

Trade Sustainability Impact Assessment for the FTA between the EU and Ukraine within the Enhanced Agreement

Ref: TRADE06/D01

Final Report – Draft version

Client: European Commission, DG-Trade

Submitted by



Rotterdam, 5 November 2007

ECORYS Nederland BV
P.O. Box 4175
3006 AD Rotterdam
Watermanweg 44
3067 GG Rotterdam
The Netherlands

T +31 (0)10 453 88 00
F +31 (0)10 453 07 68
E netherlands@ecorys.com
W www.ecorys.com
Registration no. 24316726

ECORYS Macro & Sector Policies
T +31 (0)31 (0)10 453 87 53
F +31 (0)10 452 36 60

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Preface

This report is the Final Report and entails our study of the Trade Sustainability Impact Assessment study of the Free Trade Agreement within the Enhanced Agreement between the EU and Ukraine.

This study is a joint work by ECORYS Netherlands and CASE Ukraine and it aims to shed light on the expected economic, social and environmental impacts of the FTA in order to assist the negotiation process between the European Union and Ukraine. Even though we have extensively consulted with government representatives of both Ukraine and the EU, we would like to emphasise that all results presented in this report are economic predictions based on CGE modelling and our in-depth analyses. These outcomes are based on FTA assumptions that are our estimates of how the negotiations may go, but are by no means predictions of how they will go – and should not be interpreted as such by any party in the negotiations. Moreover, this report represents the views and analyses of the consortium that are in no way linked to the negotiating positions of the EU.

We have benefited greatly from the various meetings with civil society (three public meetings, the TSIA Workshop in Kyiv and various in-depth interviews), sector and horizontal issue experts and European Commission services members. We are grateful to Dr. M. Maliszewska and Prof. dr. J. Francois for their work on the CGE modelling sections and various experts for the in-depth analysis.

The project website for this study is www.trade-sia.ecorys.com and you can e-mail us at trade-sia@ecorys.com for comments.

This report was commissioned and financed by the Commission of the European Communities. The views expressed herein are those of the Consultant, and do not represent an official view of the Commission.

ECORYS Netherlands BV
CASE Ukraine

1 Executive Summary

1.1 The TSIA Methodology

In this Executive Summary, we mention the main results of the report in a concise and clear manner. Because we do mention the main issues only, we refer the reader to the full text for a more elaborate and detailed description of the global analysis, expected in-depth economic, social and environmental impacts and policy recommendations.

Figure 1.1 TSIA Methodology

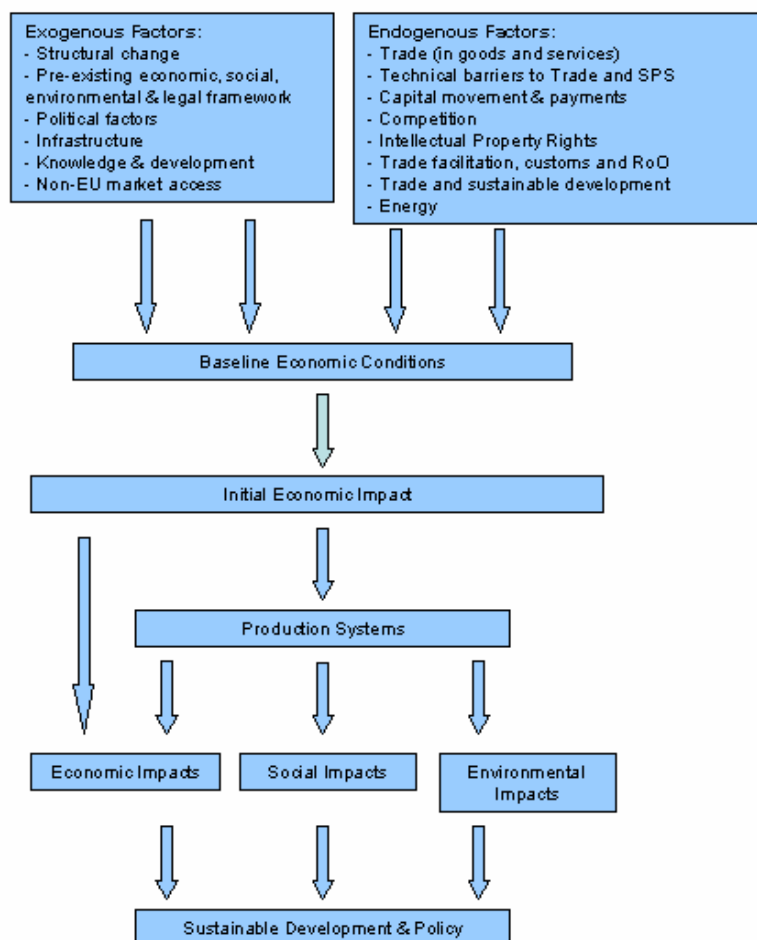


Figure 1.1 shows in a structured way what is the methodology of this report.

Global Analysis

The Global Analysis part of the TSIA EU-Ukraine gives an overview analysis of the situation between the EU and Ukraine in terms of economic, social and environmental issues, taking into account exogenous and endogenous factors. This general overview is given, with clear attention to the macroeconomic situation and to the importance of sectors for the EU-Ukraine relationship. There exist strong ties with respect to trade and FDI between the European Union and Ukraine, and those ties are strengthening as time progresses. Especially agriculture, petrochemicals and chemicals, metallurgy, energy and trade in services are sectors that define the partnership between the EU and Ukraine.

Against this background we have carried out a Computable General Equilibrium analysis to simulate two possible FTA scenarios that all are WTO inclusive. The first scenario, the Extended FTA, entails a far-reaching FTA with liberalisation of trade in goods and services and very significant reductions in border costs, standards costs (technical barriers) and reductions in barriers to FDI. Scenario two is a more limited FTA, with partial liberalisation of trade in goods and less ambitious reductions in standard costs, border costs and limited liberalisation of trade in services.

When we analyse the outputs of the CGE modelling we find that the most Extended FTA leads to the largest welfare gains for both Ukraine and the EU. The more limited the FTA, the smaller the welfare gains are expected to be. At the sector level, we note that some sectors are expected to experience large changes in output and employment, like machinery and equipment, ferrous metals, financial services and wearing apparel. The detailed results are presented in Chapter 6. We expect large environmental sustainability effects in sectors that tend to be more polluting like chemicals and metallurgy & ferrous metals. Significant social sustainable impacts we expect in agriculture and some of the horizontal issues like trade in services and competition policy as well as in the sectors that show large changes in employment.

Subsequently we screen all sectors mentioned in the Terms of Reference on the basis of four criteria:

- First, the importance of the sectors (in output and employment size) for the EU-Ukrainian economic partnership;
- Second, the estimated economic impact (measured as percentage and absolute change in levels of employment and production) of each sector is reviewed;
- Third, we look at the effect the change in production structure will have on social and environmental sustainable development and assess possible impacts. For this we use the core indicators and specific indicators for sustainable impact;
- Finally, the fourth criterion, which is not yet available, are the consultations with civil society and key stakeholders to the TSIA EU Ukraine study.

Having carefully screened all the sectors, we see that agriculture, metallurgy, machinery and electronics and energy are important goods sectors and transport, distribution, telecommunication and financial services are important sectors in terms of magnitude,

FTA impact effects, social and environmental impacts and complementary civil society remarks. Therefore, we propose to analyse the following five sectors:

- Agriculture (and various subcategories)
- Metallurgy
- Machinery and electronics
- Energy
- Trade in services (and various subcategories)

Having carefully analysed the various horizontal issues and progress that is currently being made by Ukraine, we have selected the following issues, keeping in mind their estimated effect on trade flows, tarifficated levels of protection, social and environmental (positive) impact and the fact that some issues are already largely dealt with through Ukraine's accession to the WTO (e.g. sanitary- and phytosanitary measures):

- Competition policy
- Government procurement
- Technical standards

It is these sectors and horizontal issues that we have 'scoped' in more detail in Chapter 7, describing their current situation and the areas for further research.

In-depth study of sectors and horizontal issues

The second part of the report looks at the CGE modelling results (initial economic impacts) and then provides a more in-depth analysis of selected sensitive sectors and horizontal issues (chosen during the screening process and as a result of the civil society workshop in Ukraine and first Public Meeting in Brussels). This part focuses on the expected economic, social and environmental impacts for both Ukraine and the EU. We look at the impacts directly and through changes in the production structure. In Table 1.1, we show the sustainability impact indicators for each of the core impacts that we analyse.

Table 1.1 Sustainable development indicators

Area	Core Indicator	Specific Indicators
1. Economic	a) Real Income	GDP per capita, Net value added, consumer effects, effect on prices, variety of goods and services
	b) Fixed capital formation	Gross fixed capital formation, Private and public capital formation, FDI
	c) Trade	Balance of trade in goods and services, Volume of trade in goods and services, Terms of trade
2. Social	a) Poverty	People living under poverty line, GINI index, regional effects
	b) Health	Life expectancy, Mortality rates (maternal, child), Access to health services, sanitation, nutritional levels
	c) Education	Primary, secondary and tertiary enrolment rates, literacy rates
	d) Labour issues (incl. Employment and decent work)	Unemployment, Productivity and quality of work, Rights at work, Employment opportunities, wage

Area	Core Indicator	Specific Indicators
	e) Equality	effects, self-employment Gender equality in employment and employment opportunities, gender equality in education, social protection, social dialogue
3. Environmental	a) Atmosphere	CO2 emissions, air quality, quantity of dangerous chemicals in atmosphere (dangerous to ozone layer or to humans)
	b) Land	Land use in agriculture, forest, desertification, urbanization, natural resource stocks
	c) Biodiversity	Number of species, protected areas, ecosystem
	d) Environmental quality	Waste management, energy resources
	e) Fresh and waste water	Quantity of water use, Access to safe drinking water, Water quality, Quantity of waste water, Cleaning of waste water, Water supply

This study looks at two possible FTA scenarios: an extended (deep) FTA and a limited FTA (both in the short run and in the long run) and then at the mentioned economic, social and environmental impacts by making use of the mentioned core indicators and specific indicators. This methodological approach is in line with the TSIA Handbook.

Policy recommendations

The CGE analysis and in-depth analysis have made the advantages and disadvantages of the FTA clear by showing the economic, social and environmental impacts. Many people, and the Ukrainian economy as a whole, will benefit, but some people will lose. It is to the stronger impact outcomes of the analysis, both positive and negative, that the policy recommendations are geared. From an economic viewpoint, the social and environmental effects are positive or negative externalities that have to be strengthened or dealt with in order to reach the sustainability goals set at the outset of the FTA. Both policy recommendations for the EU negotiating position as well as flanking policy measures to mitigate the negative impacts and enhance the positive impacts of the FTA will be reviewed.

1.2 Consultations with Civil Society

Consultations with civil society are at the core of the Trade Sustainability Impact Assessment. ECORYS has therefore taken extensive care of involving civil society at various moments into the development of this report. The involvement of civil society has taken place through the following means:

- Public meetings at the end of each of the three parts of the study;
- TSIA Workshop in Ukraine (Kyiv);
- Online consultations and discussions via the ECORYS trade-sia website;
- Structured interviews with individual stakeholders

This has resulted in an open dialogue and constructive involvement of civil society both in the EU and Ukraine with regard to this TSIA study. We consider this of great value to add to the quality and realism of this report beyond the overall CGE model outcomes.

Having listened careful to the workshop participants, public meetings questions raised, and online consultations, we have included (among others) the following issues and comments into the study:

1. As suggested by several participants, we have included more dynamics into the CGE model by looking at the short-run as well as the long-run effects of the FTA (for two scenarios);
2. We have more clearly presented the assumptions and restrictions of the CGE model in the final version of the GAR;
3. We have adapted our assumptions in the model regarding the reduction of EU tariffs to mirror those of Ukraine – which leads to different modelling outcomes (e.g. more positive for agriculture than before);
4. We have decided to look at the coal industry as part of the proposed in-depth analysis of the energy sector;
5. Significant attention is given to ecological consequences of the FTA outcomes for the sectors and horizontal issues;
6. As a consequence of the repeated comments from civil society, the transport sector has been included in ‘trade in services’;
7. As a consequence of reactions from civil society, we have included government procurement as a horizontal issue;
8. We have included several smaller suggestions for improvement.

1.3 The extended FTA

When we look at the two scenarios, it becomes clear from the CGE analysis as well as from the detailed sector studies and horizontal issue investigations that the extended FTA will bring Ukraine and the EU by far the most benefits in terms of economic, social and environmental gains: welfare gains, production, international trade, wage increases, health effects, productivity increases, employment generation and poverty reductions. However, not all social effects are positive and there are several negative environmental effects. They can potentially be protected by flanking policy measures to the extended FTA. The general model outcomes are shown in Table 1.2. The expected impacts are based on the scenario definitions coming from the first part and do not reflect any negotiating position of the EU in the FTA negotiations.

Table 1.2 Macro-economic CGE modelling results

Variable	Ukraine	Russia	EU-27	ROW
Scenario: WTO Accession				
Welfare (% change)	0.654	0.018	0.006	0.006
Income (return factors and taxes) (bn US\$)	0.058	0.364	8.526	24.847
Skilled Wage (% change)	0.814	-0.004	0.001	-0.001
Unskilled Wage (% change)	0.839	-0.038	-0.001	-0.001

Variable	Ukraine	Russia	EU-27	ROW
Scenario 1: Extended FTA (short run) – including WTO				
Welfare (% change)	2.261	0.030	0.007	-0.001
Income (return factors and taxes) (bn US\$)	0.060	0.364	8.526	24.846
Skilled Wage (% change)	2.496	0.049	0.009	-0.001
Unskilled Wage (% change)	3.066	-0.028	0.009	-0.002
Scenario 1: Extended FTA (long run) – including WTO				
Welfare (% change)	5.285	0.071	0.011	0.003
Income (return factors and taxes) (bn US\$)	0.061	0.364	8.527	24.847
Skilled Wage (% change)	4.355	0.059	0.009	-0.003
Unskilled Wage (% change)	4.970	-0.029	0.008	-0.003
Scenario 2: Limited FTA (short run) – including WTO				
Welfare (% change)	1.216	0.004	0.007	0.002
Income (return factors and taxes) (bn US\$)	0.059	0.364	8.526	24.846
Skilled Wage (% change)	1.547	-0.003	0.006	-0.001
Unskilled Wage (% change)	1.789	-0.053	0.006	-0.001
Scenario 2: Limited FTA (long run) – including WTO				
Welfare (% change)	3.295	0.032	0.009	0.004
Income (return factors and taxes) (bn US\$)	0.060	0.374	8.527	24.847
Skilled Wage (% change)	2.817	0.002	0.006	-0.002
Unskilled Wage (% change)	3.093	-0.054	0.005	-0.002

* All values are in billion US\$ unless specified to be in %

Even though the overall effects of our modelling exercise show they are clearly positive in total, there are two important considerations to keep in mind. Firstly, in the short-run, the most beneficial scenario can also be costly in terms of regulatory approximation, investments in new and upgraded standards and production methods and sector re-allocations (e.g. metallurgy production upgrading, SPS standards in meat and animal fats, certification trainings and agreement, border cost reductions). Several of these types of costs carry over to the long run. Secondly, even though the overall effects are positive, it is clear that some sectors gain and some lose, and within the sectors, some people gain and some lose.

We have taken care to make sure that both the impacts for Ukraine as for the EU and included. Given the relatively large impacts in the Ukrainian economy and relatively small impacts of the FTA on the (much larger) European Union economy, there is a natural bias towards Ukraine. However, in some sectors and with respect to some issues there are EU impacts that will be highlighted. These include for example, wine & beer, transport, government procurement and metallurgy.

1.4 Economic sustainability impacts of the FTA

In general, the **(initial) economic impacts** of the FTA are estimated to be overwhelmingly positive for the extended FTA and slightly less positive for the more

limited FTA. This happens because in the extended FTA scenario we assume the EU and Ukraine cut tariffs deepest and achieve the highest levels of regulatory approximation, leading to lower standard costs, border costs and costs for trade in services and FDI. Also in the long run, the economic impacts are more positive than in the short run. The reason for this is that capital is assumed mobile only in the long run, allowing capital to find the highest rate of return across the Ukrainian economy only in the long run, causing the marginal product of labour to rise. This analysis is corroborated in Table 1.2, showing that the welfare gains are largest in the long run extended FTA with 5.3% welfare gains for the Ukrainian economy.

Across sectors and horizontal issues, we identify the main expected economic impacts by looking at the sustainability impact indicators presented in Table 1.1.

1.4.1 Real income

GDP per capita

Overall GDP per capita is expected to go up as a consequence of the FTA – more in the extended FTA than in the limited one and more in the long run than in the short run. Assumed improvements in competition policy are expected to lead to increases in production and GDP per capita as productivity goes up. For the cereals sector, the FTA will lead to growth if the tariff rate quota (TRQ) and quotation of exports are sufficiently reduced. Ukrainian meat and animal fat may experience growth if SPS measures are sufficiently implemented to approximate the EU food and safety standards, albeit this is expected to be a long run development. The metallurgy sector is expected to show significant increases in GDP per capita from the FTA. Distribution services and communication services will benefit but transport and financial services will show negative real income effects. The latter is expected due to restructuring of the sectors (e.g. banking), consolidations and existence of scale economies. A well-functioning government procurement system can lead to growth in specific sectors where it enhances efficient investments (e.g. infrastructure, transport, hospitals, education). The assumption of technical standards approximation is expected to have positive growth effects in the agri-food sector, machinery & electronics, manufacturing of textiles and wearing apparel, motor vehicles and agriculture due to lower costs of compliance. Short-term approximation costs should not be underestimated though.

Net value added

Overall, the net value added, will go up as a consequence of the FTA. Especially in meat and animal fat (agriculture sub sector) if SPS is sufficiently harmonised, metallurgy, and machinery & electronics, if technical standards and sufficiently harmonised. Improvements in the distribution sector may lead to secondary positive net value added effects in the retail & wholesale sectors. Also improvements in government procurement and technical standards potentially lead to higher net value added because of regulatory cost reductions, which make sectors more competitive, allow more firms to tender and increase value added. The net value added in EU industries is also likely to go up because of (limited) production reallocation to Ukraine.

Consumer effects

Consumers are expected to benefit significantly from the FTA, mostly because of cheaper prices for agricultural and manufacturing products and services. If sugar tariffs are dropped consumers pay less for sugar, but also the confectionary industry will benefit from cheaper prices for the major input in their production processes. Modelled reductions in tariffs in metallurgy and machinery & electronics lead to lower prices for intermediate goods, having a positive impact for price levels of consumer goods all across the Ukrainian economic sectors. In agriculture, due to the FTA, food security may increase if SPS standards are being implemented which can have a positive effect on people's health and even life expectancy. For industrial goods, if technical barriers to trade are reduced, more efficient and cleaner production may be the consequence, and more attention for workers' safety and health. The expected energy effects of the FTA are not clear. There will be more pressure for environmentally sound production of energy, which is positive for consumer health, but due to external effects, coal production with current production technologies may continue and even increase (at least in the short run) which is not a positive effect from a sustainable point of view. Lower prices for transport services due to the break up of monopolies in public transport and infrastructure may lead to better quality of transport services and cheaper prices. The same goes for financial services where clear standards, rules and regulations improve consumer confidence in the sector. Government procurement is expected to lead to public investments that are much more effective and yield higher returns with tax money, having positive effects in areas like infrastructure, construction, financial services, and communication services. Finally lower prices can spill over into the Ukrainian economy from technical standards approximation to EU legislation. EU consumers will also benefit due to increased trade with Ukraine, mostly in agricultural products and steel, which will have a downward effect on prices for consumer products and is expected to lead to more choice.

Effect on prices

Generally – as explained under consumer effects – the FTA scenario predicts lower prices in the Ukrainian and EU economies due to the use of scale economies. In the meat and animal fat sub-sector, prices go down depending on the level of approximation of Ukrainian production standards to EU food safety rules. For sugar the drops in prices are expected to be significant and also prices for beer and wine will go down because of increased international competition. When metallurgy and machinery prices drop this will have a positive impact on downstream sectors that need steel and machines for production, also in the EU. The effects on energy prices are not clear because of other factors, outside the FTA, that have a significant impact. Energy security for Ukraine and the EU can increase because of the FTA if addressed properly in the Enhanced Agreement. Also in the services sector, international competition can lead to lower prices. If technical standards are harmonised with EU legislation, especially agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production can experience lower costs of compliance and customs controls. This is expected to lead to more trade between the EU and Ukraine and lower prices.

Variety of goods and services

With respect to agricultural products the number of varieties of products is expected to increase (e.g. meat offer, wine, beer, fruits and vegetables) and the same applies to the

confectionary industry with sugar as its main raw material input. For the manufacturing sectors metallurgy and machinery & electronics variety in intermediate products may increase because of the integration of the Ukrainian economy into the worldwide (and especially EU) steel and machinery production networks. For consumers, liberalisation of the electronics sector is expected to lead to more choice in terms of electrical appliances and electronic equipment. The positive effect of the distribution services on retail and wholesale will also increase varieties of products. We expect a strongly increased offer of service products from the financial sector – both from foreign and domestic suppliers – to the Ukrainian consumers, multinationals and SMEs.

1.4.2 Fixed capital formation

Gross fixed capital formation

GFCF formation – the total value of additions to fixed assets by resident producer enterprises – is most commonly applied to tangible assets like plants & machinery equipment, vehicles, land-improvements and building (excluding their depreciation). But also intellectual property and discoveries of mineral deposits are included. The FTA is expected to have an impact on the GFCF in the cereals sub-sector through investments in upgrading the production methods, including the machine parks at farms. Most investments in the long run are expected in the production upgrading of the metallurgy and machinery sectors. There are large investment opportunities for EU capital in these sectors. Also in the major restructuring of the energy sector that is likely to follow an extended FTA, including energy production with open hearth furnaces, outdated coal plants, unsafe nuclear power plants, etc. large investments will occur – and are desperately needed. In the transport sector, transport equipment is expected to be upgraded to meet EU environmental standards (Euro-5 level) as part of the FTA. This also is in line with the reduction of the level of concentration in transport services. An improved competition policy – where state aid and anti-trust policies are reduced and enforced respectively – leads to more gross fixed capital formation and so do an improved government procurement system and harmonisation in technical standards. Regarding the latter, the process of regulatory approximation of technical standards can make sectors like agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production much more attractive to investmentss from the EU because these sectors will get access to EU markets over time.

Private and public capital formation

In the beer and wine as well as cereals sub-sectors of agriculture, we expect public and private capital formation to have positive impacts. Also private capital formation is encouraged and has a strong potential in metallurgy. The latter may improve environmental effects – i.e. cleaner production – in this sector in the longer run.

Foreign Direct Investment (FDI)

FDI is of crucial importance for the positive impacts of the FTA because it can give a boost to sectors in Ukraine that is not possible with the (limited) amounts of domestic money and with FDI come modern standards and new (read: also cleaner) production technologies. FDI can support the wine and beer industries, help in SPS approximation to EU levels and contribute to technology upgrades and more efficient and cleaner

production methods using less energy in metallurgy, chemicals, and machinery & electronics. FDI in the energy sector can be used for new and 'sustainable' projects and upgrades of energy production, including increasing safety standards at work. The FTA is expected to increase FDI in the services sector because of its liberalisation, allowing for foreign investments, take-overs, stakeholderhip, etc. Our gravity estimations show that the larger the increase in Business Climate Index (BEI), the larger the expected FDI inflows in Ukraine will be. The Ukrainian financial services sector can potentially integrate with the EU (and other) financial markets. If the broad FTA includes provisions for improving government procurement procedures, they may lead to more foreign bidders in the process. Increases in technical standards lead to more foreign investments into those sectors that harmonise enough to EU standards to get export approvals into the EU markets. The need for FDI in Ukraine, provides EU firms with large investment opportunities in the years to come.

1.4.3 Trade

Balance of trade in goods and services

Overall the trade balance for Ukraine will improve and for the EU it will worsen in relative terms. In absolute terms also EU exports to Ukraine will rise significantly. However, due to the fact that the trade balance of the EU is over 100 times larger than Ukrainian trade, the effects for the EU are insignificant. Improvements in the trade balance for Ukraine are expected in cereals, meat and animal fats (depending on the depth of the SPS agreement if it is included in the FTA (and EA)), machinery & electronics, metallurgy and distribution services, while an improvement for EU industries is expected in beer and wine, sugar, transport services, and financial services – these are the sectors where imports are expected to increase faster than exports. Improvements in domestic competition policy may enhance the competitive force of Ukrainian industries and will lead to a further improvement of the trade balance.

Volume of trade in goods and services

The FTA may lead to large increases in the volume of trade for cereals (if TRQs are sufficiently reduced), sugar, steel products, machinery & electronics. Growth in distribution services is limited and initial growth rates in trade in transport and financial services are negative. Overall, FDI inflows, competition policy, reductions in customs procedures, clearer and more transparent government procurement procedures and harmonisation of technical standards are horizontal issues that we expect to lead to significant trade increases for Ukraine and increases for the EU also because of more understanding and mutual recognition of each others product quality.

Terms of trade (ToT)

The terms of trade apply to the Ukrainian economy as a whole and it is hard to use the sum of some sector impacts to determine the ToT impacts of the FTA. Given import prices, the terms of trade for sugar and transport services are expected to worsen, while the terms of trade for metallurgy and machinery & electronics is improving. An overall effect, however, is impossible to give due to the fact we need detailed information regarding all sectors in Ukraine.

1.5 Social sustainability impacts of the FTA

Overall, **social impacts** are closely linked to the economic impacts, which imply employment increases for both Ukraine and the EU – although the CGE outcomes may present an upper limit to this effect – and wage increases. Employment increases are lower initially and more marked in the long run, while the nature of employment – required skills and skill levels demand – may be subject to change. For the EU in relative terms the employment increases are very small, albeit that in absolute terms they are large. Wage increases that are positive for both the EU and Ukraine, next to employment effects, are important in the light of differences in regional income distribution in Ukraine. Increased employment opportunities and wages should lead to lower levels of poverty and may have a mitigating effect on labour migration. Again, the predicted effects are much stronger in the long run in an extended FTA than in the short-run and the transition from the short to the long run may bring with it losses to specific groups or regions.

The FTA is also expected to encourage an overall improvement of working conditions, health & safety standards (via regulatory approximation) and quality of work along the lines of the decent work indicators as identified by the EU and ILO. This effect will be both direct, due to the need to adjust to and comply with EU standards and more indirect, through the fact that the FTA will further encourage and speed up ongoing restructuring and modernisation in certain sectors which still use out-dated (and often more hazardous) technologies and production methods.

Finally, growth potential in some sectors, may spur investments, entrepreneurial activities and self-employment, which all have positive potential impacts on income and poverty levels.

In the longer run increased employment opportunity, but particularly increases in wages and the quality of work, may reduce out-migration of labour and particularly the worst forms of this migration: illegal migration and ‘slave’ trade of women into prostitution. As such it should improve the position of some of the weakest groups (low-skilled / uneducated and poor persons and particularly women) in Ukrainian society.

1.5.1 Poverty

People living below the poverty line

Most poverty in Ukraine is concentrated in the rural agricultural areas. The model outcomes for the FTA for the agricultural sector predict both employment and wage growth, which will be more pronounced in the long run. This implies poverty can be reduced, both in depth and in breadth, also through flanking policy measures as will be further discussed in Chapter 19. The positive effects would be most noticeable in the cereals, meat and animal fats and fruits sectors. Harmonisation of technical standards can further enhance agricultural performance leading to further poverty reductions. Also increasing employment opportunities in metallurgy, machinery & electronics, the electricity and distribution services sectors lead increased job opportunities and income,

hence to lower poverty levels. However, especially in the short run, large scale restructuring of the coal industry – a possible FTA outcome – would have a negative impact on poverty levels in areas where this industry is concentrated, because it raises unemployment in a sector with workers that are not easily re-allocated to other industries or sectors.

GINI index

The GINI index is a measure for income equality in a country: the higher the GINI coefficient, the greater the difference between rich and poor. Since the lowest incomes are found in the rural areas and agricultural sector, predicted impacts of an FTA in terms of improvement of employment and wage levels in this sector could contribute an improvement of the GINI coefficient – depending on the overall size of these effects. But improvement of the GINI coefficient hinges most crucially on issues that are not necessarily directly related to the FTA, such as the tax and education systems, ownership structures and factor returns. An FTA would lead to increased openness, competition and approximation of standards and regulations, in turn further encouraging restructuring and modernisation in certain sectors and the Ukrainian economy at large. As such it may indirectly affect these systems and structures, thus reducing income disparities. There are no effects foreseen of the EU Ukraine FTA on the EU GINI index.

Regional effects

Through various mechanisms, the FTA is expected to have regional effects in Ukraine. Regional effects are important in the country because of political sensitivities and because of regional development and poverty reduction programmes. Agricultural productivity, growth – albeit not so large in the short run – tends to positively affect the (mostly Western) rural agricultural countryside. If FDI leads to improved productivity in wine production the wine producing areas in the south of Ukraine benefit. If the FTA leads to increased importance of metallurgy and machinery, that are pre-dominantly located in the (south)east of Ukraine, this should lead to employment and income growth in these regions. Possible closure of the coal mines for environmental reasons and because of a change in the energy mix resulting from an FTA will have large negative social and economic impacts in Eastern Ukraine where most miners live and work. The development of distribution services has a regional effect in that it will benefit the industrial areas in Ukraine more than the agricultural countryside. Development in communication services is expected to be stronger for cities than for the countryside unless accompanied by flanking measures. Also competition policy may lead to regional effects due to reductions in state aid for specific sectors and enforcement of antitrust policies in others (e.g. coal subsidies, metallurgy subsidies, agricultural subsidies, transport service monopolies). Also for the EU there may be regional effects, with the bordering countries to Ukraine being affected more strongly than those EU member states that are located further away. For example, in some ‘new’ EU member states, agricultural production may experience some pressure from the FTA, while the transport sectors are expected to benefit.

1.5.2 Health

Life expectancy

Life expectancy increases when living conditions in general improve. One effect of the regulatory approximation of SPS standards to comply with EU food safety regulations and harmonisation of technical standards for industrial products to EU levels is that food quality goes up. This means that product safety and health aspects in Ukraine and the EU improve. Both these effects lead to an increase in life expectancy. Also envisaged improvements in working conditions, worker safety, and quality of work in manufacturing and agriculture will lead to higher life expectancy. On the other hand, negative environmental impacts like increased CO₂ and SO₂ emissions, more chemicals in the air, and increased water and waste pollution lead to a less healthy environment and reductions in life expectancy. In general, if poverty decreases and disposable incomes increase, people have more money and will live healthier lives, leading to higher life expectancies. For coal miners, an FTA that improves production technologies, working conditions and worker safety can have a significantly positive impact on their life expectancies. Government procurement improvements resulting from the FTA can have a positive effect on life expectancy in the long run through increase procurement quality of facilities like roads, infrastructure, hospitals, better advice and policies, etc. For the EU we do not identify any significant impact.

Mortality rates (maternal, child)

Studies show that higher income levels (in this case for Ukraine because of the FTA) can lead to purchase of better and more diverse food products and – based on research of the relation between income and lifestyle – a healthier lifestyle. In many sectors, worker safety and working conditions will be improved because of the FTA. Upgrading of production methodologies as well as vehicles and planes, investments in road, rail and airport infrastructure lead to more road, rail and air safety. A negative impact stems from the mixed environmental aspects related to air pollution, greenhouse gas emissions, waste increases, and chemicals in the air. Maternal and child health is likely to improve due to increasing income levels and more transparent government procurement for maternity and child hospitals. Although labour migration of health professionals (especially obstetricians and paediatricians) may have negative effects, it must be noted that such migration is still limited as long as Ukrainian diplomas and certificates are not yet recognised in the EU.

Ageing of population

Although the ongoing process of an ageing population due to low birth rates and high mortality rates represents an autonomous demographic process, an FTA with the EU may indirectly affect this process. The extent of these effects should not be overestimated though. On the positive side, improved public health (systems) may decrease the mortality rate, while on the negative side labour migration may reduce further the share of the working population and the availability of health professionals.

Access to health services

We identified no direct links between the FTA and access to health services. However, indirectly, higher incomes make it easier to access health services and improved government procurement procedures improve the quality of constructed hospitals and

other health-related buildings. Services liberalisation, including mode 4, can lead to migration of surgeons, doctors and other health specialists.

Sanitation

There is an expected indirect positive effect of government procurement schemes on the quality and availability of sanitation. Also, if the FTA leads to poverty reductions and more unlocking of the Ukrainian countryside, sanitational quality is likely to improve. For the EU we do not identify any effects.

Nutritional levels

Through improved Ukrainian SPS standards as a consequence of the FTA effects on approximation of the EU food safety standards, meat, fruits, cereals enjoy higher quality and increased nutritional levels. Technical agri-food standards improvements have the same effect.

1.5.3 Education

Primary, secondary and tertiary enrolment rates

Reductions in poverty, and increases in income will likely have a positive effect on enrolment rates, as less children will be required to supplement household income at a young age. This is a medium to long run effect, which is also strongly influenced by Ukraine's overall education policy (e.g. importance of the MDGs). However, in the short run, trade liberalisation leads to increased levels of competition in most sectors of the Ukrainian economy, which will lead to both intra- and inter-sector restructuring. Thus on the one hand this implies skills and skill levels required in specific sectors may change, while on the other hand while labour will have to transfer from losing to gaining sectors. Both of these effects place an adjustment burden on the Ukrainian education system, not just in terms of the quality of existing basic and higher education systems, but also in terms of the need for adult education, vocational training, on the job training and retraining, etc. For EU educational policy and educational institutions there are cooperation opportunities (e.g. joint programmes) that can serve mutual interests.

Literacy rates

Reductions in poverty, increases in employment and consequent increases in enrolment rates will have long term positive effects on literacy rates. However, no immediate effects of the FTA on literacy rates have been identified, neither for Ukraine nor for the EU.

1.5.4 Labour issues (including employment and decent work)

Employment and unemployment

Unemployment overall is expected to go down. However, this is not the case for all sectors, while in Ukraine the unemployment rate is only part of the story since a large share of the Ukrainian population does not participate in the labour market and is thus not registered as unemployed. The model outcomes need to be interpreted with some caution, especially for certain sectors. Thus, although the model predicts strong employment gains for the Ukraine, these effects may be more moderate in reality, particularly in the short

run. On the one hand the current labour participation rate is low, implying that increased job opportunities may result in more people 'returning' to the official labour market and official unemployment figures remaining at the same level or even increasing. On the other hand, in many companies more people are employed than strictly necessary. Production, sales and export growth may therefore not immediately translate into new jobs, but rather lead to increased productivity of the existing workforce.

In addition, in certain sectors the FTA will not substantially change the direction of more structural and ongoing transition and modernisation processes. Thus, for instance, in the long run the number of jobs in the agricultural sector is expected to decrease, as the sector is modernised and becomes more efficient and as employment shifts from agriculture to manufacturing and services.

At the sectoral and sub-sectoral levels effects will likely vary. For agriculture the employment effects would be negative in the short run and positive in the long run, while the nature of the jobs may change over time (more technology intensive). Employment in the meat and animal fat sub-sector would go up if SPS standards are approximated to EU levels. Also for metallurgy and machinery & electronics we expect employment to increase. The energy sector shows mixed results with employment increases for the electricity sub-sector but decreases for coal, gas and oil. In the energy sector deep restructuring is needed so in the immediate aftermath of the FTA implementation employment is expected to go down. Particularly the coal industry is expected to experience employment declines due (in part) to the FTA. Unemployment in transport and financial services sector are expected to go up but only to a limited extent. Employment changes in communication services are negligible and positive in distribution services. Increased competition policy should lead to lower margins initially and increased unemployment, especially in non-competitive (sub)sectors (e.g. transport, and meat and animal fat production). In the long run competition is good for employment as it keeps wage increases within limits and raises productivity. Technical standards are expected to have positive effects (if harmonised) for employment in agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production because approximation of standards may lead to the opening up of new, large markets and because of lower compliance costs to higher standards.

For the EU we expect very small and at most regional effects. Based on the modelling results, in-depth analyses and engagement with civil society, we see the main benefits for the financial sector, transport sector and sugar sector if the extended FTA scenario is analysed. However, also very small positive effects occur in leather products, beverages and tobacco sectors in the EU. There are negligible negative effects in the wearing apparel, vegetable oils & fats and oil & petroleum production sectors as the FTA will cause a small shift towards Ukraine.

Employment opportunities

As becomes clear from the above, the effect of the FTA on employment opportunities would be on the one hand more of the same type of jobs and on the other hand new and/or different jobs. Examples of the first effect would be the metallurgy sector, and machinery & electronics sector, where more similar jobs are expected to be created due to increased

outputs of those sectors. At the same time, in the coal industry and in some service sectors, employment opportunities will likely decrease. Examples of the second type of effect include agriculture, financial and transport services. The nature of employment in agriculture will change due to mechanisation. This will have implications for the skills required for these jobs, for instance the use of new tractors and machines (e.g. hydraulics, electronics), IT skills for administrative and management purposes, knowledge of dosing, use and registration of pesticides and fertilisers etc. and the acquisition of certain certificates (e.g. EUREP-GAP). Government procurement and competition policy is expected to generate further employment opportunities in the long run.

For the EU there are employment opportunities in the sugar and confectionary industry as well as in beverages (beer & wine mostly) and tobacco sectors. In the service sectors, most employment opportunities are created in the financial services sector.

Wage effects

In financial services and transport services wages are expected to decrease and so are wages in the coal industry. The effects on agricultural wages are expected to be mixed, with positive effects for the meat and animal fats sub-sector, if SPS standards are harmonised. Competition policy will lead to less protection and a downward pressure on wages initially. In the longer run, competition policy will make Ukrainian firms more competitive internationally and with rises in productivity allow for rises in wages. As explained in the above, increased overall wage levels should lead to poverty reduction and improvement in health and education levels.

In the EU overall, the wages will go up also, albeit with a very small amount.

Self-employment

In service and manufacturing sectors with a high minimum efficient scale (MES), such as metallurgy, chemicals and machinery, the possibilities for self-employment are low due to minimum investment levels needed to start up a successful business. However in agriculture, and various services sectors (communication, financial) these possibilities exist. The FTA will have a positive impact on self-employment in these sectors if at the same time, red tape and bureaucracy around setting up new businesses is significantly reduced. Since cutting these costs is part of the border and standard costs reductions in the FTA, this is an expected impact for Ukraine.

Productivity

Overall, productivity is expected to increase for various reasons. For Ukraine, first, improved competition because of the FTA will force firms and industries to become more efficient in order to survive. Second, increases in investments in (new) production technologies and updated and cleaner machinery, R&D as a consequence of the FTA, would lead to higher levels of productivity. Finally, improved government procurement procedures will lead to more competition and pressure to perform on the part of the tenderers. These effects would be particularly noticeable in certain (sub) sectors. With respect to agriculture (livestock), gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods exist according to sector experts that were interviewed. These inefficiencies will alter potentially because of the FTA. Metallurgy and machinery are expected to increase productivity over time as investments

come in. In turn, higher productivity also allows for payment of higher wages in various sectors of the Ukrainian economy. The FTA envisages the energy sector to become more productive by aiming for the use of more gas and for improving energy efficiency in the production of electricity. For the EU, EU capital will be an engine to increase productivity and therefore capital returns.

The enforcement of competition policy as part of an EU-Ukraine FTA is expected to have rather ambiguous social impacts. The key issues to be negotiated within future FTA - state aid, anti-trust, and state monopolies policies – should increase competition in the most monopolised sectors and in general improve the overall competitiveness of Ukrainian enterprises. This would lead to a downward pressure on goods and service prices. On the other hand, increased competition also creates pressures to reduce costs and raise labour productivity, thus leading to potential employment reductions. These effects are expected to be most pronounced in sectors with highly monopolistic structure and state ownership dominance, such as transport and telecommunications, energy and coal industries. These would all be long term effects.

Quality of work

The FTA clearly puts sustainable development as a top priority in the negotiations. We assumed in the modelling a reduction in differences in technical standards, which should be achieved through adoption of EU technical standards. Not automatically, but in addition to the existing FTA, policy measures could be developed to include environmental, health and safety aspects with regard to the work place and methods. Indirectly, restructuring and modernisation should lead to the adoption of safer and cleaner technologies and working conditions in sectors such as metallurgy, machinery & electronics, transport and the coal industry. In the energy sector, improving safety standards and their monitoring and implementation related to nuclear energy is envisaged. Likewise, inflows of FDI would lead to upgrading of machine parks, introduction of cleaner production methods, increased worker safety, and increased health standards at the workplace, e.g. through corporate social responsibility (CSR) schemes on the part of the foreign investors. For the EU there may be some very small and regional competitive pressures but overall the EU serves as an example for quality of work standards for the Ukraine.

Rights at work and social protection

The FTA impact on rights at work and social protection would taken place both through the adoption of standards and FDI inflows (see above remark about CSR). However, most of the effects will likely be indirect and require specific policy measures to take place that will be assessed in Chapter 19. In principle the EU approach to the FTA is to grant Ukrainian workers reciprocal rights that EU workers currently enjoy in Ukraine and looking ahead to Chapter 19, social protection will likely be dealt with under the enhanced agreement.

Social dialogue

There are no identified direct effects of the FTA on social dialogue. However, overall, the FTA will lead to restructuring of the Ukrainian economy and gains and losses across sectors and high-skilled and low-skilled workers. This will likely lead to a more active involvement of social partners to protect and assert worker's rights. Such active

involvement would of course depend on their ability to strengthen their capacities and the willingness of the Ukrainian authorities to enter into a dialogue.

1.5.5 Equality

Gender equality in employment and employment opportunities

As simulated in the CGE analysis, the main FTA effect on gender equality would occur due to the expected substantial employment increases in the textiles and wearing apparel sectors (if technical standard procedures are cleared). Given the fact many women work in these sectors this would have a positive impact on gender equality in terms of labour participation rates. However, wages in this sector are usually among the lowest and labour circumstances remain an issue of international debate as the sector often employs young women known to be cheap, docile and often unorganised. The effect in terms of the income gap may thus be limited or even negative, while labour rights for women may also come under pressure.

Gender equality in education

There are no identified effects of the FTA on gender equality in education.

1.6 Environmental sustainability impact effects

With respect to **environmental impacts**, increased production, growth and employment have potentially negative effects on the environment, air quality, biodiversity, land use, water use and overall environmental quality.¹ The FTA however, could include provisions for upgrading environmental standards and include the environment as a sustainable factor for long-term development at an early stage – This will be done in Chapter 19. Also some issues need to be addressed at a more disaggregated level in order to show clear effects.

1.6.1 Atmosphere

CO2 emissions

Growth in the metallurgy, machinery, energy and transportation sectors will likely lead to negative environmental impacts with respect to CO2 emissions (energy in the short-run) as well as to greenhouse gas emissions in general. For machinery & electronics, there is evidence of increased (though for the EU negligible) SO2 and NOx emissions. Production upgrading and the use of ‘cleaner’ technologies that are impacts expected to occur because of the FTA can mitigate these effects somewhat. If energy restructuring leads to an intensified use of coal as the main source of energy, this may have very negative environmental impacts due to the pollution of the current coal mining process itself and because of the use of coal for electricity generation (Ukrainian coal contains a high level

¹ Ukraine needs to take care not to go back to the pollution levels of the final years of the Soviet period.

of polluting sulphur).² A smaller transport sector, combined with expected standard upgrading (e.g. car emissions from Euro-2 to Euro-5 level) is expected to lead to lower CO2 emissions. Competition policy is thought to have mixed effects on CO2 emissions: initially environmental concerns may be neglected due to competitive pressures, but in the long run, environmental aspects will be priced into the market. Government procurement system improvements can have significant positive impacts on CO2 emission reductions. A first example of this development could be the ‘green scheme’ of the Kyoto protocol. Ukraine signed the Kyoto protocol but remains below the boundary of emission rights, increasing potential for higher production or re-allocation of production from somewhere else.

For the EU the FTA has potential impacts of the CO2 emissions in that the FTA may prompt re-location of the EU industries to Ukraine that may reduce CO2 emissions in the EU. Also, in the short run, when polluting industries grow, CO2 emission levels in the eastern part of the EU may increase and only in the longer run decrease again.

Air quality

Revival of the agricultural industry and productivity increases can lead to more intense use of pesticides used for crop (e.g. cereals, fruits) protection.³ If the number of livestock increases, more methane gas is going to be produced in agricultural areas. Manufacturing sector growth like metallurgy can have a negative impact on air quality due to increased levels of chemicals in the air and greenhouse gas emissions. In general, aerial pollution in Ukraine is significant with greenhouse gas and SO2 and NOx emissions into the atmosphere and it is likely to increase. Moreover, since air does not stop at borders, these environmental effects also partially spill over to the (eastern) EU. Also, a shrinking transport sector is expected to lead to less emissions and improvements of air quality. Competition policy and government procurement can have similar effects as mentioned above under ‘CO2 emissions’. The EU effects mentioned under CO2 emissions apply equally to air quality.

Quantity of dangerous chemicals in atmosphere

In line with the arguments presented in the previous impact descriptions, agriculture growth may bring associated problems with eutrophication and the use of chemicals and dangerous pesticides. Like in the cereals sector, increased fruit production may lead to increased use of fertilisers and pesticides in order to increase fruit production output. This will have adverse environmental effects. Metallurgy growth leads to potentially more chemicals in the air and greenhouse gas emissions. Also aerial pollution is significant and is likely to get worse unless the FTA clearly breaks with past Ukrainian (energy) production methods and sets new standards.

² However, if Ukraine joins the Memorandum of Understanding on Energy or the Energy Treaty, these effects are addressed and mitigated.

³ FTA provisions could cover these issues in flanking policy measures as will be explained in Chapter 19.

1.6.2 Land

Land use in agriculture

Livestock increases in the meat production sub-sector of agriculture, and the gross inefficiencies in production can have a negative impact on land use in agriculture. Increased amounts of livestock also potentially bring problems with methane gas and phosphates and nitrates – though Ukraine is still far from the level of urgency of these issues that has been reached in the EU.

Desertification

Especially open coal mining, and the use of hearth furnaces, are expected to have a continuing negative impact on Ukrainian lands. If in the short run, the coal industry will grow this effect may exacerbate.⁴ More intense use of agriculture is also likely to lead to a 'giving land back to nature' tendency. No significant EU effects are expected.

Urbanisation

We expect migration effects from rural agricultural areas to the cities to continue and even be encouraged by the FTA because of growth of manufacturing and services sectors relative to the agricultural sector. Wage differences that increase over time between cities and villages will also lead to more urbanisation. For the EU no significant effects are expected.

Natural resource stocks

The FTA is expected to lead to an increased use of natural resources, but less so than the growth rates of certain sectors would predict because the FTA in the longer run also facilitates and encourages more efficient energy use and 'cleaner' means of production. The use of coal, oil and gas is expected to increase because of increases in production. In the meat sector, the number of livestock will increase and the concept of bio-industry may be gaining ground to combat gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods.

1.6.3 Biodiversity

Number of species

There are no indications that the FTA will have a significant impact on the number of species in Ukraine or the EU.

Protected areas

There is no significant impact of the FTA on protected areas. However, the increased attention in the FTA for environmental concerns can have a positive impact on real protection of protected areas and increase their number and size. Inclusion of sustainable development in government procurement procedures and Ukrainian authorities' thinking will also have an impact. Next to this being a model assumption, it also will come back in Chapter 19 as a policy recommendation.

⁴ The impacts of the envisaged government procurement that include environmental standards and an attitude of awareness in general for environmental issues, can lead to combating desertification.

Ecosystem

The ecosystems in Ukraine and the EU may – to a limited extent – be affected by the FTA. Livestock increases and meat production bring with them the problem of eutrophication, increased agricultural production may increase the use of pesticides and chemicals in the air and water and waste pollution of metallurgy and energy production can also negatively affect the ecosystem. Less transport services lead to improvements (read: decreases) in CO₂ emissions but in the long run, when transport services start to grow this effect may be reversed. Longer run effects involve upgrading to ‘cleaner’ production methods and investments in waste processing. Ukraine signed the Kyoto protocol but remains under the boundary of emission rights, increasing potential for higher production or re-allocation of production from somewhere else. For the EU the small impact may be an improvement of the ecosystem due to re-allocation of industries to Ukraine and due to re-allocation of some agricultural production to Ukraine – both of which reduce the pressure on the EU ecosystem.

1.6.4 Environmental quality

Waste management

Waste management applies mostly to the energy sector, metallurgy and chemicals sectors. The FTA is expected to lead to more wastewater production but also to more environmental care to address the management of waste production through FDI and production upgrading. Wastewater increases involve toxic side-products in metallurgy production, coal mining and gas transport through pipelines (gas leakages). Especially wastewater management in the Black Sea region is also potentially affecting the EU as Ukraine’s sea waters are close to those of Romania and Bulgaria, EU member states.

Energy resources

Traditionally, many energy resources have been and are wasted in Ukraine through inefficient extraction methods and the use of heavily outdated and energy wasting production equipment and methodologies. In the short-run, our analysis expects the FTA to lead to increased coal production and increases in CO₂ emissions. Only in the long run, and after significant investments, the FTA may lead to significant improvements in the creation and use of energy resources. Growth of the economy and specific sector growth will lead to the use of much more energy. Through investments, foreign and domestic, the FTA can enhance production techniques and reduce leakages of energy in metallurgy production, machinery production, chemicals production, etc. This will make the sectors more competitive (important in an age of rising energy prices) and energy-efficient. Coal extraction is very inefficient in Ukraine and so is electricity generation, which leads to negative impacts on Ukrainian ecological standards. In addition to the traditional sources of energy, sunflower seed oils and cereals are more and more used as bio-fuels.

For the EU an intensified agreement with Ukraine has the potential impact of higher energy security and increased energy interdependency. Through EU funds and FDI, the Ukrainian energy sector may increase efficiency and more energy exports to the EU.

1.6.5 Fresh and waste water

Quantity of water use

Overall, water use is expected to increase because of the FTA as water is used for irrigation in agriculture, input in metallurgy and machinery production. Also, macro-economically, if incomes rise, consumers start using more water. For the EU, no impact of the FTA on quantity of water use is expected.

Access to safe drinking water

There are potential negative effects of environmental and wastewater pollution on access to safe drinking water. This FTA impact has however not been found, nor for Ukraine, nor for the EU.

Water quality

Ukraine has to be careful with the water quality – keeping in mind the enormous pollution of water in the late Soviet period – when more fertilisers and chemicals are used in agricultural production (e.g. cereals, fruits). Also the metallurgy sector seems to create a negative environmental impact by water and waste pollution generation. However, we need to note that economic growth in general has these environmental impacts unless sustainable growth allows policy makers to address the polluting issues *ex ante*. The FTA is expected to lead to more growth and thus to growth of industries that can affect the water quality. There is space for flanking measures here. For the EU, FTA impacts on water quality are not found.

Quantity of waste water

The quantity of wastewater in Ukraine is expected to go up due to sector growth as a consequence of the FTA. Especially in metallurgy this environmental impact is expected. For the EU no such effects are found.

Cleaning of waste water

Regulatory approximation of environmental standards envisaged are designed to lead to higher environmental standards, including the cleaning of waste water (see also the section on water quality above). However these effects will be dominated by the increased need of cleaning of wastewater due to larger amounts of wastewater production as a consequence of the FTA. For the EU impacts in cleaning of wastewater are not found.

Water supply

The FTA will impact the utility companies by introducing more market access and thus competition as well as increased competition in the government procurement markets. These improvements in public utilities as a consequence of the FTA can have a positive impact on quality and productivity of water utilities, including the water supply. For the EU no significant impacts of the FTA on the water supply are envisaged.

1.7 Policy implications

The sustainable impact assessments show the expected economic, social and environmental effects for the FTA overall and for the various sectors and horizontal issues. Sometimes care needs to be taken in interpreting these impacts as they may stem from the model assumptions in the first place. The latter may lead to the idea that a policy measure is already in place even though it is just a model assumption that has specific impacts *if* agreed and implemented. The economic, social and environmental effects show a very diverse and mixed picture. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts.

Overall, the economic impacts of the FTA are positive in the long-run for both the Ukraine and the EU. In the short-run labour reallocations and production upgrading while facing increased EU competition in many markets, may lead to drops in output and employment. A gradual phasing in of tariff liberalisation and NTB reductions would mitigate these negative short-run impacts for many sectors. Based on screening of sectors in the Ukrainian economy, the negotiators could jointly work out the length and depth of transition and to what sectors it would apply. Also – outside the scope of the FTA – work on SPS and technical standards in Ukraine are of vital importance to improve the competitive position of Ukraine's agricultural and manufacturing industries.

Socially, the effects of the FTA are ambiguous. Overall, in the long run, jobs will be created in both the EU and Ukraine, but in certain sectors we see potential employment losses, especially in the long run. Overall trends in economic development (e.g. reductions in agricultural employment) should not be mixed with an agricultural FTA impact, however. Improvements in the Ukrainian business climate that will lead to increases in FDI inflows, may strengthen the Ukrainian economy and create employment. In the short run, reallocation of labour needs to be facilitated through regional policy and educational programmes.

The FTA is expected to have negative environmental effects unless mitigated by flanking policy measures. Increases in output of various manufacturing sectors (e.g. metallurgy, machinery & electronics, chemicals), increases in road transport and more intensive and modernised agriculture, will have negative environmental impacts, through greenhouse gas emissions, water and waste pollution, land use and use of pesticides and nitrates. As part of FTA negotiations, preferential treatment for goods and services that are produced in an environmentally friendly way could be considered as well as broader policy measures related, for example, to inclusion of environmental standards in government procurement.

2 Introduction

2.1 Aims of the study

The Trade Sustainability Impact Assessment methodology is set up for two major reasons:

- To analyse the **economic, social and environmental impacts** in advance of policy decision making in order to include sustainable development goals in trade policy. This aim is achieved in this report by using analytical tools (CGE modelling) and causal chain analysis in a scientific and objective manner.
- To **involve civil society in a dialogue on trade policy and trade policy issues**. This aim is achieved in this report by actively engaging with civil society at various stages of the report development, including dissemination of results.

In order to achieve these goals, the study has been carried out in three intertwined parts:

- Phase 1: The Global Analysis of the economic relations between the EU and Ukraine and first economic impact analysis;
- Phase 2: The in-depth analysis of sectors and horizontal issues, including economic, social and environmental impacts;
- Phase 3: Policy measures, including flanking measures, to maximise the outcome of the FTA negotiations.

Phase 1: The Global Analysis

In the Global Analysis part, we make a preliminary assessment of the economic impacts of trade and investment liberalisation measures which can be taken within the framework of the EU-Ukraine FTA negotiations as part of the overall objective of the study. For the Global Analysis part, the following specifications have been presented in the assignment:

‘Describe in a preliminary overview the baseline scenario, with focus on WTO commitments and selected sensitive areas, define two scenarios of likely outcome of the negotiations and propose selected sectors and horizontal measures for in-depth analysis’

As outcomes, we provide a general economic analysis of the Ukraine and EU, assess the quantitative impacts of the EU-Ukraine FTA on both economies through CGE modelling and propose five sectors and three horizontal issues for in-depth study based on a screening and scoping exercise.

Phase 2: The in-depth study of sectors and horizontal issues

In the in-depth studies, we analyse the economic, social and environmental impacts of trade and investment liberalisation measures which can be taken within the framework of the EU-Ukraine FTA negotiations:

‘The Trade SIA should address how the trade and investment provisions of the Enhanced Agreement under negotiation could affect social, environmental and developmental issues in the EU and in Ukraine’.

Also, actively, we consult civil society through the TSIA workshop, public meetings and in-depth interviews based on interim report outcomes.

Phase 3: Policy recommendations and flanking policy measures

In the final part, presented in Chapter 19, we broadly recommend two types of policy measures: policy measures concerning negotiation positions and policy measures that aim to maximise the positive FTA impacts and minimise its negative effects (flanking measures). These policy measures are based on the impact analyses of the earlier parts of the study. Also during this part, we heavily involve ourselves with civil society and its representatives to discuss the results and outcomes.

2.2 Description of the structure of the report

This final report is structured in such a way as to combine the methodological aspects with the empirical and policy outcomes and to combine the three sub-parts of the study into one coherent result. At all times, we focus on maintaining the following aspects as core issues throughout the report:

- Clearly look at and present the assumptions we make throughout the report;
- Clearly look at the FTA as coming ‘on top of’ WTO obligations for Ukraine;
- Clearly look at the FTA from both the Ukrainian and EU sides (e.g. in terms of modelling, impacts and policy recommendations);
- Clearly present the involvement and outcomes of our engagement with civil society.

First, in Chapter 3, we present the Trade Sustainable Impact Assessment methodology, based on the DG Trade Handbook (2006). In there we show the various steps from the global analysis part, the CGE modelling, causal chain analysis to in-depth sector and horizontal issue studies to reach policy recommendations in support of the FTA negotiations.

Given the importance and weight placed on civil society consultations, we present the ways in which ECORYS and CASE Ukraine have presented results to and interacted with representatives of civil society (e.g. via the TSIA workshop, public meetings, digital consultations and private interviews and discussions). This has resulted in a clear and constructive involvement of civil society and key stakeholders throughout the study.

In Chapter 5 we investigate the strengths and weaknesses – at present – of the Ukrainian and EU economies. We look at the way the economies are structured and the way they interact with the rest of the world (through trade and FDI), also in terms of social and environmental state of affairs. Towards the end we narrow the analysis down to the trade issues likely to be discussed during the FTA.

Chapter 6, the macroeconomic analysis, represents the quantitative core of the study in which we explain the CGE model used, the assumptions and restrictions as well as the two scenarios (including underlying assumptions regarding tariff and non-tariff barrier reductions). We include more dynamics into the CGE model and add a gravity analysis on FDI to complement the general equilibrium analysis. Chapter 6 also summarises the CGE overall and sector-specific outcomes in terms of changes in welfare, prices, output, imports, exports and employment.

The screening of sectors and horizontal issues – prioritisation to determine where to focus with the in-depth analysis – takes place in Chapter 7. Based on four criteria, we determine what sectors and horizontal issues are most important and warrant a deeper analysis. For each of the sectors and horizontal issues, we also investigate the scope of the research that needs to be done – a preliminary analysis of the key issues per sector and horizontal issue.

Chapters 8 to 15 cover the in-depth analyses of the screened (and scoped) sectors and horizontal issues. In these Chapters, the following sectors and horizontal issues are carefully analysed, based on the CGE outcomes, in-depth theoretical and (local) empirical research and consultations with civil society: agriculture (including various sub-sectors), metallurgy, machinery & electronics, energy, trade in services (including various sub-sectors), competition policy, government procurement and technical standards.

Chapters 16 and 17 put more focus on the social and environmental impacts that are the consequence of changes in the production structure because of the FTA. Because the economic impacts of the FTA are significantly positive, but the social impacts show an ambiguous picture and environmental effects may be significantly negative, we believe extra focus on social and environmental impacts is justified.

Based on the sustainability impact indicators, as presented in the Handbook, as well as in this report in Chapter 18 as **Error! Reference source not found.**, we assess the possible economic, social and environmental impacts of the FTA on the EU and Ukraine. This Chapter provides additional insights into the impacts of the FTA by looking at the sustainability (core) indicators instead of at the analysed sectors and horizontal issues. As such this analysis is more broad and links the impacts direct to the indicators that matter for sustainable development.

The final translation of our study, from CGE modelling to in-depth analysis and impact assessments, into flanking policy recommendations is carried out in Chapter 19. In a general form, we present – in line with best economic practice – policy suggestions for the negotiators as well as flanking policy recommendations to enhance the positive FTA impacts and mitigate the negative ones.

The final Chapter of the report, Chapter 20, concludes.

Additionally, in the various Annexes, we provide more details, additional information that is not at the core of the final report.

2.3 Sources of information

Throughout this study, we use various references (See Annex 1) but the main ones are mentioned below:

- The Partnership and Cooperation Agreement between the EU and Ukraine;
- EU-Ukraine Action Plan in the context of the ENP;
- The Terms of Reference for the TSIA if the FTA in the framework of the Enhanced Agreement to be negotiated between the EC and Ukraine;
- The Handbook for TSIA's, EC, External Trade, March 2006;
- Guidance and Note provided to the Contractor during the kick-off meeting of 7 February 2007;
- CEPS (2006), "The prospects of deep free trade between the EU and Ukraine";
- CASE (2006), "Prospects for EU-Ukraine Economic Relations".
- ICPS (2007), "Free trade between Ukraine and the EU – an impact assessment "

2.4 Explanation of the conclusion tables

At the end of each Chapter in which sectors and horizontal issues are analysed, we present the conclusions for that sector (or horizontal issue) together with a conclusion Table in line with the Trade SIA Handbook. The Table summarises the effects of the FTA for the selected economical, social and environmental indicators for sustainable development. Table 2.1 below shows an example of this kind of conclusion table of the effects with all the specific indicators. For each indicator there's an indication of:

- A. Overall direction and magnitude of change from baseline (WTO accession) scenario;
- B. Extent of existing economic, social and environmental stress in affected areas;
- C. Equity of change: how it affects different sectors of the population;
- D. Potential for irreversibility;
- E. Regulatory and institutional capacity to implement ameliorating measures.

The symbols for impacts:

- Insignificant impact
- △ Positive, less significant impact
- ▽ Negative, less significant impact
- ↑↓ Positive and negative impacts to be experienced
- ? Net effect uncertain
- ▲ Positive, highly significant effect
- ▼ Negative, highly significant effect

Additional symbols used:

- (--,0,+,++) Existing conditions, where:
 - = Important existing stress
 - ++ = Absence of stress
- Yes Potential for reversibility
- No Irreversible
- L Low capacity to change
- M Medium capacity to change
- H High capacity to change

Table 2.1 Example conclusion table

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income					
Fixed capital formation					
Trade					
Social					
Employment & decent work					
Poverty					
Equality					
Health					
Education					
Environment					
Atmosphere					
Land					
Bio-diversity					
Environmental quality					
Fresh and waste water					

3 Trade SIA Methodology

3.1 Introduction

The TSIA methodology has been developed during the 1990s to support policy makers and trade negotiators to get a better picture and idea of the expected economic impacts and sustainable impacts (social, environmental) of FTA negotiations. Currently, all EU policy measures are carried out in parallel to or after a sustainability impact assessment has been carried out.

The TSIA methodology consists of a few core components. These core methodological components are:

- Causal Chain Analysis (CCA);
- Scenario analysis and CGE modelling;
- Sector case study methodology;
- Consultation and dissemination strategy;

3.2 Causal Chain Analysis (CCA)

CCA is a conceptual tool used to identify the relevant cause-effect links between the trade measures proposed and the economic, social and environmental impact this trade measure may have. What is imperative for a realistic impact assessment is that the CCA is applied to *significant* links between trade negotiations and their impacts. In the first part of the TSIA CCA is used to provide insights into the Global Analysis, as a tool to provide preliminary screening and scoping as well as indicating possible priority issues.

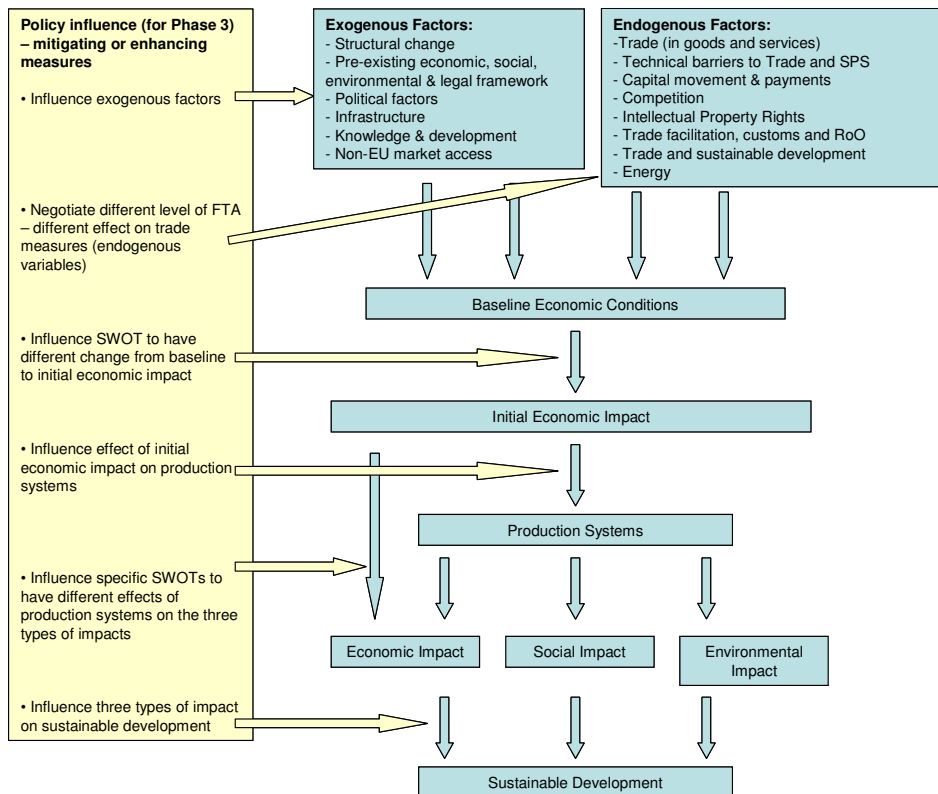
Figure 3.1 shows – in a slightly adapted way compared to Chart 3 of the ‘Handbook’ (p. 35) how we view the way Causal Chain Analysis should be applied within the TSIA framework for the Global Analysis part of the study.

Exogenous and endogenous factors influence a baseline (pre-defined) scenario. The exogenous factors are present but determined elsewhere, while the endogenous factors are the possible change variables because of the FTA negotiations within the Enhanced Agreement between the EU and Ukraine.

The change in baseline scenario to initial economic impact as a consequence of the FTA negotiations depends on the strength of specific effects (like for example the size of sectors, levels of international trade, market structures or regulatory environment). Subsequently, the initial economic impact affects the production structure which in turn affects the economic, social and environmental impacts. This means there is an indirect

effect of the initial economic impact on the specific fields. On top of that there is also a direct influence of economic impact. Finally, the economic, social and environmental impacts of the FTA negotiations between the EU and Ukraine determine sustainable development.

Figure 3.1 Causal Chain Analysis: from trade measure to impact on sustainable development



The effects of the FTA negotiations on sustainable development therefore run through the light blue arrows. For example, if the FTA between EU and Ukraine alters the regulatory framework regarding technical standards of agricultural products (technical barriers to trade), the baseline economic scenario changes because trade patterns change, and so do (international) market conditions for producers and consumers. This will change the behaviour of (agricultural) producers as well as EU and Ukrainian consumers (following price changes) which in turn will have an economic, social and environmental impact – related to sustainable development.

However, in addition to the ‘Handbook’ we show also – already at this stage – how via the light yellow arrows, policy measures taken (enhancing or mitigating) can influence the various cause-effects. Thus Figure 3.1 shows how at what stages flanking policy measures may increase the positive and mitigate the negative impacts of the FTA

negotiations between the EU and Ukraine, since we believe policy can influence various stages and ‘should not wait till the effects are over’.

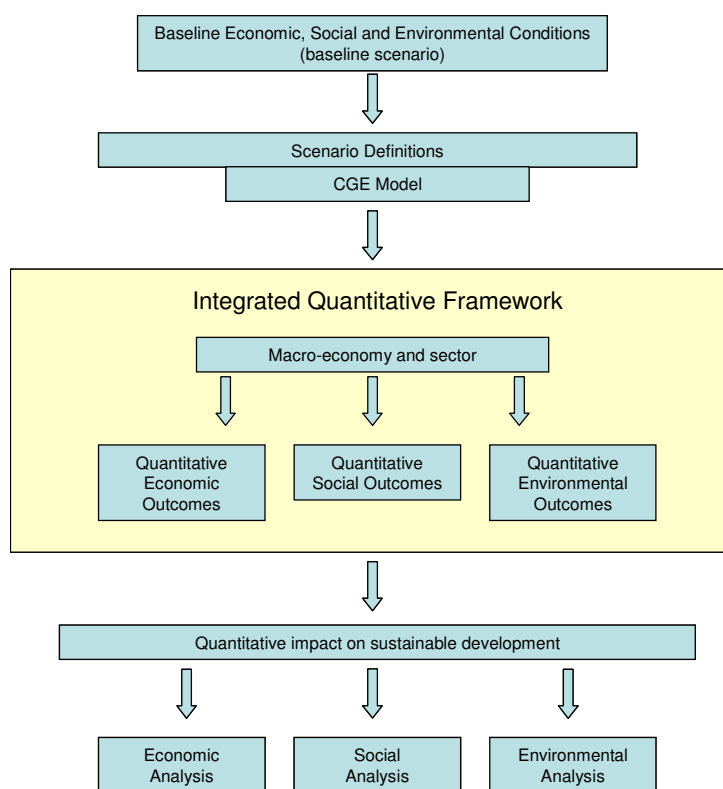
3.3 Scenario analysis and CGE modelling

The approach ECORYS and CASE Ukraine take towards this part is covered in paragraph 3.3 in detail. The general methodology, however, runs as described below.

Scenario analysis

Two scenarios are developed regarding future consequences of the FTA negotiations within the EA between the EU and Ukraine in order to assess prospective consequences of the negotiations. The more information ECORYS and CASE Ukraine have available on where Ukraine currently stands, the more realistic these scenarios can be. That is a logical deduction since the scenarios will be based on assumptions regarding the context and starting position (the baseline scenario) that may or may not include a continuation of recent trends with respect to Ukraine’s economic, social and environmental performance, depending on various processes Ukraine is in right now (e.g. WTO accession).

Figure 3.2 Framework for Quantitative Analysis through CGE modelling



We will carry out two scenario analyses to predict the likely consequences of outcomes of the FTA negotiations. These quantitative outcomes can be of economic, social and/or environmental nature. Given the focus of the TSIA on sustainable development, the model outcomes will be screened and then analysed in-depth regarding this aspect – split out, again, in the fields of economic, social and/or environmental sustainable development. This is shown in Figure 3.2 in stylised form.

Scenarios define the scope of the evaluation and reflect the extremes of a likely range of realistic outcomes of the trade negotiations between the EU and Ukraine.

Modelling

In order to quantify the impacts on sustainable development of a possible FTA outcome, various modelling techniques are available. For the general overview, Computable General Equilibrium models (CGE-models) are used. This class of models can provide insights into the effects of trade and investment liberalisation on trade flows, trade balances and economic welfare. For sector or regional analyses other tools like input-output models and gravity models are available. Some of the major issues that need to be solved are those of NTBs, capital accumulation and last but certainly not least: imperfect competition and market structure. The place of CGE modelling in the quantitative framework is shown in Figure 3.2.

The advantages of modelling include the possibility of a quantitative assessment of any type of impact and the fact these quantitative results rely on clear hypotheses and assumptions. At the outset of this study, modelling can help to provide useful insights.

The disadvantages of modelling results is that even the general equilibrium models (CGEs) provide only a partial analysis because of lack of data and the fact the models are inherently static. Berden and Van Marrewijk in the *Journal of Development Economics* (2007)⁵ have looked at the dynamic welfare effects of trade restrictions, which is a good addition to these models because it gives indications as to what the long term FTA effects are. Modelling, moreover, ignores a large part of the trade agenda like trade in services, trade rules, market access, legal issues like intellectual property rights and trade rules and investment.

3.4 Sector and horizontal issue case study methodology

Once the first part of the study is completed, leading to the focus on specific sectors and horizontal issues (at least 5 sectors and three horizontal issues, as specified), the detailed sector/issue analysis part and the final overview and recommendations part can commence. This will include:

- A detailed assessment of the economic, environmental and social impacts of possible results according to the two scenario outcomes relevant for the specific sectors and horizontal issues through CCA;

⁵ Berden, K.G. and C. van Marrewijk (2007), 'On the static and dynamic costs of trade restrictions', *Journal of Development Economics* (2007).

- An assessment of the expected significance of these impacts for the sector under investigation, using quantitative and qualitative techniques;
- Identification of the social groups and geographical areas most likely to be affected positively or negatively by the negotiation outcomes (as assumed in the two scenarios);
- Organise a Workshop in Ukraine to interact extensively with key stakeholders in the process, in particular Ukrainian business, administration and civil society in order to create transparency and inputs for the detailed sector studies and study outcomes;
- A proposal for effective flanking measures that either mitigate or enhance the (expected) effects at sector level of the negotiation outcomes – this is presented in a stylised way in general in Figure 3.1;
- Continuously contribute to the debate and dialogue of the TSIA methodology in general and the TSIA on the FTA between EU and Ukraine in particular and involve all into the sector studies.

3.5 Policy recommendations

In the final part of the TSIA, the methodology consists of the possibility of devising policy recommendations for the EU negotiating position and flanking measures to enhance the positive impacts of the FTA and mitigate the negative ones. Based on normative and positive policy analysis to look at the optimal mix of economic policy, the measures are suggested.

3.6 Consultation and dissemination strategy

The target groups for the consultation process and dissemination of knowledge can be split into three components:

- Key stakeholders affected by the negotiations between the EU and Ukraine;
- Key stakeholders who will be involved in the implementation of the negotiation results;
- Stakeholders because they are interested in the EU-Ukrainian FTA negotiating process and results.

That means, for this TSIA, the following interested (key) stakeholders will be targeted, approached and invited to take part in the consultation process:

- The Ukrainian government;
- The European Union institutions: European Commission (mainly DG Trade but also other DGs), European Parliament, Delegation of the European Commission to Ukraine;
- Civil society including environmental and social NGOs in the EU and Ukraine;
- Interested institutions and persons from third countries (contacting in progress);
- Producer and consumer associations in the EU and Ukraine;
- Regional experts (contacting in progress).

For Ukraine, CASE Ukraine has identified the following partners – which is still a non-exhaustive list.

Table 3.1 List of Ukrainian Key Stakeholders

State Bodies	
Secretariat of the President of Ukraine	Viktor Baloga, Head of the Secretariat, Oleksandr Shlapak, First Deputy Head of the Secretariat Oleksandr Chaly, Deputy Head of the Secretariat
National Security and Defence Council	Vasyl Rogoviy, Deputy Head
Cabinet of Ministers of Ukraine Department on European Integration, Secretariat of the Cabinet of Ministries of Ukraine	Svitlana Kulykova, Director of the Department
Ministry of Economy Department of Collaboration with the WTO Department of Collaboration with the European Union Department of external economic policy Department of Bilateral Economic Cooperation	Viacheslav Tsymbal, Director of the Department Natalia Riabtseva, Director of the Department Vasyl Andriyashuk, Director of the Department Pavlo Popov, Director of the Department
Ministry of Foreign Affairs of Ukraine Department of economic cooperation Department of cooperation with EU	Sergiy Korsunskiy, Director of the Department Igor Dir, Deputy Director of the Department
Ministry of Finance Department for International Relations and European Integration	Tetyana Yefymenko, Deputy Minister
Ministry of Agricultural Policy Department for foreign economic cooperation	Ivan Dymchak, Deputy Minister
Ministry of Justice State Department for Legislation Approximation	Denys Blinda, Head of the Division
Ministry of Health Protection Medved's Institute of Ecohygiene and Toxicology	Anatoliy Podruzniak, Head of the Department on Ecohygiene and Toxicology-Ecohygiene Expertise of Food Products and Consumer Products
Ministry of Industrial Policy	Dmytro Kolesnikov, First Deputy Minister
Ministry of Education and Science State Intellectual Property Department	Anastasiya Mindrul, Main Specialist, Legislation development division
Ministry of Environmental Protection Department on Euro integration and International Collaborations	Head
Ministry of Labor and Social Policy	Natalia Ivanova, Deputy Minister
Ministry of Fuel and Energy	Sergiy Pavlusha, Department on Euro integration and International Collaborations
Ministry of Coal Industry	Anatoliy Bolotov, First Deputy Minister
Ministry of Transport and Communication Department of External Affairs	Gennadiy Rak, Head of the Department
State Committee for Regulatory Policy and Entrepreneurship Department on Regulatory Policy	Oleg Miroshnichenko, Head of the
State Committee for Technical Regulation and	Ivan Sayevych, First Deputy Head

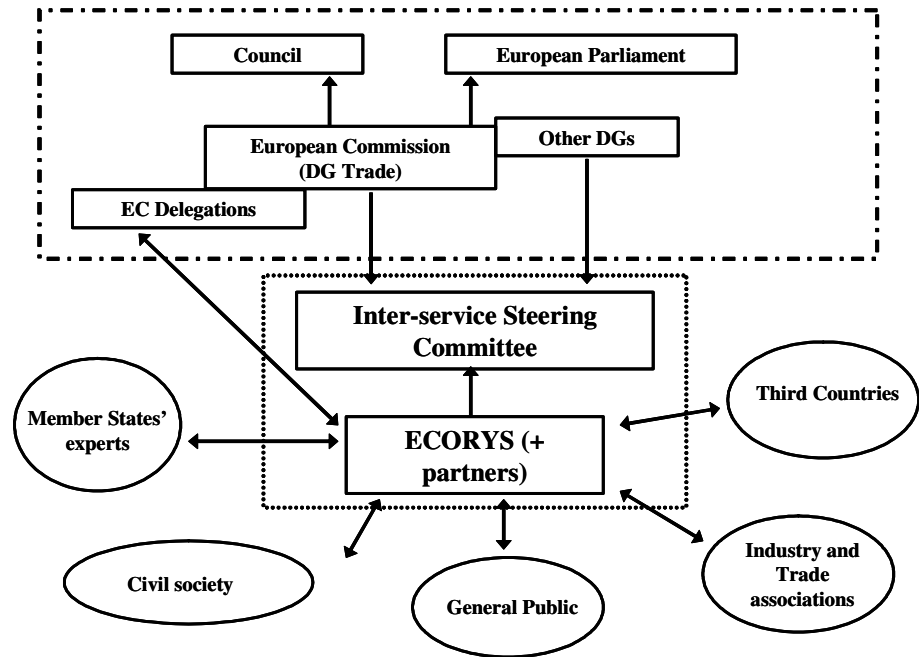
Consumer Policy Department for Strategic Planning and Economic Cooperation	
Antimonopoly Committee: Department for International Relations, European Integration and Protocol	Olena Gulakova, head of the Department
State Customs Service Department for International Cooperation	Aleksander Yegorov - Chairman Dmitri Zavtur, head of the Department
National Bank of Ukraine Center for Scientific Research of the NBU	Igor Shumylo, Executive Director on Economic Issues
National Electricity Regulation Commission of Ukraine	Valeriy Tsaplin, Head of the Department
State Commission on Financial Service Market Regulation	Tetyana Korotka, Department for development of financial services market, European and Euro-Atlantic integration
Parliament - Verkhovna Rada Of Ukraine	
Parliamentary Committee on European Integration	Prokopovych N.V., Head of the Subcommittee on Adaptation of the Ukrainian Legislation to the EU Legislation Lanoviy V.T., Head of the Subcommittee on Cooperation with WTO Ivan Kyrilenko, Committee on European Integration
Parliamentary Committee on Social Policy and Labor	Ivan Bondarchuk, Head
Parliamentary Committee on Economic Policy	Mykola Katerynychuk, First Deputy Head
Parliamentary Committee on Ecological Policy, Nature Management and Liquidation of Consequences of Chernobyl Catastrophe	Valeriy Kal'chenko, Head
Parliamentary Committee on Industrial and Regulatory Policy and Entrepreneurship	Sergiy Matviyenko, Head
Parliamentary Committee on Agricultural Policy and Land relations	Mykhaylo Gladiy, Head
Parliamentary Committee on Transport and Communications	Anton Prygodsky, Head
Think-tanks and NGOs	
Institute of Economic Research and Policy Consulting	Igor Burakovskiy, Director
Research institute of the Ministry of Economy of Ukraine	Shapovalova Maryna, Deputy Director of the Institute
Ukrainian Center for international Integration	Natalia Yasko, Director
Economic Education and Research Consortium	Tom Coupe, Director
Ukrainian Center for Economic and Political Studies named after O.Razumkov	Vasyl Yurchyshyn, Director of Economic Programs
Ukrainian European Policy and Legal Advice Centre (UEPLAC)	Jacques Tallineau, Legal Advisor in Internal Market Issues and Economic and Trade-related Reforms
Institute of Reforms	Viktor Pynzenyk, Director
International Center for Policy Studies	Olga Shumylo, Director of the European

	Integration Department
Yalta European Strategy	
Centre for Peace, Conversion and Foreign Policy of Ukraine (CPCFPU)	Oleksandr Sushko, Director
Ukrainian Institute for Social Research after O. Yaremenko	Head
Ukrainian Fund of Social investments	Viktor Miroshnichenko, Executive Director
Center "Social Monitoring"	Dmytro Dmytruk, Director
International Renaissance Foundation	Iryna Kuchma, Social Capital and Academic Publications Program Manager Dmytro Shulga, European Program Project Manager
Eurasia Foundation, Kyiv Office	Sarah Jewett, Regional Communications Coordinator
Trade Unions	
Ukrainian Trade Union Federation	Grygoriy Osoviy, Vice-President
Trade Union of Workers of Agri-Industrial Complex of Ukraine	Volodymyr Chepura, Head
Trade Union of Workers of Coal Industry of Ukraine	Valeriy Mamchenko, Deputy Head
Trade Union of Workers of Communication of Ukraine	Valeriy Yefremov, Head
Trade Union of Workers of Energy and Electrotechnical Industry of Ukraine	Sergiy Shyshov, Head
Trade Union of Workers Aircraft Building of Ukraine	Head
Trade Union of Workers of Automobile and Agricultural Mashingbuilding of Ukraine	Vasyl Dudnyk, Head
Businesses	
Ukrainian League of Industrials and Entrepreneurs	Anatoliy Kinakh, Head, Tetyana Ponomarenko, Deputy Director of Department on Economic Policy
Council Of Entrepreneurs of Ukraine	Ksenia Liapina, Head of the Council
The Council on Competitiveness of Ukraine	Yuri Poluneev, Head
Ukrainian Chamber of Commerce and Industry	Victor Yanovsky, Head of International Economic Relations Department
European Business Association	Anna Derev'yanko, Executive Director
Business Associations	
Ukrainian Association of Ferrous Metals Enterprises Association of Ukrainian Banks Ukrainian Grain Association Ukrainian Association of Light Industry Enterprises Ukrainian Association of Milk Industry Enterprises Association of Pharmaceutical Producers of Ukraine National Association of Meat Producers of Ukraine National Association of Vegetables and Fruit Producers of Ukraine National Association of Alcoholic Products Producers Ukrainian Association of Sugar Producers of Ukraine Union of Chemical Producers of Ukraine	

Association of Juice Producers Association Ukrcement"	
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From the tender application we show – again in Figure 3.3 – the stylised way in which we view the involvement of the various key stakeholders.

Figure 3.3 Key stakeholders in the consultation process



To ensure also focused consultation, we will make sure that representatives from the sectors that are chosen to be assessed in detail (both from the EU and Ukraine), will be invited specifically. Also those who can shed a light on and provide valuable insights onto the horizontal issues, will be invited.

Next to inviting the key stakeholders from the EU and Ukraine for inputs into the TSIA study, we also involve them actively by providing them with the latest outcomes of the various parts of our study. This dissemination of knowledge will not only entail the key stakeholders but will also be provided via general means of communication.

For the practical implementation of involving civil society and key stakeholders, we refer to Chapter 4.

4 Consultation with Civil Society

4.1 Introduction

Consultations with civil society are at the core of the Trade Sustainability Impact Assessment. ECORYS has therefore taken extensive care of involving civil society at various moments into the development of this report. The involvement of civil society has taken place through the following means:

- Public meetings at the end of each of the three parts of the study;
- TSIA Workshop in Ukraine (Kyiv);
- Online consultations and discussions via the ECORYS trade-sia website;
- Structured interviews with individual stakeholders

This has resulted in an open dialogue and constructive involvement of civil society both in the EU and Ukraine with regard to this TSIA study.

4.2 Public meetings with Civil Society

Three public meetings have taken place throughout 2007:

- 29th of June 2007 – related to Phase 1, the Global Analysis Report
- 11th of October 2007 – related to Phase 2, the Interim Report
- 23rd of November 2007 – related to Phases 1-3, the Final Report

Throughout the public meetings, ECORYS explained and summarised the reports shortly and subsequently engaged in a discussion with the representatives of civil society that were present. The summarised minutes of these public meetings can be found on the website of DG Trade and ECORYS (www.trade-sia.ecorys.com).

4.3 TSIA Workshop in Kyiv, Ukraine

4.3.1 Workshop proceedings

In cooperation with CASE Ukraine (local responsible) and the Delegation of the European Commission to Ukraine, the workshop was prepared. Sixty-five participants from civil society were present to discuss the first part and start of the second part of the TSIA project. The workshop consisted of three different sections with presentations and a plenary discussion at the end of each section.

- The first section was about the progress in the Trade SIA regarding methodology, application of methodology, and first results of the analysis, including sectoral impacts of CGE modeling, screening methodology and results.

- The second section concerned the sectoral and horizontal issues and included the following topics:
 - FTA impact on different sectors of industry and comments on the results;
 - Impact of the FTA on conducts of business between the EU and Ukraine;
 - Trade Agreement impact on agriculture
 - Alternative modelling exercise and study on FTA impacts for Ukraine;
 - Employment effects of the FTA.
- The third section concerned the FTA and sustainable development challenges for Ukraine, including the role of civil society, social impacts and environmental impacts.

The civil society representatives were active and engaged in lively debates on the pro's and con's of an FTA for different sectors, issues and from different perspectives.

4.3.2 Concise analysis of the discussions

The main points of the workshop discussions consist of:

- Modelling aspects of the study (long run, short run, model assumptions, tariff reductions, data gathering and updates, scenario specifications);
- The way the CGE model takes losses in budget revenues due to tariff reductions taken into account;
- The reasons why the transport and financial sector declines are so pronounced – they are larger than expected;
- The issue of labour migration in case of liberalisation of movement of people;
- The inclusion of labour safety and other social risks;
- The way the ecological impact of the FTA is measured and can be quantified.

The minutes of the TSIA Workshop are summarised and presented on the websites of DG Trade and ECORYS (www.trade-sia.ecorys.com).

4.3.3 Follow-up actions

The follow-up actions consisted of two main actions: (i) communication with civil society and (ii) include the workshop and public meeting comments in the TSIA reports.

Communication with workshop participants and civil society

In the weeks after the workshop, we have worked out the minutes and communicated with various workshop participants and related civil society members about issues related to the CGE outcomes, the choice of sectors and horizontal issues, specific sector issues (e.g. cereals, motor vehicles, the environmental situation in Ukraine and government procurement). The outcomes of these discussions and e-mail exchanges have been incorporated in this report.

Include comments of the Workshop in this report

We have included the most important comments from the workshop in this report. For a concise summary, we refer to section 4.6.

4.4 Online consultations and discussions via ECORYS website

Over 1550 hits have been registered on the ECORYS website, where all information regarding the TSIA study on the FTA between the EU and Ukraine is presented. Throughout the study we have received over 30 comments and requests for clarification related to the TSIA study reports. Also we have sent the ECORYS Newsletter (appearing every 2 months) to over 100 persons and institutions that have expressed their interest. The feedback received via online consultations and discussions is incorporated in the report.

4.5 Contacts with individual stakeholders

In addition to the contacts with civil society mentioned above, ECORYS and CASE Ukraine have also engaged in active bilateral interviews, surveys and discussions to get feedback and (both constructive and critical) comments on the TSIA study. Below, in Table 4.1, we present the list of interviews with stakeholders we have carried out since April 2007.

Table 4.1 Bilateral discussions and involvement of civil society

Name
ECPA (European Crop Protection Association) – Brussels, Belgium
ITUC (International Trade Union Confederation) – Brussels, Belgium
Federation of Trade Unions – Kyiv, Ukraine
Social-Economic Council for Ukraine – Kyiv, Ukraine
Ukrainian Ecological League – Kyiv, Ukraine
Institute for Economic Research & Policy Consulting – Kyiv, Ukraine
UNDP Blue Ribbon Analytical and Advisory Centre (BRAAC) – Kyiv, Ukraine
Ukrainian Agrarian Confederation – Kyiv, Ukraine
ONGOING STILL

4.6 Civil society comments included in this report

As mentioned repeatedly, we believe that listening to civil society with respect to this study is of crucial important to add to the quality and realism of this report beyond the overall CGE model outcomes. Having listened careful to the workshop participants, public meetings questions raised, and online consultations, we have included the following issues and comments into the study:

1. We have included more dynamics into the CGE model by looking at the short-run as well as the long-run effects of the FTA (for two scenarios);
2. We have more clearly presented the assumptions and restrictions of the CGE model in the final version of this report;
3. We have adapted our assumptions in the model regarding the reduction of EU tariffs to mirror those of Ukraine – which leads to different modelling outcomes (e.g. more positive for agriculture than before);

4. We have decided to look at the coal industry as part of the proposed in-depth analysis of the energy sector;
5. Significant attention is given to ecological consequences of the FTA outcomes for the sectors and horizontal issues;
6. As a consequence of the repeated comments from civil society, the transport sector has been included in 'trade in services';
7. As a consequence of reactions from civil society, we have included government procurement as a horizontal issue.

5 Economic situation in Ukraine and the EU

5.1 Agreements shaping EU-Ukraine relations

5.1.1 Overview

In order to get a first overview on the relations between Ukraine and the EU, we need to shortly look back at the historical agreements that were signed. A concise list is presented in Box 5.1.

Box 5.1 Overview of trade related agreements between Ukraine and the EU

- Agreement between Ukraine and European Community on Trade in Textile Products (signed in 1993, new Agreement signed in 2000);
- Agreement between the Government of Ukraine and the Commission of the European Communities on the Establishment and the Privileges and Immunities of the Delegation of the Commission of the European Communities in Ukraine (signed in 1993);
- Agreement between the Commission of the European Communities and the Government of Ukraine setting up a Contact Group on Coal and Steel (signed in 1994);
- Partnership and Cooperation Agreement between the European Communities and their member states, and Ukraine (signed in 1994);
- Agreement between the Government of Ukraine and the European Coal and Steel Community on Trade in Certain Steel Products (signed in 1997);
- Agreement for Cooperation between the European Atomic Energy Community and the Cabinet of Ministers of Ukraine in the Field of Controlled Nuclear Fusion (signed in 1999);
- Bilateral protocol between Ukraine and the EU for market access in goods and services in the framework of Ukraine's WTO accession (signed in 2003);
- European Neighbourhood Action Plan for Ukraine as part of European Neighbourhood Policy (signed in 2005).

It is within this policy context of agreements that the Enhanced Agreement (EA) – and within the EA the Free Trade Agreement (FTA) – is to be negotiated and developed.

Box 5.2 shows the trade related issues that follow from these agreements. The General System of Preferences (GSP) that Ukraine has become a beneficiary of, allows a differentiation between sensitive and non-sensitive products and differentiated treatment of these product categories. Notably steel and textiles are exempt and subject to special rules and regulations. Ukraine has a specific challenge to meet in facing the anti-dumping allegations brought forward at the WTO – also by members of the EU-25.

Box 5.2 Trade related issues a.o. based on Vinhas de Souza et al, 2005 and EC Delegation to Ukraine, 2007

Generalised System of Preferences (GSP)	Since 1 January 1993, Ukraine has become a beneficiary of the Generalized Scheme of Preferences (GSP). EU GSP benefits are however not granted to the commodities accounting for a
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	considerable part of Ukrainian exports (iron and steel, fertilizers, fishery products, grain, seeds, fruits, and plants). Still, the GSP should be considered as a tool for facilitating the access of Ukrainian goods to the EU market.
Steel	The import of certain steel products is subject to quantitative restrictions in the EU (Ukraine, on its side, levies duties on metal scrap exports). The EU and Ukraine have negotiated an agreement on steel products that will remain in force until 31 December 2007. This Agreement shall be automatically renewed year by year provided that neither Party gives the other Party written notice of denunciation of the Agreement at least six months before it expires. With each early renewal, quantities in every product group shall be increased by 2.5%. The EU-Ukraine Cooperation Council on 18 June 2007 provided the framework for signing of 3 important agreements among which a new agreement on Trade in Steel.
Textiles	Trade in textiles between the EU and Ukraine is regulated by a separate agreement, signed in December 2000 (replacing a previous agreement dating back to 1993), aimed at reciprocal liberalization of trade in textiles and clothing. The Parties agreed to refrain from adopting any non-tariff measures that could hinder trade in textile and clothing products if certain conditions are met by the Ukrainian side. Ukraine's commitments under this agreement were: First, to bound tariff rates applicable to EU textile imports from Ukraine to the level of tariffs as of July 2000, and Second, reduce them to the level not exceeding the rate EU has bound in WTO.
Anti-dumping investigations / Market economy status	Anti-dumping measures are applied particularly frequently against steel and chemicals, two categories that comprise nearly half of Ukraine's total exports. According to the WTO, Ukraine ranked 13th in the world as a target of anti-dumping measures between January 1995 and June 2004, with 51 anti-dumping measures concluded by various countries. At the EU-Ukraine Summit in December 2005 the granting of Market Economy Status for anti-dumping purposes by the EU to Ukraine was agreed. This implies that in anti-dumping investigations calculations of the normal value of products can be based on the data of Ukrainian exporting producers concerned, instead of those of an analogue country. By March 2006 the EU had applied anti-dumping measures on imports of 7 types of products originated in Ukraine, in particular: urea, ammonium nitrate, urea ammonium nitrate, silicon carbide, seamless tubes, welded tubes, steel ropes and cables. Besides in the beginning of 2006, the EC started two new anti-dumping procedures on imports, inter alia, from Ukraine of pentarythritol and ironing boards and review on ammonium nitrate.

5.1.2 Neighbourhood policy and Action Plan

In 2003, the EU created a new framework for its relations with neighbours, including Ukraine, called the European Neighbourhood Policy (ENP). The main idea of the ENP is to encourage stability, security and prosperity in the neighbouring states without extending EU membership to them.⁶ To make the ENP operational, the EU agreed with each ENP country an action plan that specifies priorities that should be realised in the short-to-medium term (see Box 2.3 for the EU-Ukraine Action Plan).⁷

⁶ The blueprint for the ENP was outlined in the Communication on Wider Europe issued in March 2003 (EC, 2003), and then elaborated in the ENP Strategy Paper, adopted in 2004.

⁷ These action plans are the main tool for the ENP implementation. The European Neighbourhood Policy Instrument (ENPI) was introduced to support the financial part of the reforms. The Commission together with the related country monitor the implementation of the action plan with progress reports.

Box 5.3 The EU-Ukraine Action Plan 1

The EU-Ukraine action plan was drafted in late 2004 and signed in February 2005. Its objective is to intensify the relations between Ukraine and the EU and to go beyond just co-operating towards gradual economic integration and deepening of political cooperation. The Plan is to be implemented over a period of three years. The Plan sets objectives and priorities in most big policy areas - e.g. in legislation, economic and social policies, trade policies, environmental standards, taxation, transport, energy, education and public health sector - and elaborates on what should be done to achieve them. In the economic domain, the prioritised areas include WTO accession, removal of non-tariff barriers in bilateral trade, improvement of investment climate, tax reform and approximation of the Ukrainian legislation with the European Union legislation. Underlining the EU's firm support to Ukraine's efforts for joining the WTO, the Action Plan also foresees looking at the feasibility of establishing an EU-Ukraine Free Trade Area following Ukraine's accession to the WTO. Priorities in other policy sectors include strengthening democratic institutions and rule of law, ensuring freedom of media and freedom of expression, enhancing EU-Ukraine consultation on crisis management, enhancing co-operation in disarmament, fighting corruption and enhancing transparency, improving migrant workers treatment and rights and enhancing and improving nuclear safety. The EU has promised to increase financial support to Ukraine to help with the implementation of the action plan with the ENPI. The European Investment Bank has promised to support also projects involving infrastructure investments in Ukraine.

In the economic sector of the EU-Ukraine Action Plan targets and methods are set, for example to strengthen the independence of the National Bank of Ukraine, implement privatisation programmes, reduce the involvement of the state in setting prices, enhance the functioning of a market economy, strengthen banking regulation and supervision, reduce regional imbalances and enhance competition policies. The functioning of customs and improvements of food safety, sanitary and phyto-sanitary measures are also objectives in the Action Plan. The objectives in the social sector include enhancement of employment creation, poverty reduction, and improvement of social cohesion, education systems and public health management. Environmental safety and sustainable development are also included in the goals of the Action Plan.

According to the Commission ENP progress report for Ukraine, good progress has been made since 2005, however, implementation of reform strategies has lagged behind since the beginning of 2006, mostly due to long pre- and post-election periods of political instability. Ukraine has succeeded especially in various trade and trade-related improvements and made progress regarding its WTO accession.

5.1.3 Enhanced Agreement

According to the study of CEPS, IFV & ICPS (2006) a deep enhanced agreement between the EU and Ukraine would be most beneficial to both parties. A “normal” FTA agreement would have only minimal positive welfare effects for both parties. The Enhanced agreement is expected to be in line with the ENP and EU-Ukraine Action Plan and go beyond the respective WTO obligations for the parties. In general it should be a comprehensive and balanced agreement. This Enhanced FTA agreement is planned to have a five-pillar structure:⁸

⁸ The official start of the negotiations for the enhanced agreement was March 5, 2007. Since the actual trade negotiations will only begin after Ukraine's WTO accession an informal process with Ukraine has started meanwhile.

- 1) An institutionalised political dialogue on common values in line with mutually accepted general principals governing the future relationship between the EU and Ukraine;
- 2) A WTO compatible FTA for goods and services including binding disciplines in non-tariff and regulatory areas (e.g. intellectual property rights, technical standards, competition, sanitary and phyto-sanitary rules, trade facilitation);
- 3) Specific provisions regarding energy;
- 4) Provisions on cooperation on a broad range of areas of mutual interest;
- 5) An effective implementation structure of the agreement, including a dispute settlement mechanism.

The enhanced agreement is expected to include new commitments in trade-related areas as many as possible. The Commission's objective is to reach an ambitious agreement with Ukraine that will highly integrate both markets and abolish customs duties and quantitative restrictions wherever possible. The Commission's goal is to establish trade relations comparable to those between the EU and countries like Switzerland, Norway or Liechtenstein.

According to the CEPS, IFV & ICPS (2006) report and the CASE (2006) study, one of the main requirements for the enhanced agreement is uncorrupted, transparent and consistent economic governance in Ukraine.

The preparation of the Enhanced Agreement besides other policy measures, boosts the approximation of Ukrainian legislation to the EC environmental acquis with a corresponding increase in the level of competitiveness of its economy. Practical implementation steps are being implemented also for investment-heavy EU directives like the Directive 96/61/EC on IPPC. Some legal acts have already been adopted including the Cabinet of Ministers of Ukraine Resolution №206 regarding Kyoto protocol of 22 February 2006, and Resolution №554 regarding the Montreal protocol of 21 April 2006. A detailed list of relevant pieces of legislation and related implementation deadlines is under negotiation.

5.2 Ukraine's WTO Accession Status

Ukraine submitted its official request for joining the General Agreement on Tariffs and Trade (GATT) in late 1993 and the Working Party on the accession of Ukraine to the World Trade Organization (WTO) was established on 17 December 1993. The Memorandum of the Foreign Trade Regime was agreed upon in 1994. During the more than 13-year WTO accession process, Ukraine passed through intensive rounds of multilateral and bilateral negotiations with the WTO members, as well as through substantial legal transformations and trade liberalisation.

Presently, the negotiation process on Ukraine's accession to the WTO has approached its final stage as Ukraine has almost concluded its bilateral talks with interested countries and already agreed all import tariff lines for goods (which are reflected in Ukraine's tariff offer), as well as finalised its offer regarding conditions of market access for services⁹. In

⁹ "Accession Package" of each WTO acceding country consists of: the Schedule of Concessions and Commitments on Goods, the Schedule of Specific Commitments on Services, the Draft Working Party Report and the Protocol of Accession.

addition, Ukraine has already introduced a number of legal changes aiming at harmonising its legislation to the WTO rules, as well as at fulfilling Ukraine's accession commitments undertaken during multilateral and bilateral negotiations.

There still remain a few bottlenecks in the negotiation process, such as the level of domestic support to agriculture and bilateral negotiations with Kyrgyzstan, which should be resolved urgently to fully finalise Ukraine's accession to the WTO in the summer of 2007. Besides, to reap more benefits from WTO membership and international economic integration, Ukraine should further continue implementing deep legal and institutional reforms; first of all in areas like sanitary and phyto-sanitary measures, technical standards, intellectual property, and competition policy, aiming at creating a favourable business environment, strengthening Ukraine's competitiveness position and ensuring effective enforcement of national legislation.

This paragraph will analyse the status of the major issues regarding Ukraine's negotiation process, namely bilateral negotiations, multilateral negotiations and legal reform, as well as key Ukraine's accession commitments and the status of their implementation.

5.2.1 Bilateral market access negotiations in goods and services

Ukraine has concluded its bilateral negotiations on market access for goods and services with 49 out of 50 WTO member countries from its Working Party (see Table 5.1).

Table 5.1 Status of Ukraine's bilateral negotiations on market access

Bilateral protocols signed: 49 countries - Argentina, Armenia, Australia, Bulgaria, Brazil, Canada, China, Colombia, Cuba, Croatia, Czech Republic, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, EU, Georgia, Honduras, Hungary, Iceland, India, Indonesia, Israel, Japan, Latvia, Lithuania, Malaysia, Mexico, Moldova, Mongolia, Morocco, New Zealand, Norway, Panama, Paraguay, Peru, Poland, Romania, South Korea, Slovak Republic, Slovenia, Sri Lanka, Switzerland, Taiwan, Thailand, Turkey, Uruguay, and USA
Ongoing negotiations: 1 country – Kyrgyzstan

The relatively large number of WTO members having expressed their interest in negotiating market access conditions with Ukraine is an indication to the level of attractiveness of Ukraine's domestic market to its current and potential trading partners.

Negotiations with the USA started, in 1997, and were concluded only in March 2006. The main concerns of the USA regarded market access in audiovisual services, implementation and enforcement of national legislation on intellectual property rights protection.¹⁰

¹⁰ The negotiations with other countries included a number of other important matters, for example, Australia expressed most interest in the issues of market access for sugar, sugar prices and other support for the sugar industry in Ukraine, the aggregate level of domestic support for agricultural products, intellectual property rights (application of geographical indications for certain types of products), and market access in legal services. Japan was concerned about certification of electric and electronic goods, application of sanitary-epidemiologic expertise for audio and video products and restrictions on branching into financial services. The milestones of bilateral negotiations with Moldova were the introduction of a new free trade agreement between the countries, joint customs posts, licensing procedures for certain types of activities and services, and conditions of foreign natural persons' residence and employment in Ukraine.

The ongoing negotiations with Kyrgyzstan have been protracted so long and have not yet been concluded because of the Kyrgyz insistence on repaying the debt, which Ukraine inherited from the Soviet Union times (27 million US dollars). Kyrgyzstan also requested abolishing of antidumping measures for electric bulbs applied by Ukraine, as well as zero tariff bindings on a wide range of goods including the most sensitive for Ukraine: agricultural products.¹¹

5.2.2 Multilateral negotiations and legal reform

Since its establishment in December 1993, the Working Party on the accession of Ukraine to the World Trade Organization has been gathering 16 times for its formal meetings, with the last one taking place in June 2006. The Working party on Ukraine's accession to the WTO consists of 50 WTO Members.

The first draft of the Report of the Working Party summarising Ukraine's progress and conditions of entry was prepared in March 2004 and after that revised several times. The next 17th formal meeting of the Working Party will analyse and hopefully approve the last version of the Working Party's Report.¹²

In the framework of the Working Party multilateral sessions, all aspects of Ukraine's existing trade and legal regimes were discussed, and its accession commitments were formulated. During the course of the multilateral negotiations, Ukraine has gradually fulfilled the results of these negotiations through introducing a great deal of legal changes, which were to harmonise Ukraine's legislation with the provisions of the WTO Agreements and the commitments taken by Ukraine during the negotiation process. This process was notably sped up during the recent period (2005-2006), when the Ukrainian government managed to resolve a number of problematic issues that it had failed to resolve for quite some time. According to the Ukrainian Ministry of Economic Affairs, during the two last years, 38 WTO-related laws were adopted by the Parliament.¹³ The latest legal changes, namely 20 draft laws, were passed during November-December 2006.¹⁴

During 2005, Ukraine passed 4 laws that amended the custom duty rates for many industrial and agricultural goods in accordance with Ukraine's market access commitments.¹⁵

¹¹ According to the Ukrainian government, the two countries have already achieved an agreement on the problematic issues, including the debt issue, and will sign a bilateral protocol in the nearest future.

¹² This version will reflect recently adopted legal changes.

¹³ http://www.me.gov.ua/control/uk/publish/article?art_id=48387&cat_id=38238.

¹⁴ Ukrainian Government declared these drafts crucial for finalising Ukraine's WTO accession process and obtaining WTO membership.

¹⁵ Besides, many other market access barriers and discriminatory practices were eliminated such as minimum prices on imports of alcoholic products, discriminatory taxes on petroleum and tobacco products, discriminatory practice with respect to usage of promissory notes for payments of VAT on imports, most discriminatory fees for rail transport (import, domestic, transit), trade related investment measures (TRIMS) in the free economic zones and technological parks, discriminatory excise and VAT rates in the automobile sector, foreign exchange surrender requirements (50%), tax exemptions previously granted to certain industries, the system of licenses and quotas applied to certain products, WTO-incompliant import/export licensing fees and SPS-related provisions.

The most recently passed laws in Ukraine envisage the following policy changes: gradual reduction of export duties connected with ferrous and non-ferrous metals (export ban on scrap non-ferrous metals was eliminated and replaced by export duties), live cattle and leather raw materials (all effective upon the WTO accession); lowering the fees connected with import licensing for alcoholic and tobacco products; protection of intellectual property rights; abolishment of a ban on imports of old-aged vehicles to Ukraine (upon WTO accession); lifting of citizenship requirements for performing auditing and attorney services; amendment of two framework laws on veterinary medicine and on foreign economic activities; allowing establishment of branches of foreign banks and insurance companies (upon accession and in 5 years respectively), elimination of export quotas and trade related investment measures (TRIMS) in the sugar industry (upon accession); introduction of tariff quotas for importation of raw cane sugar amounted to 260 000 tons per year (upon accession) and elimination of import price control and quotas provisions with regard to the key agricultural commodities.

As of today, Ukraine adopted all framework laws connected with SPS, TBT, customs valuation, and intellectual property rights, essential for WTO accession. However, Ukraine is still required to develop a considerable number of sub-legal acts to implement these framework laws and to ensure their effective enforcement. Besides, Ukraine has to refrain from introducing any new policies or legislation contradicting provisions of the WTO agreements and its commitments.¹⁶

Presently, Ukraine also continues to seek an agreement with the Working Party country members on the level of state support to agriculture, which is still an unresolved issue in the course of the negotiations. Moreover, there are some new requests of the Working Party Members addressing such issues as trade in biotechnological products, taxation in agriculture (e.g. abolishment of VAT privileges for domestic producers), certification and standards, and legislation harmonisation.

5.2.3 Ukraine's WTO commitments and their implementation

Many of Ukraine's accession commitments (including market access commitments, legal and rule of origin commitments) have been already implemented during the negotiation process, but still some of them will become effective only upon Ukraine's accession to the WTO or even thereafter, based on ex ante agreed transition periods.

In general, Ukraine, like any other WTO accession country, is obliged to ensure the implementation of two fundamental principles of the WTO multilateral trading system, namely most-favoured-nation (MFN) treatment and national regime in three main spheres of trade governed by the WTO – trade in goods, trade in services and intellectual property rights.¹⁷

¹⁶ After the WTO accession, the Ukraine's Accession Protocol will make up a part of the national legislation, and in case Ukrainian laws stipulate provisions that contradict to the Ukraine's WTO obligations the latter will have legal supremacy over provisions of these laws (pursuant to the provision of the Constitution of Ukraine on Ukraine's international arrangements).

¹⁷ That is, a WTO member cannot discriminate between its WTO trading partners (MFN treatment) and should treat imported and domestically produced goods equally after the foreign goods entered the domestic market (national treatment); the same concerns services, local trademarks, copyrights and patents (although the principles are applied a bit differently in each of these cases). Information on Ukraine's IPR regime can be found in subsection 5.3.7.

5.2.4 Trade in goods

Market access commitments

The results of Ukraine's bilateral negotiations for market access in goods are incorporated in the Consolidated Schedule of Concessions and Commitments on Goods. According to the Ministry of Economic Affairs, as of today Ukraine has reached agreement on all tariff lines in its tariff offer, as well as on undertaking commitments to join 16 sectoral agreements.

Box 5.5 Key elements of Ukraine's tariff offer

- Conversion of specific and combined tariffs to ad valorem duties;
- Setting up maximum bound rates at 10% level for most industrial goods and at 20% level for most agricultural products; exceptions are some sensitive products like sugar (50%) and sunflower-seed oil (30%);
- Joining 16 of the 19 sectoral initiatives, namely: agricultural equipment; chemistry; civil aircraft; construction equipment; distilled spirits; furniture; information technologies¹⁸; medical equipment; nonferrous metals; paper; pharmaceutical; scientific equipment; steel; textile and textile clothing; toys; and wood. For most of these products, binding tariff rates will be established at a zero level, however for textile and chemicals they will be non-zero;
- Obligations on tariff binding at the end of implementation period (year 2010): Ukraine will apply the MFN tariff rates to imports from all WTO Members. The average MFN rate for industrial products will be bound at the level of 4.85%, for agricultural products – 11.16%, for all products of the nomenclature of the Harmonized System (HS) – 6.28% (most tariffs should be harmonised with these obligations upon accession, however for some products transition periods till 2010 allowed).

In accordance with its market access commitments, Ukraine has been constantly liberalising its tariff protection in practically all sectors of the domestic market.¹⁹ In particular, changes to Ukraine's Customs Tariff adopted in 2005, have lowered the privileged (MFN) tariff rates for many industrial and agricultural products (about 70% of the HS nomenclature) in accordance with Ukraine's tariff offer, reduced the excessive tariff rate differentiation, harmonised many full tariff rates with the MFN ones, and converted specific and mixed tariffs on many products to their ad valorem tariffs. As a result, while at the end of 2004, the average import duty rate across the entire commodity nomenclature was 10.47% with the weighted average rate equalling 7.7%, upon changes the same indicators were 6.28% and 5.09% respectively (see Table 5.2).

¹⁸ Ukraine committed to join the Information Technology Agreement (ITA) and eliminate tariffs on most information technology products upon accession. However for some products like computers and semiconductors, a transition period till 1 January 2010 is envisaged.

¹⁹ Protection (via tariffs and non-tariff barriers) of certain products (first of all, agricultural and food products), on the contrary, has been increasing during the accession period. For some agricultural products (e.g. meat products, sugar, etc.), tariff protection was so high (up to 100-200% if converted from specific and mixed tariffs into ad valorem tariffs) that it almost prohibited the import of these products into Ukraine under the formal import procedures. Instead, these products were imported into Ukraine mainly through the free economic zones, or from countries with which Ukraine had free trade agreements (CIS countries), or under special import schemes, or illegally via smuggling practices. Imports in all of these cases meant that products entered the domestic market with paying zero tariff rates and VAT taxes. Therefore, high tariff rates appeared to be not very effective in the protection of the domestic market from import competition. This aspect will later be incorporated in the modeling scenarios.

Table 5.2 Harmonisation of import tariffs with the WTO obligations undertaken in 2005

	Applied tariffs before changes to Customs Tariff, 2004	Applied tariffs after changes to Customs Tariff in 2005	Ukraine's WTO final obligations on MFN tariff binding
Agricultural products			
Average bound rate	19.71	13.84	11.16
Weighed average bound rate	21.10	18.19	10.07
Industrial products			
Average bound rate	8.29	4.40	4.85
Weighed average bound rate	6.70	6.11	4.77
All products			
Average bound rate	10.47	6.51	6.28
Weighed average bound rate	7.77	7.02	5.09

Source: Ministry of Economy of Ukraine (<http://wto.inform.org.ua/attach/Stenograma.doc>).

To conclude, after recent tariff reductions, the currently applied tariff regime in Ukraine is roughly in line with its WTO commitments for most sectors of the economy. Customs duties applied to industrial products, their components, parts, as well as raw materials, are already lower than Ukraine's WTO commitments for these commodities. For many agricultural and food products (meat and dairy products, food-processing, spirits and alcoholic beverages, etc.) and some finished industrial products (e.g. certain pharmaceutical goods, automobiles, agricultural machinery, information technology products, medical equipment, etc.) tariffs rates will be further reduced upon the WTO accession. The biggest source of tension during Ukraine's WTO accession negotiations concerned and concerns agriculture-related issues (see Box 5.6).

Box 5.6 Agricultural domestic support

One of the issues in the WTO accession negotiations is the level of domestic support for the agricultural and food sectors (commodity groups 1-24 of the HS, except fishery and some other products). The main problem here is the lack of agreement among negotiators on the base period for domestic support to agricultural and food products, which actually determines the level of domestic support binding obligations of the acceding country. The Ukrainian negotiators suggest 1994-1996 years as the base period, during which domestic support to agriculture in Ukraine reached its highest level of USD 1.14 bn. In other words, the Ukrainian position is that the total aggregate measure of support (AMS) is to be bound at the level that exceeds its de minimus level (5% of the value of annual total agricultural output in the country, which was USD 12.54 bn during the base period, - and in 2004 – USD 15.8 bn). If so, then Ukraine will likely be obliged to commit itself also to reduce its bound AMS level by 20% over a certain period.

The WTO Members (such as the USA, Australia, etc.) insist on later and more representative periods in terms of factual agricultural policy of Ukraine, for example 2000-2002, during which Ukraine's total AMS equaled only USD 265 mln. Ukraine argues that this sum is not sufficient to implement the Strategy for Further Development of Agriculture in Ukraine submitted to the Working Party. Besides, WP Members have comments to Ukraine on the methodology of calculating the total AMS and other support

tables (ACC/4). They argue about including various tax privileges (e.g. VAT) in the total AMS in Ukraine. Ukraine has to reach a compromise with the Working Party Members on this tough issue in order to finalise its accession process. The possible compromise may come from choosing the later base period and correcting support tables in accordance with the Working Party's suggestions.

As to export subsidies in agriculture, Ukraine reported not to apply such subsidies and committed itself to abstain from applying them in the future.

Trade in services

Ukraine's schedule of specific commitments in services is among the most liberal offered by acceding countries, as well as the countries that have entered the WTO recently. A draft schedule of Ukraine's specific commitments contains sector-specific commitments in 150 out of the total of 155 subsections as identified by the WTO Services Sectoral Classification List.²⁰ The session of horizontal commitments covers such areas as land ownership, subsidies and other forms of state support, and entry and temporary stay of natural persons.

Ukraine committed itself to full liberalization in the three modes of service supply: 1) cross-border supply, 2) consumption abroad, 3) commercial presence for 139 out of 155 sub-sectors. Still, some limitations on commercial presence will be present under the WTO in such sectors as notary services (eligibility only for Ukrainian citizens), agricultural land (ownership only by Ukrainian citizens), education (universities led only by Ukrainian citizens), health services, medical and dental services (reassessment of professional qualifications), postal services (licensing required for mail and packages), as well as insurance, road transport, auditing services, audio-visual sector. Limitations on foreign investment will be allowed only for news agencies (35%). As such, in order to implement its commercial present commitments, Ukraine will have to abolish other existing restrictions on foreign investment for companies distributing printed editions (30%) in a 5 year transition period.²¹ Besides, branching limitations will be abolished in banking sectors upon WTO accession and in the insurance sector within five year from accession. Moreover, upon WTO accession, non-residents in the insurance sector will be allowed to re-insure certain kinds of risks (connected with overseas transportation, commercial aviation, launching of spaceships and freight), whereas within in five years upon accession, Ukrainian persons will be able to purchase insurance policies from foreign insurance suppliers to insure any kinds of risks (cross-border supply).

As to Mode 4 of service supply 'presence of natural persons', Ukraine committed only to allowing access of senior employees (who may stay in Ukraine up to five years), as well as other service providers defined in Ukraine's commitments (up to 180 days).

Summing up, Ukraine's current legal framework is now largely in line with Ukraine's WTO service commitments. Ukraine has already liberalised to a great extent its trade regime by eliminating the WTO-incompliant and discriminatory restrictions on imports, exports and FDI. The introduced legal policy changes in the framework of Ukraine's WTO accession lead to a (partial) reform of Ukraine's trade related economic policies and practices such as customs proceedings, competition policy, intellectual property

²⁰ Around 80% of service commitments are full and the other 20% are conditioned (in particular, in banking, insurance, transport, telecommunications, education, audiovisual, and professional medical and legal services).

²¹ All other limitations on the share of foreign investment in statutory funds of companies have already been eliminated.

rights, quality standards and safety requirements, etc., in accordance with multilaterally accepted international standards.

5.3 Existing economic situation and trends in the EU – Ukraine

5.3.1 European Union policy: The Lisbon Agenda in perspective

In March 2000, in what has become known as the Lisbon Agenda, the EU Heads of States and Governments agreed to make the EU "the most competitive and dynamic knowledge-driven economy by 2010". The Agenda focused heavily on the role of innovation as a driving force for economic development, the importance of skills and learning in a knowledge-based economy, and the need for compatibility with social and environmental concerns and renewal. Although some progress was made, it was clear by the time of the mid-term review in 2005 that overall the EU was falling behind the ambitious targets it had set itself. Re-launching the Agenda in 2005, increased emphasis was given to two key areas: (a) delivering stronger, lasting growth, and (b) creating more and better jobs. The bedrock to meeting these challenges is the maintenance of stability-orientated macroeconomic policies and sound budgetary policies. Meanwhile, the renewed action programme gave priority to:

- Making the EU a more attractive place to invest and work:
 - Extending and deepening the internal market;
 - Improving European and national regulation;
 - Ensuring open and competitive markets inside and outside Europe;
 - Expanding and improving European infrastructure.
- Knowledge and innovation for growth:
 - Increasing and improving investment in research and development;
 - Facilitating innovation, the uptake of ICT and the sustainable use of resources;
 - Contributing to a strong EU industrial base.
- Creating more and better jobs:²²
 - Attracting more people into employment and modernising social protection systems;
 - Improving the adaptability of workers and enterprises and the flexibility of labour markets;
 - Investing more in human capital through better education and skills.

5.3.2 Evolution of EU trade with Ukraine

Size and direction of trade flows

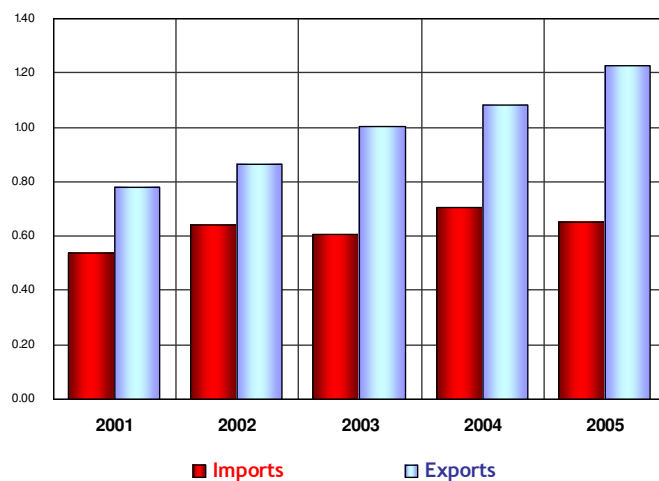
The European Union currently represents the biggest trade partner for Ukraine with 30.2% of all trade actions, while in the past Russia used to be Ukraine's main trade partner. For the EU Ukraine is only a small trade partner with 0.9% of total EU trade

²² In the second part of the TSIA we will study in detail for five sectors what tangible measures may be designed to smoothen the impact of the possible FTA in the employment sector. More general information on Ukraine's labour market policy can be found in subsection 2.4.1.

going to or coming from Ukraine as Figure 5.1 shows. In 2005, Ukraine ranked 33rd in terms of EU import partners, 22nd in terms of export partners, and 29th in terms of overall trade (imports plus exports).

Over time, as Figure 5.2 shows, trade flows (in mln Euros) between the EU and Ukraine have steadily increased.

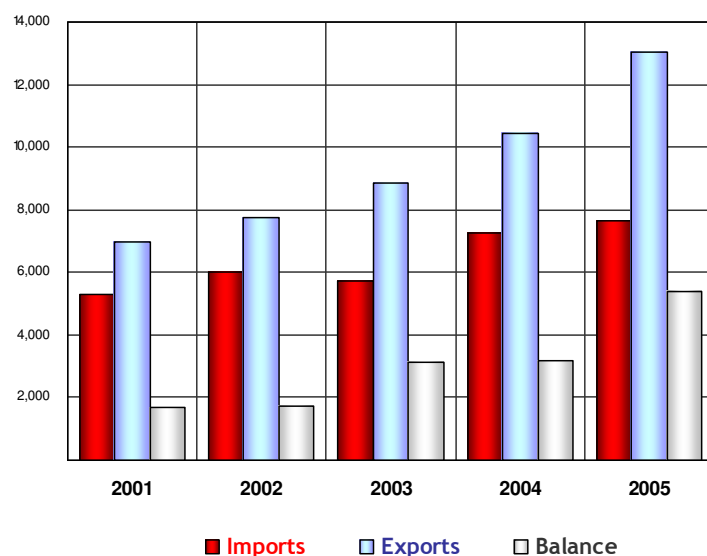
Figure 5.1 Ukraine share in total EU trade (%)



	2001	2002	2003	2004	2005
Imports	0.54	0.64	0.61	0.70	0.65
Exports	0.78	0.86	1.01	1.08	1.23

Source: EUROSTAT (Comext, Statistical regime 4), from DG Trade 15 Sept. 2006

Figure 5.2 Evolution of EU trade with Ukraine (mln Euro)



	2001	2002	2003	2004	2005	a.a.g.r.
Imports	5,276	6,025	5,715	7,270	7,668	
Change (%)		14.2	-5.1	27.2	5.5	9.8
Exports	6,967	7,758	8,830	10,460	13,045	
Change (%)		11.3	13.8	18.5	24.7	17.0
Balance	1,691	1,733	3,115	3,189	5,377	
Total Trade	12,243	13,783	14,545	17,730	20,713	
Change (%)		12.6	5.5	21.9	16.8	14.0

Source: EUROSTAT (Comext, Statistical regime 4), from DG Trade 15 Sept. 2006

In 2005, the EU ranked 2nd in terms of Ukraine's import partners (behind Russia), 1st in terms of export partners, and 1st in terms of overall trade (imports plus exports). The role of Russia, although it is still the second largest trade partner for Ukraine, has gradually and substantially diminished. The most significant decline is registered for Ukraine's exports to Russia, which halved their share in total Ukraine's exports from 36 per cent in 1996 to 17 per cent in 2004. Export flows were redirected towards both the EU-25 and to the rest of the world, in particular Asia. The decrease in imports from Russia was far less significant, primarily because of its importance as a source of energy products for Ukraine.²³

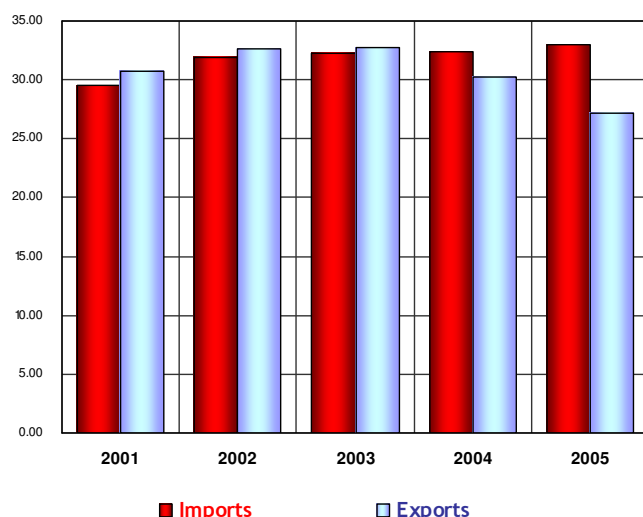
²³ Vinhas de Souza *et al* (2005).

Table 5.3 EU share in total Ukraine trade (%)

	2001	2002	2003	2004	2005
Imports	29.55	31.97	32.27	32.40	32.93
Exports	30.68	32.60	32.70	30.22	27.21

Source: IMF (Dots), from DG Trade 15 Sept. 2006

Figure 5.3 EU share in total Ukraine trade (%)



Composition of trade

Ukraine has large natural resources e.g. in different metals and natural gas. In 2005, Ukraine exported mainly iron and steel, agricultural products, energy products, chemicals, textiles and clothing and transport equipment to the EU-25. At the same time Ukraine imported mainly chemicals, transport equipment, power/non-electronically machinery, office- and telecommunications equipment and textiles and clothing from EU. Because of intra-industry trade patterns, Ukraine had actually a positive trade balance only in iron and steel, agricultural products and the energy sector in trade with the EU. Overall the trade balance of Ukraine with the EU is negative.

The structure of Ukraine's trade with the EU-25 is characterised by exports from Ukraine of raw materials and semi-processed goods, and imports by Ukraine of final products, primarily investment goods. In the Tables below, the summary of imports, exports and trade balance data according to Eurostat is given.

Table 5.4 European Imports from Ukraine

Products (Sitc Sections) by order of importance	Mio euro	%	Share of total EU imports
TOTAL	7,668	100.0	0.7
Manuf goods classif. chiefly by material	2,415	31.5	2.1
Crude materials inedible, except fuels	1,172	15.3	2.6
Mineral fuels, lubricants and rel. Materials	1,050	13.7	0.4
Machinery and transport equipment	589	7.7	0.2
Miscell. manuf. Articles	583	7.6	0.3
Chemicals and related prod., n.e.s.	497	6.5	0.5
Food and live animals	446	5.8	0.8
Animal and vegetable oils, fats and waxes	160	2.1	3.9
Commodit. and transactions n.e.c.	49	0.6	0.2
Beverages and tobacco	15	0.2	0.3

Source: EUROSTAT (Comext, Statistical regime 4), from DG Trade 15 Sept. 2006

Table 5.5 European Exports to Ukraine

Products (Sitc Sections) by order of importance	Mio euro	%	Share of total EU exports
TOTAL	13,045	100.0	1.2
Machinery and transport equipment	5,771	44.2	1.2
Manuf goods classif. chiefly by material	2,090	16.0	1.6
Chemicals and related prod., n.e.s.	1,998	15.3	1.2
Miscell. manuf. Articles	1,490	11.4	1.2
Food and live animals	507	3.9	1.4
Crude materials inedible, except fuels	209	1.6	1.1
Mineral fuels, lubricants and rel. Materials	164	1.3	0.4
Commodit. and transactions n.e.c.	155	1.2	0.5
Beverages and tobacco	110	0.8	0.7
Animal and vegetable oils, fats and waxes	26	0.2	1.1

Source: EUROSTAT (Comext, Statistical regime 4), from DG Trade 15 Sept. 2006

Table 5.6 European Trade Balance with Ukraine

Products (Sic Sections) by order of importance	Balance Mio euro
TOTAL	5,377
Machinery and transport equipment	5,182
Chemicals and related prod., n.e.s.	1,501
Miscell. manuf. Articles	908
Commodit. and transactions n.e.c.	105
Beverages and tobacco	95
Food and live animals	61
Animal and vegetable oils, fats and waxes	-135
Manuf goods classif. chiefly by material	-324
Mineral fuels, lubricants and rel. Materials	-885
Crude materials inedible, except fuels	-963

Source: EUROSTAT (Comext, Statistical regime 4), from DG Trade 15 Sept. 2006

The composition of the Ukrainian exports remain highly concentrated with no substantial improvements in the last years: metals and derived products, chemical products, and mineral products made up about 61.7% of Ukrainian exports in 2006. Imports are dominated by mineral resources, namely gas and oil supplied from Russia. In 2006 minerals accounted for 30% of the overall commodity imports.

Trade in services

Trade in services between Ukraine and the EU was larger in total value than any other sector, as EU imported services from Ukraine worth 0.8 billion euros and exported worth 0.7 billion euros.

Ukraine's trade partners

Ukraine's other big trade partners – after the EU – are (in decreasing order, with share of total trade down to 3.5% in brackets): Russia (29.1%), Turkmenistan (4.1%), Turkey (3.8%), China (3.6%), Belarus and the USA (see also Table 5.7). The main trade partners of the EU at the moment are the USA, China, Russia, Switzerland and Japan.

Table 5.7 Ukraine's major trade partners

	Partners	Mio euro	%
1	EU	16,943	30.2
2	Russia	16,343	29.1
3	Turkmenistan	2,303	4.1
4	Turkey	2,118	3.8
5	China	2,027	3.6

	Partners	Mio euro	%
6	Belarus	1,472	2.6
7	USA	1,339	2.4
8	India	851	1.5
9	Kazakhstan	686	1.2
10	Korea	684	1.2
Source: IMF (Dots), from DG Trade 15 Sept. 2006			

FDI in Ukraine

Over the last few years the stock of FDI from the EU to Ukraine has been growing very rapidly. In 2004 FDI inflows amounted to 0.2 billion euros from the EU to Ukraine and the total stock of FDI in 2004 from the EU was 1.7 billion Euros according to Eurostat. At the beginning of 2007, the stock of FDI originating in the EU had risen to 15.9 billion USD, which equals around 11.8 billion euros. So the FDI stock has risen tenfold in three years time. Table 5.8 shows the 5 EU countries having most FDI in Ukraine. Germany is by far the largest source for FDI in Ukraine.

Table 5.8 FDI to Ukraine, Top 5 sending EU countries (in mln US\$)

Country	Cumulative FDI to Ukraine at 1.1.2007 (volume in mln \$)
Germany	5620,7
Cyprus	3011,7
Austria	1600,8
United Kingdom	1557,2
Netherlands	1493
EU total	15924

Source: State Statistics Committee of Ukraine, 2007

Ukraine remains one of the most open economies in the world: in 2006, export-to-GDP ratio equaled 47.2% while the import-to-GDP ratio stood at 50.1%. Openness of the economy gives it more opportunities to develop through deeper international specialisation. For many years net exports remained one of the driving forces behind economic growth in Ukraine. However, heavy reliance on foreign markets makes the economy very vulnerable to external shocks.

5.3.3 Growth, inflation and unemployment

In 2000 after a sharp decline conditioned by a transitory shock the Ukrainian economy resumed its growth. Throughout 2000-2006 the economy showed an average growth rate of 7.4% with a record high result of 12.1% in 2004. Noteworthy in 2006 the industrial output reached the level of 1990. However, the overall real GDP is still behind the pre-transition level. Inflation in Ukraine has been relatively high during the last years, but it has dropped substantially from the very high levels in the 1990's. For the European

Union, during the same time period, GDP has been growing between 0.8% and 2.6% and inflation has been equally mild, around 2% annually. Figure 5.3 summarises these findings.

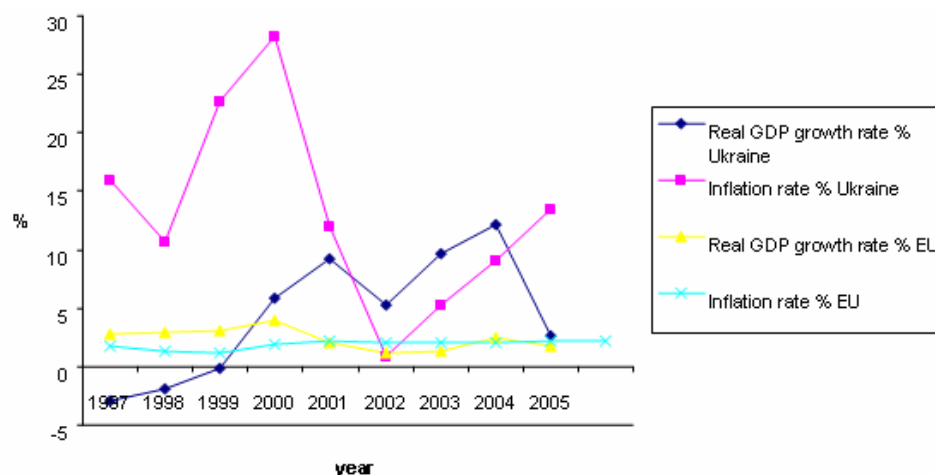
Unemployment in Ukraine has been relatively high, but declining. By 2005 it had declined to 7.2% from nearly 11.6% during the early twenty-first century. Unemployment in the EU areas has stayed around 8% during recent years as is shown in Figure 5.4. Intensive sectoral restructuring negatively affected employment prospects: as said in 2000 about 11.6% of the labour force was without a job. The situation improved substantially in the following 6 years: in 2006, 6.8% of the economically active population was unemployed, which is far below the EU average level. However, according to the World Bank, the low unemployment rate can be attributed to low labour force participation as many people quit the labour market with no hope of finding decent jobs in the future.

On the back of economic growth, population income is steadily expanding. Real wages grew at an average rate of 19.2% in 2002-2006. 43.2% of the total population income came from job earnings. In 2006 the per capita salary in Ukraine averaged at UAH 1041 (USD 206). Social payments remain the second largest source of the population income making about 39.5% of the overall income volume.

The gross capital formation has been rather steady in Ukraine and around 20% of GDP every year since 1997. That is around the same values as the EU areas' gross capital formation. Figure 5.5 shows this in detail.

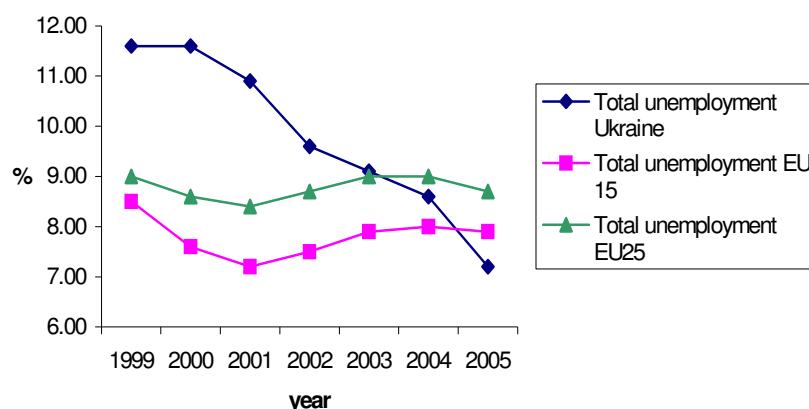
The current account in Ukraine has been in surplus since 2002 and in 2005 Ukraine had a surplus of +3.1% of GDP. The official Ukrainian currency, Hryvnia, is floating against the Euro and lately it has been depreciating against it (National Bank of Ukraine). The government debt in Ukraine was in 2005 only around 24% of GDP according to the World Bank, while in the EU-25 it was on average 63% of GDP (Eurostat).

Figure 5.3 GDP growth and inflation in Ukraine and the EU



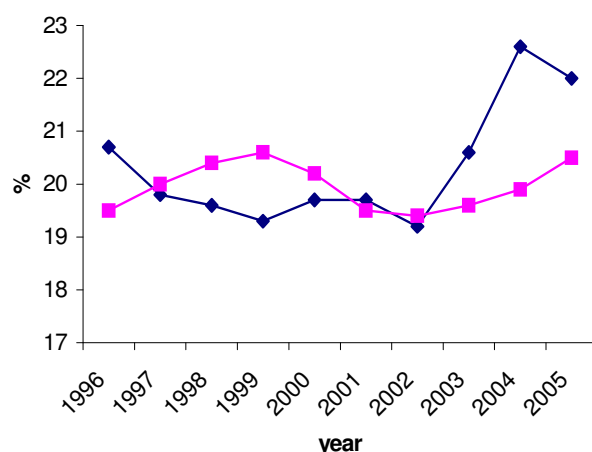
Source: Eurostat

Figure 5.4 Total unemployment in Ukraine and the EU



Source: Eurostat

Figure 5.5 Gross capital formation (% of GDP)



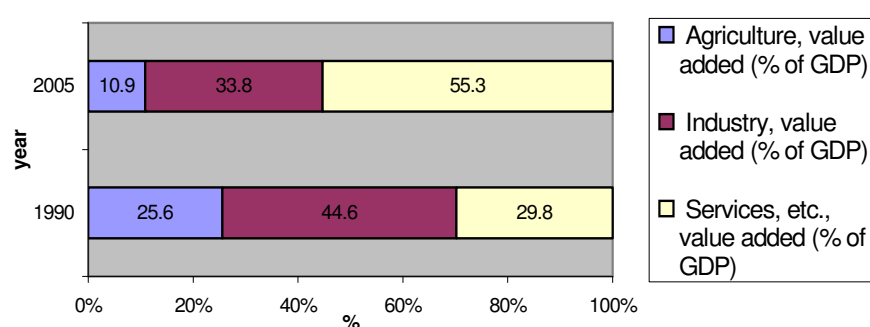
Source: Eurostat

The composition of output underwent substantial changes in the latest years: the share of services in GDP has been steadily growing. Figure 5.6, Figure 5.7 and Table 2.9 show GDP composition by sectors for Ukraine and the EU. During the last 15 years from 1990 to 2005, agriculture and manufactures have lost some of their shares of GDP to services in Ukraine. While in 1990 agriculture accounted still for 25.6% of GDP, in 2005 its share had dropped to around 11%. Services on the other hand have grown from 30% of GDP to 55% representing the biggest sector in the Ukrainian economy currently. The services sector is also the biggest employer in Ukraine. The manufacturing sector used to account for 45% of Ukrainian GDP, but in 2005 this share had been reduced to a mere 34% (Eurostat). The largest industries in Ukraine measured by gross industrial production are: food and agricultural products processing, production of coke and refined petroleum products, metallurgy and processing of metal, machine building and chemicals. In the agricultural sector Ukraine is producing mostly grains, potatoes, sugar beet, milk and eggs. In the service sector, transport and travel services were the largest industries. Out of

all the investments in 2005, the biggest share (24%) was invested in the manufacturing industry. A lot of investments were made also in the transport sector and in real estate operations (Ukrainian state statistics committee).

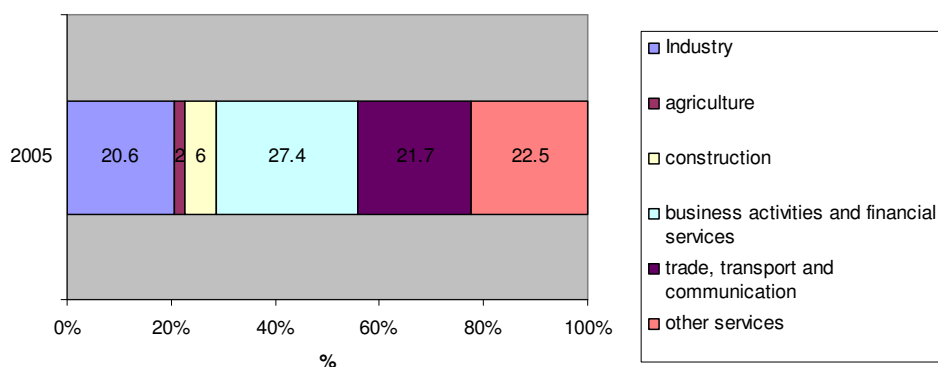
In 2005, the EU-25 area, services (including business activities and financial services, trade, transport and communication and other services) accounted for the largest share of GDP by far. Together they account for over 70% of GDP. Industry and construction were responsible for around 26% of GDP and agriculture for only 2%. In comparison to the change in the shares in Ukraine, it seems that the Ukrainian economy is rapidly moving in the EU direction: the agricultural and manufacturing shares of GDP are declining and the share of services is increasing.

Figure 5.6 GDP by sector in Ukraine



Source: Eurostat

Figure 5.7 GDP by sector in EU 25 (2005)



Source: Eurostat

Table 5.9 Sector shares in Ukrainian production (2004)

	Sector production (mln US\$)	Share of sector in Ukrainian total production (%)
Agriculture, Fisheries, Forestry	16.19	10.70
Coal, Oil, Gas	3.48	2.30
Minerals NEC	2.49	1.64
Bovine cattle, sheep and goats, horse meat products	1.66	1.10
Vegetable oils and fats	0.99	0.66
Dairy products	2.33	1.54
Processed rice, Sugar	1.13	0.75
Food products nec	3.84	2.54
Beverages and tobacco	3.71	2.45
Textiles	0.51	0.34
Wearing apparel	0.66	0.44
Leather products	0.43	0.28
Wood products, Paper products, publishing	2.81	1.85
Petroleum, coal products	7.74	5.11
Chemical, rubber, plastic products	5.18	3.42
Mineral products nec	2.01	1.33
Ferrous metals, Metals NEC	13.79	9.11
Metal products	3.48	2.30
Motor vehicles and parts	1.73	1.14
Transport equipment	2.20	1.45
Electronic equipment; Machinery and Equipment	5.72	3.78
Manufactures nec	1.33	0.88
Electricity	4.04	2.67
Gas, Water	1.97	1.30
Construction	7.08	4.68
Trade	14.46	9.56
Transport nec, Water transport, Air transport	10.53	6.95
Communication	3.62	2.39
Financial services nec, Insurance	5.08	3.35
Business services nec, Renting	7.30	4.83
Recreational, entertainment, cultural and sporting activities, Social activities	1.66	1.09
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	12.22	8.07
	151.37	100

Source: Social Accounting Matrix CGE – CASE Ukraine (2004)

Large-scale privatisation started in the mid-1990s and favoured restructuring through increased competition and inflow of private capital in major sectors of the Ukrainian economy. Increasing competition forced companies to modernise outdated equipment and increase investments in start-ups. Companies that managed to attract FDI lead the drive to competitiveness among domestic producers by introducing international standards of product safety and quality.

Large companies play a dominant role in the Ukrainian economy: small businesses accounted for about 12% of the overall output in 2006. The involvement of small businesses in foreign trade is even less significant: slightly more than 6% of small businesses claimed that they exported in 2005. Regarding employment creation by SMEs, there are different views. According to the IMF the SMEs in Ukraine employ around 5.4% of all employed people, but due to data problems and inconsistency, a GFA report estimates that the real number would be actually around 40-43% after employment in medium size companies and within sole proprietors is also added. (GFA, 2006)²⁴

5.4 Existing social situation and trends in the EU and Ukraine

Ukraine has been rather explicit in expressing its desire to eventually become part of the EU. Whether this is feasible or realistic is not an issue for this report, but it has meant that the country has made improvements to the overall quality of life to meet EU standards, in addition to meeting political and economic requirements.

The EU/Ukraine Action Plan includes a section on social situation, employment, and poverty reduction, which envisages (1) strengthening cooperation on social matters, ensuring a closer approximation of Ukraine to the EU standards and practices in the area of employment and social policy; (2) introducing effective employment creation and poverty reduction measures, aimed at a significant reduction in the number of people with income below the poverty line and improved social cohesion, including sustainable systems for education, health and other social services with access for all. In addition one of the priorities for action is to “encourage dialogue on employment issues and best endeavours, in accordance with the Partnership and Cooperation Agreement (PCA), to ensure that treatment of migrant workers does not discriminate on grounds of nationality.”

The main social indicators described in this section for the Ukraine, and where relevant for the EU include: (1) Labour issues, and particularly decent work as defined by the ILO; (2) Poverty, including the number of people living under poverty line, GINI index, regional effects, etc.; (3) Equality, relating to gender, race, religion, in areas such as education, employment, geographic location, etc.; (4) Education, including primary, secondary and tertiary enrolment rates, literacy rates, access and quality issues, etc. and (5) Health, including life expectancy, mortality rates, access to and quality of health services, sanitation, nutrition, etc.

²⁴ In the Chapters related to the in-depth studies we will give a description of the market structure per sector.

Whether all these indicators will also be considered in the impact assessment depends on their current status and the extent to which they are relevant to the eventual sectors and horizontal issues selected.

5.4.1 Labour issues

The EU takes the ILO concept of Decent Work as its reference point for the social aspects of employment and unemployment. The decent work concept provides a converging focus for the strategic objectives of the ILO – to which the EU subscribes – namely rights to work, employment, social protection and social dialogue. As such it touches on issues of unemployment and underemployment, poor quality and unproductive jobs, unsafe work and insecure income, rights which are denied, gender inequality, exploitation of migrant workers, lack of representation and voice, and inadequate protection and solidarity in the face of diseases, disability and old age.²⁵

According to the EU social policy, work can be characterised in terms of the multiple dimensions of *quality in work*, comprising on the one hand job characteristics and on the other hand work and the wider labour context. This notion is closely related to the Decent Work concept.

Present Ukraine labour legislation seems to address the main elements of the decent work concept.²⁶

Labour legislation

The main body of laws covering Ukrainian labour regulations is the Labour Code of Ukraine. Ukrainian labour legislation is inherited from Soviet times; therefore, the emphasis is on protecting the rights of employees. An illustration is article nine of the Labour Code, which states that the provisions of the individual employment agreements which worsen the working conditions of the employees compared to those stipulated by the Ukrainian labour legislation are considered ineffective. In fact, employment protection legislation in Ukraine is significantly stricter than in other CEE countries and even stricter than in most OECD countries.

Ukrainian labour legislation provides certain guarantees to employees, including the following:

- Wages for time spent away from work for performing functions of trade union officer, appearing in court, voting and fulfilling other state or social responsibilities;
- Right to keep one's job while on a training programme;
- Wages while hospitalised;
- Severance pay in certain situations;
- Social benefits, such as: maternity leave, paid vacation and holidays;
- Minimum wage guidelines.

In addition, the following is provided by the labour legislation:

- Working week is not to exceed 40 hours;

²⁵ Source: www.ilo.org/public/english/decent.htm

²⁶ We will in the second part of the TSIA –when we study 5 sectors in more detail- focus on the implementation and application aspects and the respective gaps of the labour legislation.

- Overtime is generally prohibited, except for certain cases, in these exceptional cases time limitations are such that overtime may not exceed four hours during two consecutive days or 120 hours per year;
- Annual leave of 24 calendar days;
- Paid maternity leave for women 70 days prior and 56 days after the childbirth; women are also entitled to partially paid leave until the child reaches the age of three.

In terms of labour legislation, but also in terms of major indicators such as unemployment, labour participation and labour conditions, the Ukraine seems to perform quite well relative to some of the other transition economies and even relative to the EU average. However, Ukraine's performance 'on paper' is better than in practice, as several recent studies confirm.²⁷

Since Ukraine's independence the following developments with regards to labour issues can be considered positive:

- Labour force participation and unemployment rates are not that bad and approximate the EU average;
- The proportion of women in the labour force is fairly high (48.9 per cent) and is similar to the situation in the EU;
- Between 2000 and 2004, the share of people who identified themselves with "middle class" increased from 9.2 per cent to 16 per cent;
- The share of wage and salaried employees covered by occupational injury insurance is quite high (84 per cent);
- With a collective bargaining coverage rate of 74.1 per cent, Ukraine is at the level of the EU average.

Negative developments and trends can be outlined as follows:

- Monetary increase in wages and salaries has not been able to compensate for the loss in purchasing power caused by inflationary processes;
- Over 16 per cent of low pay workers earned less than 2 USD a day, which means that in 2004 the salary of low pay workers in Ukraine was less than the established minimum wage;
- In spite of a relatively low unemployment, the number of long-term unemployed grew almost tenfold. Ukraine's falling unemployment rate is largely a function of the negative population growth pattern than of the creation of new jobs;
- In comparison with the EU, Ukraine has the lowest incidence of employer-sponsored/organized training;
- Job-related training especially for women is a major concern. Moreover, the majority of the Ukrainian employees had received no promotion in the past five years;
- In spite of the decline in strike activity, the last decade witnessed continued erosion of the social security system and a deterioration of working condition in such accident prone industries as construction and mining.

²⁷ Chernyshev, I. (2005) "Socio-economic security and decent work in Ukraine: A comparative view and statistical findings." Working Paper No. 76, Policy Integration Department, Statistical Development and Analysis Group, ILO, Geneva./ United Nations Development Programme (2006) "Ukraine. Poverty Alleviation." Millennium Development Goals Project. Ministry of Economy of Ukraine (<http://www.undp.org.ua/>).

Employment opportunities and labour market security

The Ukrainian economy grows at a high rate and, as mentioned above, unemployment is relatively low. At the same time productive job opportunities are scarce, especially in the formal sector. Many workers have a hard time finding a job, and many become discouraged and withdraw from the labour force.

As in many transition economies, the employment elasticity of growth in the Ukraine is rather low, thus despite strong GDP growth, employment growth has been disappointing. To an extent this can probably be attributed to productivity increases and the fact that in many sectors the number of people employed is already higher than needed. Another reason appears to be the limited role of SMEs in the economy. In transition economies jobs are created mainly by the private, usually small, firms. However, the size of this job-generating sector in Ukraine is significantly smaller (less than 30 percent of total employment) than in the most successful transition economies. The high costs of doing business in Ukraine deter entry of new firms. According to the World Bank Doing Business in 2006 report, Ukraine ranks among the last (with most complications for starting a business) countries in the region. For example, Ukraine and Belarus rank the last in the number of procedures to start a business (this number equals 15). Hence, there is a scarcity of jobs because there are few firms creating them.

Labour migration

There is emerging evidence on migratory flows from Ukraine to the EU countries such as Poland, Italy, Portugal, Spain, Greece and the Czech Republic. Given that a significant number of migrants engage in irregular forms of employment, it is difficult to estimate the actual numbers of male and female labour migrants from Ukraine working abroad. Official estimates of registered migrant workers in countries of origin and destination usually tend to underestimate the effect and at times differ from one another.

Out of a population of over 46 million people, Ukrainian authorities estimate that over two million Ukrainian women and men work abroad, with one million working in Russia, and the other million spread out mostly among EU countries (Poland – 300,000; Italy – 200,000; Czech Republic – 150,000; Portugal – 150,000; Spain – 100,000). The majority of these migrant workers come from rural areas of Ukraine's Western regions.

Unemployment and employment security

The labour market in Ukraine is at a relatively early stage of transition. Most labour is still employed in the public sector, which implies that the major wave of job and labour reallocation lies in the future. At the same time, despite low open unemployment, the labour market is depressed and productive job opportunities are few.

The unemployment rate, at about 7 percent, is relatively low by the standards of transition economies.²⁸ But the unemployment rate does not tell the whole story. The scarcity of job opportunities in Ukraine manifests itself largely in the relatively low labour force participation rate. Many workers have become discouraged by the futility of their job search and have withdrawn from the labour force. About 60 percent of the working age population are either employed or looking for a job. As a result the employment-to-

²⁸ Calculated using International Labor Organization methodology, year 2006.

population ratio, which is the most comprehensive indicator of the degree of utilisation of labour resources, is relatively low in Ukraine (around 60 per cent compared to the OECD average of 70 per cent).

Moreover, the official unemployment figure fails to completely account for hidden unemployment. For example, more than a third of rural residents of working age are technically unemployed, as the majority of the population working on their own small farms, do not consider themselves employed. Large numbers of working age rural residents are forced to move away from their places of residence in search of employment, including moving abroad. The number of officially registered unemployed citizens is unreliable, also for another reason: instead of registering with the state unemployment agency, many unemployed choose to leave the official labour market and move to the shadow economy.

Rights at work and social protection

Social dialogue and workplace relations also deserve a few comments. It is the case that the last decade has witnessed a positive historical change in the right of Ukrainian workers associate themselves. Today, instead of one All-Ukrainian Federation of Trade Unions with a reported 100 per cent membership, the country has a dozen of independent trade union organisations with their own federations and representation at both national and international levels. The reality of today is that in order to safeguard their level of representation and position in the process of social dialogue, the Ukrainian trade unions have to strengthen their positions. They need to demonstrate their ability to defend workers' rights in an environment characterised by growing competition coupled with the population's declining interest in their activities.

One measure of the failure of social dialogue is the recourse to strike. However, the absence of strike action could also indicate the absence of the right to strike. In a ten-year time span, the annual number of strikes diminished dramatically from 247 in 1995 to only 4 in 2004. However, this decrease in recourse to industrial action does not necessarily mean that social dialogue and workplace relations have improved proportionally in the reverse direction. For example, working conditions in Ukraine's mining industry are among the most dangerous in the world with a very high number of miners killed each year.

5.4.2 Poverty

With respect to social policy the EU/Ukraine Action Plan emphasises effective poverty reduction measures with an aim to significantly reduce the number of people with income levels below the poverty line.

Until 1999 poverty as a national problem was not recognised in Ukraine. There was no commonly accepted definition of poverty or a single methodology or strategy for poverty reduction. In 1999, after a careful selection and analysis of international experience in poverty monitoring, a relative poverty measure – 75% of median expenditures per equivalent adult – was chosen to be an official poverty line definition in Ukraine. In the Presidential Decree issued on August 15, 2001 the Ukrainian Government explicitly

recognised the problem of poverty as the inability of the household to provide for its basic needs and instated a relative poverty line definition as the basis of the first State Poverty Reduction Strategy. A methodology for measuring poverty comparable to international standards was established and poverty monitoring finally began in Ukraine.

Thus, in 2001, the proportion of the Ukrainian population defined as poor according to the international cost of living criteria for Central and Eastern European countries and the CIS (daily consumption below 4.3 USD, based on PPP) equaled 11%.²⁹ According to this national poverty line definition, in 2001, the proportion of population below this line constituted 27.2%. Given this high level of poverty for the economy, the Ukrainian Government has made poverty reduction one of its primary goals. Poverty reduction indeed was the first of the eight UN Millennium Development Goals to be achieved by 2015 according to the document signed by Ukraine at the UN Millennium Summit in September 2000. The first target - reduce by 50% the proportion of people with a daily consumption below 4.3 USD measured at average purchasing power parity by 2015 - has already been met; the 'poor' portion has decreased significantly, to 1.3% in 2005, down from 11% in 2001. The second target was to reduce by one third the proportion of the population living below the nationally defined level of poverty. This second target has proven much harder to achieve: According to the Ministry of Economic Affairs of Ukraine, in 2005 the 'poor' population constituted 27.1%³⁰, which was practically the same level as in 2001. According to a more recent study of the World Bank on poverty in Ukraine³¹ (using 2005 statistics) the poverty rate has declined from 32% in 2001 to below 8% in 2005. Such substantial difference from the official figures can be explained by the choice of poverty line: the World Bank takes 151 UAH per month as poverty line, which is much lower than the national poverty measure.

In 2005, the Ukrainian Government took concrete actions aimed at poverty reduction. These were concentrated on ensuring that the state minimum wage and level of social support for vulnerable groups of society continue to increase. More specifically, the Government significantly raised social aid for many vulnerable groups: newborn children and children under the age of three, children in low-income families, unemployed, retired, disabled, victims of work-place accidents. In addition Government set the minimum wage with a view to gradual convergence with the minimum living standard, indexed to the changes in consumer prices.

As there are no recent data on poverty incidence in the Ukraine, it is hard to indicate the exact impact of these policy measures. Reports of the World Bank (2006) and the 2007 review of the European Neighbourhood Policy by the Directorate-General for Economic and Financial Affairs (DG ECFIN) both refer to the decline in poverty rates and the positive contributions of social transfers to this decline, however, poverty statistics used in these studies are all from 2005 or earlier. The DG ECFIN report indicates that considering the average rate of economic growth of 7.2% and the increase in pensions, it is likely that poverty has further declined. However, the observations made above

²⁹ Noteworthy, in the same year, the national relative poverty line in monetary units constituted 175 UAH per month, which is equivalent to about 5.4 USD of daily consumption, based on PPP rate (PPP rates source of data: IMF)

³⁰ In this same period the national relative poverty line in monetary equivalent increased twofold from 175 UAH to 365 UAH (9.3 USD of daily consumption, based on PPP).

³¹ Ukraine: Poverty Update, June 20, 2007, the World Bank.

regarding the limited employment effects of GDP growth requires some caution in directly equating GDP growth to poverty reduction. Moreover, it must be noted that regional disparities and more general income inequality seem to have increased,³² implying that poverty reduction may be unevenly spread as well.

5.4.3 Equality

The Constitution of Ukraine states that all citizens have equal constitutional rights and freedoms and prohibits discrimination based on race, gender, political, religious and other beliefs, ethnic and social origin, property status, linguistic or other characteristics.

Income distribution

A distinctly uneven income distribution is continuing to form in Ukraine, with the majority of the population concentrated in the low-income category. The gap between the rich and poor is widening.

Also regional income disparity is increasing in Ukraine. Substantial gaps between wage levels in different geographical regions of Ukraine remain pronounced. For instance, average wage level in 2006 in Donetsk oblast equals 1,204 UAH, while in Ternopil oblast it is only 731 UAH. The highest paying location remains Kyiv, averaging 1,737 UAH per month. The wage gaps are largest between the capital and provinces, especially those in the predominantly agrarian west of the country.

Sectoral income disparity is an issue in Ukraine as well. There is a significant differentiation in population income and consumption levels between different industries. Especially alarming is the fact that such professional groups as doctors, engineers, teachers, social sphere workers fall into the poorest categories. The fact that the specialists from the above-mentioned spheres belong to the low-income group can have a negative impact on the society's development potential. But the most critical situation remains in the agricultural sector, where the average wage in 2006 was UAH 553, reaching only 50 percent of the national average. However, it should be kept in mind that in the agricultural sector a significant share of labour compensation is delivered in-kind, creating a gap between accrued wage and actual labour compensation amounts and increasing the error in income level calculations for rural areas.

Gender Equality

In the process of Ukraine's development as a member of the world community and on its way towards integration with its European neighbours, gender equality is becoming an increasingly important issue in public dialogue at all levels. By now all national legislation regarding rights of men and women has been brought into accord with the international conventions ratified by Ukraine. Non-discrimination in employment and equal opportunities for men and women are guaranteed by the Ukrainian Constitution. Most international experts confirm that Ukraine has managed to adopt a gender-friendly national legislative environment, which guarantees that no one is discriminated against on the base of one's sex. Yet, constitutional norms can be implemented only under the

³² The GINI coefficient for Ukraine increased from 0.274 in 2003 to 0.276 in 2005, which indicates a slight increase in inequality

condition that legally approved international standards of gender equality are implemented in the relevant institutions. The Millennium Development Goals targets and indicators are seen as milestones for providing gender equality and raising the profile of women in Ukrainian society. The first target was to achieve a gender ratio of at least 30:70 for either gender in legislative and executive office.

2004 gender equality data gives the following numbers: gender ratio among deputies of the Verkhovna Rada (women/men) - 5/95; gender ratio in oblast governments - 10/90; in municipal governments – 22/78; in village governments – 47/53, etc. Noteworthy is, that in 2005, for the first time in the history of independent Ukraine a woman was appointed Prime Minister.

The second target was to halve the gap in income levels between men and women. In 2002, the ratio of average wages of women as a percentage of average wages of men was 69.3% of that of men, and in 2003 – 68.6%. In 2004, this ratio decreased further to the level of 68.56%.

Summarising the performance on gender equality indicators, it is worth noting that progress in achieving most targets remains insufficient. It should be emphasised that Ukraine, which has traditionally high standards in women's education and significant achievements in developing legislation based on the principle of equal rights, has deliberately committed itself to a larger challenge than many other post-soviet countries.

5.4.4 Education

From the Soviet Union, Ukraine inherited quite an effective education system. Afterwards, it underwent fundamental changes, both positive and negative.

A sharp reduction of funding for education led to a rapid deterioration of its quality, a lowering of the general educational level of the population, and a devaluation of the social status of teachers, due to low salaries in the sector.

In recent years, Ukraine has made significant efforts to develop reform strategies and to undertake reform policies in the human development sector. The country continues to face challenges, however, and in the education sector these translate into unequal access, eroding quality and low efficiency in the use of resources.³³

5.4.5 Health

Health of the population is now viewed as an indicator of social and cultural progress and the overall quality of life. The 2002 report on the state of the European health care system by the World Health Organization (WHO) Regional Office for Europe says that

³³ As footnoted in subsection 2.3.1 on the Lisbon Agenda, we will study in-depth five sectors, including the actual and desirable situation regarding investing in human capital through education and skills upgrading during the transition period of the possible FTA .

investments in the health care system should be considered as a contribution to the development of the national economy and to the reduction of the poverty rate.

The medico-demographic crisis peaked in Ukraine in 1995-1996, caused by an abrupt drop in living standards during the period of socio-economic changes, unfavorable environmental conditions, socio-psychological stress, and reduced health care accessibility. Although the situation has improved since then, Ukraine falls behind economically developed nations in health and life expectancy indicators.

Major Health Problems

The major problems faced by Ukrainians today and which have been getting most attention lately are maternal health and child mortality; the spread of HIV/AIDS and tuberculosis.

The Ukrainian government is very supportive of maternal and child health and ranks it high among state priorities. Although it looks like Ukraine has almost fulfilled its obligations under the Millennium Development Goals 2005 both for maternal (to reach an indicator of 19.8 deaths per 100,000 live births in 2015), and child mortality rates (9.3 per 1,000 children less than one year old and 12.3 for under fives), these indicators appear rather high compared with the European ones. In particular, in 2004 in Ukraine, the infant mortality was 9.5 per 1,000 infants and maternal mortality – 13.7 per 100,000 live births.

The HIV/AIDS epidemic in Ukraine poses a serious threat to national security. According to official statistics, as of December 1st, 2006 there were over 70,000 officially registered HIV-positive people in Ukraine, while experts estimate the real number to be approximately 377,000. At the end of 2006, the International HIV/AIDS Alliance in Ukraine reports on the implementation of the two largest HIV/AIDS programmes in Ukraine: 'Overcoming HIV/AIDS Epidemics in Ukraine' financed by the Global Fund to Fight AIDS, Tuberculosis and Malaria, and the USAID-supported project 'Scaling up the National Response to HIV/AIDS through Information and Services'. Some results have been already achieved, among which are the following: i) over 3,500 people are receiving life-saving AIDS treatment; ii) the groups most vulnerable to HIV have access to prevention and information services, including 31% of the injecting drug user population (over 102,000 individuals covered), 13% of women involved in commercial sex (over 14,000 women), and 23% of prisoners (about 26,000 people); iii) 406 medical institutions in all regions of Ukraine received medicines and other medical supplies.

Tuberculosis is no less important an issue than HIV/AIDS epidemic. Currently Ukraine is experiencing a tuberculosis epidemic. According to the official statistics the epidemic threshold has been significantly exceeded and as of beginning of 2007 there were 85 sick people with tuberculosis per 100 thousand. According to WHO representatives in Ukraine, the situation is getting more threatening: just 10 or 15 years ago tuberculosis was a disease of marginal level to people (people suffering from alcoholism, prisoners, etc.), and now everyone is at threat. Socially successful people and even children can become infected with tuberculosis. The WHO has outlined the target for each country - to detect 70% of "contagious" tuberculosis cases and have 85% of the detected patients cured. Ukraine has still a long way to go to get to these standard levels. According to

WHO statistics, approximately 50-60% of all sick people are detected in Ukraine and about 65-70% of patients get cured. Another problem for Ukraine is that there are no modern laboratories and necessary methods for diagnosis especially for diagnosing multi-drug resistant TB (MDR TB), from which about 10% of patients in Ukraine suffer. In 2006, the Foundation for Development of Ukraine of SCM Company decided to fully finance a pilot project on struggle against MDR TB in Donetskaya Oblast. Two million euros were allocated for purchasing the necessary diagnose equipment and staff training.

In spite of some progress achieved by Ukraine in the most problematic areas, the general condition of the nation's health may be characterised as unsatisfactory. In Ukraine, compared to economically developed nations, the mortality rate of the population remains too high, including early death rates (child, maternal, able-bodied).

Healthcare System Financing

The general approach to financing the health care system in Ukraine has not changed since the Soviet times when it was mandatory, based on joint taxation and provided virtually free to the public. The Constitution of Ukraine, adopted in 1996, declares that "state and community health institutions provide medical services free of charge; the existent network of such institutions may not be reduced." The citizens' right to health insurance is also guaranteed in the same Article of the Constitution. Since most health facilities in Ukraine are state and community run, despite the existence of the private health care sector, the state budget and the budgets of local and regional self-governing bodies remain the major official source of health care financing.

The proportion of the budget allocated for health care in Ukraine cannot meet the needs of the public. The shortage of public funds results in the replacement of free-of-charge health care by medical services for a fee. Personal spending on health care is rapidly becoming more common. According to official statistics, in eight years (1996–2003) the proportion of private payments rose from 18.8% to 38.5% and, including informal payments, the estimate becomes 52%. A network of private health care providers and private health facilities has emerged in Ukraine since its independence. It is hard to estimate the population's spending on the services delivered by the private healthcare sector due to a lack of relevant statistics.

Birth and death rates

The birth rate in Ukraine has been declining — from 12.6 per 1,000 in 1990 to 7.7 per 1,000 in 2001. This is due to the ageing of the population and self-regulation of the number of children by families. This, in turn, is due to socio-economic conditions. However, starting from 2002 the birth rate has been stabilising: from 8.1 in 2002 to 9.8 in 2006. Death rates in Ukraine remain high – State Statistics Committee reports a figure of 16.2 (in the total population per 1000 individuals). Death rates among the rural population are higher than among the urban population.

5.4.6 The EU Perspective

In 2000 the EU launched the Lisbon Strategy or Lisbon Agenda, which focused on economic, social, and environmental renewal and sustainability based on the concepts of

innovation, the ‘learning economy’ and *social and environmental renewal*. The strategy was reviewed in 2005 and updated – for the social component – with a Social Agenda for 2005-2010. This Social Agenda emphasises decent jobs and social justice as the pillars for the modernisation of the European Social Model. It is this modernised social model that the EU promotes not just within the EU, but also in its relations with other countries, especially ENP countries.

The principal areas of EU social policy, monitored through an annual social situation report, include: population; education and training; the labour market; social protection, income, poverty and social exclusion; gender equality; health and safety at work.

The social situation in the EU compares rather favourably to the Ukrainian situation, although within the EU, substantial differences can be observed. This is especially true for the EU enlarged to 27. Averages at the EU level for many indicators were affected by the enlargement, explaining some of the changes since 2003. Among the best performers are the Northern European countries, while Southern member states (notably Spain and Portugal, Greece and Italy) perform less. New member states’ performance more closely matches the performance of these Southern member states. In general, EU enlargement has caused specific social pressures, through for instance migration and structural adjustments. In general, migration policies are becoming a higher priority among member states and migration management is developing into a balancing act between openness and control, including issues such as the socioeconomic inclusion of migrant populations and measures to prevent discrimination.

Without going into the details of each indicator, or differences within the EU, Table 5.10 summarises the current situation for the EU and highlights the biggest differences within the EU.

Table 5.10 Overview of social situation in the EU³⁴

Indicator	Situation EU
a) Population	<ul style="list-style-type: none"> • Aging population and immigration as main driving forces behind EU demographic changes; in some new member states (NMS) population decline due to emigration.
b) Poverty	<ul style="list-style-type: none"> • Approximately 16% of total EU population is at risk of poverty and approximately 30 million people are living in long term poverty. The relative poverty rate – those living below 60 percent threshold of median national income – varies considerably across member states from 8 percent in Denmark, to 23 percent in Portugal. • Existing regional disparities are addressed through the EU structural funds.
c) Labour issues	<ul style="list-style-type: none"> • Unemployment rate EU-27 decreased from 9% in 2003 to 7.9% in 2006, with highest levels in Poland (13.8%) and Slovakia (13.4%) and lowest level in Denmark and the Netherlands (3.9%). • Employment rate increased from 62.2% in 2000 to 64.3% in 2006 which is still below the target of 67% set by the EU member states in 2003. Moreover, with ageing population participation rates may in fact decline again. • Migrant workers: Demographic change in EU15 to a large extent determined by immigration, causing social and cultural tensions and inclusion and discrimination issues, while in NMS large out-migration and issue of brain drain. • Productivity and quality of work are core elements of the Lisbon Agenda. Although improvements are being made, productivity increases are lagging behind the United

³⁴ Sources: Eurostat Yearbook 2006; and COM(2004) 137 final Scoreboard on Implementing the Social Policy Agenda

	<p>States in particular.</p> <ul style="list-style-type: none"> • Employment opportunities; focus on creating balance between security and flexibility and on quality of work, education and training to remain competitive. • Minimum wages are enforced by law and apply nationwide to the majority of full time employees in each country. As is to be expected they vary widely across the EU-27. • Social dialogue: Social partners at national and EU levels discuss and negotiate labour policies. However, limited in NMS.
d) Equality	<ul style="list-style-type: none"> • Female employment rate was 57.1% in 2006, with the highest levels in Denmark (73.4% and the lowest in Malta (34.9%) and Poland (48.2%). This is seen as a result of effective EU and national policy to increase the participation of women in the labour market. However, the gender gap* remains 15%. • Gender equality in education. • Income inequality – the ratio of total income received by the 20% of the population with the highest income to that received by the 20% of the population with the lowest income – was 4.9 for the EU-25 in 2005, with the highest inequality in Lithuania (6.9) and the lowest in Sweden (3.3). • The dispersion of regional employment rates by NUTS 2 regions, as expressed in a coefficient of variation is 11.9 for the EU-25 and 10.9 for EU-15. The 4 highest regional variation in employment is found in Italy (16.0), while the Dutch coefficient is only 2.0. • Civil society involvement: At national levels, particularly in Northern Members States increasingly part of policy process (Government and Parliament). At EU level regular dialogue facilities in most DGs, although quality and intensity differs strongly. In NMS civil society still evolving.
e) Health	<ul style="list-style-type: none"> • Average life expectancy at birth was 78 years in 2006 (79 years in the old Member States and 74 years in the NMS). Life expectancy is higher for women, but the gender gap is closing. • Access to and quality of health services: In most countries there is some form of health insurance. Public health care expenditures are substantially higher in the old member states. • With ageing of the population increasing pressures on existing health care systems as well as pension funds; reforms being carried out in several member states. • Rules and regulations regarding hygiene and sanitation are strict. • Approximately 90% of population is connected to public water system and approximately 88% to sewerage system.
f) Education	<ul style="list-style-type: none"> • Enrolment rates are high, but educational attainment of the adult population lags behind Canada, Japan and United States. • Ambitious targets to increase tertiary education enrolment and reduce early leaving of schools.

* This is the difference between average gross hourly earnings of male paid employees and of female paid employees as a % of average gross hourly earnings of male paid employees. The population consists of all paid employees aged 16-64 that are at work 15+ hours a week.

5.5 Existing environmental situation and trends in the EU and Ukraine

5.5.1 Economic transition, recovery and the environment

Ukraine has favourable climate conditions and geographical location and moreover is endowed with an abundance in natural resources. But for decades abundant resources were wasted by an ineffective and environmentally unfriendly economic system that still today affects the extensive model of a developing economy. Thus the share of the fuel and power sector in Ukrainian industry is twice as much as in France, Germany or Italy; the share of metallurgy is almost three times more. “Dirty” industries prevail in the Ukrainian economy; they have more than forty percent of key assets and about one third

of overall industrial output. The fuel and power sectors consume near three quarters of water in Ukrainian industry.

Since the date of the Independence Declaration (1991), the state formation and transition to a market economy have been marked by the decrease of the country's industrial potential. The economic decline was accompanied by an increase of a specific volume of a non-productive sphere in GDP; increases in social inequality. On the other hand, those processes caused a decrease of man-made burden on the environment. But as a result of capital outflow from the country and minor volumes of foreign direct investments (less than a hundred USD per capita), the general capital investments decreased, leading to deterioration of quality of machinery and production facilities, including decreasing environmental circumstances by over 50%.

Since 1999, the recovery of the Ukrainian economy has started. The total increase of GDP exceeded 22% during the last 3 years and had a positive impact on the socio-economic activities of the Ukrainian economy, including the trend of increasing of environmental protection expenditure. In 2005 Ukraine spent \$882 million to protect the environment, allocating a similar share of income to environmental protection as do Central- and Eastern-European countries. However, environmental expenditure per capita remains low at less than 40 USD per year.

According to an OECD survey for 2000-2005 (OECD 2007 Trends in Environmental Finance in EECCA) like in a majority of EECCA countries, wastewater receives the highest share of environmental expenditure: 49% of the total amount, air attracts 22%, waste about 15%, soil and groundwater – 11%, biodiversity and landscape – 2%, and other – 1%. Investment represents 22% of total environmental protection expenditure that is near 2% of the Gross Fixed Capital Formation (GFCF), similar to that in Germany. The share of environment in domestic investment has almost doubled since 2000.

Multilateral environmental assistance from international financial institutions (IFIS) is an important factor because over the period 2000-2005 Ukraine received 105 million USD, and became a major EECCA recipient in 2004.

But industrial recovery since 1999 also resulted in the tendency to go back to catastrophic pollution levels of the late Soviet period and a growing burden on the environmental infrastructure. This threat is more than real as dirty industries dominate in economy's recovery and specific figures of pollution have become apparent.

5.5.2 Metallurgy and steel

The major environmental impact is connected with ferrous metallurgy and the energy sector. Ukraine still has outdated and obsolete but powerful steel making plants and related coke production and metal mining. These sectors are responsible for about 40% of air emissions. The share of ferrous metallurgy in the structure of exports accounts for about 40%, that greatly helped in 2006 to save Ukraine from the economic crisis, when due to political instability, inflation, and increases in the price of natural gas amounted to a negative trade balance of \$6.667 billion. Also in 2006, Mittal Steel paid \$4.8 billion for the "KrivorozhStal" plant. Important for this report is also to note that the internal market

for the industry is fairly low: Ukraine exports 80% of its steel products. The agreement with the EU of June 2007, introducing a quota system with increasing quotas over time, may further enhance the metallurgy sector.

To improve the environmental performance of the steel making industry, we have to substitute first of all 'open hearth' furnaces. More than half of the remaining outdated, energy wasting installations in the world are in Ukraine now – a very dubious honour. About 45% of Ukrainian steel is produced in open hearth furnaces, which are not operated in developed countries any more. For comparison in Russia about 20% of steel production is carried out that way and Russia plans to phase out the open hearth production method completely by 2010. Reconstruction of the industry is hindered by an unstable situation related to energy prices and strong competition at the global market place.

The Ukrainian steel making industry is supported by domestic sources of raw materials. The relatively low steel prices are explained by low costs of labour, iron ore, coke, scrap, and electricity.

5.5.3 Energy

Another activity with a large environmental impact, both for pollution and resources use, is the power sector. The current state of Ukrainian power plants in general can be described as critical. Installations put into operation in 1960 – 1970s by design and norms of the 1950s are physically and morally obsolete. The overwhelming majority of existing power plants is outdated.

Specific fuel consumption for the generation of electricity at thermal power plants increased by 17% till 373.7 g / (kWh). Coal provides the largest share, about 35%, of fuel raw material and – according to national development plans – will be even more intensively used.

Ukraine can be considered as one of the most ineffective countries for natural gas use, since it consumes more than fifteen hundred cubic meters of natural gas for \$1,000 GDP. Cogeneration possibilities are usually not used, and energy efficiency is correspondingly about 34% instead of 90%.

Contrary to Russia, where electricity production was restored to the level before the slump of the 1990-s, Ukraine still has significant unused capacities that creates a big potential for export of electricity to neighbouring countries.

Poor dust control at power plants results in high emissions of particulates, including heavy metals. Control equipment of SO₂ emissions is mostly absent, which is especially dangerous because of low quality fuel and very high content of sulphur in Ukrainian coal.

There were numerous governmental programmes for improving the situation but their usual feature is a failure to achieve its goals. This shortfall of environmental policy may be explained by a rather unbalanced way in which policy is developed; rather as an internal ministerial document only than with proper and active participation of main

stakeholders, including the public and various NGOs. Typically a list of projects is declared without secure funding, monitoring and control and enforcement measures.

The government now has programmes to promote energy efficiency and modernisation at power plants, environmental considerations are addressed also in recently developed the Energy Strategy of Ukraine to 2030.

Cooperation with the EU may significantly help to solve acute problems of the energy sector. Both cost demanding and low-cost measures are urgently needed. The Memorandum of Understanding on co-operation in the field of energy between the EU and Ukraine, which was signed on 1 December 2005 within the context of implementation of the EU-Ukraine Action Plan, consists of road maps covering (1) nuclear safety; (2) the integration of electricity and gas markets; (3) security of energy supplies and the transit of hydrocarbons; (4) the coal sector. In 2006 both sides further recognised the importance of developing a fifth roadmap for increasing co-operation in energy efficiency. A number of large scale projects and practical recommendations was already identified by these five working groups.

5.5.4 What is happening at the moment?

Promising efforts started in 2006 with the practical implementation of Kyoto mechanisms and provisions of the IPPC directive. For June 2007 there are 8 joint implementation projects that got official letters of approval and became financially valid under the Kyoto Protocol procedures.

For 2004, Ukraine reported the emission of 413,4 million tonnes of CO_{2e}, which means that a space of about 512 million tonnes of CO_{2e} still exists within the ceiling imposed by the Kyoto Protocol. According to an estimate of the Ministry of Environmental Protection of Ukraine, during the first commitment period (2008-2012) Ukraine can sell up to approximately 1 billion tonnes of CO_{2e}, without creating any threat to its industrial development.

In 2007 the Green Investments Scheme Agency was created in Ukraine in order to use the country's significant potential for cooperation within the framework of the Kyoto Protocol, thus opening up the possibility of billions of USD of environmental assistance.

Implementation of the European concept of best available techniques for the main industrial sectors should drastically improve environmental regulation and environmental performance of the main polluters.

Other proposed measures like changes in the Tax Code of Ukraine are to stop negative environmental trends.

Large scale activities for joint implementation projects combined with proper environmental regulation based on international approaches, including technical standards and BAT (best available standards) recommendations may quickly improve investment conditions and help develop government procurement policy. It is the only way to secure the competitiveness of Ukrainian companies with the environment in mind.

According to official data, emissions from Ukrainian stationary sources have been on the increase during the last years: air emissions exceeding 4 million tonnes, and polluted water discharges are near 3.3 billion m³.

From the early 1990s, the most reliable source of environmental financing in Ukraine has been the system of environmental Funds. As it is shown in the OECD 2006 Performance Review of the State Environmental Protection fund of Ukraine, it has undergone significant changes, closely linked to the evolution of the public finance system in the country. Most of these changes have already brought positive results and have contributed to the improvement of the fiscal discipline and transparency of the State Fund. Its increased revenue has attracted the interest of various stakeholders in the government. But despite this increase in revenue levels, programming and expenditure planning remain weak and crucial elements of programme design are missing.

The Fund uses no clear appraisal criteria and practically does not consider environmental effects when choosing project proposals. Monitoring and evaluation of implemented projects are effectively missing. No information on results achieved by these projects is collected at the national level, which makes subsequent planning even more difficult. Given the current administrative structure of the State Fund and its staff's limited experience with good project cycle management, the Fund is not in a position to play a major role with regard to foreign sources of finance. Reforming the Fund in accordance with good international practices will require significant political support and commitment, and the EU-Ukraine dialogue may significantly contribute to it.

5.5.5 Environmental effects of outdated production methods

Imperfect extraction technologies result in big losses of minerals, thus with absence of enhanced oil recovery systems, about 50% of the oil reserves is not extracted at Ukrainian deposits. The same levels of extraction apply also to sodium chloride and potassium chloride, with 40% for coal and 25% for metals.

Improper waste management at mineral extraction and industrial production resulted in formation of landfills with 20 billion tonnes of industrial waste. These waste deposits grow annually by 170-180 million tonnes while only 20-40% of the waste is utilised. For example around 1% of the territory of the most industrialised Donetsk oblast is under landfills.

5.5.6 Ukraine's nature and environment

Ukraine is historically famous for its rich nature, agriculture, and significant world's share of black soil. Nowadays it features the highest indicators in Europe as for ploughing-up of agricultural land, use of fresh surface water resources and deforestation; up to 54% of the land is ploughed up, about 10.6 million ha or 33% of the total area, including 44% of the best steppe fields suffer from wind and water erosion.

Annual water consumption is 23-25 km³, including up to 6.0 km³ of underground water. About 60% of water is used in industry with formation of discharges. The water use problem is further aggravated by prevailing consumption in industrial areas with low water resources.

Only 30% of the territory of Ukraine is under vegetation, and it is not natural growth mainly. Forests cover 10.4 million hectares and clean territories cover 8% only.

Fauna resources are presented mainly by fish (up to 90%). 70% of the fish catch comes from the Black Sea and Sea of Azov. The catch of fish decreased 2.5 times over the last 20 years, and this negative tendency continues at present. In the Dnipro river the yearly catch was about 22 thousand tonnes in the 1970s, while nowadays it is around 7-8 thousand tonnes only. The same drastic slump is true for game, with three times decreasing catch over the last 30 years.

At the same time new reserved territories are being established. At present time, the Fund of Natural Reserves of Ukraine comprises 7120 territories and objects totalling more than 2.7 million hectares in area; it makes 4.5% of the whole area of Ukraine.

5.5.7 Overall

In general, Ukraine demonstrates negative environmental trends for:

- Consumption of natural resources, including water and land use;
- Pollution of ambient air, water and soil, disposal of waste;
- Destruction of habitats, wild life and natural landscapes;
- Emergency situations; and
- State of public health.

These trends are quite evident though some figures can be disputed and revised. Like other countries in the region, Ukraine retains a traditionally comprehensive and thorough system of state reporting, where every enterprise fills numerous questionnaires on annual or even quarterly basis. But data quality is traditionally very poor, as it was never used for real policy making but rather used to serve unrealistic ambitions. A systematic cross-checks or balances-system is usually not in place in practice. For example, no Ukrainian annual energy balance has been prepared in Ukraine since independence. Moreover, for such crucial data, different governmental agencies produce their own figures that may differ significantly. Very cautiously should we also treat the official data of motor vehicles emissions, contrary to evident congestion of cars in modern Ukrainian cities, statistics shows several times decreases of such emissions.

According to the Environmental Performance Review of Ukraine (UNECE, 2007, Environment Performance Reviews, Second Review), it definitely strengthened its legislation using integration into international legal area. Ukraine ratified 27 key environmental conventions and, at present time, is a member of discussion around 26 other environmental conventions. At this time, 173 standards that represent European and international standards have been introduced in Ukraine, and this work actively goes on.

The State Committee of Statistics of Ukraine very recently introduced questionnaires for air pollution, waste management and environmental expenditures corrected for harmonisation with EU/OECD classifications and definitions. This questionnaire should significantly improve compatibility and reliability of environmental information.

Improvement of the environmental situation in Ukraine is impossible without the renewal and modernisation of technological infrastructure that aims to approach in its characteristics the EU standards. This will require financial domestic and foreign resources. The capital investment need for providing the fulfilment of priority arrangements related to environmental pollution is about 50-60 billion Euro.

5.6 Free Trade Agreement between the EU and Ukraine

As mentioned before, the negotiated Enhanced Agreement is planned to have a five-pillar structure: An institutionalised political dialogue based on common values in line with mutually accepted general principles governing the future relationship between the EU and Ukraine; A WTO-compatible FTA for goods and services, which will also include binding disciplines in non-tariff and regulatory areas; Specific provisions regarding energy; Provisions on cooperation in a broad range of areas of mutual interest; Developed institutional structures to ensure effective implementation of the Agreement, including a dispute settlement procedure.

With Ukraine already being a member of the WTO, and – in line with our analysis of paragraph 5.2.3 thereof – we need to see the FTA as a further deepening on top of Ukraine's WTO commitments, some of which have already been implemented, some take effect the moment Ukraine enters the WTO and some take effect via transition paths in the time afterwards. We summarise the majority of WTO commitments as follows:

- Lower custom duty rates for many industrial and agricultural goods – increased market access;
- Dropping of minimum prices on imports of alcoholic products;
- Dropping of discriminatory taxes on petroleum and tobacco products;
- SPS related protective provisions eliminated;
- Elimination of discriminatory fees for rail transport;
- Gradual reduction of export duties connected with ferrous and non-ferrous metals, live cattle and leather raw materials;
- Protection of intellectual property rights;
- Lifting of citizenship requirements for performing auditing and attorney services;
- Allowing establishment of branches of foreign banks and insurance companies;
- Elimination of TRIMS and export quotas in the sugar industry;
- Introduction of tariff quotas for importation of raw cane sugar;
- Setting up maximum bound rates of 10% for most industrial goods and of 20% for most agricultural products (exception sugar (50%) and sunflower-seed-oil (30%));
- Application of MFN rate by 2010 of 4.85% for industrial products, 11.16% for agricultural products and 6.28% for products of the nomenclature of the Harmonised System;
- Full liberalisation in mode 1 of service supply: cross-border supply;
- Full liberalisation in mode 2 of service supply: consumption abroad;

- Full liberalisation in mode 3 of service supply: commercial presence for 139 out of 155 sub-sectors;
- Limited liberalisation – in mode 4 of service supply: presence of natural persons (see section on WTO accession Ukraine);

Unresolved issues compared to a full Free Trade Area after the WTO negotiations for Ukraine as for now are among others:

- Effective implementation of all the agreed WTO commitments;
- Level of state support to agriculture;
- Remaining levels of tariffs in agricultural products (sensitive ones) and industrial goods;
- Still custom duty rates;
- Limited liberalisation of mode 4 of service supply: presence of natural persons;
- Limitation on commercial presence in sectors as notary services, education, health services, medical and dental services, postal services as well as insurance, road transport, auditing services and the audio-visual sector;
- Limitations on FDI encompasses news agencies.

As mentioned by the Terms of Reference, the new commitments that are expected to be negotiated as part of the FTA within the framework of the Enhanced Agreement lie in the areas of:

- Trade in goods, including industrial goods, agricultural products, processed agricultural products and fishery products;
- Technical Barriers to Trade and SPS;
- Trade in services (such as financial services, transport and telecommunications), establishment and investment;
- Capital movements and payments;
- Government Procurement;
- Competition;
- Intellectual Property rights;
- Trade facilitation, Customs and Rules of Origin;
- Trade and sustainable investment;
- Energy.

It is the information we obtain from the ‘unfinished issues’ with respect to Ukraine’s WTO accession combined with the information available from the Terms of Reference that we analyse to deduct the main negotiation issues for the FTA. It is also these issues we try to focus on in our analysis and try to incorporate as good as possible into the CGE modelling exercise of Chapter 6. In the next Chapter, we will also summarise the issue-wise analysis of the Terms of Reference below and map it into a modelling exercise.

Trade in Goods

Given the analysis on the outcomes related to the WTO negotiations of Ukraine, which entail a substantial liberalisation in goods and services, we expect the FTA to go beyond this level of liberalisation. In the ambitious scenario, we assume a zero tariffs in all sectors, also steel, agriculture and food. For the less ambitious scenarios we model some products (e.g. agricultural ones) to remain at WTO bind levels.

Energy

The energy sector is of significant importance to Ukraine because of its share in Ukraine's GDP as well as because of reasons of national security. Ukraine exports energy (electricity) to EU countries in Central and Eastern Europe and even though not very significant amounts, Ukraine intends to increase this share significantly. This makes energy an issue to model because it is likely to be discussed during the FTA negotiations. Not only does the CGE model exhibit ambitious and limited changes to the coal and gas sectors, also the electricity sector is analysed in an ambitious and less ambitious way via significant or less significant reductions in tariffs.

Trade in services

As part of the WTO commitments, service sectors are (partially) liberalised. Regarding trade in services, the most ambitious scenario is a full liberalisation under the FTA negotiations. However, because this is a very sensitive sector for the Ukrainian government, we developed two limited scenarios, one including limited services liberalisation going beyond WTO obligations and one where no further liberalisation takes place on top of the (already implemented) WTO commitments. Also we model barriers to FDI in services that lead to higher costs for foreign (financial) service providers. The extended FTA leads to a much larger reduction in these barriers to FDI than the limited FTAs.

Trade facilitation, Customs, and Rules of Origin

The rules of customs procedures **and practices, integrity**, rules of origin, and other measures of trade facilitation are negotiated with the aim of bringing them largely in line with EU regulations **and standards, where effective control and trade facilitation are properly and sufficiently balanced**. For the customs procedures in particular and trade facilitation in general, this leads to lower border costs for EU and Ukrainian products thus increasing market access. For the rules of origin, we envisage the FTA leading to lower technical barriers. The ambitious scenario envisages a far-reaching synchronisation and lower border costs and technical barriers while the limited FTA negotiations would lead to less synchronisation and thus higher border costs, technical barriers and smaller FTA effects.

Technical Barriers to Trade and SPS

Starting from the WTO commitments of Ukraine, for trade in goods we envisage the FTA to achieve substantially higher reductions in technical barriers and harmonisation on SPS standards. In both less ambitious scenarios we assume a limited elimination of this kind of NTBs. Harmonisation has to lead to lower preparation and adaptation costs from the side of the exporters both ways. Lower costs lead to more trade. The depth of the FTA determines the depth of the liberalisation in technical barriers and SPS.

Capital movements and payments

Increased capital flows through opening up and further liberalisation of the financial sector is important for obtaining working capital and reducing the costs of trade by reducing capital costs. The WTO commitments imply a partial liberalisation and international opening up of the financial sector, but within the framework of the extended FTA there is room for further improvement. Through tariff equivalent reductions in the

financial sector – further-going or not, depending on the scenario – we include this in the CGE modelling.

Government procurement

Improvements in government procurement are important in reducing the costs of doing business and/or carrying out projects and increasing the efficiency of financial flows. In preparation for the WTO, Ukraine passed legislation on improving the process of government procurement in December 2006, so arguably an important step has been made. Depending on the scenario, the FTA could further increase the quality of government procurement by looking at an enforcement of the new legislation or not. Through an increase in NTBs we model this into the scenarios.

Competition policy

Coming from a communist system over 16 years ago, a functioning market economy is a crucial part and goal of transition and a pre-requisite for joining the WTO. Competition policy in itself is difficult to model. However, policy that aims at increasing competition so as to increase efficiency and welfare gains through pro-competitive effects of trade are implicitly modelled in the CGE exercise. The extended FTA entails an ambitious competition policy while the more limited FTA scenarios look at a more modest policy engagement.

Intellectual Property Rights

Improvement Intellectual Property Rights (IPR) will increase security for foreign companies in doing business with Ukraine. An ambitious improvement, not only in legislation but also in implementation of IPR leads to reductions in standard costs – the more encompassing the FTA the larger the reductions.

Trade and sustainable investment

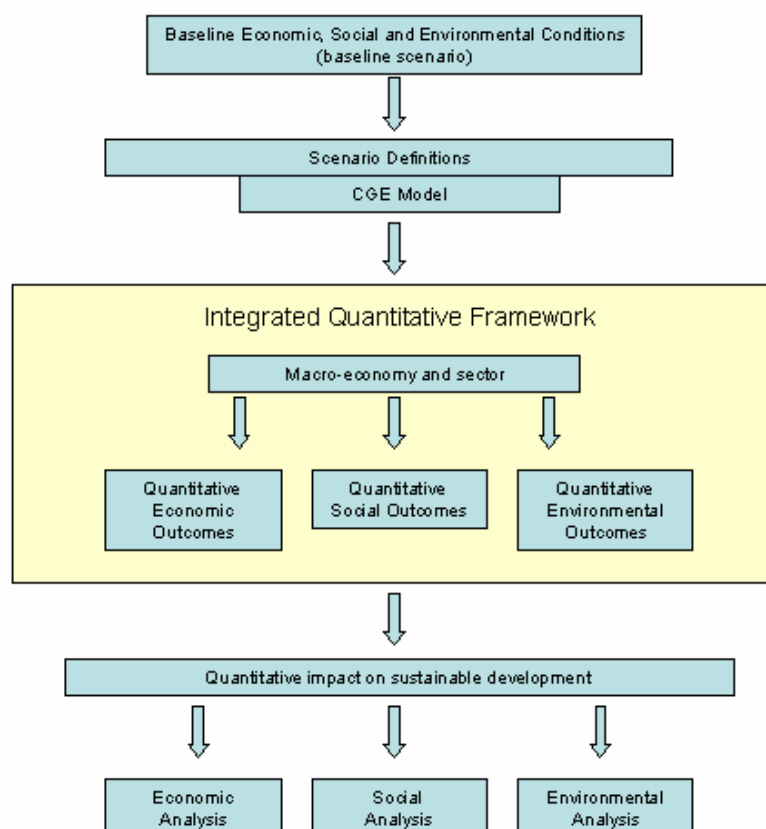
Investments are a main determinant of economic growth. If the FTA can ensure (partial) focus of investments in the direction of sectors that promote sustainable development, trade patterns will also become ‘greener’. A free trade agreement may – through its output and employment effects – have asymmetric impacts on sectors and thus on sustainable development.

6 Macroeconomic analysis

6.1 Macroeconomic analysis

In this section we employ computable general equilibrium (CGE) modelling to analyse the economic consequences of the trade measures negotiated in the Free Trade Agreement between the European Union and Ukraine. We use the Harrison-Rutherford-Tarr (1996) Multi-Region Trade model for this analysis. As mentioned in the Handbook (2006), this CGE modelling aims to quantify the effects of the trade measures concluded in the FTA negotiations. Depending on the different envisaged scenario outcomes, different effects will result. Within the sustainability framework of this study, it is this macroeconomic analysis that provides the first indication of likely sustainability effects resulting from the macroeconomic level. The indicators that we measure overall are: overall welfare changes, average real income, employment effects, effects on high- and low-skilled wages, price effects and net fixed capital formation. At the sector level – split out into 38 sectors – we investigate the effects of the FTA on sector output and sector employment. These calculated effects serve as input for the screening exercise in Chapter 7. Since the sustainability impacts, be it economical, social or environmental, must arise directly or indirectly from an initial economic impact, as is shown in Figure 6.1, the CGE model provides the starting point for the sustainability analysis.

Figure 6.1 CGE Methodology



6.2 CGE: The Multi-Region Trade Model

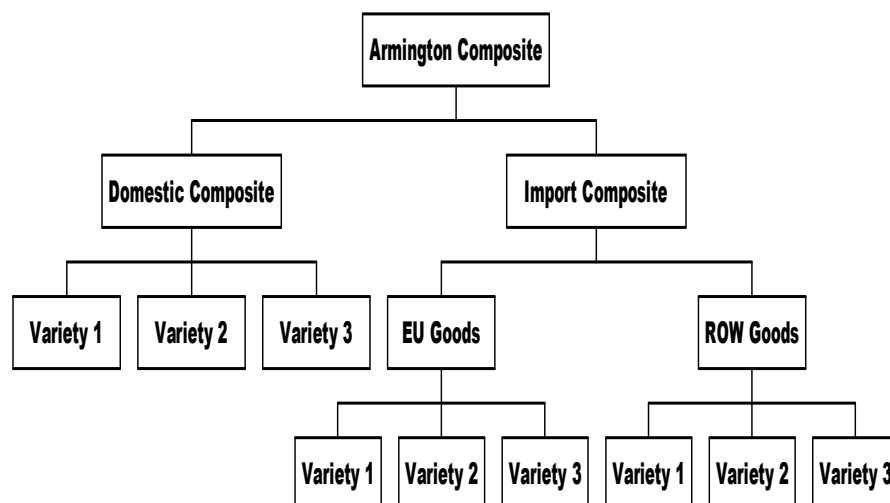
6.2.1 The model

The model employed in this study is a computable general equilibrium model. It includes several price-wedge distortions such as factor taxes in production, value-added taxes, import tariffs and export subsidies. Factor taxes in production and value-added taxes remain unchanged in simulations. Production involves combination of intermediate inputs and primary factors (capital, skilled and unskilled labour). We assume a Constant Elasticity of Substitution (CES) function over primary factors and a Leontief production function combining intermediate inputs with factors of production composite. Primary factors are mobile across sectors within a region, but immobile internationally. Each region has a government, whose revenue is held constant at the benchmark level and a single representative consumer. The trade balance is also held constant in counterfactual simulations.

Demand for final goods arises from a Cobb-Douglas utility function. The demand structure is illustrated in Figure 6.2. Within each region, final and intermediate demands

are composed of the same Armington aggregate of domestic and imported varieties. The composite supply is a nested CES function, where consumers first allocate their expenditures among domestic and imported varieties and then choose among imported varieties. In the imperfect competition case firm varieties enter at the bottom of the CES function. This approach allows for the differentiation in preferences for home and imported goods.

Figure 6.2 Demand structure in the IRTS scenario – firm level product differentiation within an Armington aggregate



Source: HRT (1996a).

A detailed description of the model equations, calibration and parameters employed is provided in Annex 22. It is built on the basis of the MRT – Multiregional Trade Model – by Harrison, Rutherford and Tarr (HRT) implemented in their evaluation of the impact of a completion of the Single Market (HRT, 1994 and HRT, 1996a), but has been modified in several ways to fit this analysis. Similar analysis was applied in the study of the Eastern EU Enlargement (Maliszewska, 2003a, 2003b) and Albanian Integration with the EU (Maliszewska and Kolesnichenko, 2004).

The social accounting matrix (SAM) for Ukraine has been prepared by experts from the Center for Social and Economic Research (CASE Ukraine). The original data sources used to construct the SAM include the official input-output table³⁵; official production statistics; law on import duties and 10-digit import statistics from State Statistics Committee for tariff calculations. The reference year of the official input-output table is 2004, it includes 38 sectors, based on operating Classification of Economic Activities (KVED). The units of measurement are million Ukrainian Hryvnas (UAH). The Ukrainian I-O table is in basic prices, i.e. the elements of intermediate consumption and final consumption expenditures do not include transportation and trade margins and taxes on production and imports, but do include subsidies on production.

³⁵ State Statistics Committee of Ukraine

The data on the EU has been updated to 2004 based on the structure of the EU27 data in the Global Trade Analysis Project Version 6 database, which includes the national and regional input-output structures, bilateral trade flows, final demands pattern and government intervention benchmarked to 2001. The GTAP protection data for the EU27 has been updated based on Trains data. The benchmark database includes Ukraine, Russia, EU27 and the Rest of the World. It includes 32 sectors out of which 15 are subject to increasing returns to scale in the imperfect competition scenarios.

6.2.2 CGE modelling limitations

CGE modelling is the best tool to evaluate outcomes of policy changes in general equilibrium. It yields outcomes with respect to output, employment wage changes and other macroeconomic variables that are important for policy makers. However we need to caution for very rigid interpretation of the modelling outcomes due to data issues (quality and quantity of data) and modelling issues. With respect to the latter, we present below shortly some of the strongest limitations that CGE modelling encounters and that policy makers need to be aware of. For this reason, the CGE outcomes are further tested during the in-depth analysis.

- There are no transaction costs in the CGE model;
- Economic phenomena like involuntary unemployment, effective demand failures cannot occur because of the assumption of full employment and a fixed trade balance and fixed budget deficit;
- The comparative-static approach allows for the description of the relative changes in the economy when all the necessary adjustments have taken place. It does not provide insights into the specific timing or patterns of adjustment;
- There are no costs of investment necessary to obtain a higher capital stock in the long run.

6.2.3 Dynamics of the model

As mentioned above, the lack of a dynamic nature of the CGE modelling is a limitation that we would like to address. Therefore, even though the CGE model is inherently comparative-static in nature, we add features and flank the model with additional methodologies to address the dynamic nature of the FTA. We have included the following measures:

- First of all, we have modelled two scenarios on top of the WTO – one more limited and one more extended FTA. The more extended FTA can be seen as a long-run goal to maximise welfare for the EU and Ukraine;
- Secondly, for each of the two FTA scenarios, we have modelled a short-run and a long-run version, clearly indicating what are the more immediate and more long-run effect of the FTAs, adding significantly to the dynamism of the results;
- We add a gravity analysis on the concept of FDI, which proves difficult to model, in order to show the change of FDI flows over time in a dynamic setting;
- During the in-depth analysis of sectors and horizontal issues of the TSIA study, we will address the issues of FDI, technology and introduction of new goods in more

detail at sector levels making use of Berden & Van Marrewijk (2007) on the introduction of new goods through reducing trade barriers.³⁶ Through these measures we believe the CGE model (and flanking methodological exercises) adequately analyse the FTA scenarios and real-life situation.

6.2.4 Short-run and long-run effects

The calculation of steady state growth effects in our model follows HRT (1996a). In the short run scenarios the price of capital is allowed to vary within each country, while capital stock is held constant. In the steady state scenario capital stock in Ukraine is allowed to adjust, while the price of capital is held constant at its benchmark level. This approach assumes that there exists an invariant capital stock equilibrium. It is defined as a set of prices, production and investment levels for which the economy is able to grow at a steady rate with constant relative prices.

This approach provides an upper bound of the potential welfare gains as it ignores the adjustment costs and foregone consumption necessary to increase investment. For sufficiently high discount rates the costs of forgone consumption could overturn the benefits of capital accumulation. Although in the steady state scenarios, as well as in the short run scenarios we measure welfare as equivalent variation as a share of GDP, it has to be borne in mind that incorporation of the cost of the investment required to build up the capital stock may substantially reduce the estimates of welfare gains cited below. On the other hand our approach does not incorporate the potential gains due to productivity improvements or endogenous growth theory, for example through learning by doing effects.

This distinction between the short- and the long-run – also mentioned in the previous sections – is an important addition to the analytical strength and realism of the model we use.

6.3 Model inputs for WTO and FTA scenarios

6.3.1 Sector specification for model analysis

The analysis conducted is based on 38 sectors that are partially grouped together. The sector classification is based on the EUs NACE and UN ISIC definitions that are also used in GTAP modelling.³⁷ This means that our sectors:

- a. Cover the entire economy in line with international standards;
- b. Do not overlap.

³⁶ Berden, K.G. and C. van Marrewijk (2007), 'On static and dynamic costs of trade restrictions', *Journal of Development Economics*, 2007.

³⁷ <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=17&Lq=1> / http://www.fifoost.org/database/nace/nace-en_2002c.php

6.3.2 Tariff changes following accession to the WTO

The model is set on 2004 data, and that year's macroeconomic and trade variables are the basis for further simulations. The first modeling step is to assess the effects of Ukraine's joining of the WTO. Technically WTO accession will precede the FTA, whatever form it may have. Thus, WTO accession is the benchmark for scenarios describing deeper integration of the EU and Ukraine's economies, i.e. FTA effects are compared to the post-WTO hypothetical macroeconomic and trade values.

The WTO accession scenario envisages tariff and NTBs reductions. **2004 weighted average tariffs are reduced** to be in line with the Ukraine's WTO schedule of concessions and commitments. Noteworthy, most of tariff lines have been changed in 2005-2006 and currently are in full conformity with the WTO schedule. Nevertheless we expect that reduced tariffs effects have long-term nature and tangible results of tariff reduction will come in several years. Thus, we do not impose a new benchmark and **stick to 2004 tariff structure** as the initial point for the modeling. The NTBs are also expected to decrease somewhat as the result of the Ukraine's WTO accession. Ukraine still has to bring technical standards, SPS norms, licensing and customs procedures in line with the WTO multilateral agreements.

Upon WTO accession, Ukraine and the EU work on the FTA. These negotiations – as said – take Ukraine's accession to the WTO as given and aim at further liberalisation beyond WTO requirements. Therefore the two scenarios for the FTA: the extended scenario and the more limited scenario are both going beyond the requirement of GATT Article XXIV, to liberalise 'substantially all trade'.

Table 6.1 Ukrainian tariff changes in WTO and the FTA scenarios (manufacturing)

	2004			WTO				Scenario Extended FTA		Scenario: Limited FTA	
	RUS	EU27	ROW	RUS	EU27	%Red04	ROW	EU27	%Red04	EU27	%Red04
Agriculture, Fisheries, Forestry	0.00	5.25	14.54	0.00	1.84	65%	0.46	0.25	95%	1.29	75%
Coal, Oil, Gas	0.00	0.00	0.00	0.00	0.00	0%	0.00	0	0%	0.00	0%
Minerals NEC	0.00	1.21	1.41	0.00	1.44	-18%	0.78	0	100%	0.00	100%
Bovine cattle, sheep and goats, horse meat products	0.00	2.19	1.29	0.00	2.19	0%	10.89	0.12	95%	1.53	30%
Vegetable oils and fats	0.00	1.74	2.42	0.00	0.60	66%	0.60	0.09	95%	0.42	76%
Dairy products	0.00	18.68	6.71	0.00	10.28	45%	4.10	0.95	95%	7.20	61%
Processed rice, Sugar	0.00	28.45	36.19	0.00	27.96	2%	27.55	1.5	95%	19.57	31%
Food products nec	0.00	6.49	3.77	0.00	4.66	28%	0.79	0.3	95%	3.26	50%
Beverages and tobacco	0.00	20.23	20.00	0.00	10.70	47%	3.35	0	100%	7.49	63%
Textiles	0.00	1.76	2.58	0.00	1.76	0%	2.58	0	100%	0.35	80%
Wearing apparel	0.00	7.88	7.17	0.00	7.86	0%	7.17	0	100%	1.57	80%
Leather products	0.00	11.30	13.49	0.00	9.53	16%	7.49	0	100%	1.91	83%
Paper products, publishing, Wood products	0.00	5.25	3.33	0.00	0.22	96%	0.24	0	100%	0.00	100%
Petroleum, coal products	0.00	0.46	0.00	0.00	0.46	0%	0.00	0	100%	0.00	100%
Chemical, rubber, plastic products	0.00	2.73	2.65	0.00	1.36	50%	1.64	0	100%	0.00	100%
Mineral products nec	0.00	6.11	4.97	0.00	5.03	18%	3.82	0	100%	0.00	100%
Ferrous metals, Metals NEC	0.00	2.65	0.87	0.00	0.24	91%	0.44	0	100%	0.05	98%
Metal products	0.00	4.02	4.20	0.00	2.51	38%	3.00	0	100%	0.50	88%
Motor vehicles and parts	0.00	2.97	2.44	0.00	2.97	0%	2.44	0	100%	0.00	100%
Transport equipment	0.00	1.01	4.43	0.00	0.86	15%	3.45	0	100%	0.00	100%
Electr equipment; Machinery & Equipment	0.00	2.95	3.09	0.00	1.90	35%	1.75	0	100%	0.00	100%
Manufactures nec	0.00	6.76	7.94	0.00	4.62	32%	4.54	0	100%	0.00	100%

6.3.3 Non-tariff barriers

One of the studies ordered by the European Commission before completion of the Single Market looked at the perception of EC producers as to the importance of barriers to be removed by the formation of the Single Market. It showed that the elimination of physical frontiers, costs and delays, harmonisation of national standards and regulations, and government procurement were the most important barriers to trade before 1992. Similar conclusions were reached after a survey of barriers to exports to the EU faced by the Ukrainian exporters (see Jakubiak et. al. 2006). Elimination or lessening of these impediments to trade is also likely to bring major benefits to Ukraine when it gains better access to the Single Market thanks to a creation of a deep FTA. In modeling of a deep FTA we focus on reduction in border costs and delays, as well as reduction in costs of compliance with varying national standards and regulations. In addition we also study an impact of a reduction of barriers to trade in services.

1. Border costs

One of the most observable barriers to trade is due to the existence of borders and customs formalities, which involve delays and various kinds of administrative costs. At the moment all goods from Ukraine exported to the EU and vice versa are stopped at the EU border for customs clearance. Border costs are modelled as additional purchases of a domestic transportation good which includes shipping, handling and warehousing for customs purchases.

Ukrainian border costs are approximated by the costs of customs clearance faced by the **Ukrainian exporters** to the EU in 2006. According to Jakubiak et al (2006) border costs amounted on average to 6% of the value of production. We assume that these costs will be reduced by 50% in the Extended FTA scenario and by 10% in the Limited FTA scenario. We assume that lowering of border costs due to reform of customs procedures or decreases in corruption at the border reduces the costs to exporters to Ukraine from Russia, EU27 and the ROW in the same way.

The EU-Ukraine Action Plan requires Ukraine to revise the Customs Code and other related by-laws in line with the EU legislation. EU-Ukraine “deep FTA” is expected to bring more attention the issue of customs clearance procedures as they remain overregulated and complicated in Ukraine. Although Ukraine reports substantial progress in implementation of EU-aligned legislation, the problem is also in weak implementation of the improving legislation. Exporters and importers surveys reveal great difficulties in passing customs procedures in Ukraine due to corruption and poor infrastructure. Ukraine has no choice but to improve the customs procedures to ensure fulfilment of its international commitments.

Table 6.2 Border costs estimates

	Benchmark (2004)	WTO Accession	Extended FTA (S1)	Limited FTA (S2)
Border costs as a share of the value of exports	6%	6%	3.0%	5.4%

2. Standard costs

The EC has been concerned with the elimination of the technical barriers to trade since its creation. However, the major effort of elimination of barriers to trade imposed by differing national regulations and standards was undertaken with the creation of the Single Market. The Single Market measures consist of 2,556 different mandated standards. This number rises to more than 20,000 when voluntary standards are considered.

Recently, CASE conducted a survey on NTBs faced by Ukrainian exporters to the EU (Jakubiak et al 2006). Among others, respondents (over 500 companies) were asked to assess costs associated with meeting EU technical standards and the duplication of efforts related to compliance with both national and the EU standards (existing for the majority of surveyed firms). Costs of meeting EU standards for Ukrainian producers are presented in Table 6.3.

The issue of technical standards has been given much attention in the EU-Ukraine Action Plan (article 2.3.1) and is likely to be one of the focuses of the trade-related provisions under the new Enhanced agreement. Ukraine made commitment to revise existing Ukrainian standards, providing for harmonisation with international and European ones and progress in this field has been promising so far. Currently Ukraine and the EU are working on four priority sectors that are going to be covered by the Agreement on Conformity Assessment and Acceptance potentially coming into force since 2011. If the Agreement is concluded successfully it is likely to be further extended to cover majority of the sectors.

Table 6.3 Percentage of yearly production costs spent by Ukrainian exporters to the EU in order to ensure products compliance with the EU norms, 2006

NACE	Industry	% of production costs	number of responses
01	Agriculture, hunting and related service activities	14.0	3
02	Forestry, logging and related service activities	7.0	11
14	Other mining and quarrying	n/a	0
15	Manufacture of food products and beverages	10.4	9
16	Manufacture of tobacco products	n/a	0
17	Manufacture of textiles	2.3	3
18	Manufacture of wearing apparel; dressing and dyeing of fur	34.4	8
19	Tanning and dressing of leather; manufacture of luggage, and footwear	5.3	3
20	Manufacture of wood and of products of wood and cork	20.9	22
21	Manufacture of pulp, paper and paper products	15.0	2
22	Publishing, printing and reproduction of recorded media	0.0	0
23	Manufacture of coke, refined petroleum products and nuclear fuel	10.0	1
24	Manufacture of chemicals and chemical products	5.5	4
25	Manufacture of rubber and plastic products	5.6	5
26	Manufacture of other non-metallic mineral products	29.3	6

NACE	Industry	% of production costs	number of responses
27	Manufacture of basic metals	5.0	1
28	Manufacture of fabricated metal products, except machinery and equipment	6.4	5
29	Manufacture of machinery and equipment n.e.c.	4.4	7
30	Manufacture of office machinery and computers	n/a	0
31	Manufacture of electrical machinery and apparatus n.e.c.	11.0	5
32	Manufacture of radio, television and communication equipment and apparatus	10.0	2
33	Manufacture of medical, precision and optical instruments, watches and clocks	20.0	1
34	Manufacture of motor vehicles, trailers and semi-trailers	12.3	3
35	Manufacture of other transport equipment	4.0	2
36	Manufacture of furniture; manufacturing n.e.c.	15.3	4
37	Recycling	5.5	2
Total/average		13.9	109

Source: own calculations based on survey described in Jakubiak et al (2006)

The differences in technical regulations and standards, which vary between domestic and the EU markets, require producers to manufacture or package goods in forms, which are different than for their domestic markets. **Standardisation costs therefore increase the cost of production for exports** and they are **modelled as additional value added in each sector** where trade takes place. This approach ignores the fixed cost elements of implementation of new standards. However, these are mostly one-off investments and their magnitude is not likely to be significant.

These estimates are based on a survey of exporters to the EU. We do not have similar data for the other export destinations for Ukrainian products and in any case the impact of a Ukraine-EU FTA on them would be uncertain. Hence in the simulations we assume that these costs apply only on exports to the EU. Any harmonisation of legislation with the EU, wider availability of conformity assessment centres and with that lower prices of certification that would follow an EU-Ukraine FTA would lead to a reduction of these costs for Ukrainian exporters to the EU. In the WTO Accession scenario these costs are assumed to decrease by 30% in the case of agricultural and food products and by 15% in all other sectors. In an Extended FTA we assume that these costs will decrease by 50% and 35% respectively and in a Limited FTA reductions are assumed to decrease by 40% and 25% relative to their initial level in 2004.

Table 6.4 Standard cost reductions

	Benchmark (2004)	WTO Accession	Extended FTA (S1)	Limited FTA (S2)
Agriculture, Fisheries, Forestry	14	9.8	7.0	8.4

	Benchmark (2004)	WTO Accession	Extended FTA (S1)	Limited FTA (S2)
Coal, Oil, Gas	0	0	0	0
Minerals NEC	0	0	0	0
Bovine cattle, sheep and goats, horse meat products	10.4	7.3	5.2	6.2
Vegetable oils and fats	10.4	7.3	5.2	6.2
Dairy products	10.4	7.3	5.2	6.2
Processed rice, Sugar	10.4	7.3	5.2	6.2
Food products nec	10.4	7.3	5.2	6.2
Beverages & tobacco	10.4	7.3	5.2	6.2
Textiles	2.3	2.0	1.2	1.7
Wearing apparel	34.4	29.2	22.4	25.8
Leather products	5.3	4.5	3.4	4.0
Paper products, publishing, wood products	15	12.8	9.8	11.3
Petroleum, coal products	10	8.5	6.5	7.5
Chemical, rubber, plastic products	5.5	4.7	3.6	4.1
Mineral products nec	29.3	24.9	19.0	22.0
Ferrous metals, Metals NEC	5	4.3	3.3	3.8
Metal products	6.4	5.4	4.2	4.8
Motor vehicles and parts	12.3	10.5	8.0	9.2
Transport equipment	4	3.4	2.6	3.0
Electronic equipment; Machinery and Equipment	10	8.5	6.5	7.5
Manufactures nec	15.3	13.0	9.9	11.5

3. Barriers to foreign trade in services

We base our estimates on the barriers to foreign direct investment in services on the IER's study (see Pavel et. al. 2006). The authors estimate tariff equivalents of barriers that discriminate against foreign service providers of telecommunication, transport and financial services. **We model those barriers as additional purchases of value added in the amount equal to tariff equivalents by exporters or providers of those services from all the remaining regions** (Russia, EU27 and the ROW). Hence we assume that in order to provide financial services (banking insurance) in Ukraine foreign providers face costs that are 28.9% higher than those faced by local providers. The additional costs in the transport sector amount to 16.7% and in communications to 4.9%. In simulations we assume that all providers will face an improved access to the Ukrainian market following and EU-Ukraine FTA. Hence these barriers are also reduced with respect to Russian and ROW providers of services.

Table 6.5 Barriers to trade in services

	Benchmark (2004)	WTO Accession	Extended FTA (S1)	Limited FTA (S2)
Transport nec, Water transport, Air transport	16.7	11.7	0	6.7
Communication	4.9	3.4	0	2.0
Financial services nec	28.9	20.2	0	11.5

We assume that the barriers to foreign providers of services in Ukraine are reduced by 30% with WTO accession and then by a further by 100% in an extended FTA scenario. In the limited scenario these barriers are assumed to go down by 60% relative to the benchmark 2004 level. Scenario specifications

Table 6.6 Scenario overview

Agenda Issues	WTO outcomes (with base scenario is 2004) (base)	Extended FTA (S1)	Limited FTA (including services) (S2)
	Abiding by the principles of non-discrimination and transparency among WTO partners		
Trade in Goods including industrial goods, agricultural products, processed agricultural products and fishery products	Fixing tariffs, mostly at low levels, with the most-favoured nation clause – based on WTO accession analysis: reductions varying between 0% and 100% (see Table 6.1)	Zero tariff in almost all sectors (with 5% remaining in agri-food sectors) extending the zero tariff principle to embrace the free movement of all goods, services, capital and (doubtless with longer transition periods) labour as well	Agriculture reduced by 75% compared to 2004 tariff level, food products reduced by 30%-80%, rest to very low tariffs (not all industrial products to zero – allowing for limited liberalisation in sensitive sectors)
Energy	Reducing barriers to trade in energy sector and related sectors	Zero tariff in electricity, gas & coals sectors	Zero tariff in electricity, gas & coals sectors
Trade in services (such as financial services, transport and telecommunications), establishment and investment	Opening many service sectors to free trade – base on WTO accession analysis – 30% reduction compared to 2004	For trade in services, complete sectoral coverage and convergence on internal market regulatory rules of the EU or best international standards: 100% reduction compared to 2004	Further limited liberalisation of services (but perhaps with only limited liberalisation in some sectors): 60% reduction compared to 2004
Trade facilitation, Customs and Rules of Origin	Adopting rules for customs procedures – no reductions compared to pre-WTO	Rules for customs procedures, trade facilitation and rules of origin largely in line with EU - 50% reduction compared to 2004	Partial adoption of rules for customs procedures – 10% reduction compared to 2004
Technical Barriers to Trade and SPS	Observing rules for non-tariff barriers, with the principle of non-discriminatory 'national treatment' – reduction of 30% in agri-food sector; reduction 15% other sectors	For trade in goods, substantial elimination of non-tariff barriers through harmonisation or mutual recognition of technical standards with those of the EU (or both) – 50% reduction in agrifood sector; 35% other sectors compared to 2004	For trade in goods, limited elimination of non-tariff barriers through harmonisation or mutual recognition of technical standards with those of the EU (or both) – 40% reduction in agrifood sector; 25% other sectors compared to 2004
Capital movements and payments	Liberalisation of the financial sector and opening up of domestic capital markets	Further commitments in opening up the financial sector, including specific professions, reducing capital costs in Ukraine. Increased FDI inflows are expected because of the FTA. In a special gravity	A limited increase in FDI flows is expected; in line with further commitments to opening up to foreign capital. In a special gravity estimation this will be analysed further.

Agenda Issues	WTO outcomes (with base scenario is 2004) (base)	Extended FTA (S1)	Limited FTA (including services) (S2)
		estimation this will be analysed further.	
Government Procurement	Ambitious legislation passed as part of WTO negotiations in December 2006 regarding public procurement.	Ongoing improvements in the process of government procurement especially the focus on implementation. Ambitiously this could lead to a reduction in NTBs of 50%/35% .	More limited success in implementation of improved procedures regarding government procurement. A reduction of 40%/25% of NTBs is envisaged.
Competition policy		Stronger commitments in competition policy, corporate governance and internal market regulation that are anchored to EU practices, and for selective elements of environmental standards	Limited commitments in competition policy, limited improvements in corporate governance
Intellectual Property rights		Improved IPR increases security for companies doing business and resulting in de fact reductions in standard costs. The standard costs are expected to drop by another 20% on top of WTO commitments.	Limited success in protecting IPR and thus limited reductions in standard costs of 10% on top of WTO commitments.
Trade and sustainable investment		Adoption of accompanying policies, including technical assistance, infrastructure investment, education and training	Adoption of accompanying policies, including technical assistance, infrastructure investment, education and training

6.4 Modelling results

Before shortly summarising the results, we would like to emphasise once more that the baseline data are defined to be 2004, so all changes we report are based on this baseline. The effects of the FTA scenarios alone constitute the difference between our outcomes of the WTO scenario and the effects of the FTA scenarios. In the overall changes we look at the WTO scenario, the extended FTA scenario (scenario 1) and the more limited FTA scenario (scenario 2). For the two FTA scenarios we have looked at the long-run and short-run effects to allow for comparative-dynamical effects to become visible. For the definition regarding the short-run and long-run, we refer to section 6.2.4.

6.4.1 Summary of overall macroeconomic changes (welfare, income and wages)

Table 6.7 Summary of macroeconomic changes

Variable	Ukraine	Russia	EU-27	ROW
Scenario: WTO Accession				
Welfare (% change)	0.654	0.018	0.006	0.006
Income (return factors and taxes) (bn US\$)	0.058	0.364	8.526	24.847
Skilled Wage (% change)	0.814	-0.004	0.001	-0.001
Unskilled Wage (% change)	0.839	-0.038	-0.001	-0.001
Scenario 1: Extended FTA (short run) – including WTO				
Welfare (% change)	2.261	0.030	0.007	-0.001
Income (return factors and taxes) (bn US\$)	0.060	0.364	8.526	24.846
Skilled Wage (% change)	2.496	0.049	0.009	-0.001
Unskilled Wage (% change)	3.066	-0.028	0.009	-0.002
Scenario 1: Extended FTA (long run) – including WTO				
Welfare (% change)	5.285	0.071	0.011	0.003
Income (return factors and taxes) (bn US\$)	0.061	0.364	8.527	24.847
Skilled Wage (% change)	4.355	0.059	0.009	-0.003
Unskilled Wage (% change)	4.970	-0.029	0.008	-0.003
Scenario 2: Limited FTA (short run) – including WTO				
Welfare (% change)	1.216	0.004	0.007	0.002
Income (return factors and taxes) (bn US\$)	0.059	0.364	8.526	24.846
Skilled Wage (% change)	1.547	-0.003	0.006	-0.001
Unskilled Wage (% change)	1.789	-0.053	0.006	-0.001
Scenario 2: Limited FTA (long run) – including WTO				
Welfare (% change)	3.295	0.032	0.009	0.004
Income (return factors and taxes) (bn US\$)	0.060	0.374	8.527	24.847
Skilled Wage (% change)	2.817	0.002	0.006	-0.002
Unskilled Wage (% change)	3.093	-0.054	0.005	-0.002

* All values are in billion US\$ unless specified to be in %

Welfare effects (% change)

From the results it becomes clear that the positive welfare effects for all the defined regions in the model are largest in the Extended FTA (Scenario 1) in the long run, where the integration is most far-reaching. Positive welfare effects are 5.285% for Ukraine while 0.071% for Russia and 0.011% for the EU. In the short-run extended FTA scenario these amounts are 2.261% for the Ukraine and 0.007% for the EU. In the limited FTA, these effects are smaller: 3.295% for Ukraine in the long-run and 0.009% for the EU. It must be noted that – even though relatively the largest positive welfare effects occur in the extended FTA – the magnitude of welfare changes for the EU are – as we expected – very small. This is due to the relative sizes of the Ukrainian versus the EU economies (0.63%). What also is worth mentioning is that every FTA scenario leads to larger welfare gains than just the WTO accession does for the EU and Ukraine and that in the long run the welfare effects are greater than in the short-run for both FTA scenarios. This is the case because in the long run the Ukrainian capital stock is allowed to adjust (FDI inflows for example). These outcomes reflect the pro-competitive effect of trade as well as the increased use of comparative advantage between the European Union and Ukraine. Overall the FTA appears to be a non-zero-sum game with the more extended FTA leading to larger welfare gains than the more limited scenarios.

Income measured as return on factors and taxes

The income, measured as return on factors and taxes is not expected to change for the EU or other geographical areas, except for the Ukraine. For Ukraine, we observe higher factor incomes the more deep the FTA and the longer the run. This is in line with what is to be expected when in the long run capital is allocated most efficiently across the Ukrainian economy.

Wage effects for low- and high-skilled workers

We observe a significant increase in the real wages of both skilled- and unskilled workers in Ukraine and the EU as a consequence of the FTAs. Compared to 2004, the WTO scenario would predict an increase for high-skilled workers of 0.814% and for low-skilled workers of 0.839%. The FTAs including the WTO accession reach levels of 4.355% and 4.970% respectively for the extended FTA (long run) and 2.817% and 3.093% for scenario 2. This can be seen as a small but clear increase in the real wage rate in Ukraine. The FTA also has a positive effect on EU wages, albeit much smaller in terms of % change. Whereas in the WTO the low-skilled workers in the EU would experience a tiny wage decline, for the FTA scenarios these effects are clearly positive: 0.008% for the extended FTA and 0.005% for the more limited FTA.

6.4.2 Summary of sectoral effects (prices, output, imports, exports and employment)

Tables 10.1 – 10.8 in Annex 24 present the most important outcomes for the various FTA scenarios that we analysed.

Price changes per sector

If we focus on price changes in sectors, we observe that price changes in the European Union are very small, all below the 2% change compared to the WTO scenario we set as the border for a significant price impact.

For the transport equipment sector in Ukraine, the scenarios lead to price decreases of 10.8% and 10.9% respectively though this is not a significant increase on top the WTO scenario that is showing a 10.6% increase – see Annex 24. A significant decrease in prices occurs in **processed rice and sugar** (-3.8%, -3.7% and -2.1% for the extended scenario (LR and SR) and the short-run version of the limited scenario, **wearing apparel** (-3.8%, -3.7% and -2.8%), **leather products** (-6.7%, -6.7%, -5.8%). In the extended FTA in the long run there is also a substantial decrease in the price levels in the **wood products, paper products and publishing sector** of 3.3%, of **textiles** of 3.2% in the **financial services nec and insurance sector**, that do not occur in the more limited scenario.

Output changes per sector

For output changes, we observe overall that there are only very small output effects for the European Union 27 regardless of the scenario that is simulated, with the largest increase being in the sugar sector, showing an increase of 0.4% in the extended FTA (SR and LR). We have presented the results in Annex 24 if the expected impact was larger than +/- 0.05%; any smaller share we have rounded off to zero. Also for Russia and ROW the output changes are very small. However, for the production structure of the Ukrainian economy, WTO accession and the three FTA scenarios do have significant results – which is important because we want to look at the direct economic impacts as well as the indirect economic, social and environmental impacts. We classify production changes to have a significant impact on the production structure of sectors and the Ukrainian economy if there is an impact effect of the scenarios that leads to a change in production of 3.5% compared to the WTO outcomes.

For the agriculture, fisheries and forestry sector, there is a significant positive impact though not very large compared if we look at the share of the effect that belongs to WTO accession. For **bovine cattle, sheep and goats, horse meat products** the extended FTA shows a significant increase in production in the short-run but a strong negative impact in the long run. For the **vegetable oils and fats** the same applies. **Processed rice and sugar** show a very significant production drop as a consequence of the proposed FTA compared to WTO accession. In general, the agricultural production does not change tremendously compared to the WTO scenario because most agricultural tariff liberalisation has already taken place. Indeed, in the sectors where liberalisation has not gone so far (e.g processed rice and sugar or vegetable oils and fats) the effects seem to be largest because there is still sufficient scope for liberalisation. Compared to the WTO scenario, there is a very large production increase in the **textiles sector** (43.7% and 50.4% for scenario 1) as well as in **wearing apparel** (185.1% and 197.9%) and **leather products** (23.9% and 29.6% for SR and LR respectively compared to 2004). In the extended FTA also the **wood products, paper products, publishing** (SR – 5.8%), **petroleum and coal products** (4.5% and 6.8% for SR and LR respectively), **chemical, rubber and plastic products** (8.6% and 10.5%), **metal products** (7.1% and 8.2% for SR and LR in extended FTA respectively), **electronic equipment and machinery** (17.5% and 20.2% in the extended FTA) and **manufactures nec** (7.7% and 9.3%) show significant production increases. The sector **motor vehicles and parts** shows an increase compared to the WTO scenario also, where this increase is largest for the extended FTA and smallest for the short-term limited FTA. The **transport equipment sector** is shrinking compared to the 2004 base

data but not compared to the WTO accession scenario. **Transport nec** shrinks in the extended short run FTA but in the long run and limited scenario this is not the case. Finally, a sector that will be negatively affected by the extended FTA both in the long run and in the short run (-18.3% / -15.1%) and the limited FTA (-9% and -6.7%) is the **financial services nec and insurance sector**.

If we do not only look at the output changes in percentages, but include the relative size of each sector, i.e. combining the results percentage changes in output with the absolute size of the sector. We note that especially **financial services nec and insurance** and **transport nec, water transport and air transport** show significant absolute losses (up to kUS\$ 821) while sectors like **agriculture, forestry and fisheries, wearing and apparel, textiles, chemicals, rubber and plastic products** as well as **ferrous metals and metals nec, trade and electronic equipment, machinery equipment** gain substantially in production (up to kUS\$ 1157). The results are presented in Annex 24.

Export % value changes per sector

Looking at the percentage changes in the value of exports from the countries in the model to the rest of the world, we define a significant change in export structure as a change of +/- 10%.

Overall what is interesting to observe from Annex 24 is that WTO accession in any of the FTA scenarios leads overwhelmingly to significant *increases* in Ukrainian exports. There are some exceptions though that show negative export growth both in the long and short run of the extended FTA. These sectors are: **coal, oil, gas** (-11%, -12%), **electricity** (-12%, -11%). For the limited FTA these deviations do not occur. Furthermore, in the short run, **trade** (-12%), **transport nec, water transport and air transport** (-14%), **as well as communication** (-17%) and **business services** (-14%) are among the shrinking sectors. In the longer run these effects are partially mitigated. We also see that the FTA between the EU and Ukraine has a negative impact on Russian exports for certain sectors like dairy products, processed rice and sugar and beverages and tobacco. For the EU the percentage change in the value of exports because of the FTA is positive in general (with the exception of the sector processed rice and sugar) but relatively small.

More specifically, we note that the positive percentage change in exports from Ukraine to the rest of the world is most pronounced in **bovine cattle, sheep and goats, horse meat products** (33% 34%, 25%, 26% for both scenarios in SR and LR respectively), **vegetable oils and fats** (41%, 43% for the extended FTA), **dairy products, food products nec** (28%, 29%), **textiles** (53%, 59%), **wearing apparel** (273%, 288% for the extended FTA and 136% and 143% for the limited FTA), **leather products** (34%, 39%), **wood products, paper products, publishing** (31%, 34%), **petroleum & coal products** (20% and 22%), **mineral products nec** (53%, 53 for SR and LR of the extended FTA scenario), **motor vehicles and parts** (18% and 20%) and **manufactures nec** with respectively 47%, 47%, 30% and 30% increase in the value of exports compared to the 2004 base data. Also **electronic equipment and machinery increases** strongly. Overall, sectors where there is most room for further liberalisation and where Ukraine has a comparative advantage, we see the largest export value increases. Some export value increases are only significant over 10% in case of the Extended FTA scenario: **chemical rubber and plastic products** (14% and 16%) and **metal products** (11% and 12%).

Import % value changes per sector

Looking at the percentage changes in the value of imports from the countries in the model from the rest of the world, we define a significant change in import structure as a change of +/- 10%.

The Ukrainian sectors show positive percentage changes in the value of imports for Ukraine as is to be expected as a consequence of further trade liberalisation. Most pronounced are **agriculture, fisheries and forestry** (42% and 45% for the extended FTA in SR and LR respectively), **coal, oil and gas** (48%, 75%), **dairy products** (15% and 16%), **processed rice and sugar** (36%, 38%), **textiles** (46% and 51% but also in the limited FTA), **wearing apparel** (61%, 68%), **leather products** (46%, 51%), **mineral products nec** (35%, 40%), **manufactures nec** (22% and 25% in the extended FTA). In **processed rice and sugar** we clearly see a drop in Ukrainian domestic output combined with an increase in imports. In the service sectors we see increased value of imports in **recreational, entertainment, cultural and sporting activities and social activities** by 239% and 276% in SR and LR of the extended FTA respectively. For **financial services nec and insurance** the model outcomes are implausibly high which is due to the very small base upon which the trade measures are modelled. In case of a small base, any absolute increase (or decrease) will have a very large relative (%) effect. We therefore opt not to present these results.

Employment changes for high- and low-skilled workers per sector

The last effect we look at for each specified sector is the change in employment for high- and low-skilled workers. Any 'large' change in employment signifies a more than 2% change in the production structure of the Ukrainian economy, making it more likely for the sector to be analysed for economic, social and/or environmental impacts. We model the impacts for high- and low-skilled workers whereby both categories are defined as done by the International Labour Organisation (ILO) whereby the high-skilled workers are managers and administrators and professionals. Low-skilled workers are trade persons, salespersons, clerks and personal service workers, plant and machine operators, labourers and drivers as well as farm workers (Dimaranan and MacDougall, 2002).

In general we observe small differences between changes in employment for high- and low-skilled workers. As could be expected, in sectors like **agriculture**, where the employment opportunities are decreasing, the decrease is larger for the low-skilled than the high-skilled workers. Employment in the **financial services nec, and insurance** sector on the other hand decreases more (%-wise) for the high-skilled than the low-skilled workers. Overall we see a trend that employment changes for high- versus low-skilled workers are related to the skills-level required to work in this sector. Also we note that from the general macroeconomic analysis we observed that wages of the low-skilled workers rise more relatively than do wages of high-skilled workers.

The largest negative employment impacts, measured as the percentage change in the wage bill (i.e. percentage change in employment) are to be found in the **processed rice and sugar sector** (-8.2%, -6.0% for the extended FTA) and the **financial services nec, and insurance sector** (-18.8%, -15.8%, -9.2% and -6.9% for both scenarios in short and long run). Also for the Extended FTA the **transport nec, water transport and air transport sector** shows a decrease in employment (-4.7%). Also **minerals nec** shows a

short-term negative employment effects beyond WTO. Other sectors show – when correcting for the WTO accession scenario – increases in employment: **bovine cattle, sheep and goats** (9.8% and 12.5%), **vegetable oils and fats** (9.3%, 12.3%), **wearing apparel** (189.7%, 206.5%), **leather products** (24.%, 30.9%), **chemicals, rubber and plastic products** (8.8%, 11%), **electronic equipment and machinery equipment** (18%, 21.1% for SR and LR in the extended FTA respectively). Similar but slightly different changes apply to the low-skilled workers % changes.

In absolute value of employment change – that is an increase or decrease in the number of people working in a sector, i.e. we combine the percentage changes with the absolute levels of employment in each sector to calculate the changes in number of persons employed. The results are presented in Annex 10. We see that for skilled workers (that are a much smaller part of the total working population than unskilled workers), only the sector **financial services and insurance** has a negative impact larger than 15.000 jobs disappearing. With respect to the unskilled workers the effects are quantitatively much larger due to the fact a much larger share of the population is classified as ‘unskilled’ (93.8%) according to our definition. Negative – and quantitatively significant – employment impacts occur but it depends on whether or not we take the WTO into account or not. If we do not, for example the **agricultural sector** actually creates a lot of employment in the years to come (136.499 jobs). Jobs are lost in **coal, oil and gas** as well as in **minerals nec** sectors. Also in **transport nec**, jobs are lost in the short- and long run (-177.000 and -80.000 respectively). In most sectors, however, there is a strong increase in employment: **bovine cattle, sheep and goats, horse meat products, food products nec, textiles, wearing apparel, chemical, rubber and plastic products, ferrous metals, metals nec, metal products, motor vehicle parts, electronic equipment; machinery and equipment, construction and trade**, all gain over 15.000 jobs per sector each.

The presented results under this heading need to be interpreted with caution. Because the CGE model assumes full employment at all times, there are no increases or decreases in the level of employment. Instead there is a re-allocation of personnel inter-sectorally without affecting the total. Though not entirely realistic, this is a consequence of the model specifications used.

6.4.3 Summary of cumulative effects

In order to check for cumulative effects we carried out the following analysis. First of all we looked at scenario 1 (the extended FTA) overall – and at the effects. Secondly, we looked at the effects the individual measures had: tariff changes, standard cost changes, barriers to trade in services changes and border cost changes. Any difference between the sum of the individual measures and the overall scenario outcomes would be ‘interactions’ between the individual measures. When carrying out this analysis, we however ran into the limitations of running a non-linear CGE model while assuming additivity of the individual trade measures would work. The summations did not yield any reliable or significant results, nor could they be interpreted as estimations of the individual trade measure.

6.5 Tables summarising modelling results

In Annex 24, we summarise the CGE modelling outcomes in the various tables. For each of the tables we provide the effects for Ukraine, for the EU-27, for Russia and for Rest of the World (ROW).

Given the defined three scenarios (including WTO), the tables provide the following information, based on the 2004 base scenario:

- Summary of macroeconomic changes (Table 24.1)
- Price changes (Table 24.2)
- Percentage changes in output (Table 24.3)
- Changes in absolute value of output (including WTO and on top of WTO) (Table 24.4)
- Changes in exports (Table 24.5)
- Changes in imports (Table 24.6)
- Employment changes (Table 24.7)
- Absolute value of employment changes (including WTO and on top of WTO) (Table 24.8)

Because of the uncertainties regarding the WTO accession of Ukraine, we have taken the year 2004 as the base year, executed the CGE study for the WTO accession as well as on the two scenarios. This implies that the presented results of the scenarios need to be read as WTO inclusive – which is exactly what the Terms of Reference require us to do.

6.6 Gravity estimates on FDI in Ukraine

This part of the report is devoted to the estimation of the impact of an FTA between the EU and Ukraine on potential FDI inflows into Ukraine. An important aspect of trade linkages is involvement or potential involvement in free trade agreements, customs union and supra-national economic structures, such as the European Union. Third party countries may invest into such regions to avoid tariffs on exports, while the enhanced growth and trade from the economies of scale of integration provide a demand stimulant to FDI. Within the EU context, the prospect of an EU-Ukraine FTA might be viewed by potential investors as reducing country risk; both because it serves as an external validation of progress in the reform process, and because it signals higher macro-economic, institutional, legal and political stability. In our econometric work, we therefore analyse the indirect impact of EU-Ukraine FTA via business-environment risk on FDI in Ukraine.

We make our forecasts based on a gravity model, which we estimated for 12 developing/transition countries (countries-recipients) and 31 OECD countries (countries-donors). For a fuller description of the model please refer to Annex 27. FDI inflows into a host country are modelled to be a function of both source and recipient countries' GDP and geographical proximity; coupled with traditional FDI determinants like labour costs, a degree of openness of the economy, the friendliness of business environment and the WTO membership.

Our key matter of interest in this analysis is the impact of a business environment index (BEI), which enables us to estimate the impact of an FTA with Ukraine at a later stage. We find that the Economist Intelligence Unit (EIU) business environment index plays an important part in explaining bilateral FDI flows in our sample. The index ranks countries (with lower values standing for less friendly countries) according to 10 aspects of business environment, including market opportunities, macroeconomic environment, political environment, infrastructure, private enterprise policy, labour market, tax regime, financing, foreign trade and exchange regime, and policy environment for foreign investment.

The results of our model are consistent with the conclusions of other studies analysing determinants of FDI in transition/developing countries. In line with previous research we find the gravity factors (GDP of home and host countries, and distance between the two countries) to have a significant effect on FDI flows. We also find the level of the domestic debt, degree of country's openness and labour costs to affect significantly FDI flows. The impact of the EIU business environment index is significant and positive, which is in line with our expectations.

The estimated coefficients are in line with the estimates in the comparable studies, CEPS (2002) in particular. CEPS estimated an impact of FTA with Russia on FDI using the same methodology as applied in this study to find out that one percent increase in the BEI results in 1.23% increase in FDI flows to Russia. According to our estimates for Ukraine, one percent increase in the value of the Business Environment Index (BEI) will result in 1.38 percent increase in the amount of FDI inflow into Ukraine. This is a considerable increase given the model is estimated in flows and this increase is expected to happen every year.

As was stated above, the impact of an FTA with Ukraine is approximated by the impact of change in its business environment to the level of CEE countries. We believe this is a reasonable assumption as a deep FTA will ultimately require (and trigger) a significant improvement in the institutional and political climate in Ukraine. The Ukrainian government will only be willing to engage in FTA if it is set to significantly benefit from it (i.e. have free access to the EU market). However, the EU should also be able to benefit from the FTA with Ukraine as well – not only the EU companies should have free access to the Ukrainian market, but also the Ukrainian government should provide corresponding institutional and legal systems that will facilitate their operations in Ukraine. And these systems should be of standard that is very close to the one at home for the companies to have enough confidence to conduct business in Ukraine. Hence, we see that the dual pressure (from Ukraine to the EU and back) should prompt the Ukrainian government to conduct deeper institutional and political reforms.

Hence, we estimate a change in FDI inflows to Ukraine considering its business environment improving by 10%, 20% and 30% respectively. Correspondingly, an increase by 10% in Ukraine's EIU business environment index (from 4.6 to 5.06) brings its business quality to the level of Kazakhstan, whereas an increase of 20% (from 5.06 to 5.52) corresponds to Ukraine being perceived by international investors nearly as business friendly as the Russian Federation. The largest improvement considered in this study is 30% (BEI value of 5.98). It sets Ukraine's business climate above that of

neighbouring Turkey, yet it is still quite far away from that of the Eastern European advanced transition economies like Poland, Slovakia and Hungary. Please see Table 6.8 for corresponding values of the EIU Business Environment Index.

Table 6.8 EIU Business Environment Index, 2005

Country	2005
Brazil	6.50
Bulgaria	6.00
China	5.70
Czech Republic	7.10
Hungary	6.80
India	5.50
Kazakhstan	5.10
Poland	6.80
Russia	5.50
Slovakia	6.90
Turkey	5.70
Ukraine	4.60

Source: Economist Intelligence Unit

As a result, the amount of potential FDI inflows into Ukraine are estimated to increase by 14%, 29% and 44% respectively (see Table 6.9). In absolute terms it means that annual FDI flows into Ukraine will increase from the current level of USD 9,137mln (OECD countries, 2003) to USD 9,554mln (increase of USD 417mln) if the business environment improves by 10%, and to USD 9,607mln (increase of USD 470mln) and USD 9,662mln (increase of USD 525mln) if the business environment improves by 20% and 30% correspondingly. This is, of course, a lower bound estimate for FDI as it does not include potential changes in other variables (which have a sizeable impact also), like, for example, GDP, GDP per capita etc.

Table 6.9 Estimated changes to FDI flows to Ukraine

BEI change	% increase in FDI flows to Ukraine	Estimated FDI flows, OECD countries, USD mln
10%	14	417
20%	29	470
30%	44	525

FTA impact on stock of FDI

Furthermore, we have estimated an impact of the FTA with the EU on the stock of FDI in Ukraine until 2020. According to our estimates, FDI stock will increase from USD 17,311 mln in 2005 (NBU) to USD 19,911 mln; 36,407 mln and 140,472 mln in 2020 or 85%, 110% and 612% increase of the current value according to our three BEI improving

scenarios (please see Table 6.10).³⁸ Again, this is a lower bound estimate of an increase in FDI stock due to the impact of the EU-Ukraine FTA only (not considering changes in the GDP and related variables).

Table 6.10 Estimated changes to FDI stock, Ukraine, 2020

BEI change	% increase in FDI stock in Ukraine	Increase in FDI stock, OECD countries, USD mn
10%	85	19911
20%	110	36407
30%	612	140472

Thus, a free trade agreement with the EU is likely to have a substantial impact on FDI inflows into Ukraine. If economic, institutional and political reforms are entrenched and enhanced (resulting in the overall business environment improving to the level of neighbouring CEE countries), Ukraine will enjoy a sizeable increase in FDI inflows. It is obvious that the level of domestic reform has a significant impact on the improvement of the business environment and, as a result, on FDI inflows between Ukraine and the EU. Hence, a free trade agreement with the EU should not be regarded as a substitute for domestic reforms, but as a complement and, as a matter of fact, a consequence of internal institutional and economic development of Ukraine.

The increased projected FDI flows, are expected to have an additional effect on trade flows, especially intra-firm and intra-industry trade flows in sectors that experience economies of scale like food processing and manufacturing industries. At a later stage we will elaborate further on this matter.

³⁸ These estimates are obtained assuming that FDI inflows increase annually according to our estimates starting 2005 until 2020.

7 Screening & Scoping

7.1 Overview of screening

The purpose of screening is to identify those sectors or issues that are considered to be worth examining further to find if there is a potential causal link to a sustainability impact. In order to carry out the screening exercise, we have gathered the information in Chapter 3 and carried out the CGE modelling in Chapter 6. There are several criteria for selecting a sector or activity as explained in the Inception Report as well as in the Handbook (2006). They will each be discussed a little further on.

The evaluation of the overall macroeconomic situation and sectors that are of major importance to the Ukrainian economy was made in Chapter 2. The evaluation of the initial economic effects of the trade agreement is made through the CGE framework, namely the Multi-Region Trade Model model based on earlier work by Harrison, Rutherford and Tarr (1996a). Making use of utility and profit maximisation, the multi-region trade model is a tool for analysing market- as well as inter-market transactions. The important characteristic of the model is its ability to quantitatively assess the impacts of economic policy changes on the industrial structure, resource allocation, income allocation, and other items through changes in relative prices and the changes in the behaviour of economic entities in response to relative price changes.

On the basis of the overall macroeconomic situation and the macroeconomic CGE analysis, it is possible to determine which sectors are likely to be the most economically affected by the trade agreement. If some sectors are affected in terms of their production structures, there may be indirect economic, social and/or environmental effects. In the latter case, a screening exercise may also be worth conducting.

The screening exercise is conducted on the basis of the results of the macroeconomic model. In this part, we identify those sectors where a sustainability impact is likely to occur. In-depth assessments concerning these sectors have then to be undertaken. The scoping exercise aims to determine the objectives and methods of the in-depth assessment studies that are intended to produce the information required for the social and environmental assessment of potential sustainability impacts. Its basis is the outcome of the screening exercise, which has established a link between the trade agreement or other policy change under study and economic consequences in the areas it considers to be of interest.

In order to identify the sectors and horizontal issues, which should be studied further, a large number of sectors and horizontal issues are assessed with the screening criteria. For the screening the sectors and horizontal issues are partially grouped. The screening

criteria provide the first identification of the potential sustainability impacts that result from the trade measures or measures that are related to the sector/issue. The screening criteria were selected in order to get as much valuable information as possible for the selection. The selection sectors and horizontal issues for further analysis will take place at the end, taking into account all of the criteria. Five sectors will be selected for further study out of a total of 12 sectors in the screening part. Similarly there will be 3 horizontal issues selected out of a total of 9 issues.

The screening of the five sectors and three horizontal issues takes place, making use of the following criteria:

- a. The (macroeconomic) importance of a sector/horizontal issue for Ukrainian – EU relations (e.g. through share of GDP, employment);
- b. The size of the expected impact of the FTA within the context of the EA between the EU and Ukraine;
- c. The expected economic, social and/or environmental impact of the sector for the EU and Ukraine;
- d. The comments and feedback from the consultations with key stakeholders and civil society;

First criterion: The macroeconomic importance of the sector/horizontal issue for EU-Ukraine relations measured by output, employment, growth and trade shares.

The first criterion that will be used is measuring the importance of the sector/horizontal issues. As an indicator of the importance of the sector/horizontal issue, we will use the share of total output created by the sector, number of people employed in the sector, recent growth rates and share of total trade. The values are checked for both the EU area and for Ukraine. For example a sector with big output and employment share can be considered important to study further even if the effects of the EA-FTA seem to be small in percentage for that sector as even small percentage changes can have then relatively large effects.

Second criterion: The projected sustainability impact of the trade measures in the FTA, calculated with the CGE model.

The results of the CGE model will be used as a criterion as well for the selection of the sectors/horizontal issues to be studied further. If the expected impact of the trade measures in the FTA will be large in some sectors in either the EU area or in Ukraine according to the models results, it can be an indication that the effects in that specific sector/issue should be studied in detail. The CGE model will calculate the impacts for both areas and all the effects will be considered during the selection.

Third criterion: The expected economic, social and environmental impact on the sector/issue.

The expected impacts, based on the CGE model and other information, on the different sustainability indicators will be assessed for both the EU and Ukraine. In the selection of the sustainability indicators, coverage, exclusivity and balance of the indicators was used as selection criteria. Every theme of sustainable development has many core indicators (i.e. sub-themes) in order to guarantee this coverage. The core economic indicators include real income, fixed capital formation, trade and government finance. The social effects are assessed for poverty, health, education, gender equality and labour issues. The

environmental effects are assessed for atmosphere, land, biodiversity, environmental quality and fresh and wastewater. Large estimated changes in any of the sustainability indicators will be taken into account in the selection process.

Fourth criterion: The comments and feedback received from stakeholders and civil society through the consultation process.

The consultation process and the comments and feedback from different key stakeholders and civil society are considered as a very important source for information as well. All of the information gathered via the consultation process is taken into account, when choosing for the sectors and horizontal issues that are studied in detail during the in-depth studies of the project. Especially the comments of key stakeholders of the studied sector from both the EU and Ukraine will be valued.

7.2 Sustainability impact indicators and dimension

When screening for a likely sustainable economic, social and/or environmental, the following Table 7.1, summarises the variables and specific indicators this study has taken into account.

Table 7.1 Sustainability impact indicators

Area	Core Indicator	Specific Indicators
1. Economic	a) Real Income b) Fixed capital formation c) Trade	GDP per capita, Net value added, consumer effects, effect on prices, variety of goods and services Gross fixed capital formation, Private and public capital formation, FDI Balance of trade in goods and services, Volume of trade in goods and services, Terms of trade
2. Social	a) Poverty b) Health c) Education d) Labour issues (incl. Employment and decent work) e) Equality	People living under poverty line, GINI index, regional effects Life expectancy, Mortality rates (maternal, child), Access to health services, sanitation, nutritional levels Primary, secondary and tertiary enrolment rates, literacy rates Unemployment, Productivity and quality of work, Rights at work, Employment opportunities, wage effects, self-employment Gender equality in employment and employment opportunities, gender equality in education, social protection, social dialogue
3. Environmental	a) Atmosphere b) Land	CO2 emissions, air quality, quantity of dangerous chemicals in atmosphere (dangerous to ozone layer or to humans) Land use in agriculture, forest, desertification, urbanization, natural resource stocks

Area	Core Indicator	Specific Indicators
	c) Biodiversity	Number of species, protected areas, ecosystem
	d) Environmental quality	Waste management, energy resources
	e) Fresh and waste water	Quantity of water use, Access to safe drinking water, Water quality, Quantity of waste water, Cleaning of waste water, Water supply

We will screen the horizontal issues on the basis of hypotheses. From the impact of the FTA on the issue a causal chain is presupposed through a change in the production structure to a potential social or environmental sustainability impact. If there is no impact of the FTA on the horizontal issue that leads to hardly any change in the production structure or production methods we assume that there will be no effects on social and environmental sustainability. In this case the horizontal issue or area will not be selected for further study.

7.3 Screening for major sectors in the EU-Ukraine trade relationship

Looking at the first criterion, we have to identify the major sectors in the EU-Ukraine trade relationship. As mentioned in the inception report we look at the share of sectors in total Ukrainian output as well as the share of employment of each sector in total Ukrainian employment. Based on these two criteria, we can make a rating of most important sectors. In order of importance these are:

Table 7.2 Most important sectors in Ukraine (employment share in Ukrainian output)

Nr	Sector	Percentage share of sector in Ukrainian employment
1	Agriculture, Fisheries, Forestry	18.34
2	Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	14.42
3	Transport nec, Water transport, Air transport	8.39
4	Trade	7.55
5	Construction	5.78
6	Ferrous metals, Metals NEC	5.43
7	Coal, Oil, Gas	4.59
8	Business services nec, Renting	4.14
9	Electricity	3.29
10	Electronic equipment; Machinery and Equipment	2.94

Table 7.3 Most important sectors in Ukraine (output share in Ukrainian output)

Nr	Sector	Percentage share of sector in Ukrainian production
1	Agriculture, Fisheries, Forestry	10.70
2	Trade	9.56

Nr	Sector	Percentage share of sector in Ukrainian production
3	Ferrous metals, Metals NEC	9.11
4	Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	8.07
5	Transport nec, Water transport, Air transport	6.95
6	Petroleum, coal products	5.11
7	Business services nec, Renting	4.83
8	Construction	4.68
9	Electronic equipment; Machinery and Equipment	3.78
10	Chemical, rubber, plastic products	3.42

The sectors **agriculture, forestry and fishing, Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal, transport nec, water transport, air transport, trade, construction** as well as **ferrous metals and metals nec, business services nec and renting, and electronic equipment and machinery equipment** are present in both columns and thus are of significant importance for the Ukrainian economy both in terms of output and in terms of employment.

Within the agricultural sector, various subsectors can be identified. These are presented in Table 7.4.

When screening these for output and exports/imports impact, we find that cereals, wheats & grains, meat, edible meat offal, animal & vegetable fats, fruits and nuts and beverages, spirits and vinegar are important agricultural and food subsectors.

Table 7.4 Agricultural sub-sectors and their relative importance

		Exports, thnd. USD	% in total exports	% to 1-24 group exp	Imports, thnd. USD	% in total imports	% to 1-24 group imports
01	Live animals	440.61	0.0%	0.1%	12481.56	0.13%	1.94%
02	Meat and edible meat offal	16.53	0.0%	0.0%	60249.54	0.63%	9.37%
03	Fish and crustaceans, molluscs and other aquatic invertebrates	1953.47	0.0%	0.3%	21079.37	0.22%	3.28%
04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, nec	21227.58	0.2%	2.8%	16223.28	0.17%	2.52%
05	Products of animal origin, not elsewhere specified or included	10378.23	0.1%	1.4%	1104.46	0.01%	0.17%
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage	51.74	0.0%	0.0%	12907.34	0.13%	2.01%
07	Edible vegetables and certain roots and tubers	22013.6	0.2%	2.9%	3197.3	0.03%	0.50%
08	Edible fruit and nuts; peel of citrus fruits or melons and watermelons	45545.42	0.4%	6.1%	6337.78	0.07%	0.99%
09	Coffee, tea, mate and spices	626.55	0.0%	0.1%	12993.59	0.14%	2.02%
10	Cereals	188977.15	1.7%	25.3%	30121.36	0.31%	4.68%
11	Products of the milling industry; malt; starches; inulin; wheat gluten	4410.34	0.0%	0.6%	12911.7	0.13%	2.01%
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds; industrial/medicinal plants	91419.58	0.8%	12.2%	18360.23	0.19%	2.85%
13	Lac; gums, resins and other vegetable saps and extracts	266.25	0.0%	0.0%	9664.9	0.10%	1.50%
14	Vegetable plaiting materials; vegetable products not elsewhere specified or included	1464.65	0.0%	0.2%	18.12	0.00%	0.00%
15	Animal, vegetable fats and oils and cleavage products; prepared edible fats; animal/vegetable wax	196057.82	1.8%	26.3%	66072.11	0.69%	10.27%
16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	7.32	0.0%	0.0%	12395.31	0.13%	1.93%
17	Sugars and sugar confectionery	8753.72	0.1%	1.2%	19212.83	0.20%	2.99%
18	Cocoa and cocoa preparations	4580.72	0.0%	0.6%	36065.8	0.38%	5.61%
19	Preparations of cereals, flour, starch or milk; pastrycooks' products	6677.79	0.1%	0.9%	7748.44	0.08%	1.20%
20	Preparations of vegetables, fruit, nuts or other parts of plants	19046.6	0.2%	2.6%	23014.08	0.24%	3.58%
21	Miscellaneous edible preparations	15933.3	0.1%	2.1%	126443.3	1.32%	19.66%
22	Beverages, spirits and vinegar	25880.42	0.2%	3.5%	13123.45	0.14%	2.04%
23	Residues and waste from the food industries; prepared animal fodder	80109.04	0.7%	10.7%	45079.08	0.47%	7.01%
24	Tobacco and manufactured tobacco substitutes	949.83	0.0%	0.1%	76470.8	0.80%	11.89%

Results Criterion 1:

Based on the first criterion, agriculture and food products, petrochemicals & chemicals, metallurgy, machinery and electronics, energy, transport, distribution services and construction are presented as having a significant impact in Column 1 of Table 7.5. As horizontal issues, SPS, technical standards for industrial products, competition policy, government procurement and intellectual property rights are of significant importance. Also based on Criterion 1, cereals, wheats & grains, meat, edible meat offal, animal & vegetable fats, fruits and nuts and beverages, spirits and vinegar are important agricultural and food subsectors.

7.4 Screening for major output and employment impacts, i.e. changes in production structure, as a consequence of the FTA

The second criterion for screening is the size of the direct economic impact, measured by output and employment impacts as a consequence of the FTA negotiations and resulting trade measures. These impacts, as shown in Chapter 3, can be measured in terms of percentage changes or in terms of absolute changes in employment and output. An additional factor to take into account is the fact that we have modelled two likely outcomes of the FTA negotiations: the extended FTA and a more limited FTA. For the screening purpose and focus of this study we will present the most extended FTA effects only (for the outcomes on the other scenario we refer to the Tables in Annex 24) because it has the most extreme outcomes in terms of employment and output. The less ambitious FTA remains inside the boundaries of the extended FTA scenario, meaning its effect is in any case more limited.

Percentage changes in output

When analysing the economic impact, we find that **wearing apparel, textiles, electronic equipment and machinery equipment, leather products, motor vehicles and parts, metal products, bovine cattle e.a, vegetable oil and fats, manufactures nec** as well as **metal products, chemical, rubber and plastic products** are among the sectors with the largest positive percentage change in output while the sectors **processed rice and sugar as well as financial services nec and insurance, transport equipment and agriculture, fisheries and forestry** are among the sectors with the largest negative percentage change in output. Also aggregate investment flows are set for significant increases.

Absolute changes in output

We find that the largest absolute changes in output occur in the following sectors as presented in Annex 10: **electronic equipment, machinery and equipment, ferrous metals, metals nec, wearing apparel, metal products, chemical, rubber and plastic products, agriculture, fisheries and forestry, financial services nec and insurance and processed rice and sugar.**

Absolute changes in employment

The largest absolute changes in employment occur in the sectors as presented in Annex 24. Clearly the absolute impact occurs most among the unskilled workers. with one exception: **financial services nec and insurance**, that shows a significant decrease in

employment in absolute terms. The largest decrease in employment comes from the sectors **financial services nec and insurance** and **transport nec**. Sectors that show large employment increases in absolute terms are **electronic equipment and machinery and equipment, food products nec, ferrous metals and metals nec, wearing apparel, chemical, rubber and plastics, metal products, electricity** (long run), and **construction** (all over 15.000 jobs of employment increase).

Relative changes in employment (%)

The largest absolute changes in employment do not necessarily coincide with the largest percentage changes in employment. Some small sectors show large percentage changes but in absolute terms are not very important. For example, **agriculture, forestry and fishery** unskilled employment decreases by only 2.2% yet the absolute employment impact is over – 110.000 jobs. However, if we take the WTO as finished, this sector will again increase employment as a consequence of the FTA with +53.000 jobs.. The **processed rice and sugar** sector decreases by 8.7% in relative terms and by – 9.060 jobs only due to its much smaller relative size.

The largest relative changes in employment occur in the sectors **wearing apparel, textiles, electronic equipment and machinery equipment, bovine cattle e.a.**, as well as **leather products, metal products and motor vehicles and parts**. Also large relative – negative – changes in employment occur in **processed rice and sugar, financial services nec and insurance and transport equipment**.

Results Criterion 2:

Financial services nec and insurance, transport equipment, wearing apparel, textiles, electronic equipment and machinery equipment, bovine cattle e.a., food products, metal products, motor vehicles and vehicle parts, and processed rice and sugar are presented as experiencing significant impacts from the FTA which is summarised in Column 2 of Table 7.5.

7.5 Screening for resulting social and/or environmental impacts as a consequence of the FTA

7.5.1 Social impacts

If we combine the current social situation of Ukraine as described in section 5.4 with the output and employment changes and the characteristics of the various industries a general picture of indirect social impacts starts to emerge.

With changes in production structures in various sectors, we expect certain social impacts to occur. First of all, when we look at poverty, a decrease in employment and output for the **agriculture, fisheries and forestry** sector – mainly located in the already poor western parts of Ukraine – combined with an increase in production in **chemicals, rubber, ferrous metals and coal** production – mainly located in the eastern parts of Ukraine, may lead to further geographical income disparities inside the country in favour of the eastern parts. Secondly, overall for Ukraine, given the positive wage effects for the

unskilled workers we expect the FTA to contribute to Ukraine alleviating people who currently live on an income below the poverty line. Thirdly, with an expected increase in the quality of production methods to meet EU technical standards, attention to sanitary- and phytosanitary measures and conditions for employment, we imagine a possible positive effect on the health levels in Ukrainian society. Fourthly, through the FTA we expect the EU and Ukraine to agree on standards for quality of work that lead to improvement of the working conditions, especially in manufacturing industries like **ferrous metals, metals nec, chemical, rubber and plastic products, electronic equipment, machinery equipment and petroleum and coal products**. The improvement of the quality of work is the more important because most of the aforementioned sectors are expected to increase upon negotiating an FTA. Even though the CGE model assumes full employment, we imagine that in the short-run for the sectors with large expected negative changes in employment, social issues related to unemployment will become more pronounced and need to be dealt with. This involves sectors like **agriculture, fisheries and forestry, financial services nec and insurance, transport, processed rice and sugar and transport equipment**. Finally, with respect to gender equality, an increase in the wearing and apparel, leather and textiles sectors will lead to larger employment of women in Ukraine – since these have been traditionally the sectors where many more women find jobs than men.

7.5.2 Environmental impacts

If we combine the current environmental situation of Ukraine as described in section 5.5 with the output and employment changes and the characteristics of the various industries an general picture of indirect environmental impacts starts to emerge.

Several air polluting industries like **electronic and machinery equipment, metal products, ferrous metals and metals nec, chemical, rubber and plastic products** are expected to grow as a consequence of the FTA, both in relative and in absolute terms. This will have a negative impact on air emissions (CO₂, SO₂, small particles) and makes it likely these industries will account for more than 40% of air emissions in the future unless action is taken related to the methods of production.

An increase in the use and production of energy (**petroleum and oil products**) will lead to an increase in the use of coal for the production of **electricity** which will also have an environmental impact, both for the quality of the air and for the use of energy resources.

With **agriculture, forestries and fishery** and **processed rice and sugar** among the sectors that will shrink most, both in terms of employment and in terms of output as share of Ukrainian GDP, there will be environmental impacts via land use in agriculture and natural resource stocks.

Overall, if the (extended) FTA leads to a relative increase in the share of polluting industries, there will be negative environmental consequences that need to be analysed and discussed at a later stage.

When looking at the agricultural subsectors, we see that cereals, grains & wheat has an important impact socially and environmentally (land use) and so do the intensive

industries like meat & edible meat offal, sugar, fruits and nuts, beverages, spirits and vinegar, animal & vegetable fats, and tobacco and tobacco substitutes.

Results Criterion 3:

Agriculture and food products, petrochemicals and chemicals, metallurgy, automotive, motorvehicles, machinery and electronics, energy, transport, distributions services, construction, trade in services, and environmental goods/technologies all have significant social and environmental impacts because of a change in production structure. This is presented in Column 3 of Table 7.5.

7.6 Screening based on consultation with key stakeholders and civil society

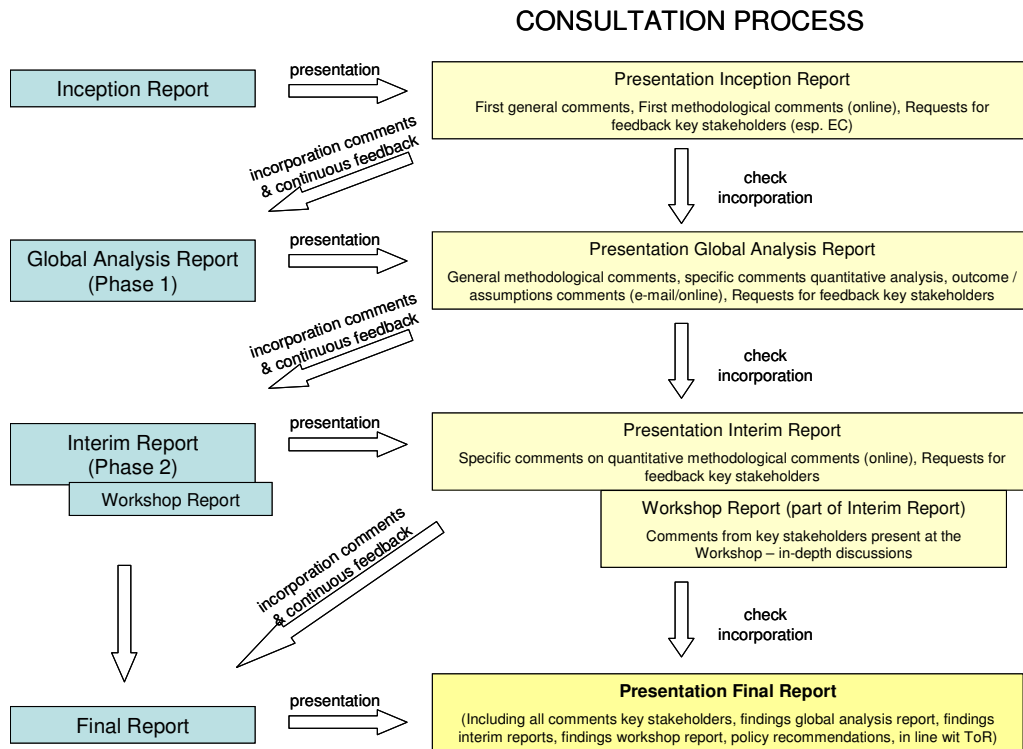
The consultation process is part of the Trade Sustainability Impact Assessment (Trade SIA) and it is conducted in parallel to the other parts of the project. The purpose of the consultation process is to increase transparency, involve key stakeholders and the general public, support the consultants, improve the recommendations and increase credibility and legitimacy of the Trade SIA. The consultation happens via the collection of feedback from TSIA EU Ukraine stakeholders, dissemination of information and reports, engaging in two-way dialogue, organising of meetings and continuous dialogue between and with in the consortium and all stakeholders. Figure 7.1 below shows the consultation process in line with the other parts of the project and how the comments are incorporated in the process. All received information and feedback is gathered and processed and the consultation of stakeholders influences e.g. the selection of sectors and horizontal issues to be studied in-depth as well as mitigating and enhancement recommendations.

A large number of key stakeholders are contacted and invited to take part in the consultation process. We have made the list of contacts as exhaustive as possible to guarantee a balanced coverage of all parties. Therefore it includes for example branches of the Ukrainian government, a large number of European Union Institutions, civil society, producer and consumer organisations and regional experts. The general public is also encouraged to take part in the consultation process. Civil society in this context includes business people, academics and different NGOs (environmental and social NGOs in Ukraine and in the EU). A database is created to manage the consultation process and to help to process all the received comments. On the 29th of June 2007, a public meeting was organised with civil society in Brussels and a one-day Workshop for Ukrainian stakeholders on the 9th of July 2007. The debates, discussions and constructive comments are included in this report and a separate workshop report will be published as part of the TSIA Methodology.

In addition to the contacts with the key stakeholders, other tools are used as well for the dissemination of information, collection of feedback and keeping up of the dialogue. First of all, the website www.trade-sia.ecorys.com is operational for the collection and dissemination of information. All important information from the consortium to stakeholders as well as all the reports are published on the website and the website has a feedback form for the comments of stakeholders and other interested parties. The website has also an online forum for online conversations between the different stakeholders of

the Trade SIA. Many meetings with different stakeholders are also organised. These include e.g. the working meetings with the Commission, working meetings with the Ukrainian government and key stakeholders, public meetings in EU and meeting with civil society in Ukraine. A workshop is organised in Ukraine on 9th of July for key stakeholders.

Figure 7.1 Consultation process



The main conclusions and points from our engagement with key stakeholders and civil society are the following points – the deduced sectors/horizontal issues can be found back in Column 4 of Table 7.5:

- How the EU trade barriers are modelled – and whether they are reduced symmetrically with Ukrainian tariffs or not;
- How trade between Ukraine and Russia is modelled – is this through an FTA or via other means;
- More clearly present aggregate statistics on changes in output, exports, imports, prices etc. otherwise it's difficult to judge on the overall FTA effects;
- How are the effects on agriculture and given the 'black soil' in Ukraine, what potential does the agricultural sector and its sub-sectors have? Especially with respect to cereals, sugar and derived products.
- Clearly think of the transport sector – as an enabling industry – and its effects on the Ukrainian economy;

- What are the changes in trade volumes with the EU? Not just with the rest of the world in general. Currently results on overall changes of export and imports are presented, but also changes in Ukraine-EU trade are needed.

For a more detailed overview of our consultations with civil society and key stakeholders, we refer to the minutes of the Workshop report.

Results Criterion 4:

During the public meeting as well as during the Workshop in Kyiv, the emphasis by civil society and key stakeholders, taking into account questions and comments, including explicit mentioning of sectors and issues, wants the study to look at agriculture and food products, metallurgy/steel, automotive, motor vehicles, machinery and electronics, energy, strongly suggesting to look at transport, telecom and environmental goods & technologies. These – as well as competition policy, SPS and technical standards – have been noted down and are presented as having a significant impact in Column 4 of Table 7.5.

7.7 Final sector and horizontal issue selection

Having worked through the four screening criteria for sectors specified in as much detail as possible and horizontal issues as taken from the ToR, we can now summarise and select the sectors and horizontal issues of importance for the negotiations of this FTA..

Regarding the sectors, they have been discussed above in detail. The horizontal issues have been linked to individual sectors wherever we felt the issues were important, but mostly they have been used as inputs into the CGE model where we split the trade measures into tariffs, standard costs (e.g. sanitary and phyto-sanitary measures or government procurement), border costs (e.g. customs duties, border controls) and barriers to FDI and trade in services.

In sum the screening criteria for the selection of sectors are based on the importance of the sector, the economic changes at sector level and finally the linkages between output and employment at sector level and social and environmental sustainability. The screening criteria for the selection of horizontal issues are based on the importance for the various scenarios in the FTA, the calculated effects on output and employment as well as environmental and social impacts of the horizontal issue. As mentioned before, the involvement of key stakeholders and civil society is to be carried out after the creation of this draft Global Analysis Report.

Table 7.5 summarises the findings regarding sectors and horizontal issues with respect to the pre-defined screening criteria.

Table 7.5 Screening and selection of sectors and horizontal issues

	Cr1: Importance of sector/issue	Cr2: Economic Impact (output / employment)	Cr 3: Social / environmental effects	Cr4: Comments civil society
Sectors				

	Cr1: Importance of sector/issue	Cr2: Economic Impact (output / employment)	Cr 3: Social / environmental effects	Cr4: Comments civil society
Agriculture (meat, dairy) and food products	√	√	√	√
Petrochemicals and chemicals	√	√	√	
Pharmaceuticals				
Textiles	√	√		
Metallurgy	√	√	√	√
Automotive, motor vehicles		√	√	√
Machinery and electronics	√	√	√	√
Energy	√	√	√	√
Transport	√	√	√	√
Distribution services	√		√	
Construction	√		√	
Banking				
Telecom	√		√	√
Trade in services	√	√	√	
Environmental goods / technologies			√	√
Horizontal Issues				
Investment conditions		√		
Sanitary- and Phytosanitary measures	√	√	√	
Technical standards for industrial products	√	√	√	√
Government procurement	√	√	√	√
Competition policy	√	√	√	√
Intellectual property rights	√		√	

Based on the above Table that summarises our screening criteria – conditional upon feedback from civil society – we propose to analyse the following sectors and horizontal issues:

Selected sectors

The largest absolute changes in employment do not necessarily coincide with the largest Sectors:

- Agriculture (split out into subsectors cereals, wheats & grains, meat, edible meat offal, sugar, animal & vegetable fats, fruits and nuts and beverages, spirits and vinegar)
- Metallurgy/steel
- Machinery and electronics
- Energy
- Trade in services (split out into subsectors transport, distribution services, telecommunications, financial services)

Selected horizontal issues

- Technical standards for industrial products
- Government procurement
- Competition policy

Having selected the sectors and horizontal issues for further research, we now turn to the scoping part in order to determine the objectives and method for further research of the selected sectors and horizontal issues.

7.8 Overview of scoping

The evaluation of the initial economic effects of the trade agreement is made through a Computable General Equilibrium (CGE) framework. This CGE analysis has a nearly comprehensive coverage of the economic impacts. The Screening exercise is subsequently conducted on the basis of the results of the macroeconomic model. In the Screening part the sectors and horizontal issues for further research are selected.

The Scoping exercise then aims to determine the objectives and methods of the in-depth assessment studies of screened sectors and horizontal issues that are intended to produce the information required for the social and environmental assessment of potential sustainability impacts. As said, the basis of the scoping exercise is the outcome of the screening exercise, which has established a link between the trade agreement or other policy changes under study (e.g. WTO accession) and economic consequences in the areas it considers to be of interest.

7.9 Sectors

As part of the first part of the study, we have extensively scoped every sector and horizontal issue for impacts and important issues. In this section, we present a summary of those findings.

7.9.1 Agriculture and food processing

Ukraine is endowed with natural resources which creates a good basis for the potential development of the agricultural sector. Over 40 million hectares of land could be used for crop production with more than 50% of the area consisting of high quality chernozem soils ('black earth'). The favourable resource environment defines the role of the sector within the Ukrainian economy.

For agriculture, we need to look carefully at the economic impacts (output and employment) that involve large numbers of unskilled workers in areas that are already among the poorest in Ukraine. Next to the real income effects, we need to look at labour issues, ie. the social impact of unemployment, decent work and wage effects. Also horizontal measures of SPS and technical standards in agricultural production – that are likely to be part of the FTA – will have to be further investigated. Environmentally, effects on the production structure of agriculture may have effects on the land use and natural resource stocks. In more detail we have to look at the identified sub-sectors with respect to employment effects, technical standards, including SPS.

For the food industry the main issues to be covered are technical standards (quality in health and safety) as well as reductions in border costs. Increases in production are already under way but need to be continued further. Next to the direct issues, the popularity of the food industry with foreign and domestic investors also warrants a detailed analysis regarding FDI and barriers to FDI. The food sector is closely related to the agricultural sector since the former is a downstream industry of the latter. Also the ISIC definition quickly classifies matters as food products instead of agriculture. This is why we propose to analyse both the food as well as agricultural sectors together in more depth.

7.9.2 Metallurgy/Steel

Metallurgy is a key sector of Ukraine's industry. Metal is the most important export article of Ukraine and its production is an important input factor for machinery and metalworking industries. In 2005 Metallurgy and metal processing contributed with 32.6 percent to total exports. It produced 5.1 percent of GDP while employing 3 percent of the working population.

Given the significant impact of the metallurgy sector on the Ukrainian economy and its importance for EU-Ukrainian trade relations, we propose to analyse this sector further. Though several obligations will be dropped upon Ukraine joining the WTO, several important issues remain. The metallurgy sector receives significant subsidies and shows large anticipated impacts from the FTA in terms of increases in output and employment. Also the metallurgy sector is one of the more polluting ones which may warrant an environmental impact assessment. Social impacts focus on poverty reduction, and mostly labour issues like productivity, upgrading the production facilities and inflow of FDI. The latter means we investigate the barriers to trade in services and FDI effects. This is why we propose to select this sector for deeper analysis.

7.9.3 Energy

The energy sector comprises the production and distribution of electricity, heat and gas³⁹. This sector can be identified as significant under economic criteria, because its contribution to GDP and gross output in 2005 was at 4.2% and 3.5% respectively. The importance of these activities is also highlighted in terms of national security. In total production sold by the sector⁴⁰, electricity generation and distribution take a major share of 85% (electricity production - 27%, and distribution at 58%), gas and heat account for only 9% and 6% respectively.

³⁹ Under 'gas' we mean gaseous fuel

⁴⁰ The volume of products sold, UAH

The energy sector is highly sensitive to environmental sustainability issues, because 45% of electricity is produced in Ukraine by thermal power stations, which together with heat producers are one of the largest emitters of CO₂. The major reasons are the high level of equipment depreciation and outdated networks, which result in heat and electricity losses. Moreover, the energy sector is of strategic importance for Ukraine but also – in terms of energy throughput – for the European Union. Next to the strategic importance, the FTA also suggests considerable impacts in terms of output and employment changes for the energy sector. We propose to further analyse the sustainability effects in the next part of this study, including the environmental and social effects of improvements in production coupled to a larger energy sector.

7.9.4 Machinery and electronic equipment

Machinery construction plays a vital role in the economic development of any country because it is an industry that produces the intermediate parts needed for final goods production. Therefore, machinery construction has a direct influence on the development of other sectors of the economy.

Next to a thorough analysis of the economic impacts in terms of employment, we also envisage the large expected changes in the production structure to have social sustainability effects (employment, quality of work and productivity effects) as well as environmental effects – this sector has an effect on the atmosphere and environmental quality (energy resources). Improvement of productivity and means of production can have sustainable development effects while generating growth in parallel. This is why we propose to select this sector for deeper analysis.

7.9.5 Trade in services

In the last five years services accounted for 17.5% of the overall Ukrainian exports and 7.4% of total imports. Russia is the leading importer of Ukrainian services (41.8%), the EU follows next with a share of 30%. Ukraine benefits from its geographical position and provides transportation services by water, roads, railways, and pipelines which all in all account for 71% of the overall services exports. Having a huge transit potential, Ukraine aims to improve the quality of services and modernise the transport infrastructure. So far, the progress has been quite limited, however. Many long-term infrastructure projects failed to start as the government could not develop a coherent development strategy. Attempts to attract private capital for infrastructure projects were not successful because the country lacked an effective regulatory regime and long-term investment risks remain too high.

Trade in services is a key issue for the EU-Ukrainian partnership. The liberalisation scenarios show that an extended FTA will have major economic and social impacts through changes in the production structure of Ukraine. The sector financial services, nec, and insurance will shrink substantially in terms of output and employment under the extended FTA assumptions but less under the less ambitious scenarios. This will cause social sustainability issues regarding employment and employment opportunities because

the decrease will affect both high-skilled and low-skilled workers in terms of employment and wages. It also poses questions for the educational system. This is an important sector for further analysis. Also the transport sector, with its environmental impacts and communications as well as distribution services are important. To gain focus, we look at these various sub-sectors of trade in services in more detail.

The importance of the transport sector in the Ukrainian economy is beyond doubt, with Ukraine being a transit country in various ways. Also the importance of transport as an enabling industry and the focus of civil society on this issue means that – in spite of the fact we do not identify major changes in the production structure as a consequence of the FTA, we will analyse the sector nonetheless. Important factors to look at are the social and environmental impacts directly and indirectly through effects in other sectors, for the Ukrainian economy. Indirectly, an improved transport sector may lead to more cars and vehicles on the roads, but it may also lead to more public transport and more efficient cars which means that we have to look in more detail at the dominating effect on environmental impact.

Because of the large size of the distribution sector in the Ukrainian economy, its enabling character and links to other sectors that we research further. Given the expected impacts environmentally, we propose to continue with this sector. Furthermore, we will analyse the impacts of other sectors on the distribution sector and subsequent environmental and social impacts.

Given the domestic nature of the telecommunication sector, the relatively small share in Ukrainian output and employment and small expected changes in wages, output and employment with subsequent small sustainable impacts to be expected, we have decided not to propose this sector for further analysis. This, in spite of an existing social impact that relates to the unevenly spread telecommunications network which causes divisions between the cities and the countryside.

7.9.6 Mining/extraction

Ukraine is well endowed with mineral fuels, ferrous and non-ferrous minerals. Mineral fuels include coal, gas and oil; together they account for 63% of total production sold by the mining sector (coal takes 40% and gas and oil 23%). Domestic extraction provides for 25% of Ukraine's gas, 25% of oil and 82% of coal consumption. The ferrous minerals production is highly developed in Ukraine (it accounts for 30% of total mining production sold). Ukraine is the world's second-largest producer of manganese ore and the fifth-largest producer of iron ore.

Currently the sector employs 3.7% of total labour but as a consequence of the FTA under negotiation this may increase. We will not further analyse this sector because of similar environmental effects as the metallurgy sector that we research and because part of this sector – regarding fossil fuels – is looked at in the 'energy' analysis.

7.9.7 Textiles

After its dramatic decline during the 1991-99s (by more than 92% in physical terms), the role of the textile industry in the Ukrainian economy remains rather limited. In 2005, textiles (including clothing) and leather industries accounted only for 1.6% of gross output produced in the country and for 1.4% of its GDP, even though the FTA indicates large percentage changes in output and employment as likely effects. The industry started recovering since 2001 (mainly, as a result of abolishing the EU quantitative restrictions on imports of textiles from Ukraine) and revealed positive growth dynamics over the recent period. However, in 2005 its growth again slowed down to a meagre 0.3% compared to the previous year. The industries finished 2006 with a negative growth rate of 1.9% compared to the previous year⁴¹ (in particular, the textile industry decreased by 4.8%, while leather goods production grew by 10.3%). The number of employed people in these industries has been gradually declining over the last decade: only 1% of the Ukraine's labour force was employed in textile and leather industries in 2005 (1.9% in 2000).

With respect to a further analysis, we do not recommend textiles to be included. Even though we expect significant positive impacts on output and production from the FTA and textiles are subject to various issues like technical standards, border limitations and parallel market competition, the absolute size of the sector is too small to generate major impacts in the Ukrainian economy. Also compared to other industries, the anticipated environmental and social sustainable impacts are moderate.

7.9.8 Chemicals

Manufacturing of chemicals and chemical products is one of the basic industries in Ukraine. In 2005 it accounted for 2.7% of GDP and 4.1% in gross output of Ukraine. This sector is basically export-oriented – 43% of total output was exported in 2005. Besides, it takes a considerable share of Ukrainian total exports (8.9% in 2005), as well as in exports to the EU countries (7.0% of Ukraine's export to the EU in 2005).

The sector is subject to environmental sustainability issues because nitrogen production yearly generates several millions of CO₂e emissions of nitrous oxide.⁴² Gas price increases in 2006 have already pushed chemical enterprises to launch energy-saving projects, that may lead to improved environmental conditions. In spite of these arguments we propose not to further pursue analysis with respect to this sector due to the limitations of the study and the fact two other major manufacturing industries are being analysed – allowing for parallels to be drawn between the sectors.

⁴¹ This negative tendency is due to the decline of the textile production under "cut-and-made" arrangements (due to introduction of new administrative barriers), as well as from the expansion of official and unofficial imports of textile products from Asian countries into Ukraine. The increase of the official import levels was triggered by the reduction in import tariff rates for textile products undertaken by the Ukrainian Government in 2005 (in line with Ukraine's WTO commitments).

⁴² CO₂e – CO₂ equivalent

7.9.9 Construction

Construction is a medium size sector in Ukraine contributing 4.4% to GDP (2006) and employing about 0.9 million of Ukrainians which is 4.5% of the employed population. The role of the government in this area is limited. Mostly private companies are operating in this sector (98% in 2005).

The sector does not play a significant role in foreign trade. Ukraine used to be a net importer of construction services although the situation has changed recently. Currently the account on these services is almost balanced. And the volumes of both exports and imports was only 2.0% of total exports/imports of services. We do not propose to further investigate this sector.

7.10 Horizontal issues

Next to sector selection and scoping for deeper analyses regarding sector studies, the Terms of Reference also clearly specify the selection of at least three horizontal issues for further analysis. In the above sections some issues have been addressed, but below we focus on the horizontal issues specifically.

7.10.1 Government procurement

Recently the stance with government/public procurement underwent significant improvements in terms of the repeal of domestic preferences. The procurements are regulated by the Law of Ukraine “On Government Procurement of Goods, Works and Services”. The law is applied to purchases above UAH 20 thousand for services and UAH 50 thousand for works and is not related to the purchase of monopoly originated goods or services like natural gas, communal utilities etc.

Notwithstanding the recent changes in the legislation on public procurement, widespread alleged corruption and an inefficient court system are still strong impediments for equal competition. Court reform and administration reform are essential for enforcement of the amended law on procurements. The legislative amendments are still subject to pernicious regulatory hurdles and other shortcomings (especially from the institutional side).

Government procurement – on top of this – is for the EU a very important issue and further analysis on this issue needs to be carried out. The rationale for this is that having a more detailed look at the significance for EU-Ukrainian current and future bilateral trade is huge. According to the World Bank, government procurement in Ukraine amounted to US\$ 4.1 billion in 2005 (that is, roughly 5% of GDP) and this is expected to be on the low side. Of course, this figure is likely to grow hand in hand with economic development in Ukraine. Besides, some events such as the Euro2012 may boost the state's procurement activities (need to build and improve infrastructure). The FTA could provide a platform for EU companies to access Ukraine's procurement market (and vice versa), and for Ukraine to achieve budget savings through more open, transparent and competitive tender procedures. We therefore propose to further investigate this horizontal issue.

7.10.2 Competition policy

Part of economic reforms of the EU-Ukraine Action Plan (Action Plan) stipulate Ukraine's commitments to establish a *fully functioning market economy*, which implies market based price formation, effective control of state aid and a legal environment that ensures fair competition between economic agents⁴³. Furthermore, in the area of competition policy Ukraine committed itself to approximating its legislation with respect to antitrust and state aid to that of the EU⁴⁴, as well as to ensuring a credible enforcing of this harmonised legislation and maintaining well-functioning independent competition authority⁴⁵.

In its conclusions to the legal comparative analysis, the State Department for Legislation Approximation reports about the low level of approximation of the Ukrainian state aid legislation to the EU law⁴⁶. Ukraine's state aid system proves to be inefficient and not transparent; it provides additional possibilities for corruptive actions and prevents structural restructuring of the economy. Therefore, Ukrainian state aid policy is among the first that needs significant legal and policy transformations in the framework of Ukraine's European integration process. This is indispensable for establishing a fully functioning market economy in Ukraine, and enhancing efficiency and competitiveness of Ukrainian enterprises and industries. We therefore propose this issue for further study.

7.10.3 Technical standards

Compliance with universally acknowledged quality standards is crucial for producers working in both domestic and international markets. Ukraine admits to the necessity to modernise the sphere of technical regulation in line with the WTO and the EU requirements. In particular, currently Ukraine is in the process of implementing the WTO TBT Agreement and intends to ensure full compliance of domestic norms with respective international regulations by the end of the transition period envisaged by the WTO accession agreement.

Given the possible non-tariff barrier that comes from differences in technical standards and in line with the argument that with lowering tariffs technical standards may become – relatively – an even larger impediment to EU-Ukrainian trade, we propose this horizontal issue for further study.

⁴³ EU-Ukraine Action Plan, Article 2.2.

⁴⁴ Ibid.

⁴⁵ **The same commitments are repeated in the Partnership and Cooperation Agreement between the EU and Ukraine, 1998.**

⁴⁶ State Department for Legislation Approximation, 2007. Overview of the Status of Approximation of Ukrainian Legislation to *acquis communautaire* — K.: «Professional», ISBN 966-370-034-3 — 544 p. (<http://sdla.gov.ua/atachs/ADAPT.pdf>).

7.10.4 Investment conditions

Ukraine aims to create a free market economy in which private capital would play a role in the economic development of the country. In this respect, it recognises the importance of FDI and hence it seeks to create an enabling investment climate for its attraction.

However, there are certain restrictions for foreign investors in the fields of insurance, publishing, information agencies, broadcasting and the manufacture of weapons and alcoholic spirits. Mostly these restrictions are the juridical limitation concerning the rights of establishment or maximum percentage rate of the foreign investments in the statutory fund of the enterprise.

Ukraine's International Investment Framework includes multilateral and regional instruments, as well as bilateral treaties. Ukraine is a party to many multilateral and regional instruments such as the Paris Convention for the Protection of Industrial Property of 20 March 1883; the Declaration on International Investment and Multilateral Enterprises, adopted by the Council of the Organization for Economic Cooperation and Development on 21 June 1976, etc. Bilateral treaties aimed at promotion of investments include bilateral investment treaties (BITs) and bilateral treaties for the avoidance of double taxation. As of June 1, 2006 Ukraine has signed BITs with 61 countries, including 24 countries of the European Union.

Following a drop in 1999, FDI inflows to Ukraine resumed their upward trend in 2000. By 2001, FDI inflows recovered and even exceeded their 1998 level. Since then, FDI to Ukraine has been steadily growing. Cumulative FDI estimated as of January 1, 2007 equals US\$ 21,186.0 million, which is 25.4 % more than in the beginning of 2006.

Since FDI is analysed at various occasions and given the limited scope of this study, we do not propose investment conditions to be further analysed.

7.10.5 Sanitary & Phyto-Sanitary measures

An increase of food safety for consumers and reforms and modernisation of the sanitary and phytosanitary measures are the main objectives of the EU-Ukraine Action Plan (Action Plan) in this area. This is to be achieved through implementation of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures, carrying out a comparative assessment of the sanitary and phytosanitary control systems in Ukraine and the EU, implementing a legislative approximation and policy convergence in this area (namely, in regard to general food safety principles and requirements, food hygiene and food traceability), the HACCP system at enterprises and controlling bodies, modernizing the national laboratory network and appropriate methods of analysis and preparing their accreditation in compliance with ISO standards⁴⁷.

We propose to analyse this issue further with respect to the agricultural and food sectors where SPS is most useful, but not as a general issue.

⁴⁷ EU-Ukraine Action Plan, Article 2.3.1. (32).

7.10.6 Intellectual Property Rights

The legislation on intellectual property (IP) develops simultaneously with the development of technology and science. The main objective of legal regulation in this area is to secure the protection of intellectual property rights. The development and improvement of a normative and legal basis in the sphere of intellectual property is one of the principal activities on the way to strengthen Ukraine as a democratic state.

Given the above, one may conclude that Ukraine has a rather extensive legislative base in the sphere of intellectual property rights. In practice, however, this legislation fails to effectively combat piracy and counterfeiting of goods and trade marks, which continue to be widely spread in Ukraine. There remains an urgent need for better enforcement and implementation of existing laws, including the establishment of institutions in that area. The solutions of these problems in the present-day global digital environment should be based on an agreed system of national and international legal rules.

8 Agriculture

8.1 Overall description of the agriculture sector in Ukraine

Ukraine is endowed with natural resources that create a good basis for the potential development of the agricultural sector. Despite this favourable resource environment, performance of the sector remains rather weak.

At the aggregate level, agriculture is the fourth largest sector of the economy after manufacturing, transportation and trade in services. On average, the value-added from agriculture comprises more than 10 percent of GDP. The main output is created from grain, crops and vegetables in crop production plus meat in animal production (see Table 8.1). The majority of output is produced by the private sector as more than 60 percent of agricultural production is supplied by rural households.

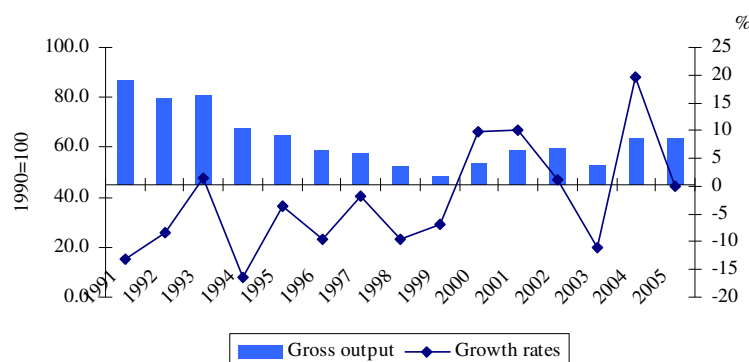
Table 8.1 Structure of gross agricultural production, relative shares (%)

Categories	1990	1995	2000	2001	2002	2003	2004	2005
Crop production	50.2	56.7	60.4	61.6	59.9	57.7	64.4	62.7
Grains	21.2	20.9	19.5	28.3	27.3	16.4	27.7	25.3
Industrial crops	7.3	7.7	6.7	5.5	6.0	7.5	6.2	7.5
Potatoes, vegetables, cucurbitaceous	10.5	16.6	25.5	21.3	20.4	25.3	23.4	22.9
Fruits, berries, grapes	3.8	3.7	4.2	3.0	3.1	4.7	3.9	4.1
Fodder crops	6.6	5.9	3.6	3.3	2.9	3.1	2.6	2.5
Other crop production	0.7	1.9	0.9	0.2	0.2	0.6	0.5	0.4
Animal production	49.8	43.3	39.6	38.4	40.1	42.3	35.6	37.3
Livestock and poultry breeding	29.0	21.3	19.2	18.6	19.3	19.4	16.2	17.2
Milk	15.4	16.9	15.0	14.5	15.0	16.4	13.7	13.7
Eggs	3.7	3.3	3.8	3.8	4.4	5.0	4.3	4.7
Wool	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Other animal production	1.6	1.7	1.5	1.5	1.3	1.5	1.4	1.6
Gross agricultural production	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: State Statistics Committee of Ukraine

The average growth rate of agricultural output for the last fifteen years was minus 3.0 percent per year. The major impediments for the development of the sector include the lack of efficiency of markets for agri-products, the monopoly of large traders, the poor quality of meat products compared to European and international food safety regulations, the inefficient subsidising system and the absence of a land market in combination with a moratorium on agriculture land sales.

Figure 8.1 Gross agriculture output, 1991-2005



Source: State Statistics Committee of Ukraine

Although performance of agriculture was rather weak, a large part of the Ukrainian labour force is still engaged in the agri-production which means changes in this sector have significant (social) impact effects. The sector officially employs over 4.5 million people, which is close to 20 percent of the employed population. Unofficially the sector probably employs a much larger share of the working population as approximately 10.7 million people within the economically active age (2006) reside in rural areas. Low sector productivity translates into low incomes. Large numbers of rural inhabitants live below the poverty level (37 percent in 2001, World Bank 2004). Traditionally, rural wages are about two times lower than the average wage for Ukraine.

Agricultural external trade decreased substantially during the initial transition parts. Despite a slow recovery in more recent years, exports still amount to less than 25 percent of gross output, while the total volume of agriculture exports constitutes a mere 12.2 percent of merchandise exports (1-24 HS) in 2006. Import volumes comprise only 7.0 percent of merchandise imports. The key export item is grain while fish and tobacco are the most significant imported products.

Agricultural exports to the EU increased by 25 percent in 2005, while agricultural imports from the EU increased by 43.5 percent. In the same year, Ukraine became a net importer of agricultural products from the EU. The main reasons for this were on the one hand increased domestic demand and on the other hand limited competitiveness of Ukrainian goods, failure to comply with international quality and safety standards (SPS) and existing legal and practical barriers to trade.

All in all, the sector is recovering after a period of decline, but it still shows major weaknesses in terms of productivity, efficiency, and product quality (including weaknesses in the quality control systems). In the remainder of this chapter we will focus on the potential impact of an FTA in the light of this overview, while focusing, where relevant, on a number of sub-sectors.

In the first part of the TSIA, a number of product categories were screened for further analysis. These fall under a number of sub-sector headings, which we will consider in more detail in this Chapter. They include:

1. Cereals, grains and oil seeds;
2. Meat and edible meat offal;
3. Sugars and sugar confectionary;
4. Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes;
5. Edible fruits and nuts, citrus fruits, water melons; and
6. Beverages, spirits and vinegar.

8.2 Overall policies and issues

Overall issues affecting trade and competitiveness of the Ukrainian agriculture and food sector, in part described above, include:

- Lack of free access to land;
- Underdeveloped infrastructure;
- Poor access to finance;
- Weak and inefficient State policy for agricultural development;
- Low quality of goods, particularly livestock;
- Long and overly regulated custom procedures;
- SPS and weakness of the quality control systems; and
- Low efficiency.⁴⁸

In addition, a number of specific trade barriers can be distinguished in the area of customs procedures and VAT reimbursements, as well as quota barriers. The specific issues and policies may differ per sub-sector. The relative importance in terms of trade of the six sub-sectors in trade with the EU is presented in Table 8.2 below.

Table 8.2 Export and import of agriculture and food products, EU-Ukraine, 2004⁴⁹

Sub-sector	Description sub-sector item	Exports to EU, USDx1000	% total exports to EU	% group* exports to EU	Imports from EU, USDx1000	% total imports from EU	% group imports from EU
2	Meat and edible meat offal	16.53	0.0%	0.0%	60,249.54	0.63%	9.37%
5	Edible fruit and nuts; peel of citrus fruits or melons and watermelons	45,545.42	0.4%	6.1%	6,337.78	0.07%	0.99%
1	Cereals	188,977.15	1.7%	25.3%	30,121.36	0.31%	4.68%
1	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and	91,419.58	0.8%	12.2%	18,360.23	0.19%	2.85%

⁴⁸ See also International Centre for Policy Studies (2007) Free Trade between Ukraine and the EU: An Impact Assessment."

⁴⁹ It must be noted that although these statistics are slightly outdated, they provide a detailed overview, specifically for trade with the EU. More recent publicly available statistics do not provide such detailed information but only provide data for all countries.

Sub-sector	Description sub-sector item	Exports to EU, USDx1000	% total exports to EU	% group* exports to EU	Imports from EU, USDx1000	% total imports from EU	% group imports from EU
	fodder						
4	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	196,057.82	1.8%	26.3%	66,072.11	0.69%	10.27%
3	Sugars and sugar confectionery	8,753.72	0.1%	1.2%	19,212.83	0.20%	2.99%
6	Beverages, spirits and vinegar	25,880.42	0.2%	3.5%	13,123.45	0.14%	2.04%

* Group of 24 agriculture and food sector categories

Source: State Statistics Committee of Ukraine

8.3 Specific descriptions and issues by sub-sector

8.3.1 Grains and cereals

Grains account for a quarter of gross agricultural production (on average) and occupy more than 50 percent of the sown area. Wheat (49.2 percent), barley (23.6 percent) and maize for grain (18.9 percent) comprise more than 90 percent of grain production (2005). Grain harvesting is among the most profitable activities in agri-production in Ukraine.⁵⁰ The value of grain crops was extremely volatile during last fifteen years and was defined by cropping area and weather conditions. Since 1990 the volume of harvested grains reduced by 25.5 percent (till 2005). Still the collected harvest amounts to 1.6 percent (2005) of world crops (38.0 million tons) and Ukraine is the sixth largest world producer of grains.⁵¹

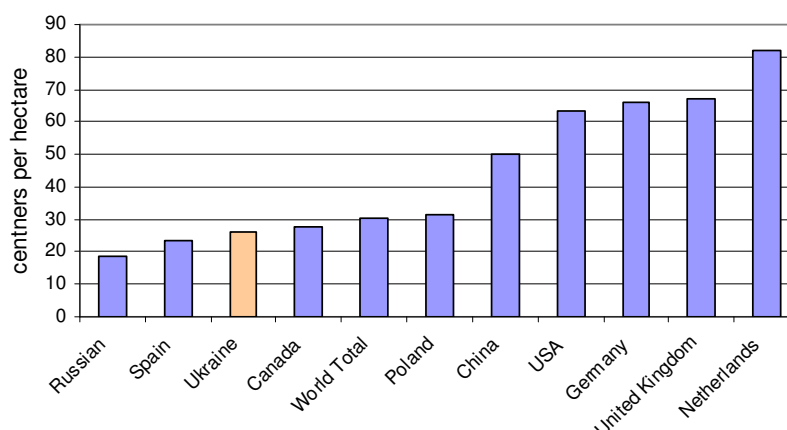
Notwithstanding this sixth place worldwide, **crop yields are relatively low** and did not exceed 30 centners⁵² per hectare (1995-2005), which is below the world average (see Figure 8.2). There is thus significant space for productivity improvements in the sector. Moreover – in line with Ukrainian interests – harmonisation towards the EU and quality guarantees in practice can enhance Ukrainian production and exports even more.

⁵⁰ For 2000-2005 average level of profitability exceeded 30 percent.

⁵¹ After China, USA, Russia, France, Canada and Germany

⁵² 1 centner equals to 100 kilograms

Figure 8.2 Grain yields, 2005



Sources: State Statistics Committee of Ukraine

Collected grains are mainly directed at local markets. Approximately 50 percent (on average) of available crops are consumed at the agriculture enterprises as fodders or sawing grains. In 2005 32.8 percent of total output was exported (up from 2.3 percent in 1995 and 29.4 in 2002). Only 20-25 percent on average is used for local consumption needs.

The major part of grains is produced by agricultural enterprises (more than 75 percent of output in 2005) while the role of households is rather limited. Farmgate prices for grain products are almost 50 percent lower than at the international markets. In 2005 the average domestic price for grain crops was about USD 85 per ton.

The grain market is regulated by the government. The key players on the market are independent traders, local administrations, Derzhreserv (state institution responsible for stabilisation fund of grains) and “Khib Ukrainy” (state company responsible for “collateral purchase” of grains). The local administrations, Derzhreserv and “Khib Ukrainy” are expected to secure food safety of the country. Local authorities and Derzhreserv create reserve funds of grains at local and state level, respectively. Interventions from Derzhreserv are used for stabilisation of grain prices while “Khib Ukrainy” is the main channel for securing stable prices and intervention on the grain markets.⁵³

The main concern within the context of WTO accession for grains is the voluntary intervention of the Ukrainian authorities in the exporting process. In order to ensure a domestic grain balance, the Authorities often introduces bans on grain exports. Specifically, the export of grains was restricted by export quota during the last two years (2006-2007).

⁵³ The “collateral purchase” mechanism is exploited for stabilization needs. The scheme creates possibility for producers to receive payment for grains (state prices) as soon as crops are delivered on elevators. If the grains later could be marketed for higher prices, farmers are free to get the “collateral” with paying back the money. The “collateral” prices are perceived by farmers as minimum secure level of grain price.

Domestic cereals production is not sensitive to import tariffs. Ukraine most likely will not have objections to tariff concessions. At the same time the EU is expected to insist on application of tariff rate quotas towards Ukrainian grains. A shortage clause for possible export restrictions also will be put on the agenda (see the Box on Grain export crises below). Ukraine will need it for regulation of domestic grain supply in case of poor harvests. SPS certification of domestic products is already being approximated to EU legislation and no major discussions are expected in this area. Nonetheless, in section 8.6, we will elaborate further on this issue.

Box 8.1 Grain export crises

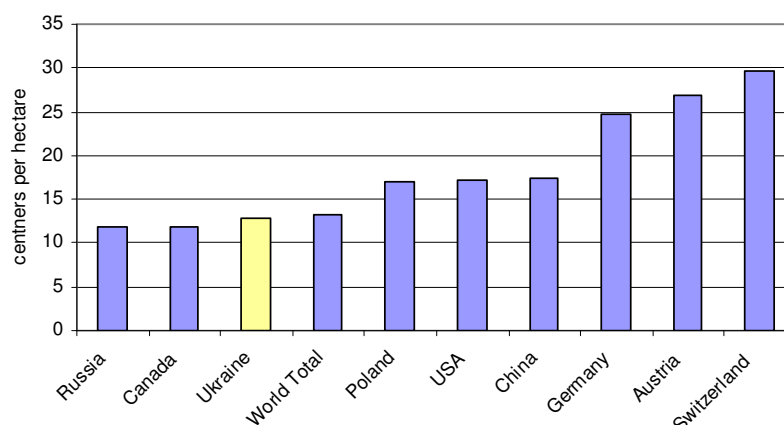
Poor harvests of grains very often stimulated the Ukrainian authorities to introduce export quotas. For the last two years the government has been restricting cereals trading. The major concerns were related to food safety of the country and internal price growth of flour food. Although restrictive measures were actively exploited, interviewed sector experts claim the instrument is very inefficient. First of all, final consumers do not benefit of grain price controls since in reality flour foodstuff producers increase prices anyway. Moreover, flour products do not take up a significant share in the consumer basket. Also quotas are not considered to be fully justified with respect of food safety. The quotation volume is overestimated while even in case of bad harvests, the supply of grains is sufficient to allow for significant exports and satisfaction of domestic needs (IER, 2006). At the same time, quotation creates considerable potential for corruption due to the non-transparent mechanism of quota distributions.

8.3.2 Oil seeds and sunflower-seed oil

Oil seeds do not take any significant share in the structure of agriculture gross output although oil seed planting involves approximately 17 percent of the sown area. Sunflowers comprise about 80 percent of oilseeds. Despite a low output share, oil seeds' farming (sunflowers) is the most profitable activity in domestic agriculture: between 2000-2005 sunflowers were generating more than 50 percent of profits on average. Due to the high profitability, oilseed was the only crop that increased in output since 1990 (by 83 percent until 2005). Even so, the **yield of domestic oil harvesting is below the world level** (see Figure 8.3) and amounts to 12.9 centners per hectare (2005).

Approximately 40 percent (2005) of output is exported and Ukraine is the second largest exporter of oil seeds (sunflowers) in the world after Argentina. Low farmgate prices for the product (about half of the world average) are the main reason for the significant export volumes. Agro-enterprises produce almost 80 percent of domestic oil seeds.

Figure 8.3 Sunflower yield, 2005



Sources: State Statistics Committee of Ukraine

Seed exporting was historically much more profitable than using the seeds for domestic oil production. Therefore in 1999 the Ukrainian authorities introduced a 17 percent export tariff in order to prevent excessive outflow of resources. That measure created a favourable environment for sub-sector development.

Ukrainian sunflower oil processing plants produce about 1.3-1.5 million tons of oil per year. More than 50 percent of produced oil is exported. The market is highly concentrated, with approximately three quarters of total output being produced by a few large players. The major players on the market are Cargill, Bunge and several Ukrainian companies like “KMT” group and Kernel group.

After WTO accession, import tariffs for oil seeds will not exceed the current level of 15 percent (reduced in 2005). Rates for oil seeds are subject to reduction till 2010 due to application of MFN tariff rates (11.16 percent for agriculture). Sunflower-seed oil is an exception from the general rule of 20 percent maximum bound rate. Ukraine will keep 30 percent import tariffs for this product even after WTO accession. The export tariff for oil seeds also will be reduced to 10 percent within six years upon accession. This is an issue for negotiations in the FTA.

Ukrainian authorities will try to keep export tariffs in place for sunflower oil seeds in order to protect domestic oil processing plants. At the same time import tariffs for sunflower oil will be subject to tariff concessions. Oil seeds and sunflower oil are already certified according to the EU SPS standards so no major regulatory changes in this field are expected.

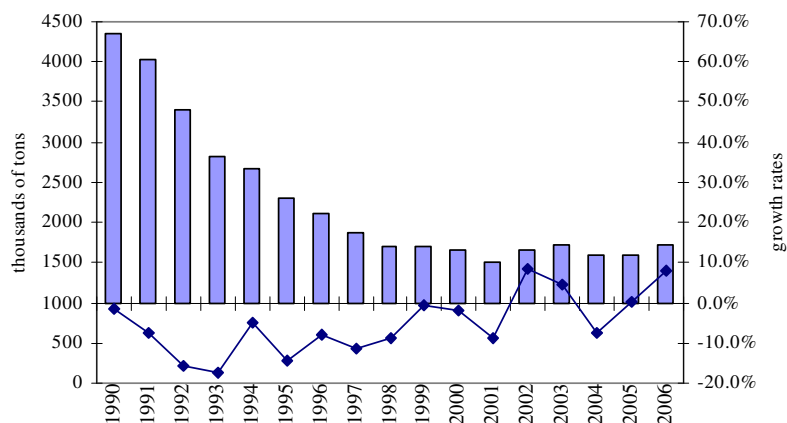
8.3.3 Meat and edible meat offal

Livestock and poultry breeding are part of one of the key sub-sectors accounting for 17.2 percent (2005) of gross agriculture production. In 2005 meat and meat products output consisted of poultry (52 percent), beef (27.8 percent) and pork (14 percent). The share of

poultry production grew only recently. More than 80 percent (2005) of all meat products is provided by domestic producers.

The meat production sub-sector went through a considerable decline (see Figure 8.4) during the 1990s mainly due to a strong slump in domestic incomes. Only recently did the sector show signs of recovery, with the poultry breeding sector as one of the key driving forces behind the sub-sector's upturn. However, according to official statistics overall meat production still operates at a loss (-25.0 percent on beef and veal, -32.1 percent on mutton and goat in 2005). Only pork and poultry production managed to reach positive financial results during recent years.⁵⁴

Figure 8.4 Meat production, 1990-2006



Sources: State Statistics Committee of Ukraine

Meat processing also slumped in line with demand during the 1990s. In 2006 only 50 percent of plants were still operating (64 out of 123). Meat processing recovered strongly with increases in household income from 2000 onwards: between 2000-2006 meat processing showed two-digit growth figures.

Approximately seven percent of the total meat production is exported, with beef as the main item of Ukrainian meat exports (more than 70 percent of all sub-sector exports). The CIS countries are the main markets for Ukrainian meat. **Exports to EU are complicated due to the low quality and standard of domestic products** while competition in the EU markets is strong. Imports of meat increased during recent years mainly due to improvement of household incomes and resumption of American chicken imports (prohibited until the end of 2003). The actual quantity of meat imports might be even higher than the official data show, because unknown quantities of raw meat seem to bypass Ukrainian customs. This would mean that the Ukrainian self-sufficiency and the competitiveness of the Ukrainian meat industry may be worse than thought.⁵⁵

⁵⁴ Pork production showed +14.9% of profits only in 2005 which is the first positive financial results since 1990. Poultry production started making profits in 2003.

⁵⁵ <http://www.ukrdzi.com/usa/uapotential/341.htm>

The sector receives substantial government support: according to OECD estimates the percentage of Producer Support Estimate (PSE) to poultry amounted to 43 percent and 11 percent for beef in 2003. Tax exemptions (VAT and 0 percent of profit tax) compose the main source of state support.⁵⁶ The major concern with meat production in the context of WTO accession is the still **sizeable government support to the sub-sector**. But even if the volume of support is agreed under the WTO, the major support to the sector comes from tax exemptions, which are not considered in the calculations for aggregate measure of support (AMS).

For meat production the major issue will be related to SPS standards compliance, and implementation and enforcement by skilled and trained people from approved animal laboratories. This is expected to be a long run issue involving substantial investments. The FTA can also lead to mutual reduction of import tariffs for meat products.

8.3.4 Sugars and sugar confectionary

Even though the production of sugar beets is not a very important sub-sector in terms of gross output, Ukraine produces 6.4 percent (2005) of world sugar beets. Due to **low yields** (about half of world average level,) the sub-sector profitability fluctuates around zero. Sugar production suffered a decline during the transition period and the sector is highly concentrated with approximately 80 percent of beets being produced by agro-enterprises. Exports of sugar beets are negligible (5 percent of output) although the farmgate price for the products is among the lowest in the world.

Almost all harvested sugar beets (90 percent in 2005) are processed in domestic sugar-mills. However, the majority of sugar-mills have outdated equipment, which is the main reason for high production costs and, subsequently, low levels of competitiveness in international markets. Ukrainian sugar is among the most expensive in the world.⁵⁷ The total number of sugar mills equals 192 while only 119 enterprises were producing sugar in 2006. If production in Ukraine is modernised, it will need only 60-80 sugar mills for processing the domestically harvested sugar beets (BIZPRO, 2006).

The domestic sugar market is supplied by many firms. One company has more than 10 percent market share (Ukrainian Food Company, 13.4 percent in 2006), two companies possess 5-10 percent of the market (Ukrros, 8.6 percent; Astra-Kyiv, 6.2 percent) but the remaining 70 percent of the market is in the hands of small companies.

⁵⁶ Special regime of agriculture taxation includes four types of tax exemptions: (i) VAT charged on sales of agriculture products stays on special accounts to be used for the acquisition of materials and technical resources for production purposes; (ii) VAT charged on sales of meat and dairy products by processing plants is returned to primary producers (no payments to budget); (iii) VAT charged on sales of meat and dairy product by farmers stays in the farm accounts to be used for livestock support; (iv) sale of milk and meat product is taxed at a zero VAT rate thus farmers has right to claim VAT credit.

⁵⁷ As of mid of July 2007 the internal sugar price was 475 USD per ton, which is 50% higher than prices at London commodity exchange (316 USD per ton, July 19, 2007).

In the confectionary sub-sector, sugar plays a key role for sugar confectionary production. The sub-sector consumes about 0.3 million tonnes of sugar every year and the cost of this input accounts for almost two thirds of production costs. The development of the sub-sector is extremely volatile due to its strong dependency on the sugar market. Frequent sugar crises have lead to a drastic reduction in sugar confectionary output. Sugar confectionary production is relatively concentrated, with two larges companies producing almost 40 percent of the market. Approximately 25 percent of the total sugar confectionary output is exported, while imports are negligible. Profitability of the sector is modest (8-12 percent, BIZPRO, 2006) due to high sugar prices.

Under WTO accession, Ukraine will move from the current combined tariff rate⁵⁸ towards tariff rate quotas (TRQs), which were agreed at the level of 260 thousand tons for raw sugar with a two percent tariff rate from the year of WTO accession. For exceeding volumes of sugar the current 50 percent import tariff will be preserved. The WTO TRQ will be a significant reduction of protection compared to the currently applied combined tariffs. Quota will be fairly and transparently distributed among trading partners ensuring full compliance with WTO regulations on import licensing procedures. The relatively high level of protection is seen by the Ukrainian authorities as needed due to the social importance of the sugar sub-sector. In case of deeper liberalisation some sugar mills most likely will cease all production thus increasing the unemployment rate.

Within the FTA, the extent to which the sugar markets are liberalised remains to be seen due to the highly sensitive nature of this market for both sides at the negotiation table.

8.3.5 Edible fruits and nuts, citrus fruits, water melons

Fruits and berries comprise 4.1 percent of gross agriculture output (2005) and occupy about 1 percent of the cropping area. Apples, pears, plums and cherries account for more than 70 percent of the sub-sector's output. Yield of the products is among highest in the world and producers' prices are among the lowest. Cropping of fruits is therefore a profitable activity. Households are responsible for 88.2 percent (2005) of fruits and berries production. More than 75 percent of fruits and berries are produced domestically while 31.9 percent is imported (2005).

Exports are significant (11.3 percent, 2005) and have increased steadily over the past ten years. Edible fruit and berries are among the most **competitive sub-sectors** within the agricultural sector, because of one of the highest yields in the world. Domestic fruit prices are among the lowest in the world, even though some European products (e.g. Polish apples) are still much cheaper.

Import tariffs for fruits (group 08 HS) were already reduced to an average of 10.4% in ad valorem terms (2005) which is close to the target level of 10.07% under WTO accession obligations. Ukraine possibly will try to introduce some protective measures for fruits (specifically for apples). Most likely either a TRQ or a partial tariff concession will be

⁵⁸ Sugar (from sugar beet) – 50% but not less than 0.3 EUR per 1 kg; lactose, fructose etc. – 0.3EUR per 1 kg; treacle – 0.8 EUR per 1 kg; sugar confectionaries – 1EUR per 1 kg.

requested by the Ukrainian side. Domestic SPS certificates for fresh fruits are recognised by EU food safety authorities.

In addition to the fruits, citrus fruits, water melons exports and imports, we note that a large share of fruits takes place indirectly through exports of juices. The juice sector is a rapidly growing sub sector for Ukraine.

8.3.6 Beverages, spirits and vinegar

Production of beverages is an important sub-sector of the Ukrainian food industry amounting to about 20 percent of total food processing output. In recent years the sector grew in line with the recovery of private consumption (beer production grew by 22.7 percent in 2006 and cognac by 15.3 percent). Alcoholic beverages production consists of distilled alcoholic beverages⁵⁹ (50 percent), beers (25 percent), and wines (10 percent). The sector is highly concentrated with the 10 largest companies producing approximately 80 percent of all alcoholic products. Ukrainian alcohol (especially, distilled beverages) is competitive on price relative to imported products. Statistics show that 99 percent of the domestic market is served by domestic producers, despite weak protective measures. More than 25 percent of Ukrainian alcoholic beverage products are exported (data for vodka, 2005), with Russia as the main destination of exports (more than 80 percent of total exports).

The Ukrainian authorities regulate the production and distribution of alcoholic products by licensing. Ethyl spirit can only be produced by state enterprises while cognac can be produced by private companies as well, albeit under licensing agreements (a production license has to be requested).

Under the WTO, import tariffs for beverages will be reduced to 11.6 percent by 2010. Current levels of tariffs translated into ad valorem terms equal 24.0 percent (2006)⁶⁰. Reduction of tariffs will affect the segment of expensive brand beverages, which are not produced domestically. Moreover, significantly more competition is expected in the markets of wine and beer. At the same time the segment of public products (like vodka) will be hardly affected since Ukrainian beverages are very cheap and qualitatively competitive.

The most pressing issue in this sub-sector in relation to WTO accession is related to protection of certain products under specific designation of origin (geographical indications). Upon WTO accession domestically produced “cognac” and “champagne” should be renamed to “brandy” and “sparkling wine.” Provisionally, those changes should not affect the output of the products since domestic “cognac” and “champagne” belong to the low price segment and are produced mainly for domestic consumption.

⁵⁹ Vodka, whisky, cognac etc.

⁶⁰ Import tariff is 2-3EUR per litre for wines, champagne and other light alcohols, 7.5EUR per litre (of 100% spirit) for spirit, vodka, whisky cognac and other strong alcoholic beverages.

The FTA is not likely to impact producers of distilled alcoholic beverages since the EU import tariffs are already zero. At the same time wine and beer expansion from the EU is anticipated because the FTA will involve reductions in wine and beer tariffs. European products are qualitatively very competitive. A reduction of tariffs will lead to increases in domestic consumption of the products.

8.4 The agricultural sector in the EU-27

The European Union is the biggest wine producer in the world and accounts for 70 percent of the exports and 65 percent of global production. Currently, the EU is reforming the whole wine sector so the FTA effects on wine production in EU are relevant at the moment.

The EU has started also large reforms in the fruit and vegetables sector in order to bring this sector in line with the rest of the reformed Common Agricultural Policy. The reform is hoped to improve the competitiveness and market orientation of the F&V sector, reduce income fluctuations resulting from crises, promote consumption and thus contribute to improved public health, and enhance environmental protection. Currently the fruit and vegetable sector in the EU is suffering from high competition from increased imports with good quality and low price and from the highly concentrated retail and discount chains, which play a major price-setting role. The reform will enter into force in 2008. Fruit and vegetable production currently accounts for 17 percent of total EU agricultural production.

Cereals and oil seed production accounts for around 40 percent of total agricultural production in the EU. The restrictions on subsidised exports by the WTO and the high price of cereals in the EU have made it difficult to focus on exports. EU production is relatively efficient and due to high quantities produced it can be difficult to import to the EU market.

Meat production in Europe is expected to decrease gradually and meat exports have already been declining so much that in 2005 the EU became a net importer of meat products except for pig and poultry meat. The pig meat industry is still rather protected from external competition and it represents the biggest production share (47 percent) of meat products. Poultry meat has also a large share of total meat production, while beef production, on the other hand, is expected to slightly decline.

The sugar sector in the EU is also under reform and the EU is opening it up slightly to face global competition. Even though sugar accounts for a mere two percent of total agricultural production, it has been a traditionally much protected industry and the EU has been a big sugar exporter due to the large protection, minimum price guarantees and consequent overproduction. The EU is also a relatively big exporter and importer of tobacco products and there are considerations to reform the tobacco sector in the EU as well.

Out of the group “Animal and vegetable oils”, the EU is producing mostly olive oil. The production is naturally concentrated in the Mediterranean area and currently the EU is the

leading world producer, accounting for 80 percent production and 70 percent consumption of the world's olive oil. The FTA with Ukraine involving agriculture leads to increased competition – the more since also Ukraine focuses a lot on oil production, albeit from oil seeds.

Box 8.2 Institutional relations in agriculture

There is no particular agreement between the EU and Ukraine pertaining to agriculture. However a Memorandum of Understanding in the field of agro-production was signed between the EC and the Ministry of Agriculture of Ukraine (October 19, 2006). The resulting EU/Ukraine dialogue has met twice since then. Matters for discussion were market policies, bio-energy, statistical cooperation and rural development.

In the Action Plan, agro-issues are mentioned in the context of SPS measures. In this field some progress was already achieved within implementation of WTO requirements according to "The agreement on the application of Sanitary and Phytosanitary measures" but a lot more efforts are needed (see section 8.6).

The EU requirements to SPS standard harmonisation are more demanding than the requests of the WTO. The SPS WTO agreement mainly concerns the impediments for imports to Ukraine while the EU food safety acquis targets exported products.

The major complaints related to the domestic SPS system relate to non-transparent requirements (the absence of scientific justification), mandatory standards and overlapping responsibilities of controlling institutions. These drawbacks are considered non-tariff barriers to international trade in certain agricultural products.

Another side of the SPS issue is related to food safety of exported agro-products. At the moment, Ukraine is only approved to export some animal products (equine and honey), but the procedure for approval for other products of animal origin is ongoing in order to be authorised and listed on the list of third countries eligible to export to the EU such specific products. This status is granted after passing a list of compulsory procedures, certification of veterinary laboratories according to the EU requirements and certification of potential exporters. Most likely during the FTA negotiations Ukraine will claim for extension on compliance with SPS standards since significant investments and time resources are essential for certification and successful completion of all other requested procedures.

8.5 Potential impact of an FTA

8.5.1 CGE modelling results

The assumptions underlying the CGE model for the two scenarios selected are summarised in Table 8.3 below.

Table 8.3 Scenario Overview Agriculture

Sub-sector	WTO scenario	Scenario 1 Extended FTA	Scenario 2 Limited FTA
Agri-food sector general			
Agriculture, fisheries, forestry	<ul style="list-style-type: none"> 65% tariff reduction from base case Standardisation costs reduced by 30% 	<ul style="list-style-type: none"> 95% tariff reduction from base case Reduction border costs by 50% Standardisation costs reduced by 50% 	<ul style="list-style-type: none"> 75% tariff reduction from base case Reduction border costs by 10% Standardisation costs reduced by 40%
Agri-food sub-sector specific			

Sub-sector	WTO scenario	Scenario 1 Extended FTA	Scenario 2 Limited FTA
Cereals, grains and oil seeds	▪ 65% tariff reduction from base case	▪ 95% tariff reduction from base case	▪ 75% tariff reduction from base case
Meat and edible meat offal	▪ 0% tariff reduction from base case	▪ 95% tariff reduction from base case	▪ 30% tariff reduction from base case
Sugars and sugar confectionary	▪ 2% tariff reduction from base case	▪ 95% tariff reduction from base case	▪ 31% tariff reduction from base case
Animal or vegetable fats & oils and their cleavage products; prepared edible fats; animal or vegetable waxes	▪ 66% tariff reduction from base case	▪ 95% tariff reduction from base case	▪ 76% tariff reduction from base case
Edible fruits and nuts, citrus fruits, water melons	▪ 28% tariff reduction from base case	▪ 95% tariff reduction from base case	▪ 50% tariff reduction from base case
Beverages, spirits and vinegar	▪ 47% tariff reduction from base case	▪ 100% tariff reduction from base case	▪ 63% tariff reduction from base case

Table 8.4 provides an overview of the CGE model outcomes of the Global Analysis, modelling the two scenarios for an FTA (extended and limited) between the EU and Ukraine for both the short and the long run. The model outcomes reflect additional effects on top of WTO accession for Ukraine.

As becomes clear from the table, all sub-sectors with the exception of sugar & sugar confectionary and beverage, spirits & vinegar, are expected to benefit directly from an FTA, in terms of production, unskilled labour and trade. This is especially true for the sub-sectors “meat and edible meat offal”, “animal or vegetable fats & oils, their cleavage products; prepared edible fats; animal or vegetable waxes” and “edible fruits and nuts, citrus fruits, water melons.” The effects from an extended FTA are more pronounced, and in the case of sub-sector “edible fruits and nuts, citrus fruits, water melons” show positive rather than negative effects compared to the more limited FTA in the long run.

As the model assumes technical barriers and border costs are reduced immediately, and EU tariffs to drop symmetrically with Ukrainian tariffs, it is likely that the short run effects will be less substantial than the model predicts. In reality such changes will take time, especially considering the current situation in many of the sub-sectors. The FTA is expected to further encourage a restructuring process that is already underway in many of these sub-sectors and in the short run may cause some disruptions (unemployment, firm closures, etc.). However, in the longer run the FTA is expected to result in a more competitive agricultural sector overall.

EU-27

The CGE model predicts very limited (often negligible) effects at sector level in the EU-27. The only sub-sector in which some effects may be expected is the sugar and sugar

confectionary sub-sector. Here the model predicts an increase of 0.4 percent in output in the case of an extended FTA (short and the long run). The small effects in general don't tell the whole story for all sub-sectors within each group and different regions in the EU.

Table 8.4 Model outcomes (% change) Ukraine

Sub-sector	Extended FTA (short run)						Extended FTA (long run)						Limited FTA (short run)						Limited FTA (long run)					
	Price	Prod	Empl.		Imp / Exp	Imp / Exp with EU	Price	Prod	Empl.		Imp / Exp	Imp / Exp with EU	Price	Prod	Empl.		Imp / Exp	Imp / Exp with EU	Price	Prod	Empl.		Imp / Exp	Imp / Exp with EU
			Usk	sk					usk	sk					usk	sk					Usk	sk		
1) Agriculture, fisheries, forestry	0.5	1.1	1.08	0.91	16.0/10.0	11/54	0.9	2.8	2.76	2.58	19.0/10.0	13/51	0.3	0.8	0.72	0.54	5.0/3.0	3/23	0.6	1.9	1.89	1.71	7.0/3.0	4/21
2) Cereals, grains and oil seeds	0.5	1.1	1.08	0.91	16.0/10.0	11/54	0.9	2.8	2.76	2.58	19.0/10.0	13/51	0.3	0.8	0.72	0.54	5.0/3.0	3/23	0.6	1.9	1.89	1.71	7.0/3.0	4/21
3) Meat and edible meat offal	-0.4	2.2	17.39	2.34	8.0/13.0	11/19	-0.2	4.6	20.08	5.00	9.0/13.0	13/19	-0.2	0.9	15.98	0.96	2.0/5.0	3/7	0.2	2.6	17.79	2.77	3.0/5.0	4/8
4) Sugars and sugar confectionary	-1.9	-4.7	-4.98	-4.94	26.0/2.0	280/21	-3.7	-5.8	-6.06	-6.02	38.0/10.0	287/22	-0.2	-0.8	-0.88	-0.87	4.0/-1.0	39/8	-2.0	-2.4	-2.52	-2.52	15.0/7.0	40/9
5) Animal or vegetable fats & oils, their cleavage products; prepared edible fats; animal or vegetable waxes	-0.3	5.5	13.03	5.62	5.0/26.0	-2/56	-0.3	8.2	16.08	8.56	6.0/26.0	-1/58	0.1	2.0	9.39	2.03	2.0/9.0	1/22	0.1	3.9	11.4	4.03	3.0/9.0	2/23
6) Edible fruits and nuts, citrus fruits, water melons	-0.8	3.8	7.24	3.92	10.0/22.0	96/202	-0.7	6.5	10.11	6.78	11.0/22.0	103/205	0.0	1.1	4.51	4.51	2.0/6.0	27/70	0.0	-6.2	6.34	3.05	3.0/6.0	30/72
7) Beverages, spirits and vinegar	-0.9	-0.2	-0.29	-0.29	10.0/7.0	253/96	-0.8	2.2	2.22	2.22	12.0/7.0	265/98	-0.1	0.0	-0.04	-0.03	3.0/2.0	68/45	-0.1	1.7	1.69	1.69	4.0/2.0	73/46

8.5.2 Economic impacts

Liberalisation of trade with the EU turns out to be beneficial for Ukrainian agriculture after a while. The modelling results support this conclusion providing growth of production and trade volumes at the sector. According to CGE modelling results new exporting perspectives in the short-run should stimulate output growth by an additional +0.8 percent in case of a limited FTA and +1.1 percent for an extended FTA agreement. In the long run the positive effect on output is expected to be even stronger (+2.7 percent for extended FTA). The model estimates exports and imports to go up by 10 percent and 16 percent, respectively, in trade with all countries. In the trade with the EU, however, exports from Ukraine will grow by 54 percent to the EU compared to the WTO accession situation and imports from the EU will go up by 11 percent - this shows that the FTA will have a positive effect on the Ukrainian agricultural trade balance.

Trade between the EU and Ukraine will grow significantly and Ukraine's exports will direct themselves more towards the EU and less to other regions in the world.⁶¹ Food imports from outside the EU countries are expected to grow more than imports from the EU. Prices are expected to go up to 0.5 percent (extended FTA) due to "spill-over effects" of price levels. Exporting possibilities – if realised – for domestic producers can stimulate internal price adjustments. If quality standards are met, improvement of agro-food product assortments can be among the major benefits of liberalisation (meat and dairy, beverages, sugar confectionaries) together with the overall positive effect an extended FTA would create for the whole sector. The necessity of regulatory approximation to EU food safety requirements may stimulate significantly public and private investments albeit the costs are significant. Moreover, we find that liberalisation of trade will spur the restructuring of enterprises as stronger competition will speed up the replacement of inefficient producers. Investment inflows are expected to increase since the FTA has an indirect and positive impact on investment decisions, can positively affect the business climate while no immediate increase in growth of capital formation is anticipated.

Compliance with the EU food safety acquis (related to animal products) will be essential for Ukraine to reap the full-fledged benefits from the extended FTA within the Enhanced Agreement. In most agricultural sectors, the major positive effects on trade, growth and employment are expected after SPS standards are harmonised with EU standards and after SPS is successfully implemented and enforced (for a specific analysis of SPS, we refer to paragraph 8.6). There is a special veterinary agreement envisaged as part of the FTA, but an agreement will be challenging as the SPS process is a difficult and long one, addressing the state of administrative capacity, level of trained personnel and up-to-date systems. The effects of successful regulatory approximation, implementation and monitoring are much larger than the impacts of tariff reductions and in the former there is still much more scope for improvement. The WTO SPS agreement will partially eliminate non-tariff barriers for imports through harmonisation of internal SPS regulations. At the same time domestically applied safety standards should be markedly improved in order for them to be recognised by the EU. Improvement of standards requires both public and private investments. Harmonisation of legislation and finance modernisation of veterinary

⁶¹ Which is the process of trade creation between the EU and Ukraine and the process of trade diversion between Ukraine and the rest of the world.

laboratories should be certified by European authorities. Private enterprises from their side will have to invest into certification of their products. For the majority of domestic agro-food enterprises certification will request prior modernisation of production capacities.

The impact of the FTA on the selected sub-sectors are expected to be positive in general for Ukraine (except for sugar and beverages). Some of the sub-sectors will undergo immediate positive effect (e.g. cereals, sunflower oil and fruits) while other sub-sectors need time and investments to become more competitive at the EU market (e.g. meat products, dairy products and fats).

Output in cereals is expected to increase shortly after the FTA creation. Certification of Ukrainian grains is already internationally recognised. Still there may be two impediments for free trade in the field of cereals: (i) provisional quotation of exports by Ukrainian authorities and (ii) a tariff rate quota from the EU side. According to the modelling results cereals output will accelerate by +1.1 percent in case of the extended FTA (short-run) based on the assumption of symmetric tariff reductions between the EU and Ukraine. This could not happen in case one-sided reductions are applied. CGE simulations also predict price growth by an additional 0.5 percent in the short-run and 0.9 percent in the long-run (extended FTA), which is in line with the assessment of agricultural experts in Ukraine. We expect improvements in the Ukrainian trade balance since domestic cereals are much cheaper than the European cereals. The FTA also is expected to lead to more investments in grain production. Trade liberalisation may further create additional earnings due to higher prices and export expansion. Therefore, grain producers have room to invest in production efficiency for further profit enlargements. Demand for cereals may also grow in the EU thanks to the expected increase in biomass and bio ethanol demand (DG Agriculture, 2007).

Production of oil seeds should benefit from trade liberalisation. We do not expect any restrictions on exports from the EU side. However, Ukrainian authorities most likely will try to control oil seeds trading with exports tariffs to support domestic sunflower oil producers. The value of the export tariff will depend on the negotiation process. Even if further reductions of tariffs are approved, oil producers are expected to have enough resources for coping with stronger competition from abroad.

Sunflower-seed oil production will not undergo significant changes although positive consequences are expected. Import tariffs on sunflower oil are already low. Sunflower oil processing plants are highly competitive and the EU is interested in importing Ukrainian sunflower oil. European companies import the product for bio-fuel production. The model results show a +5.5 percent change in output upon concluding the extended FTA (short-run). At the same time prices are expected to go down by 0.4 percent after reduction of import tariffs. The sunflower seed oil trade balance will improve due to fast growth of exports to the EU (+56 percent in the extended FTA). The exports to other countries are expected to decrease relatively though as the overall increase in exports is only 26 percent.

The FTA is expected to have a positive impact on the meat producers. According to the model estimates the sub-sector should expand production by an additional 2.2 percent

points in case of an extended FTA. However, the sector will need significant investments in SPS standards and quality of the products to be marketed in Europe. Domestic prices for meat products are expected to go up due to exporting possibilities for Ukrainian producers. Investments will be stimulated by the necessity to comply with the EU food safety requirements. Moreover, investments can be attracted through restructuring of the sub-sector due to increased competition. Poultry breeding is likely to benefit from the FTA if Ukrainian chicken exports are allowed into the EU. Ukrainian poultry is highly competitive compared to that of the EU chickens and an increase of Ukrainian market share on the European market is projected. Additionally, the majority of poultry producers use modern production technologies and will not need to invest a lot to be certified for exporting. Pig-breeding can also benefit from the FTA. However, the majority of farms are outdated in this sub-sector and significant investments are necessary to become competitive on the European market. The short-run impact for cattle breeding is ambiguous. On the one hand Ukrainian beef is competitive, on the other domestic production does not satisfy even internal demand while 3-5 years are necessary for cattle stock recovery. In the long run the sector is expected to expand production and may build up a strong position on the EU market. It should be noted though, that meat imports from the EU are also likely to go up, but the increase is smaller than the rise in Ukraine's exports. Cheap labour and large production possibilities can also attract more European companies to produce meat products in Ukraine as soon as the SPS standards are met.

The effects on the sugar market depend on the depth of the FTA agreement. According to our model – in which major liberalisation is carried through, the Ukrainian sugar industry will face some setbacks. Sugar exports from the EU are expected to grow by 280 percent in an extended FTA scenario. We calculate that the production in Ukraine will decrease by 2.5 percent points on top of the WTO scenario in the long run, mostly because prices will go down. The latter has a positive effect for consumers as they can buy sugar and sugar products at lower prices. Exports of sugar to the EU may increase slightly as well. Production and exports of sugar confectionaries could increase after the FTA creation. The confectionary market is diversified and trade liberalisation should be mutually beneficial for both parties. Increase in product varieties is expected because of the FTA. However, if the FTA is not so ambitious about liberalising the sugar industry, these effects will not occur or only to a very limited extent.

Fruit production is expected to be subdued because of cheap imported products. Current production of fruits as households' by-products will not be much affected by liberalisation and the subsequent inflow of much cheaper imported fruits. However, Ukrainian horticulture enterprises may not be able to compete efficiently on the market. In the long-run foreign investments could support recovery of the sub-sector, however, the time horizon for this perspective is very long given the long periods it takes to cultivate orchards. The CGE model forecasts a growth of 3.8 percent with an extended FTA in the short run in the fruit production sector in Ukraine and over 6 percent in the long run. The demand for fruits is also expected to go up with rising incomes of households and increasing large retail markets, which boost the demand for fresh good quality products. Exports to the EU are expected to grow by over 200 percent in the short and long run. However, the intra-industry trade with the EU seems to increase as imports from the EU will also grow. During the last years the production of fruits and vegetables

has been growing in Ukraine and especially productivity and orchards cultivation by professional farmers has increased, keeping 'organic agriculture' techniques in mind.⁶²

The fruit and vegetable processing industry has been traditionally strong in Ukraine. Since it meets the SPS standards required to export the products to the EU, Ukraine has a strong potential in this sector as well. Cheap labour, many existing companies and large supplies of fresh fruits and vegetables creates an optimal atmosphere for both industries, fresh fruit production and fruit processing. The connection between the two industries can further enhance the growth in both sectors. As part of the FTA, the adoption of new certificates, further improvements in production quality and possible establishment of laboratories will however create costs for the producers and the Ukrainian government in the short run. During this time increased competition in the sector can threaten domestic firms and sector growth. In the long run, the creation of an extended FTA seems to be very beneficial for the sector.

Beverages will be affected slightly negatively for Ukraine. The major negative effect is expected for wine and beers since European products are more qualitatively competitive. At the same time Ukrainian distilled alcoholic beverages are not expected to expand on the EU market since import tariffs for these products are already zero. Thus the FTA is not expected to have a strong direct impact on producers of distilled alcoholic beverages. However, an increasing inflow of European wines and beers on the Ukrainian domestic market is anticipated, as European products are very competitive and a reduction in tariffs will lead to an increase in domestic consumption of these products because of lower prices. The Ukrainian vodka production on the other hand is expected to increase slightly. Vodka producers have been investing in new technologies, equipment and advertising their products for a long time. The large, rather cheap production of cereals in Ukraine is also benefiting this sector. The growing demand for wine could benefit the Ukrainian wine industry, but the investments required to reach the European quality standards are a lot higher than for vodka production. The Ukrainian climate is well-suited for wine grape production, which could attract European wine producers to invest in Ukraine after concluding the FTA.⁶³

The EU-Ukraine action plan encourages the enhancement of food safety standards and facilitation of trade with modernisation keeping in mind sanitary and phytosanitary (SPS) aspects. A veterinary and phytosanitary agreement between the EU and Ukraine and creation of better food quality methods are also on the list of the action plan. These improvements could enhance exports of food products from Ukraine to the EU even further and hence increase the production when included into the FTA.

Impacts EU

The expected effects of an FTA are too small to substantially impact the agricultural sector in the EU. In other words, changes in production structures in the EU larger than 0.05 percent are not expected. It must be noted, however, that the FTA impacts may not

⁶² <http://www.lol.org.ua/eng/showart.php?id=35466>

⁶³ <http://www.ukrdzi.com/usa/uapotential/349.htm>

be evenly spread inside the EU with more effects in the post-2004 'new' EU member states and/or regional effects due to concentration of specific industries.

There are some effects that need to be addressed:

- The sugar sub-sector is expected to grow as a consequence of the FTA. Sugar production is relatively concentrated in a number of Member States, of which some are highly inefficient producers. The positive effects will therefore likely accrue to a selected number of Member States, such as Poland. Here some more pronounced impact could therefore occur;
- The reform of fruit and vegetables production in the EU, which is about to start in 2008, can also affect the estimated results of the FTA. Exports from the EU to Ukraine are estimated to grow (though less than Ukrainian exports) and in case the reform is effective in increasing the production efficiency in the EU, trade might increase yet more. Nonetheless, it may be hard to reduce the current high production costs in the EU in order to remain competitive;
- The effects on EU agriculture also depend on the extent to which Ukrainian producers are able to follow the regulatory approximation process to bring production standards in general and food quality & safety standards in particular in line with EU standards, and the extent to which the Ukrainian authorities are able to implement and enforce these measures. This transition process will take considerable amounts of time and financial resources which allows for slow adaptations;
- Removal of tariffs in EU meat production (e.g. pig meat) is likely to have negative effects for EU meat production but only if this is in line with standard improvements that lead to removal of NTBs;
- For EU beer and wine producers, the FTA envisages significant positive impacts because the large Ukrainian consumer market becomes available and competition from Ukrainian producers is (initially) low due to lower production standards;
- Increased cereals production – with Ukraine being one of the top world producers – as a consequence of the FTA, may lead to an impact on world cereal markets. Lower world market prices may then lead to lower prices in the EU;
- For EU consumers the effect of an extended FTA with Ukraine that includes the mentioned agricultural provisions is a drop in consumer prices for basic commodities like fruits, vegetables, and oils if price effects are carried on to consumers.

Even though the direct effects of the FTA are very small for EU agriculture, there are some other factors, which can affect the trade relations and production in the EU and Ukraine. For example, the ICPS report (2007) considers that the overall positive effect of an FTA can enhance the buying power of Ukrainian consumers and hence expand the market opportunities for EU companies. The exports of sugar and sugar confectionary products, fruits and beverages to Ukraine are indeed already expected to increase significantly.

It should be noted as well that the agricultural sector in the EU is rather clustered and hence the FTA might affect some areas (in which those clusters are located) more than others. The wine area around Bordeaux and sugar production in central Poland are examples of product-areas that will benefit from an FTA, while in particular the EU-15 is more vulnerable to liberalisations of trade in crops and livestock products (compared to the rest of Europe (EC – Scenario 2020, 2007)).

8.5.3 Social impacts

The major social concerns in the agricultural sector in Ukraine relate to the lack of income earning opportunities and low average wages in rural areas of Ukraine.

Large numbers of rural residents of most active working age are currently forced to move away from their places of residence in search of employment. The major reasons are low-paid agricultural jobs or simply the lack of those. According to 2006 data, the average wage in the agricultural sector hardly reached 53 percent of the national average. Moreover, the owners of new restructured agricultural enterprises often pay even less than minimum wages to agricultural workers, thus violating labour laws.

We see that as a social consequence of the FTA, employment increases are predicted in most sub-sectors of Ukrainian agriculture, which seems to slow down the abovementioned trend. Also wages are expected to go up as – over time productivity increases because of (foreign) investments. However, first of all, this does not imply that the FTA can reverse the much larger trend of shifting employment from agriculture to manufacturing and services over longer periods of time. Second, the model does not account for decreases in employment due to technology growth and more capital- (and less labour-) intensive ways of producing. These two effects complement the quantitative analysis and downsize its positive effects.

Employment in meat production is expected to increase if SPS provisions and implementation are included in the FTA while sector experts focus attention on inefficiencies of many pig-breeding and cattle-breeding enterprises. Most likely they will have to modernise production and therefore employment at the sub-sector level will increase less than predicted.⁶⁴ To an extent, the positive employment effects demonstrated by the CGE outcomes represent an upper limit, which are expected to be lower in reality in sectors where inefficiencies and hidden unemployment are high like in the pig- and cattle-breeding enterprises. In addition, technological progress is not included in the model, which on the one hand reinforces the expectations that the positive effects on employment may be more limited due to increasing efficiency but on the other underestimate the effect of ‘new’ jobs created in the agricultural industry. An FTA between the EU and Ukraine may initially lead to slightly higher levels of unemployment in rural areas, before long-term effects kick in and the rate of employment reduction is slowing down.

Increasing competition is expected to lead to strong pressure on the Ukrainian agricultural industry to modernise and improve production technologies. In the short run – when the investments are not yet in effect – this may lead to reductions in employment. In the long run, increased efficiency will also likely lead to a reduction in the number of employees doing today’s jobs, but increase employment in ‘new’ jobs in the agricultural industry.

⁶⁴ This effect occurs because production and export increases and the model assumes constant returns to scale and a symmetric reduction of tariffs.

The Ukrainian agricultural industry would then be able to produce much more for lower prices with less (labour) inputs.

Modernising Ukrainian agriculture also has the positive social impact of improving the quality of work, working conditions and possibilities for self-employment through entrepreneurial activities in Ukraine's rural areas.

Wage increases and – in the long run – modernisation of the agricultural sector, combined with increases in employment can increase the disposable incomes of workers in rural areas and thus have a negative impact on the GINI coefficient (i.e. a positive effect on income equality). Whether the overall FTA impact will lead to converging incomes depends also on the FTA effects in the industrial and service oriented sectors since the GINI coefficient is a relative equality index.

The regional income distribution is also expected to be affected by performance of the agricultural sector, which is an important and politically sensitive issue in Ukraine. The FTA shows potential positive economic and social effects for agriculture thus providing a development opportunity for the sector and the rural areas in western Ukraine. In terms of regional income distribution this is the more important as the FTA also leads to income increases, positive employment effects and rising wages in the south-eastern parts of Ukraine where heavy industries and manufacturing dominate (see other chapters of this study).

An increased variety of food products, possible increases in fruits and vegetables production and better quality of food (because of higher SPS standards) are likely (in the longer run) to affect public health positively. The increase in income is correlating also with better eating habits and a rise in the consumption of fruits and vegetables. Better health and safety standards that may result from an extended FTA are also likely to enhance public health. Similarly the FTA is expected to include flanking measures that will be addressed in the final report. It will take time to adopt the new SPS and safety standards, so these effects would be long term effects. Improvements in the education level of the agriculture workers and producers are also expected with the implementation of new standards. The strength of these social impacts depends, of course, on the courage and decisiveness with which the FTA is implemented.

Another important social issue is labour migration. As mentioned at the beginning of this section, labour migration out of the rural areas is a phenomenon that is currently happening. The FTA may have a dampening effect on labour migration.

- On the one hand, in the short run, transitional unemployment in agriculture will lead to the unemployed reallocating themselves to other sectors of the economy, i.e. construction or transport. This may also lead to geographical migration from rural areas to the cities. At the same time, many of the unemployed will not have an opportunity to leave their places of residence, which may – in the short run – aggravate the poverty problem in rural areas. These trends should be of concern to the Ukrainian authorities and FTA in developing a strategy and negotiate policy provisions to alleviate poverty and generate employment in rural areas.
- On the other hand, the EU-Ukraine FTA will most likely have a positive effect on the level of earnings in the sector and a mitigating effect on negative employment growth

in the long run. This might keep the agricultural workers from migrating to other regions or sectors. As a result of FTA, working conditions of those employed will also improve which is another reason for not migrating.

The restructuring of Ukraine's agriculture – that has already been initiated and will be further encouraged by an FTA – can be seen as a necessary part in Ukraine's transition and development that involves – often painful – adjustments for industries, regions and/or groups of people. Mitigating measures and development plans have to address these issues to bridge the gap between the short run pains and long run benefits.

8.5.4 Environmental impacts

According to the DG Trade website: *“The EU firmly believes that further opening of trade for agricultural products is an important contribution to sustained and continued economic growth for all countries. But progress in trade must not damage the wide role of agriculture and legitimate consumer concerns. Citizens are worried by the impact of globalisation on the environment, health, social standards and cultural diversity. These 'non-trade concerns' are the fundamental links between sustainable agriculture, maintaining the landscape and the environment and responding to consumer concerns.”*

The magnitude and character of the FTA environmental impacts in Ukrainian agriculture depend first of all, to a large extent on political decisions (as agriculture is one of the more regulated and politically sensitive sectors) and secondly, on the liberalisations already included in the WTO scenario. For environmental impacts on Ukraine and the EU, it is hard to distinguish between the WTO impacts and the additional FTA impacts, simply because the WTO impacts are not very clear. This is a limitation we face in this section of the report.

Most impacts are a consequence of WTO accession of Ukraine. These include dealing with the Soviet past:

- low productive extensive farming, up to 54 percent of land being ploughed up
- acute pollution and deforestation problems
- widespread wind and water erosion of soil, etc.

In some cases this legacy shows up in the form of old storage places packed with more than 20 thousand tonnes of unlabelled insecticides and pesticides, in other cases just as poor practices and lack of managerial solutions.

The WTO at first instance, and the FTA beyond that, may provide Ukrainian farmers with know-how and techniques that may significantly contribute to necessary environmental improvements. However – unless flanking measures are taken – the FTA environmental impact will be negative.

The downward trend of using less chemical, mineral fertilisers, dangerous pesticides, etc. as a consequence of the transition problems of Ukraine, is under pressure now from a change of production from regional self-supply to large scale production of the most profitable monocultures like sunflower or rapeseed. This also leads to the restart of using chemicals and other pesticides. For example, the use of mineral fertilizers was 141 kg per

hectare of sown area in 1990, 13kg in 2000, and already as much as 32kg in 2005. The FTA could look at flanking environmental measures to address this issue, which could have an immediate impact on quality of the environment and soil protection. In the nearest future Ukrainian agriculture has to define its priorities in bio-production, use of intensive methods of livestock breeding and use of Genetically Modified Organisms (GMO) technologies, etc.

Traditionally poor management has resulted in heavy eutrophication problems. Ukraine neither ratified nor signed the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone and for the moment looks far from doing so. This means it is harder to address negative environmental impacts.

Ukraine's first successes in climate change activities after ratification of the Kyoto Protocol in February 2004 show good perspectives also for innovations in agriculture. In spite of developed cattle breeding and poultry farming and a constant rise in energy prices, so far no joint implementation projects are officially validated to recover methane at farms, even though this technology is easy to implement and replicate. Also so far no joint implementation projects are under development for nitrous oxide emissions reductions, a strong greenhouse gas, at crop and grazing lands.

The FTA regulatory approximation can have a positive environmental impact on intensive poultry or pig farms through further enforcing the permitting system and assisting with the implementation in Ukraine of the provisions of the European Union's Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC) that Ukraine has started to actively implement in 2006. According to preliminary estimations there are about two hundred such farms with significant potential of environmental performance improvement.

Another environmental problem is the chronic challenge of public under funding of nature conservation and soil remediation projects.

In the Table below, we find the environmental effects summarised for Ukraine.

Table 8.5 Summary of environmental impacts for Ukrainian agriculture

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from animal farming and biodegradation of agricultural waste	▽	–	▽	No	H
Land					
Total utilized agricultural area	?	--	○	Yes	H
Soil quality (fertilizer in soil, gross nutrient balance)	↑	–	○	Yes	H
Reduction of erosion	△	--	○	Yes	H
Organic farming area	?	↑	▽	Yes	H

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Biodiversity					
Size of protected natural areas	○	-	○	Yes	H
Number of endangered species	○	-	○	No	/M
Environmental quality					
Agricultural hazardous waste	△	--	▽	No	H
Use of renewable energy in agriculture	△	--	△	Yes	H
Fresh and waste water					
Nutrients (N and P) going into waterways	△	--	○	Yes	M
Irrigation water quantity	○	-	○	Yes	M
Number of rural WWT plants	△	--	○	Yes	H

* For the meaning of the signs in the Table, we refer to section 2.4.

The + signs for Ukraine in the agricultural sector are valid with the estimated improvements the FTA brings to the Ukrainian agriculture, especially in responsible use of pesticides and reduced use of fertilizers. Increased animal farming will increase methane emissions in Ukraine.

EU environmental impacts

The overall environmental impact of this FTA on EU agriculture is considered to be negligible in magnitude as in the short run the EU 27 agriculture is expected to have max 0.1 percent change in production output and EU agriculture has already implemented most if not all of the most stringent EU environmental regulations.

The increased production of certain agricultural products (fruits and vegetables during winter season) in the EU for the growing Ukrainian market can have small negative impacts resulting in increased pressure on irrigation water quantities, reduction of erosion and soil quality. Increasing livestock and bio-fuel crop farming together with the absence of good agricultural practices will result in uncontrolled nutrient leakages from Ukraine (indirectly) into international waters (e.g. the EU Black Sea coast, Danube river and Baltic Sea) shared by the EU. This would increase the pressure for flanking measures (e.g. wetlands restoration) also in the EU.

Transfer of animal and crop farming from the EU to Ukraine will have positive impacts for the EU in the form of reduced leakage of nutrients and decreased demand for fertilizers and pesticides. The EU policy goal to increase the share of renewable energy would benefit in the long run from access to renewable energy crops (corn, rapeseed), agricultural waste and wood pellets from Ukraine. This would reduce the CO2 emissions from energy production in the EU. However, a high question mark is the overall impact of CO2 emissions from agriculture both in the EU and Ukraine since the unit emissions in Ukraine are higher than in the EU because of the low use of biogas installations and farm waste for energy supply in farms.

Pressures to reduce rapeseed and sugar beet production in Northern Europe would increase when new supplies from Ukraine reach the EU market. However, these pressures would be balanced partially with the increased demand for renewable energy resources in the EU. Increased animal farming and meat production in Ukraine in combination with the increasing import of these products into the EU raises the need to regulate the use of GMO's for food in Ukraine, which is addressed in Chapter 19.

Regionally the environmental effects of the FTA in the EU are distributed unevenly; (a) pressures to use more irrigation water and negative impacts on erosion and soil quality affect southern regions; (b) nutrient leakages impact negatively especially the EU coastal zones of the Black Sea; and (c) positive land use changes and reduced livestock dung affect central and northern regions.

The EIA results are summarised in Table 8.6 below.

Table 8.6 Summary of environmental impacts for EU agriculture

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from animal farming and biodegradation of agricultural waste	?	--	o	No	H
Land					
Total utilized agricultural area	o	0	o	Yes	H
Soil quality (fertilizer in soil, gross nutrient balance)	?	-	o	Yes	H
Reduction of erosion	?	-	o	Yes	L/M
Organic farming area	o	+	?	Yes	H
Biodiversity					
Size of protected natural areas	o	+	o	Yes	H
Number of endangered species	o	0	o	?	L/M
Environmental quality					
Agricultural hazardous waste	o	-	o	No	H
Use of renewable energy in agriculture	?	-	?	Yes	M/H
Fresh and waste water					
Nutrients (N and P) going into waterways	▽	--	o	No ?	M
Irrigation water quantity	▽	-	o	Yes	M
Number of rural WWT plants	o	+	o	Yes	H

* For the meaning of the signs in the Table, we refer to section 2.4.

8.6 Horizontal issues: sanitary and phytosanitary measures (SPS)

SPS issues potentially have a large impact on Ukrainian and EU agriculture. With SPS issues, it is important to not only look at legal harmonisation but also to implementation and enforcement of SPS rules and regulations.

WTO obligations

The EU requirements for an SPS regulatory system are in some cases more demanding than the WTO requests; in such case SPS standards have to be science based. Ukraine already signed the WTO Agreement on SPS measures and is thus committed to align its domestic SPS system according to the principles of proportionality, harmonisation to international standards, scientific adequacy, justification, transparency and non-discrimination. The country already made big progress in this field so far (e.g. certification of some laboratories). However, still lots of efforts and investments are required to upgrade SPS standards further (and thus facilitating Ukrainian export trade). The major complaints related to the domestic SPS system concern:

- Non-transparent requirements (absence of scientific justification);
- Mandatory standards and overlapping responsibilities of controlling institutions;

These drawbacks are considered as non-tariff barriers to international trade. The impediments should be eliminated and full compliance with SPS/WTO principles is achieved.

SPS in the FTA

Another side of the SPS issue is related to food safety of exported agro-products which could be much more important in the context of the FTA creation. As mentioned before, tariff reductions only provide for limited space for further liberalisation and economic gains while one of the crucial bottlenecks in agricultural trade between Ukraine and the EU is currently to be found in the area of regulatory approximation of Ukrainian standards and the existence of administrative capacity and controlling infrastructure of high level accredited laboratories and trained personnel, that would guarantee the implementation of the controls and their enforcement provided for in Community legislation, to which eventually the Ukrainian legislation is expected to become aligned.

A special veterinary agreement could be a possibility as part of the FTA, but this would involve significant and fast improvements of Ukrainian food safety standards, that may go beyond the time and scope of the FTA. Especially livestock and animal products (including by-products like skins, hides and semen) could be included and would benefit from an agreement. The significant and fast improvements needed, will need substantial investments because the state of administrative capacity, and level of infrastructure of laboratories – trained personnel and modern monitoring systems – is not at EU levels by far.

To work towards establishing a mechanism for recognition of equivalence is of the utmost importance. Equivalence of systems means that, for example, in case of a crisis (e.g. disease outbreak) the EU and its partners can react quickly, and in the same way, with a clear sharing of information.

In Table 8.7 below, we have summarised the agricultural sub-sectors, the SPS situation and consequence for EU-Ukrainian trade as well as the likely FTA impacts on this situation.

Table 8.7 FTA agricultural impacts related to SPS

Agricultural sub-sector	Current situation with respect to SPS and related EU trade	FTA impacts related to SPS
1. Cereals, grains and oil seeds	Domestic certification is internationally recognised and approximated to EU legislation	No SPS related impact from the FTA is expected
2. Sunflower seed oil	Domestic certification is internationally recognised and approximated to EU legislation	No SPS related impact from the FTA is expected
3. Meat and edible meat offal and animal fat	Ukrainian animal products are not all allowed to be exported at present due to lack of standards in productions (SPS). If granted approved 'Third Country' status this is expected to improve. Latest progress involved inclusion of eggs and milk in the residue monitoring plan.	FTA will include measures for regulatory approximation to EU SPS standards – certification of veterinary laboratories, further pressure to comply with residue monitoring and veterinary standards and procedures. Impacts: lifting of the ban on imports, leading to more trade, growth of meat producing sector, employment, wage increases, higher value added for meat sector, increased productivity.
4. Sugars and sugar confectionary	Domestic certification is internationally recognised and approximated to EU legislation	No SPS related impact from the FTA is expected
5. Edible fruits and nuts, citrus fruits, water melons	Domestic certification is internationally recognised and approximated to EU legislation	No SPS related impact from the FTA is expected
6. Beverages, spirits and vinegar	Domestic certification is internationally recognised and approximated to EU legislation	No SPS related impact from the FTA is expected

As the Table shows, many products of animal origin are not allowed to be exported to the EU, but this situation will change when Ukraine obtains the approval and is listed under the list of Third Countries eligible to export to the EU such type of products of animal origin. This status is granted after passing a list of compulsory procedures, certification of veterinary laboratories according to the EU requirements and certification of the potential exporters. Specifically, the procedures include (i) Residue monitoring, and (ii) Answering standard EU questionnaires on veterinary standards and procedures (IER, 2006). Some progress was achieved in this direction when on February 12, 2007, the European Commission approved Ukrainian residue monitoring plans for eggs and milk. Further listing may be carried out in 2008.⁶⁵ After passing the requested procedures (that do not

⁶⁵ Generally speaking, the EU listings classify three broad categories: A, B and C. If a country is given Category A status, its agricultural products enjoy unrestricted access into the EU. Countries in Category B may export agricultural products but

only include legal harmonisation but also implementation and enforcement) these products could be allowed for exports to the EU market.

Regulatory approximation to the EU food safety and food traceability standards can be a part of the FTA agreement but may go beyond it. We expect that controlling and standardisation requirements will meet no objection from the Ukrainian side. Moreover, given the potential economic benefits, the authorities may emphasise fulfilment of these FTA provisions. This will inevitably lead, not only to legal approximation of Ukrainian legislation, but also to policy measures that focus on implementation and enforcement of SPS standards. This will be elaborated upon later.

With respect to meat processing plants, Ukraine may claim for an extension of period on compliance with EU SPS standards since the majority of meat producers will not be able to afford costly modernisation and certification of their products in the short run. During this period, such products can not be exported to the EU market. Moreover, the highly competitive EU market could discourage some Ukrainian meat producers at this stage of their development. Therefore, we do not expect immediate effects of food safety requirements for all sub-sectors to be taking place at once, albeit the long run need is obvious and the process inevitable.

8.7 Conclusions

The agricultural sector is a very broad one with many sub-sectors. The envisaged FTA can have significant but widely diverging impacts on the sector and these sub-sectors.

Overall, it is clear that the FTA is expected to have positive **economic impacts** on the post-WTO agricultural sector in Ukraine and a negligible impact on the EU agricultural sector. In the short run, due to adjustment problems, we expect unemployment to increase at first. In the long run, the FTA is likely to have positive growth and development effects, facilitates the inflow of domestic and foreign investments, causes wages to rise, lowers prices for agricultural products due to competition, cause employment to increase and GDP per capita in the agricultural sector to go up. Also trade flows can significantly increase and overall Ukraine's trade balance will improve, especially with the EU. But this does not come without serious investment costs and legal commitments. Three important aspects need to be kept in mind. First of all, the more extended the FTA, the larger the long run gains for the agricultural sector. This is the economic reason to argue for an extended FTA scenario that includes significant to full tariff liberalisations, and reductions in standard and border costs through regulatory approximation and reductions in corruption and bureaucracy as part of the Enhanced Agreement. Second, the more extended the FTA, the larger the short-run adjustments and restructuring are. These can temporarily depress the long run forecasts or have even negative effects like temporary negative investment effects, lower levels of profitability, unemployment effects, unintended migration flows and a drop in production and exports. Third, regulatory approximation of SPS is important but only the first step of a significant commitment to

not raw products to the EU. Finally, countries in Category C, like Ukraine, is much more restrictive. For example, countries may only export doubly pasteurised and doubly heated and treated (milk) products to the EU.

allow clearance of Ukrainian products for the EU markets. Implementation and strengthening of enforcement capabilities to guarantee food quality are the necessary next steps. This requires short- and long-run investments that are significant. Prioritisation of investments is needed here.

For the EU – as said – the overall agricultural impacts are negligible. However, we do expect increases in exports from the EU to Ukraine in the areas of wine and beers as well as sugar and fruits. Furthermore EU capital owners could benefit through investment opportunities in agriculture. Cereal imports from Ukraine as well as meat and fats are expected to increase, the latter if SPS standards are met and implemented. Two important overall effects in agriculture are that, firstly, prices for EU consumers are expected to drop in several agricultural product categories and secondly, a potential market for EU products is opening up.

The **social impacts** are closely linked to the economic impacts and predict employment increases (though the CGE outcomes may present an upper limit to this effect) and wage increases. Employment increases are expected to be lower initially and also the nature of employment in the agricultural sector may be subject to change due to capital-labour increases and mechanisation of agriculture, as a consequence of FDI inflows. Also the high share of workers not in the labour market may depress the figures. Wage increases are important in the light of differences in regional income distribution in Ukraine. The employment and wage effects can lead to lower levels of poverty and may have a mitigating effect on labour migration. Again, the predicted effects are much stronger in the long run in an extended FTA than in the short-run. Also overall, the FTA is expected to lead to an improvement of working conditions, health & safety standards (via regulatory approximation) and quality of work. This does require significant investment levels and FDI inflows that can originate from the EU. Growth potential in the agricultural sector, due to its relatively minimum efficient scale requirements, may increase entrepreneurial activities and self-employment.

The **environmental impacts** relate mostly to problems with eutrophication and the use of chemicals, dangerous pesticides and the like in agricultural production. These effects are expected to be negative though less so in the long run than in the short run through production upgrading and the use of cleaner production technologies. Also we expect a limited problem of wastewater management and continuing issue of land use, soil remediation and nature conservation.

For the Ukrainian cereals sector, the FTA is expected to have positive impacts in terms of sector growth, increases in exports and investment in production efficiency increases if quotation of exports and TRQs are sufficiently reduced by both Ukraine and the EU. This can also lead to employment increases in Ukraine, higher wages for the workers in the sector and increases in both productivity and working circumstances. For the EU there is a small but negligible impact envisaged on exports of grains and cereals to Ukraine. The FTA is also expected to lead to small price decreases in this market, which may benefit consumers. Fertiliser and pesticide increases may have negative impacts on the environment and biodiversity in Ukraine.

The production of sunflower-seed oil likely stands to gain from trade liberalisation though only in a limited way. Tariffs are already low and Ukrainian products are accepted according to EU standards already. Ukraine may want to keep its export tariffs to support domestic sunflower producers. For the EU, Ukrainian oil production may become more important as a product for bio-fuel production. Trade in oils will intensify between the two trade partners.

The impacts on meat production and animal fats depend to a large extent on the regulatory approximation efforts of Ukrainian SPS standards to the EU acquis but are expected to be positive. In case of deep integration (far-going regulatory approximation), the sector is expected to grow into a major exporter of meat, meat products and animal fats into the EU. Growth will go up, employment will increase and so do wages. In the short-run costly investments in productive capacity and upgrading of outdated machinery to comply with EU food safety requirements will be necessary. Employment effects are predicted to be positive by the CGE model, but sector experts point at limitations not included in the quantitative analysis: gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods. We still imagine the overall effect to be positive in spite of these limitations. Furthermore, adherence to SPS standards, will increase the quality of meat production, which is expected to have positive health effects in Ukraine. Environmentally, the FTA may lead to increases in bio-industry production of meat.

The effects on the sugar and confectionary markets depend on the depth of the FTA agreement. The sugar sector is heavily protected by the EU and Ukraine. Reductions in tariffs would likely lead to significant changes in trade patterns and a reduction in output of the Ukrainian sugar sector. Prices for sugar are expected to drop significantly which is positive for consumers and for the confectionary industry. Lower tariffs are also expected to lead to increases in product varieties in the confectionary industry.

Fruit production is expected to face strong competition in the short-run, which may have an initial suppressing growth effect but will benefit significantly from the FTA in the longer run, also because in this sector EU SPS standards are met. Investments would then go up, and so would employment and wages. This sector is expected to show an increasing trade surplus with the EU because of the FTA. Like in the cereals sector, increased fruit production may lead to increased use of fertilisers and pesticides in order to increase fruit production output. This will have adverse environmental effects. There is also a trend to export fruits processed to fruit juices.

The beverage sector in Ukraine may get hurt by the FTA agreement because of the strong competitive position of the EU in the production of beer and wine. Liberalisation can cause the EU to increase its market share of these products in Ukraine at the expense of domestic Ukrainian producers. Whether this will lead to FDI and thus production fragmentation in which Ukraine will be included, remains to be seen. Vodka production – on the other hand – is expected to increase slightly. Overall a consequence of the FTA is increased levels of investment in new technologies and equipment and increased competition.

The summary of the expected impacts of the agricultural sector are presented below in Table 8.8 in line with the Handbook indications.

Table 8.8 Summarised sustainable impacts on the agriculture sector⁶⁶

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	△	--	△	Yes	L/H
Fixed capital formation	△	-	○	No	L/H
Trade	△	-	○	Yes	L/H
Social					
Employment & decent work	△	+	△	Yes	M
Poverty	△	--	△	Yes	M/H
Equality	▲	--	△	Yes	M/H
Health	△	-	▲	No	M
Education	△	-	△	Yes	M
Environment					
Atmosphere	▽	--	▲	No	M/H
Land	?	-	?	Yes/No	L/H
Bio-diversity	?	-	▲	Yes	L/M
Environmental quality	△	--	▲	Yes	L/H
Fresh and waste water	▽	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the effects for the agricultural sector (and sub-sectors). These effects are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

⁶⁶ A. Overall direction and magnitude of change from baseline (WTO accession) to scenario; B. Extent of existing economic, social and environmental stress in affected areas; C. Equity of change: how it affects different sectors of the population; D. Potential for irreversibility; E. Regulatory and institutional capacity to implement ameliorating measures.

9 Metallurgy

9.1 Description of the metallurgy sector

Sector overview and recent developments

Metallurgy is a key industry for Ukraine's economy. Metal is the most important export article of Ukraine and an important input for machinery and metalworking industries. In 2005 metallurgy and metal processing contributed 32.6 percent to total exports. The industry produced 5.1 percent of GDP while employing 3 percent of the working population⁶⁷.

The Ukrainian steel industry depends to a large extent on export demand because only one quarter of domestic steel production is needed to satisfy domestic demand. Ukraine has one of the world's lowest unit costs to produce steel, but is technologically old-fashioned and needs substantial amounts of investment to improve its infrastructure and quality and efficiency. Material expenses in 2005 constituted 82.5 percent of the final costs of the product, while labour remuneration accounted for 7 percent only. Metallurgy has become one of the most attractive industries for foreign investors.

Due to high market prices and geographical proximity, the EU plays a vital role in Ukrainian steel exports. In 2005 Ukraine increased its export to the EU to 4.5 million tons of ferrous metals and correspondingly up to 5.1 million tons of all metals. The country occupies the third place among main steel exporters into the EU after Russia and China. As the export to the EU of some articles of Ukrainian metal-roll export is limited by quotas, growth in trade is achieved mostly due to increases in non-quota products, such as semi manufactured steel and cast iron. It must be noted that the precise volume of Ukrainian steel exports to the EU is hard to determine because part of it is exported through third countries (off-shore).

⁶⁷ Within the context of the TSIA, only the influence of the FTA on ferrous metallurgy will be analyzed, while non-ferrous metallurgy will not be included. There are two major reasons for this decision: i) non-ferrous metallurgy plays insignificant role in Ukrainian economy in comparison with ferrous one, ii) current tariff on all non-ferrous metals is zero with an exception of copper (2.8 percent) and aluminium (0.01 percent) both are to be zero after the WTO accession. The metallurgy sector is considered here to consist of two product groups: "ferrous metals, metals nec" and "metal products."

Institutional & market structure

The basis of Ukrainian ferrous metallurgy is formed by twelve integrated steel making plants that provide 96 percent of total output. The metallurgy market is highly concentrated with the four largest plants producing around 58 percent of total output. Major issues that are influencing the development of the sector include:

- *Significant gas prices increases.* Metallurgy is the largest consumer of natural gas in Ukraine.⁶⁸ Investments in energy saving have already started on seven major plants with most improvements expected to take place in 2008 -2009. Most of the projects provide for introduction of pulverized-coal injection technology;
- *Steel production technology is outdated.* 45 percent of steel is produced in open-hearth furnaces – a method no longer used in Europe – of which 87 percent is operated after service life period;
- *Lack of investment in the post USSR time.* The first plants were sold for US\$ 50-70 per ton of production capacity and were not viewed by the new owners as targets for new investments. Intensive exploitation of existing production facilities with insignificant investments allowed to maintain competitiveness of the industry, but lowered its efficiency; and
- *Increases in railway fares* for internal transportation of metallurgy products. In 2007 internal transportation costs increased by 42 percent and export fares grew by 19 percent.

9.2 Current policies and crucial sector issues

WTO commitments and progress towards these commitments

Ukraine has committed itself to bringing its metallurgy tariffs in accordance with WTO requirements. Currently Ukraine applies tariffs on both ferrous metals and ferrous metal products. As for the metals the average level of tariff in 2006 was 2.13 percent while the bound tariff rate for this position is 1.51 percent. However, as internal Ukrainian prices are lower than at the international market, this insignificant reduction in tariffs is not likely to damage the industry. WTO commitments are not expected to have any impact on ferrous metal products production, as the currently used tariff rate (2.81 percent) is lower than the bound rate (3.02 percent).

Subsidies and anti-dumping issues

Distinctive features of the Ukrainian metallurgy sector are government subsidies and external antidumping pressures because of these subsidies. The authorities began providing metallurgy with subsidies after the collapse of the USSR – mostly in the form of tax immunity. As a result of this state support the EU – in February 2000 – imposed anti-dumping measures on imports into the EU of seamless pipes and tubes from Ukraine. In 2005 the EU increased the level of antidumping duties for Ukrainian producers further.

In June, 2006 the European Union adopted the Council Regulation which imposed the final antidumping measures on imports into the EU of certain seamless pipes and tubes from iron or steel originating from Ukraine.

⁶⁸ It takes five times more energy to produce a ton of steel in Ukraine than it does in the European Union, the average gas consumption per ton of steel constituted 0.26 thousand of cubic metres.

The levels of the antidumping duties established by the Regulation ranged from 12.3 percent to 25.7 percent. Products of some Ukrainian plants were under the risk of antidumping measures also in Russia. Recent issues have been solved by voluntary self-restriction policies adopted by Ukraine.

Until now, the Ukrainian authorities have been subsidising or giving “state aid” to the metal industry with the help of state regulations on prices and subsidies for coal industry, power utilities and the oil and gas complex FEC. Especially the restructuring of the FEC is currently a matter of attention for the Ukrainian authorities in order to avoid further anti-dumping measures from the EU.

EU-Ukraine relations and agreements pertaining to metallurgy

In 2005 an agreement was signed in Brussels between the Ukrainian authorities and the European Union on trade in certain steel articles for 2005 – 2006. It was renewed in June 2007 until the end of 2007. The Agreement's conclusion was a key event in relations between Ukraine and the European Union, as it formalised the parties' relations in steel trade. It provided for an increase in Ukraine's quota for exports of flat-rolled and assorted rolled steel articles to the EU, if and only if Ukraine's export duties on ferrous scrap metal will not exceed 30 euros per ton. The Agreement also specifies that Ukraine's steps to lower export duties, levied on exports of ferrous metal scrap, will be followed by the EU move to increase Ukraine's quota. Quotas and their usage are given in Table 9.1.

Table 9.1 Ukrainian deliveries of quoted steel to the EU

	2003	2004	2005	2006	2007
Quota	184.5	606.8	988.9	1,004.5	1,320.0
Delivered	118.0	549.4	922.0	1,097.3*	
Percent of quota used	64%	91%	93%	98%	

*including quota remaining from 2005

The Agreement shall be automatically renewed year by year provided that neither Party gives the other Party written notice of denunciation of the Agreement at least six months before it expires. With each renewal, quantities in every product group shall be increased by 2.5 percent, while in 2007 a one-time greater increase was allowed to compensate Ukrainian exports for the enlargement of the EU to Romania and Bulgaria. In the event that Ukraine joins the World Trade Organisation (WTO) the Agreement shall be terminated and the quantitative limits shall be abolished as from the date of accession.⁶⁹

In the summer 2007 Ukraine started negotiations with the EU to increase the quota up to 2.17 mln tons in 2008. This initiative was brought forward by Ukrainian metal producers, who used 77 percent of their quota in the first six months of 2007.

⁶⁹ The above quantitative limitations do not cover Ukraine's exports of flat-rolled steel and other steel articles, which are meant for shipbuilding, repairs and construction of rigs and floating platforms for offshore drilling.

The EU-Ukraine Action Plan doesn't concentrate specifically to the metallurgy sector, but it does list the following issues, which relate directly to it:

- Take action to ensure good environmental management;
- Adopting environmental plans for priorities in investments in each sub-sector;
- Adopt state aid policies, which don't distort the trade between EU and Ukraine; and
- Establishing of transparency regarding state aid.

Ukraine produces large amounts and different types of steel and metal objects with outdated equipment. For instance more than half of the world's outdated and energy wasting open hearth furnaces are now in this country, and about 47 percent of Ukrainian steel is produced with their use. Only 24 percent of steel is produced with continuous casting. As a result steel making plants and related coke production and metal mining are responsible for about 40 percent of hazardous air emissions from stationary sources in Ukraine.

Polluted water discharges are about 800 million m³ or 23 percent of the overall amount of polluted water, about 300 million m³, that is discharged without any treatment. Metallurgy is responsible for the annual formation of about 1 billion tonnes of solid waste or 41 percent of the overall amount. This waste is frequently accumulated in huge landfills on site. Even in comparison with similar Russian plants, specific Ukrainian consumption of coke and iron ore is 10.3 percent higher.

Nevertheless, even with inefficient and polluting production methodologies, Ukraine has a great number of freely Assigned Amount Units (AAU, in tonnes of CO₂eq) within the framework of the Kyoto Protocol, which Ukraine ratified in February 2004. It therefore has the opportunity to earn up to 10 billion US\$ by selling the quotas. Ukraine plans to sell about 1-1.2 billion tons of the AAU during the budget period of the Kyoto Protocol in 2008-2012. The mechanism for such quota sale is fulfilled within the framework of so-called "green" investments: funds received by the state should be directed to environmental projects, which will decrease emissions of CO₂ and other greenhouse gases, in Ukraine arranged through the National Agency of Ecological Investments of Ukraine.

With a carbon quota deficit in the EU and its very ambitious plans beyond the Kyoto period, the Ukrainian steel industry may benefit from being late in its previous development and jump to the most efficient innovations with EU support and thus capitalise on its huge potential to create top competitive conditions for the (Ukrainian) steel industry. In fact, the sector has no alternative for drastic improvements of its environmental performance and corresponding increase of competitiveness.

Substantial help in this process may be provided by the current process of implementation of the European concept of best available techniques in accordance with the European Union's Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC). The draft Ukrainian Law on IPPC should be prepared already in 2007. Ferrous metallurgy is chosen as pilot sector, and the two first permits should be issued for a steel plant and a coke plant already in 2008.

9.3 Potential impact of an FTA

9.3.1 CGE modelling results

The assumptions underlying the CGE model for both FTA scenarios are summarised in Table 9.2 below and the model outcomes are presented in Table 9.3.

Table 9.2 Scenario overview metallurgy (2004 as benchmark)

WTO scenario	Scenario 1 Extended FTA	Scenario 2 Limited FTA
91% tariff reduction	100% tariff reduction from base case	98% tariff reduction from base case
Standard costs reduced by 15%	Reduction border costs by 50%	Reduction border costs by 10%
No reduction in border costs	Standard costs reduced by 35%	Standard costs reduced by 25%

Table 9.3 Model outcomes of the FTA impact on the metallurgy sector (% change)

Indicators by sub-sector	Scenario 1: Extended FTA		Scenario 2: Limited FTA	
	SR	LR	SR	LR
Ferrous metals, metals nec				
Prices	-1.2	-1.1	-0.3	-0.2
Production	2.6	3.9	0.4	1.3
Skilled employment	2.68	4.05	0.44	1.36
Unskilled employment	2.69	4.07	0.44	1.36
Exports	3.0	4.0	0.0	1.0
Imports	1.0	1.0	0.0	0.0
Exports to EU	12.0	13.0	4.0	5.0
Imports from EU	4.0	4.0	1.0	2.0
Metal products				
Prices	-2.0	-1.9	-0.8	-0.7
Production	5.8	6.9	2.0	2.8
Skilled employment	5.96	7.23	2.04	2.86
Unskilled employment	6.00	7.28	2.05	2.87
Exports	9.0	10.0	4.0	4.0
Imports	3.0	4.0	2.0	2.0
Exports to EU	22.0	23.0	10.0	11.0
Imports from EU	8.0	8.0	4.0	4.0

The metallurgy sector shows the anticipated positive impacts from an extended FTA for Ukraine in terms of increases in output and employment. The effects are stronger for an extended FTA, which is especially true for trade in general and trade with the EU in particular.

Also in the longer-run, when capital investments are allowed and internal capital re-allocation is possible in the Ukrainian economy, output will increase even more and so do

employment and trade.⁷⁰ In case of a limited FTA there will be small increases in exports to and imports from the EU, while decreases in trade with third countries result in little or no trade effects in general. Particularly for the sub-sector metal products the effects of an extended FTA will be substantial, with predicted increases in output of over seven percent and increases in exports of approximately 23 percent in trade with the EU.

Outcomes of the model for the EU are all limited. Only in the metal products sub-sector some effects are predicted for exports (small decrease) and imports (increase of around 8%). However, these effects are dispersed and therefore negligible.

9.3.2 Economic impacts

The FTA agreement between the EU and Ukraine has the following estimated economic impacts for both countries:

- Border costs reductions are important in metal trade with Ukraine as export-import documents preparation takes up to a month and large reserves need to be kept. Reductions can lead to lower 'trade costs' and thus higher levels of competitiveness for Ukrainian steel and cheaper prices for steel in Ukraine and the EU;
- Upon accession to the WTO – with the agreement between the EU and Ukraine regarding steel currently in place – we expect an increase in exports of steel from Ukraine to the EU – the FTA is expected to even more support steel trade. This is expected to lead to a significant improvement in the trade balance of Ukraine;
- In the longer-run, when capital can move freely, the model shows stronger positive results than in the short-run. This is confirmed by the in-depth analysis whereby we expect further production increases when the metallurgy sector improves its equipment base, also leading to improved environmental impacts (more later);
- Ukrainian producers are expected to introduce new and more productive production methods, as their export advantage thanks to the extended FTA can be revisited if they are not able to compete in the global markets against other low-cost metal producers like China;
- Attraction of foreign investments to some plants and resistance to foreign capital at some others may lead to vertical integration of major production plants and increases in transparency of their operations. Indirect effects may include management improvements and strategic planning development. Also Ukrainian companies may be interested in European technologies (Voestalpine, Salzgitter) in order to reduce the quality gap in steel production. The FTA can lead to the import of technology and know-how;
- Increased pressure of rising costs of production is leading to plant modernisations in order to maintain profitability. Major projects are expected to take place in energy saving and changes in the technology of production;
- Predicted growth of the construction and motor vehicles industry are expected to lead to increases in demand for steel from the side of these sectors and consequently growth in metallurgy;

⁷⁰ Which is entirely in line with the theory of diminishing returns to capital and labour. When capital is allowed to allocate freely, it will allocate where it yields the highest marginal return (domestic as well as foreign capital) and thus increase the marginal product of labour, which is then again the reason why wage increases are possible.

- Improvements in standardisation or introduction of European standards as a result of the FTA are not expected to have a large significant economic impact due to only minor mismatches in both technical and chemical requirements between the EU and Ukraine; and
- As the ICPS study (2007) points out, in addition to the positive environmental effects resulting from adopting new production technologies, the efficiency and production can improve. This could allow Ukraine to start trading in Kyoto Protocol emission credits, while keeping its metallurgy production at the same level or even at a higher level. This would of course boost the economy as a whole also. The low level of emissions currently compared to the allowed level acts also as an incentive for European metal producers to transfer their production into Ukraine hence enhancing Ukrainian domestically based production and employment even further.

The economic impact of an FTA for the metallurgy sector in the EU will be limited to negligible. Some positive effects can be expected in terms of exports (four percent increase in the case of an extended FTA) and considering the concentration of the sector within the EU, this may positively affect some steel producing regions within the EU. However, at the moment many European producers have difficulties staying inside the allowed CO₂ emission targets even with current production levels. By transferring some of their production to Ukraine – which would be possible and easier upon signing the FTA – European producers could also benefit from the FTA and increase their production.

9.3.3 Social impacts

Social impacts focus on poverty reduction, and mostly labour issues like productivity and upgrading production facilities with respect to labour circumstances and worker safety.

The first impact of the FTA – both in the limited and extended versions – is predicted to be an increase in employment between two and seven percent. This increase in job opportunities reduces unemployment and has positive wage effects. Furthermore, lower unemployment can lead to lower levels of poverty. Since the metallurgy sector employs by and large low-skilled workers the positive effect on poverty alleviation is expected to be substantial.

Currently the use of outdated technologies and furnaces with expired life spans endanger worker safety in the sector. Upgrading of production facilities has been initiated, especially after the gas price increases, but still has limited coverage. Nevertheless, technological changes to modernise metal production aimed at increasing energy efficiency and productivity – i.e. motivated for economic reasons – will *inter alia* lead to higher levels of worker safety and positive (secondary) health effects.

No longer do workers have to operate polluting machines in factory halls but instead they can enjoy machines with identical technologies to the EU.

The FTA is expected to lead to more inflow of foreign investments from the EU into the sector and facilitate upgrading of the machinery and production methodologies (as mentioned before) which is expected to lead to higher productivity and thus to higher worker salaries as well, since wages reflect labour productivity. Increased productivity also leads to lower prices – not for consumers but as an intermediate input – and as such has a significant impact on the cost of living in Ukraine.

Growing demand for metal and metal products from the side of other expanding industries, such as machinery and construction, will most likely have a positive impact on employment in the metallurgy sector, which is confirmed by the modeling results.

In the EU, the very small negative production effects can lead to a small decrease of employment in the sector but has the positive effect of lower steel prices for EU industries. The concentration of the metal industry in Europe could lead to the producing regions facing small unemployment problems. However, as mentioned earlier these effects are estimated to be very small in magnitude.

9.3.4 Environmental impacts

The extended FTA predicts for the long run a 6.9 percent increase in metal products production and a 3.9 percent increase in ferrous metals production in Ukraine. We assume increases in output in the EU because of the increased import of metal scrap and semi-finished raw materials. The FTA will result in an increase of greenhouse gas emissions, if the current situation in the sector is not changed.

The environmental impact situation for this export-oriented sector may be assessed as one of the most significant in the study, both due to support of production levels and because of its environmental performance. The summary is shown in Table 9.4.

Table 9.4 Summary of environmental impacts for Ukrainian metallurgy

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from metallurgy ⁷¹	▽	--	○	No	H
Air pollution and ozone depletion	▽	--	△	No	M
Land					
Use of iron ore and other raw materials	○	0	▽	No	L
Management of contaminated sites	▽	--	○	Yes	H
Biodiversity					
Contamination of waterways	▽	--	▽	Yes	M

71 Metallurgy CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Environmental quality					
Waste management	○	--	○	No/Yes	L/M
Use of energy	▽	--	▽	No	M/H
Energy efficiency	○	--	○	No	H
Fresh and waste water					
Quantity of water use	○	–	○	No	M
Quantity of waste water	▽	–	○	No	M
Cleaning of waste water	○	–	○	No	M

* For the meaning of the signs in the Table, we refer to section 2.4.

The most important environmental impacts of the FTA with respect to the metallurgy sector are:

- An expected increase in the size of the metallurgy sector leads to increasing levels of pollution – especially if production continues to make use of the current production technologies. This will lead to lower air quality and higher levels of dangerous chemicals in the atmosphere;
- The FTA can provide EU support and – through liberalisation – FDI support for upgrading production methods and processes leading to more efficient and cleaner production (e.g. get rid of open hearth furnices);
- Ukraine can start producing part of the metallurgy products for the EU so the EU can meet its Kyoto protocol commitments while Ukraine still has idle capacity there and can boost employment and domestic production;
- The FTA may include provisions to reduce dust emissions as will be elaborated in Chapter 19;
- Implementation of continuous monitoring, which is absent now, and improving the system of monitoring in general should provide reliable data on environmental performance and reflect any improvement or worsening.

The EU environmental impacts are identified for metallurgy. The framework is based on the EU Reference documents for the sector⁷², and the environmental impact assessment (EIA) follows the guidelines of the EU Environmental *Acquis* and screening of gross media impacts is in accordance with the IPPC Guidelines⁷³. The environmental impact is related only to the change in the sector output, and therefore cannot always be exactly quantified because of the small magnitude of change. Scoring of sustainability impacts follows the Handbook. The EIA results are summarised in Table 9.5 below.

⁷² European Commission, 2001a. Integrated Pollution Prevention and Control (IPPC). Best Available Techniques Reference Document on the Production of Iron and Steel Reference Document on Best Available Techniques in the Ferrous Metals Processing Industry. December 2001. European Commission, 2001b. Integrated Pollution Prevention and Control (IPPC). Reference Document on Best Available Techniques in the Non Ferrous Metals Industries. December 2001.

⁷³ European Commission, DG Joint Research Centre, European IPPC Bureau, Integrated pollution control and prevention, Reference Document on Economics and Cross-Media Effects, May 2005

Table 9.5 Summary of environmental impacts for EU metallurgy

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from metallurgy ⁷⁴	▽	--	○	No	M/H
Air pollution and ozone depletion	▽	–	○	No	M
Land					
Use of iron ore and other raw materials	○	0	○	No	L
Management of contaminated sites	△	–	○	Yes	H
Biodiversity					
Contamination of waterways	?	–	?	Yes	L/M
Environmental quality					
Waste management	△	–	○	No/Yes	L/M
Use of energy	△	–	○	Yes	M/H
Energy efficiency	?	--	○	Yes	H
Fresh and waste water					
Quantity of water use	○	–	○	No	M
Quantity of waste water	○	–	▽	Yes	M/H
Cleaning of waste water	?	–	○	Yes	M

* For the meaning of the signs in the Table, we refer to section 2.4.

The environmental impact is assessed to be most significant for the greenhouse gas and SO₂ and NO_x emissions with an overall increase higher than the increase in production due to the lower industrial standards in Ukraine. The magnitude of this change is estimated to be from 1 to 0.5 million tons CO₂ per year without flanking measures.

Other negative impacts for the EU would arise from increased production from metal scrap and finished products based on intermediates products supplied from Ukraine. An increased flow of metallurgy sector wastewater effluents from Ukraine into international waters shared by the EU would increase the pressure for flanking measures also in the EU.

Positive impacts for the EU would arise from reduced primary production of iron, steel and non-ferrous metals. The impacts would be highly localised and would improve the air quality, reduce the energy consumption and could leverage the negative impacts if the reductions in production would happen on same sites as the increased use of metal scrap and intermediate products from Ukraine.

9.4 Conclusions

Summarising the in-depth impact assessment of the FTA on the metallurgy sector, we conclude that the **economic impacts** are significant and positive. Tariff reductions in the FTA potentially lead to production increases of both the ferrous metal sector and metal

74 Metallurgy CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

products sector in the extended as well as the limited FTA (albeit more in the extended FTA) and both in the short-run as in the long run. Lower tariffs are expected to increase trade flows between the EU and Ukraine. Increased competition also leads to lower prices and in the long run a drive to upgrade production methodologies. Investments in the sector may lead to increases in productivity and better and more environmentally friendly production in the longer run. The issue of state subsidies for this sector remains an important issue though, partially offsetting these positive impacts.

As a consequence of increased production, also employment, a **social impact**, is likely to increase because of the FTA, so do wages. This could lead to lower poverty levels among the formerly unemployed and low-skilled workers. Improvements in production methods and machines may lead to higher levels of work safety and improved working conditions in general in line with decent work directives of the ILO. Also a positive impact on health could be possible due to cleaner and better work circumstances.

The **environmental impacts** of changes in the production structure of the metallurgy sector are significant and among the most important of the FTA. Increased production will lead to more greenhouse gas emissions, lower quality of the air and higher levels of dangerous chemicals in the air and in the water. Wastewater may pollute (international) waters and increase in quantity. Flanking measures may offset some of these impacts. The sustainable impacts are summarised in Table 9.6 below.

Since Ukraine is currently below the allowed pollution ceiling agreed in the Kyoto protocol, EU metallurgy production (where there is a pollution deficit) may move to Ukraine, which leads to increases in production and employment, albeit at the cost of more pollution.

Table 9.6 Summarised sustainable impacts on the metallurgy sector⁷⁵

Core indicator	Overall direction magnitude	Existing conditions	Equity	Reversibility	Capacity to change
Economic					
Real income	▲	+	▲	Yes	M/H
Fixed capital formation	▲	+	▲	No	M
Trade	△	+	▲	Yes	M/H
Social					
Employment & decent work	▲	0	△	Yes	M/H
Poverty	▲	-	△	Yes	M/H
Equality	△	-	△	Yes	M
Health	△	--	△	Yes/No	M
Education	?	0	△	Yes	M
Environmental					

⁷⁵ A. Overall direction and magnitude of change from baseline (WTO accession) to scenario; B. Extent of existing economic, social and environmental stress in affected areas; C. Equity of change: how it affects different sectors of the population; D. Potential for irreversibility; E. Regulatory and institutional capacity to implement ameliorating measures.

Atmosphere	▽	--	▲	No	M/H
Land	△	-	?	Yes/No	L/H
Bio-diversity	?	-	▲	Yes	L/M
Environmental quality	○	-	▲	Yes	L/H
Fresh and waste water	○	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the sector picture, but they are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

10 Machinery & Electronics

10.1 Description of the machinery & electronics sector

Machinery and electronics play a vital role in the economic development of Ukraine – and for that matter in any country – because it is an industry that produces the intermediate parts needed for final goods production. Therefore, machinery construction has a direct influence on the development of other sectors in the economy and is as such an *enabling* industry.

In 2005 machine building, repair and assembly of machines and equipment provided 4.7 percent of GDP, while employing 5.5 percent of the labour force. Even though substantial, this share could have been much larger if not for the economic crisis of 1991-1997. During these years machinery construction experienced one of the biggest recessions of any sector in the Ukrainian economy. Production of some of the outputs decreased by 90-95 percent compared to their Soviet time levels. The main reason for this downturn was the discrepancy between the asked price and low quality of goods produced.

In the ‘machinery and electronics’ sector both domestic and foreign firms produce a wide variety of products designed for industries and households. The home appliance market is the most competitive one with an overwhelming dominance of imported commodities. On the other hand, heavy machinery demand is met by local producers. They maintain close ties with their (company) clients in associated sectors or are a part of larger business groups.

The structure of machinery production underwent substantial changes during the period 2001-2005. While transport vehicles and their parts and components comprised 25.3 percent of overall sector production in 2001, this share grew significantly to 42.5 percent in 2005. On the other hand, the share of machinery equipment declined to 34.8 percent in 2005 from 47.5 percent in 2001, although real output grew over that period. Electronics and electric equipment constituted 22.7 percent of the sector’s output in 2005 and 26.2 percent in 2001.⁷⁶

During the last years the highest growth rate was demonstrated by the manufacturing of parts and components for the automobile industry, which was mainly due to foreign investments and growth of internal demand. Manufacturing of household appliances and

⁷⁶ Because of international definitions, we look at machinery and electronics as well as at transport equipment and motor vehicles and parts because the latter two are also part of machinery production, and we have analysed these sub sectors in the CGE analysis with outputs worth mentioning.

manufacturing of office and computing equipment also increased, due to growth in income of the population, an inflow of investment, increases in bank credits and the availability and need to renovate capital assets. However domestic demand for large machines, such as agricultural machines, trucks and tractors remains low; this leads to growth in unused production capacities, which – at some places – reaches levels of 40-50 percent. Lower investment activities have had a negative impact on the industry and so did late payments for machines taken on lease by agricultural companies.

As the export to output ratio for the sector (34.6 percent in 2005) and the import to output ratio (65.8 percent in 2005) show, the sector is involved substantially in international trade. However, the geographical structure of exports is far from being balanced. Out of all Ukrainian exports of machinery and equipment about 17.4 percent goes to the EU, while imports from the EU-25 in 2005 exceeded 75 percent of the total machinery imports..

10.2 Current policies and crucial sector issues

In the machinery & electronics sector, the following crucial issues are identified:

- Outdated equipment and low productivity;
- Protection of the car and road vehicles sector;
- Ecological issues; and
- State aid.

Outdated equipment and low productivity

Ukraine's trade policy relating to the machinery & electronics sector is characterised by a twofold approach. On the one hand, Ukrainian industries badly need new equipment and technologies for renovation of production capacities. This requires opening of the market and a reduction of trade barriers for machinery imports. On the other hand, most of the local machinery sector's companies can hardly stand competition with acknowledged world leaders in the domestic market.

Protection of the car and road vehicle sector

The car and other road vehicles sub sector is the most protected one against international competition in the machinery & electronics sector. The lobby of car producers remains one of the strongest in the Ukrainian parliament, thus the industry benefits to a large extent from artificial competitive advantages. Currently Ukraine charges 25 percent import tariffs on cars, 20 percent on most types of trucks, and 2-12 percent on special purpose vehicles. As part of its WTO concessions schedule Ukraine has committed to reduce the maximum tariff rate on vehicles to 10 percent, which is likely to affect prices in domestic market.

Another measure affecting international trade in vehicles was prohibition to imports of cars older than 8 years, which was a clear violation of the WTO norms. The restriction was abolished by Parliament in December 2006. Instead, another discriminatory measure – a fee for the first-time registration of road vehicles – was introduced. The fee is related

to the engine volume and age of a car (it is higher for older cars with greater engine volumes).⁷⁷ The formal justification for introducing such kind of limitation was to prevent imports of old cars polluting the environment. According to governmental officials, such an arrangement is compatible with Ukraine's schedule under the WTO.

However, it is mostly likely to be changed under the FTA agreement. Environmental protection measures are to be enforced through ecological standards, not through discriminatory registration fees.

Ecological issues

The ecological aspect of vehicles production and exploitation is one of the most important in the context of FTA. Ukraine substantially lags behind the EU in terms of implementation of modern ecological standards. Since July 2007, Ukraine switched to the Euro-2 standard, while Euro-5 is currently being implemented in the EU. This immense gap in ecological standards may potentially complicate free trade in cars between Ukraine and the EU and lead to biased trade flows (i.e. many more exports of EU produced cars to Ukraine than vice versa). There is fear is that a premature introduction of higher standards will be too costly and burdensome for Ukrainian road vehicle producers. However, care should be taken in order to ensure in-time introduction of later generation ecological standards. Producers should be provided with reasonable and credible timelines in order to switch to production technologies that meet high ecological standards.

For efficient environmental regulation of production activities Ukraine has started the implementation of provisions of the European Union's Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC). Main Ukrainian installations of the sector should be under the new system, there are several hundreds of them. It envisages as well consideration of other relevant European directives and international regulations. One of them is The Waste Electrical and Electronic Equipment Directive of the European Community (WEEE Directive 2002/96/EC) on waste electrical and electronic equipment, which introduces a product cycle approach for all types of electrical goods. The directive imposes the responsibility for the disposal of waste electrical and electronic equipment on the manufacturers of such equipment. It may help to find the solution for some of the acute environmental problems in Ukraine.

State aid

The issue of state aid for "machinery & electronics" has received special attention from the Ukrainian authorities in the latest years. A number of state aid programmes was approved in 2001-2002. As most of them had few positive effects on the long-term sector development and lead, instead, to possible corruption and inefficient resource allocation, they were abolished by Parliament in March 2005. Currently, the only beneficiaries of state aid in the machinery and electronics sector are road vehicles producers. Most of them enjoy subsidies in the form of tax exemptions (which are actionable subsidies under the WTO SCM Agreement). The Decree of Cabinet of Ministers of May 24, 2007 allows import of materials (according to the approved list) and intermediate products free of

⁷⁷ The fee for registration of a new car with an engine of 1600 cm is 16 USD, while the fee is 960 USD for a similar car older than 8 years.

import tariffs and value added tax.⁷⁸ Such Decree provisions are in direct conflict with the EU “acquis” as they create a discriminatory regime in the car market. Subsidies in the form of tax exemptions proved to be utterly non-transparent and stimulating various forms of fraudulent behaviour. Although the Decree expires by the end of 2007, tax privileges are likely to be lobbied further in Parliament.

In this situation, the design of a state aid strategic programme is one of the key things to be done urgently. On the one hand, discriminatory norms should be avoided in the future, while on the other hand, Ukraine should learn to effectively implement a state aid programme compatible with the EU ‘acquis communautaire’ in order to enhance competitiveness of local producers. State aid should be focused on development of long-term competitive advantages of the sector, rather than supporting current activities of companies. Among the state aid priorities are:

- Research and development;
- Environmental protection;
- Company restructuring; and
- Implementation of international (the EU, primarily) technical regulations;

Technical regulation in machinery & electronics is another important issue. The companies’ ability to export depends on the products compliance with international norms. One striking example is the aircraft construction sub-sector functioning in accordance with the 7200 normative technical documents designed in Soviet times. The progress in aligning domestic technical regulations with the EU ones is quite modest so far. Discrepancy between Ukrainian and EU technical regulations is one of the reasons of Ukraine’s geographical export bias towards the CIS markets. The CIS countries’ and Ukrainian technical norms stem from the same Soviet documents and this substantially reduces technical barriers for exporters and importers in the trading countries.

One of the possible ways to boost the machinery construction sector in Ukraine lies in improvement of the technological levels of large agricultural machinery, the production of modern and ecologically cleaner engines, and the use of metals with modern protection against corrosion.

EU-Ukraine relationship in machinery and electronics

The EU-Ukraine Action Plan defined some priorities in reforming of Ukrainian machinery and electronics sector, among them are:

- Alignment of Ukrainian legislation in the automobiles sector with the PCA provisions;
- Elimination of discriminatory treatment in the use of promissory notes;
- Adoption of state aid legislation with a principle of prohibition of state aids which distort trade between Ukraine and the EU;
- Adoption of good environmental governance and national programmes and plans for key environmental sub-sectors;
- Fighting corruption;
- Approximating legislation involving improvements in quality of products.

⁷⁸ Tax privileges were abolished by the Cabinet of Ministers on July 20, 2005, but approved again on May 24, 2007 following ruling of the court.

The Partnership and Cooperation Agreement (PCA) provides for the following actions in relation to the machinery & electronics sector:

- Restructuring of policies to fully incorporate environmental considerations;
- Develop industrial co-operation in the fields to technology, industrial production standards and environmental protection.

10.3 Potential impact of an FTA

10.3.1 CGE modelling results

The assumptions underlying the CGE model for both FTA scenarios are summarised in Table 10.1 below and the model outcomes are presented in Table 10.2. This is carried out for both ‘machinery & electronics’ and ‘motor vehicles and parts’.

Table 10.1 Scenario overview metallurgy (2004 as benchmark)

Sub-sector	WTO scenario	Scenario 1 - Extended FTA	Scenario 2 - Limited FTA
Machinery equipment and Electronics equipment	<ul style="list-style-type: none"> ▪ 35% tariff reduction ▪ No reduction in border costs ▪ Standard cost reduced by 15% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 50% ▪ Standard cost reduced by 35% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 10% ▪ Standard cost reduced by 25%
Motor vehicles and parts	<ul style="list-style-type: none"> ▪ No tariff reductions ▪ No reduction in border costs ▪ Standard cost reduced by 15% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 50% ▪ Standard cost reduced by 35% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 10% ▪ Standard cost reduced by 25%
Transport equipment	<ul style="list-style-type: none"> ▪ 15% tariff reduction ▪ No reduction in border costs ▪ Standard cost reduced by 15% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 50% ▪ Standard cost reduced by 35% 	<ul style="list-style-type: none"> ▪ 100% tariff reduction ▪ Reduction of border costs by 10% ▪ Standard cost reduced by 25%

Table 10.2 Model outcomes of the FTA impact on the machinery & electronics sector (% on top of WTO)

Indicators by sub-sector	Scenario 1: Extended FTA		Scenario 2: Limited FTA	
	Short run	Long run	Short run	Long run
Machinery equipment & Electronics equipment				
Prices	-1.3	-1.2	-1.0	-0.9
Production	7.4	13.1	4.4	6.2
Skilled employment	10.8	13.9	4.5	6.5
Unskilled employment	10.8	14.0	4.5	6.5
Exports	16	19	8	9
Imports	4	8	2	4
Exports to EU	44	47	22	24
Imports from EU	14	20	16	21
Motor vehicles and parts				
Prices	-1.9	-1.8	-1.3	-1.2
Production	4.7	7.9	1.5	3.6

Indicators by sub-sector	Scenario 1: Extended FTA		Scenario 2: Limited FTA	
	Short run	Long run	Short run	Long run
Skilled employment	5.0	8.4	1.6	3.9
Unskilled employment	5.1	8.5	1.6	3.9
Exports	9	11	4	7
Imports	4	8	2	5
Exports to EU	57	60	28	30
Imports from EU	66	84	90	102
Transport equipment				
Prices	-0.3	-0.2	-0.3	-0.2
Production	3.3	5.3	1.5	2.9
Skilled employment	3.2	5.2	1.5	2.8
Unskilled employment	3.2	5.2	1.5	2.7
Exports	4	6	2	3
Imports	3	6	1	3
Exports to EU	23	25	12	13
Imports from EU	25	33	19	25

The machinery and equipment sector is one of the larger sectors in terms of employment and output in Ukraine. When we look at the expected changes in output and employment, this sector tops the charts in absolute values. Changes of 13.1 percent in production as a consequence of the FTA and 14.0 percent in employment make this the number one sector in terms of changes in its production structure. Given the depressed state of the sector, the FTA may just be what is needed to boost it into higher levels of productivity, employment generation and output levels. Also the motor vehicles and parts sector shows increases in production, employment and trade, albeit smaller in percentage changes than the machinery & electronics sector.

Prices in both sectors are expected to decrease because of the FTA and the trade balance of the sectors may improve because exports increase faster than imports.

10.3.2 Economic impacts

There are various expected economic impacts of the FTA for the machinery & electronics sector that have a significant impact on the Ukrainian economy.

- Especially in the long-run in the extended FTA, we expect the sector and its sub-sectors to show large (up to 13.9 percent) increases in production because of lower prices and more international competition due to lower tariffs;
- According to the Ministry of Economy, the FTA reduction of weighted average tariffs (much more relevant for this sector than post-WTO reductions) will bring about a profound reduction of domestic prices for imported machinery & electronics commodities;
- Linked to increases in production, we expect lower tariffs, given the strength of the Ukrainian economy in machinery & electronics, to generate more trade with the EU and generate an increasing trade surplus;
- A reduction in border costs has similar economic impacts in that lower border costs lead to lower prices and more international competition. This will cause more

efficient Ukrainian production, lower margins, more trade with the EU and cheaper imported and domestically produced parts & components;

- Ukrainian machinery & electronics equipment is not identical to EU equipment – especially in machinery – so the FTA has the effect of increasing the number of varieties and types of machinery on the EU and Ukrainian markets. Access to the EU market depends on provisions and achievements in approximation of technical standards towards EU standards. In order to bring production standards in line with EU standards, CASE expects the sector to have to spend an additional 4.4 – 20 percent of annual production in the coming years. This is a costly but much needed transition that needs time;
- In the transport equipment sector production is expected to increase and prices for equipment will drop slightly;
- As an enabling industry, the future of the machinery & electronics also depends on the performance of downstream sectors (e.g. aviation industry, agriculture, transport sector, production industries);
- A fall in motor vehicles prices is expected to increase households' disposable incomes because of lower prices. The combination of lower prices with growth of real income will stimulate further growth in the sector;
- Most of the leading Ukrainian companies are either state owned (i.e. in aerospace or aircraft sub-sectors) or controlled by local owners, who are reluctant to share rights and profits with foreigners in exchange for investments. Competitive pressures will force ineffective owners to sell the companies' stakes or conduct IPOs to remain afloat;
- The FTA is expected to increase competition and a kind of Darwinian 'survival of the fittest' where the domestic firms with the cheapest cost structures and highest margins will survive but other firms will go bankrupt. This is painful in the short run but strengthens the sector significantly in the long run⁷⁹; and
- Even though the FTA effect on output of transport services is negative, upgrades of transport machinery are much needed to comply with future EU ecological standards which could result in a positive (indirect) impact for machinery & electronics output and employment;
- In the longer run, when capital investments in the industry take effect, the machinery & electronics as well as the motor vehicles and parts production can be carried out more efficiently and environmentally friendly (see environmental impacts). This is why in the longer run the positive effects of the FTA are larger than in the short run.

One should keep in mind that the model assumes unchanged technologies in the long-run, which is not a plausible assumption in the real world. Thus, the results of the model discussed above may be strongly affected by success (or failure) of R&D activities, quality of long-term investment projects and management decisions within sub-sectors. Noteworthy, the model provides average changes for sub-sectors saying that the overall effect for the industry on the whole is likely to be positive; however, it is important to keep in mind that there will be winners and losers in every sub-sector.

⁷⁹ It is expected that domestic producers with profit margins lower than 10% may close all or part of their production capacities. Companies with better performance indicators are more likely to survive.

Another important issue worth mentioning is that Ukraine's competitive advantages like cheap human capital and an advantageous geographical position remain under exploited by leading European companies. Until now European producers preferred to found subsidiaries in Russia instead of Ukraine. Liberalisation of the trade regime between Ukraine and the EU is most likely to bring more outsourced production of EU companies to the country.

The machinery & electronics is likely to benefit substantially from cheaper financial resources resulting from an improved competitive environment in the financial sector. New opportunities to raise funds abroad will favour realisation of long-term investment projects and purchase of technologies. Companies, from their side, will need to improve quality of financial management and become more transparent towards potential borrowers.

10.3.3 Social impacts

Compared to the WTO scenario, employment increases are observed for the entire sector machinery & electronics including the transport equipment and motor vehicles sub-sectors, especially under the extended FTA scenario. Also wages are expected to go up in the sectors because of productivity increases and in spite of increased competition.

We expect employment increases in the motor vehicles sub-sector to be even stronger than the modelling exercise shows due to the expected FDI inflows because of resource reallocation and production fragmentation of large multinational car producers. This is further corroborated by in-depth interviews with motor vehicles representatives. The EU-Ukraine FTA is expected to strengthen the Ukrainian comparative advantages of cheap labour and the prospect of a domestic market for European car producers, who will likely expand their presence in Ukraine. The more Ukraine is able to reduce red tape and other border and standard costs, the stronger this effect will be.

Opening new European automobile plants and upgrading Ukraine's machinery production can have additional social effects. Working conditions are likely to improve with foreign firms entering the market and conducting greenfield investments (or upgrading existing machine parks) making use of the latest insights in worker safety, health conditions on the work place and clean production technologies.

Because of the concentrated location of the machinery & electronics industry we expect limited regional effects to occur, i.e. some regions will benefit substantially more than others.

Higher production will lead to lower levels of unemployment and thus on poverty, while at the same time increasing GDP per capita in the machinery & electronics sector. Even though the FTA effect on output of transport services is negative, upgrades of transport machinery are much needed to comply with future EU ecological standards which could result in a positive (indirect) impact for machinery & electronics output and employment;

Overall, since through FTA provisions the EU and Ukraine will agree on standards for quality of work, this will lead to the improvement of working conditions, especially in the manufacturing industries, including the machinery and electronic equipment sector. Moreover, the effect of an FTA including machinery & electronics is that a larger share of Ukrainians will decide to enter the labour market again, with higher wages offered and more job opportunities to choose from.

10.3.4 Environmental impacts

The screening of gross media impacts for machinery & electronics is in accordance with the IPPC Guidelines⁸⁰.

Table 10.3 Summary of environmental impacts for machinery & electronics

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from machinery & electronics ⁸¹	○	–	▽	No	M
Air pollution and ozone depletion	○	–	○	No	M
Land					
Use of raw materials		-	▽	No	M
Management of contaminated sites	△	—	○	Yes	H
Biodiversity			○		
Heavy metal contamination	○	—		Yes	H
Environmental quality			○		
Waste management	△	–	▽	Yes	M
Use of energy	▽	–	▽	No	H
Energy efficiency	○	–	○	No	H
Fresh and waste water					
Quantity of water use	△	–	○	No	M
Quantity of waste water	▽	–	○	No	M/H
Cleaning of waste water	○	–	○	No	M

* For the meaning of the signs in the Table, we refer to section 2.4.

⁸⁰ European Commission, DG Joint Research Centre, European IPPC Bureau, Integrated pollution control and prevention, Reference Document on Economics and Cross-Media Effects, July 2006; Reference Document on Best Available Techniques in the Smitheries and Foundries Industry, May 2005; Reference Document on Best Available Techniques on Surface Treatment Using Organic Solvents, May 2007; Reference Document on Best Available Techniques for the Surface Treatment of Metals and Plastics, August 2006

⁸¹ CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

The machinery & electronics sector is recovering after the severe economic crisis of the 1990s and in 2007 it may be the most successful one. Many development plans are presented while from the pollution point of view the sector looks only moderately negative in comparison with powerful power production and ferrous metallurgy.

The expected environmental impacts of the FTA for Ukraine are:

- A better competitive performance of the sector because of the FTA may result in better environmental performance, like improvement of energy and materials use, efficient control and utilisation of solvents, etc.
- Strong sector growth may lead to increasing pollution levels with additional damage to the atmosphere and water;
- Casting at foundries is connected with the formation of inert sand waste with a significant impact on the environment;
- In any foreseen development no additional land use is required; restoration of production is expected to assist recovery and remediation of abandoned and scarcely used brown fields;
- Another impact may be that soil pollution increases – like previously in the Soviet times – as Ukrainian legislation is limited to air and water emissions;

The overall environmental impact of the FTA in machinery & electronics in the EU is considered to be negligible in magnitude, also in the long run. However, the green focus of the EU industrial policy worked on with Ukraine through the FTA helps the industry to reduce greenhouse gas emissions and to develop new low-energy and resource saving processes and products. Waste management is one of key concerns for machinery and electronics industry.⁸²

The priority areas for machinery and electronics are climate change, use of resources and waste. These themes are further reflected in the environmental assessment of the sector, and in recommendations for flanking measures.

Below, in Table 10.4, we summarise the environmental impacts of the FTA for machinery & electronics for the EU.

Table 10.4 Summary of environmental impacts for the EU

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from machinery & electronics ⁸³	○	—	○	No	M/H
Air pollution and ozone depletion	○	—	○	No	M
Land					

⁸² The EU Waste Thematic Strategy and related amendments to the Waste Framework Directive (75/442/EEC) underline the life cycle approach and highlight the importance of reinvigorating the initiatives on eco-design. Key points include the shift towards a materials based approach in waste policy, away from the mechanisms focused on particular types of end product such as under the Waste Electronic and Electrical Equipment Directive (WEEE) Directive.

⁸³ CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Use of raw materials	o	0/-	?	No	L/M
Management of contaminated sites	o	–	o	Yes	H
Biodiversity					
Heavy metal contamination	o	–	o	No	M/H
Environmental quality					
Waste management	o	–	o	No/Yes	L/M
Use of energy	o	–	o	Yes	M/H
Energy efficiency	?	—	o	Yes	H
Fresh and waste water					
Quantity of water use	o	–	o	No ?	M/H
Quantity of waste water	o	–	o	Yes	M/H
Cleaning of waste water	?	–	o	Yes	M

* For the meaning of the signs in the Table, we refer to section 2.4.

The environmental impact is assessed to be most significant (even though negligible) for the greenhouse gas and CO₂, SO₂ and NO_x emissions with an overall increase higher than the increase in production due to the lower industrial standards in Ukraine. Other negative impacts for the EU arise from increased production of finished products based on intermediate products supplied from Ukraine. However, the magnitude is negligible for the EU. Positive impacts for the EU would also be negligible.

10.4 Conclusions

The **economic sustainable impacts** in machinery & electronics are expected to be positive with a significant sector growth, lower prices of intermediate and final consumption goods and projected increases in FDI in the long run that lead to upgrading of the machine park and increases in production. Lower tariff protection and subsidies beyond Ukraine's WTO commitments can lead to more competition from abroad and more efficiency in the sector. As a consequence of symmetrical reductions in tariffs, Ukraine's trade balance with the EU in machinery & electronics is likely to improve as exports to the EU grow faster than imports from the EU. Because of increased openness to trade, we also expect Ukraine and the EU to enjoy an increased variety in types of machinery. One should note, however, that production upgrading may take years and is a costly endeavour for the industry.

Social impacts of the FTA in the machinery & electronics sector include expected positive employment effects in the short run and stronger employment effects in the long run, increases in wages in the industry, upgrading of factories and production sites with improved worker safety and health standards at the workplace, and reduced levels of poverty. We expect FDI to play a significant role in this sector because of resource

reallocation and production fragmentation of large multinationals that want to make use of Ukraine's comparative advantages like cheap labour and geographical location. This FDI is expected to have positive social effects by using clean production technologies, improve social workers' rights, and the health situation at factory floors.

The overall **environmental sustainable impact** of the FTA in machinery & electronics in the EU is considered to be negative but small in magnitude, also in the long run. Waste management is one of key concerns for machinery and electronics industry. There is evidence of increased (though for the EU negligible) SO₂ and NO_x emissions, in spite of production upgrading. Also increased production of finished products based on intermediate products supplied from Ukraine can have a negative environmental impact.

The overall impact effects of the FTA are summarised in Table 10.5 below.

Table 10.5 Summarised sustainable impacts on the sector machinery & electronics⁸⁴

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	▲	-	▲	Yes	M
Fixed capital formation	▲	+	▲	No	M
Trade	▲	+	▲	Yes	M
Social					
Employment & decent work	▲	-	▽	Yes	M
Poverty	▲	-	▽	Yes	M
Equality	▲	0	▽	Yes	M
Health	▲	-	▽	Yes/No	M
Education	△	-	▽	Yes	M/H
Environment					
Atmosphere	▽	--	▲	No	M/H
Land	○	-	?	Yes/No	L/H
Bio-diversity	○	-	▲	Yes/No	L/M
Environmental quality	△	--	▲	Yes	L/H
Fresh and waste water	○	--	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

⁸⁴ A. Overall direction and magnitude of change from baseline (WTO accession) to scenario; B. Extent of existing economic, social and environmental stress in affected areas; C. Equity of change: how it affects different sectors of the population; D. Potential for irreversibility; E. Regulatory and institutional capacity to implement ameliorating measures.

The sustainable impact assessments show the sector picture for machinery & electronics, but they are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

11 Energy

11.1 Description of the energy sector

Energy markets in Ukraine have inherited the production capacities and technologies from Soviet times, but since Ukraine's independence they underwent a number of substantial changes in organisational and ownership structure.

11.1.1 Gas market

Traditionally, Ukraine has been importing gas, because its own extraction covers only 25 percent of total domestic needs. In 2006, the major part of gas (about 85 percent) was imported from Asian countries such as Turkmenistan, Uzbekistan and Kazakhstan while the rest came from Russia. In January 2006, average import prices were almost doubled overnight, while a further 35 percent increase was introduced in early 2007. The initial increase was preceded by a tough dispute with Russia on the terms of gas transit via Ukrainian territory and import gas price for Ukraine.

The gas market in Ukraine is *highly monopolistic*. Gas import to Ukraine is monopolised by a single intermediary, Swiss-registered company Rosukrenergo. Ukrainian gas extraction is extracted by state companies incorporated into the Naftogaz structure. Private companies operate mostly as joint ventures or under production sharing agreements.

Wholesale gas distribution on Ukraine's territory is also carried by one company, Ukgazenergo, a joint venture of Naftogaz and Rosukrenergo. Transmission and distribution gas pipelines are owned by the state and are prohibited from privatisation. The Ukrainian gas distribution sector is characterised by chaotic market developments, unregulated legislation and lack of transparency, allowing for corruption and non-payments.

11.1.2 Oil market

Ukraine is extracting and refining oil and produces yearly about 11 million tons of petroleum products. Domestic extraction is at about 4-4.5 million tons and covers up to 20 percent of total supply, and the rest comes from Russia.

The bulk of domestic extraction is provided by *state-owned* Ukrnafta and Chornomorhaftogaz (97 percent), which are incorporated in the Naftogaz structure.

Most proven oil reserves have already been developed, and the remaining fields are classified as difficult-to-develop. *Oil refinery* reached its highest point in 2003-2004, when Ukraine became a net exporter of petroleum products. But starting from 2005, oil refinery has suffered a sharp decline, related primarily to the cancellation of import duties on refined products in May 2005. This resulted in the increase of imports of oil products from 5 percent to 30 percent in the Ukrainian market. Oil is refined at six oil refineries with a designed capacity of about 51 million tons, the majority of which became privately-owned in 1999-2000. Four out of six plants are owned by Russian companies.

11.1.3 Coal market

It is known that coal production is not competitive as the quality is not good and the extraction practices are substandard; however coal mining still employs large numbers of workers in Ukraine and it is not clear what the prospects are. There are important drawbacks from the use of coal as it is a significant contributor to greenhouse gases. Apart from CO₂ released by coal burning, methane gas is released by coal extraction. Despite the limited competitiveness of the coal sector, it is likely to remain an important source of fuel for thermal power stations – especially now that gas prices have gone up sharply.

11.1.4 Electricity sector

Electricity is produced in Ukraine by nuclear (47 percent), thermal (42 percent) and hydropower plants (7 percent). The share of renewables, with the exception of hydropower (7%) is very low. Ukraine is a net *electricity exporter*, and export volumes have been growing over the last few years. In 2006 the major recipients of Ukrainian electricity were Hungary (33.8 percent of total electricity exports from Ukraine), Belarus (24 percent) and Moldova (23.7 percent). Electricity export to Russia heavily depends on the political relations between the two countries. Overall future export potential is limited by the lack of investments and limited modernisation of the power networks.

Electricity generation capacities are mostly state owned and nuclear and hydropower stations are prohibited from privatisation; thermal power stations are owned by four state companies and one private company. Currently Ukraine's electricity market is organised according to the model of a "single buyer": total electricity produced is purchased by Energorynok, a wholesale electricity market administrator. Energorynok sells the electricity to distributing companies and independent suppliers who in their turn supply electricity to retail customers. Furthermore, the electricity generation market is divided into two segments: a 'competitive' market (32 percent – as an upper limit) and a regulated market (68 percent including nuclear and hydro plants).

Furthermore, the nuclear plants used for electricity generation cannot be privatised according to Ukrainian law, but Ukraine receives a lot of support to maintain nuclear safety and receives nuclear fuel from Russia, potentially giving it an unfair competitive advantage.

Private capital is more present in *electricity distribution*. Out of 27 distribution companies, six are privately owned and seven are privately controlled, the rest of the companies are controlled by the state. In April 2007, the State Property Fund of Ukraine announced a further privatization of 25-27 percent shares in six companies.

11.1.5 Environmental issues in Ukraine related to the energy sector

The Ukrainian energy sector has many environmental problems. Power installations were put into operation in the 1960-1970s by design and norms of 1950s, which means that currently they are physically and morally obsolete, albeit still in operation. Some of the plants are operated for social reasons only (employment effects), even when nearby there are more efficient facilities available that still have reserve capacities.

In addition, there is poor dust control at the power plants resulting in high emissions of particulates, including heavy metals. Control of SO₂ emissions is absent entirely and the problem is aggravated by a high content of sulphur in Ukrainian coal. Finally, low levels of re-use of combustion residues and by-products result in water contamination and land use problems.

Numerous governmental programmes for improving the situation have so far failed. The situation doesn't allow for further delays with restructuring of the sector and it needs drastic improvements in environmental performance.

11.2 Current policies and crucial sector issues

11.2.1 Sector issues

- *Security of gas supplies* is one of the most critical issues for Ukraine given its high gas imports dependency. Considering that Ukraine has currently the second lowest gas price among CIS countries, one can not exclude further and substantial gas price increases. By August 2007, Ukraine's officials have not yet reached any agreement with Russia on gas prices for 2008;
- The *monopoly position in gas imports* is a matter of concern from the point of view of energy security. Spring cut-offs of a range of industrial enterprises from gas supplies by Rosukrenergo and its daughter company Ukgazenergo showed that these companies do not hesitate to abuse their monopoly position and can do considerable harm to the Ukrainian industry. The Ministry of Fuel and Energy is not addressing this issue;
- *Outdated production and transmission equipment is common* across all segments of Ukraine's energy market. Lack of investment in oil and gas transmission capacities has resulted in accidents and pipeline ruptures. Low investment in exploration and drilling does not allow increasing oil and gas production. On the electricity market, Ukraine lacks capacity to provide for peak supplies, which causes technical difficulties with stable electricity supply;
- *Domestic tariffs for electricity and gas are complex and cross-subsidised*. Electricity and gas tariffs for households, budget-financed institutions and communal enterprises are still below the cost coverage level despite the increase of electricity tariffs for

- these groups twice by 25 percent, and gas tariffs – by 25 percent and 78-85 percent in 2006. This causes a complicated system of cross-subsidies by industrial enterprises;
- *Indebtedness of the sector.* The level of accumulated arrears in the electricity and gas sectors are very high. Up to 2005, the gross debt of Energorynok to its creditors amounted to US\$ 3.6 billion, with almost US\$ 2 billion owed by consumers to distribution companies. The Ukrainian authorities have approved a roadmap for debt restructuring, but it has already fallen behind the implementation scheme. In the gas market, the level of payment to Gaz Ukrainy, a company which supplies gas to households and budget organisations, was 81.5 percent in 2006;
 - *The nuclear sector* is of a special nature due to the fact that Ukraine receives a lot of support to maintain nuclear safety and gets its nuclear fuel from Russia.
 - *The state of play in the coal sector.* Coal production is not competitive and polluting, however it is likely to be increasingly used by thermal power plants for which gas has become very expensive – at least in the short run. The long run use of coals is not certain;
 - *The oil market faces major impediments.* The major bottleneck for further oil market development are high oil export duties from Russia, low import duties on refined products and the lack of competitiveness of Ukrainian refined products due to low quality. Besides, most of the Ukrainian oil products do not meet European emission standards (EURO 1-5), which include requirements to fuel quality.

11.2.2 Current EU-Ukraine Policy issues

Within the context of the EU-Ukraine Action Plan of the ENP, EU-Ukraine relations have substantially intensified in the energy sphere. Previous co-operation was based on initiatives such as the Partnership and Cooperation Agreement (PCA 1998) and the Interstate Oil and Gas Transport to Europe (INOGATE) programme (1999/2000). Within the ENP framework, the most significant energy initiative is the Memorandum on Energy Cooperation. Deeper cooperation between the EU and Ukraine – beyond the ENP – is still possible within the Energy Community Treaty. The Memorandum of Understanding and the Energy Community Treaty are therefore to be treated separately.

The Memorandum of Understanding on Cooperation in the Field of Energy

On 1 December 2005, Ukraine and the EU signed the *Memorandum of Understanding on Cooperation in the Field of Energy*. The memorandum envisages quite an ambitious agenda of cooperation and integration, aiming at the ultimate integration of the Ukrainian energy sector with that of the EU. In particular, it envisages gradual adoption by Ukraine of the EU energy acquis and sets roadmaps in four areas:

- *Nuclear safety:* Ukraine should meet internationally recognised nuclear safety and environmental standards. Currently, nuclear safety remains, according to the EU, the troublesome area and the one in need of urgent action. While overall nuclear safety has improved thanks to a range of joint EU-Ukraine initiatives, the safety of the Chernobyl shelter remained of major concern, as the construction of a new shelter was delayed;
- *Electricity and gas markets.* The roadmap envisages integration of the Ukrainian electricity and gas markets into the European Union's internal energy market. To

- achieve this, the roadmap suggests that Ukraine should implement key elements of the EU *acquis* on energy, environment, competition and renewables;
- The roadmap on *energy security and transit* envisages, inter alia, conduct of audit and monitoring of the Ukrainian hydrocarbon transit and supply network, identifying and promoting additional sources and supply routes for gas and oil, harmonisation of technical norms and standards in the Ukrainian hydrocarbons sector with EU industrial practices, and development of a framework for the management of Ukraine's strategic oil reserves in line with EU practices;
 - The roadmap on the *coal sector* speaks of the necessity to continue the reform and restructuring of the Ukrainian coal industry, including enhancing mines safety and improving the environmental impact of coal combustion towards EU levels.

The Energy Community Treaty

Ukraine's accession to the *Energy Community Treaty* is declared as a medium-term objective of the EU-Ukraine energy cooperation; it is also a tool for deeper integration of the Ukrainian energy sector with the European one. At the moment, Ukraine has an observer status to the Treaty.

The Energy Community Treaty (signed in 2005), is a framework for integration of the South Eastern European (SEE) countries into the European markets for gas and electricity. The main three routes that the Treaty prescribes for the achievement of this goal are the implementation by the Contracting Parties of the *acquis communautaire* on energy, environment, competition and renewables; setting up of a unified regulatory framework; and creation of a common market in energy (called Network Energy) without internal frontiers.

The list of the energy *acquis* necessary for adoption includes all fundamental legislation that governs EU internal energy market: Directive 2003/54/EC on common rules for the internal market in electricity, Directive 2003/55/EC concerning common rules for the internal market in natural gas and Regulation 1228/2003/EC on conditions for access to the network for cross-border exchanges in electricity. The list on the environmental *acquis* includes Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, Directive 1999/32/EC on reduction in the sulphur content of certain liquid fuels, Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants, and Article 4(2) of Directive 79/409/EEC on the conservation of wild birds. In addition, the parties commit to endeavour to ratify the Kyoto Protocol and to implement Directive 96/61/EC on integrated pollution prevention and control.

In the area of competition, the contracting parties should be guided by the competition articles of the EU Treaty (Articles 81, 82, 86 and 87). Finally, in the area of renewables, the parties should implement Directive 2001/77/EC on the promotion of electricity produced from renewable energy sources in the internal electricity market and Directive 2003/30/EC on the promotion of the use of bio fuels or other renewable fuels for transport. In addition, the Treaty requires that SEE countries adopt EU technical standards on energy and related spheres that are needed to ensure safety and efficiency of the common network. Adoption of the *acquis* requires also the creation of transparent market regulation through independent regulators. Currently, the National Electricity

Regulatory Commission (NERC) of Ukraine has a rather weak capacity to deal with monopolies and anti-competitive behaviour and the lack of a proper legal base for its activity creates problems and unpredictability in its regulatory decisions.

Creation of the common energy market involves abolishment of all tariffs and quantitative restrictions on exports and imports of energy. The treaty also has provisions on mutual assistance in case of disruption of energy supplies and on development of common external energy policy towards third parties.

We assume that the agenda of the envisaged Free Trade Agreement in the area of energy is going to be built along the lines of a (deep) Memorandum of Understanding. By no means should the FTA scenarios be confused with the entirely separate process of negotiations for the Energy Community Treaty between the EU and Ukraine.⁸⁵ For the purposes of our analysis we distinguish between two scenarios: the less ambitious FTA⁸⁶, involving implementation of the Memorandum of Understanding on energy; the extended FTA, involving a further reaching Memorandum of Understanding. This is roughly in line with the modelling exercise.

The below Table 11.1 presents how these EU-Ukraine policy initiatives have been taken into account in the scenarios.

Table 11.1 Overview of scenarios for the energy sector

Scenario	Description of the envisaged changes	Model assumptions (from GAR)
Base scenario	<p>Coal, oil and gas production:</p> <p>Tariffs: current export/import tariffs are equal to zero</p> <p>No major barriers to trade in energy products.</p> <p>NTBs: There are some barriers to oil exports, as Ukrainian-produced oil is of low quality and does not satisfy EU standards. There are no non-tariff impediments to gas exports.</p> <p>Coal industry is uncompetitive and heavily subsidized.</p> <p>Electricity:</p> <p>Tariffs: current export/import tariffs are equal to zero</p> <p>NTBs: trade between the EU and Ukraine is limited due to lack of network synchronisation</p>	<p>Current tariffs = 0</p> <p>Current border costs = 6% of the value of exports from Ukraine to EU (as for all other sectors);</p> <p>Current standard costs = 0</p> <p>- Exports of electricity from Ukraine to the EU27 face NTBs of the order of 10%.</p>

11.3 Potential impact of an FTA

11.3.1 CGE modelling results

The modelling results for coal, oil and gas production are presented in Table 11.2.

⁸⁵ This is furthermore important because the only link between the MoU and the Energy Community Treaty is the conditionality on nuclear safety.

⁸⁶ Here we follow the terminology of the report, with less ambitious being called "Limited FTA" and more ambitious option – "Extended FTA".

Table 11.2 Overview of model outputs for coal, oil and gas production

	Production		High skilled employment		Low skilled employment		Prices	Exports	Imports	Exports to EU	Imports from EU
	US\$ bn	%	Number	%	Number	%	%	%	%	%	%
Base scenario	3,480		36,217		1,233,498						
Change on Base											
WTO accession	-0.056	-1.6	-592	-1.63	-20,229	-1.64	0.3	-6	12	-6	n/a
Change on WTO											
Limited FTA: short run	-0.038	-1.1	-775	-2.14	-26,520	-2.15	0.0	-3	17	-3	n/a
Limited FTA: long run	-0.027	-0.8	-630	-1.74	-21,586	-1.75	-0.2	-3	36	-4	n/a
Extended FTA: short run	-0.073	-2.1	-398	-1.11	-13,691	-1.11	0.1	-5	36	-5	n/a
Extended FTA: long run	-0.056	-1.6	-286	-0.79	-9,621	-0.78	0.4	-6	63	-6	n/a

Note: Description of CGE model results for Ukraine

11.3.2 Economic impacts

From the model outcomes and the detailed sector analysis, we see the following economic impacts effects of the FTA:

- *Substitution of the domestic energy production with imports* is expected due to a fall in energy (coal/oil/gas) output, combined with substantial increase in imports and fall in exports;
- *Deterioration of the trade balance in coal/oil/gas* is expected due to the substantial increase in value of imports (up to 63 percent) together with a fall in value of exports (up to 6 percent). Increase in imports also means increased dependence and a reduced energy security.
- *Increased competition in the energy market*. The requirements that the WTO puts (more transparency and competitive pricing) can lead to more competition in external energy trade. Yet, more competition in this case will not necessarily translate into more trade at lower prices, because of the highly political nature of the Ukrainian external energy trade;
- *FTA will influence the energy mix as well*. The model works with coal, oil and gas as one sector and, thus, does not show changes in the energy mix. With increased domestic energy prices we expect the share of gas to diminish and coal to increase in the short run. However an increased pressure to adhere to EU environmental regulation may again lead to more use of gas and less of coal in the longer run;
- *Real incomes* of the employees in coal, oil and gas production are expected to drop as there is a downward pressure on wages and relatively high levels of employees will become unemployed;

- *Increased production of electricity* for domestic consumption, as electricity exports will reduce simultaneously. These effects are stronger for the extended FTA than for the limited FTA;
- *Increase in business confidence.* Implementation of the provisions of the MoU on nuclear safety will lead to increase in confidence of international community and markets in the Ukrainian nuclear energy sector. One can expect increases in electricity trade as a consequence (in fact, the MoU implies that increase in safety is a precondition for more trade in electricity). Guaranteeing of safety should be also a precondition for increase of nuclear energy production (the Energy Strategy 2030 envisages that the role of nuclear energy will grow). The cost of safety enhancement may have to be factored in the electricity prices and, thus, lead to their increase;
- *The nuclear sector*, being in public hands and receiving nuclear fuel from Russia may become a cheap energy producer with an unfair competitive advantage over some of its EU counterparts.
- *Modest increase in electricity prices.* Removal of subsidies for household tariffs can result in modest overall price increases. The possibility of direct contracts with (foreign) consumers and adherence to technical standards for nuclear fuel as well as rising Russian gas prices may potentially lead to a rise in Ukrainian electricity exports even though this hypothesis is not supported by the model outcomes;
- *Energy security* for the EU increases which is likely to lead to less volatility in energy prices (even though volatility can never be eliminated) while the price changes are negligible for consumers;
- *Investment opportunities* for EU companies increase which lead to more (financial) involvement of the EU in the Ukrainian energy sector and gains for Ukraine in terms of energy efficiency and the use of new technologies;
- *The trade balance* is expected to improve for the EU – according to the CGE outcomes – with more exports to and less imports from Ukraine.

11.3.3 Social impacts

The outputs of the modelling exercise show negative impacts on employment for coal, oil, and gas production, but positive effects for the electricity sector. Positive overall employment effects for the two sectors combined seem to dominate in the extended FTA scenarios, while overall employment effects in the limited FTA are negative. These impacts are mostly driven by the corresponding production changes in these sectors.

Since about 80 percent of total labour in coal, oil, and gas sector is employed in coal production⁸⁷, this sector is likely to be affected the most by the negative employment trends. The FTA is expected to speed up the adoption of the government programme for the coal sector restructuring. The programme foresees privatisation of the majority of Ukrainian mines. Private owners can introduce new technologies and equipment, aimed at raising productivity and output, but with possible negative employment effects.

However, the model results show that in the long-run negative employment effects are less pronounced than in the short-run. This suggests that in the long-run (where according

⁸⁷ Based on model input data, source: Ukrainian state statistics committee input-output tables.

to the model the capital stock is allowed to adjust) private investments are likely to reach such levels that increased production will cause increases in employment again, driven by gradual production recovery.

One of the major social problems of the coal sector is the very low worker safety standards in Ukrainian mines. Statistics show a threatening picture: 168 miners were killed in accidents already in 2007, and according to these numbers Ukraine is ranked in the world second from the bottom after China. Though the number of miners killed in accidents has been showing a declining trend since late 1990s⁸⁸, the situation is still alarming. Successful implementation of the EU-Ukraine FTA, may lead to higher worker safety standards.

Separate from the FTA, Ukrainian Membership of the Energy Community in the medium-long run is also expected to generate significant positive health effects through lower nuclear risks and increased attention to health and safety standards in energy production. Regulatory approximation to EU standards is expected to further strengthen the quality of work, social protection of employees and emphasise the core aspects of decent work – in which Ukraine has a long way to go in (parts of) the energy sector. A specific issue in this respect is not just the approximation of standards and regulations, but especially the effectiveness of the enforcement of these regulations.

Next to the direct health effects, there are also substantial indirect health effects of the FTA through environmental impacts in Ukraine and the EU. For the environmental impact we refer to section 11.3.4.

Impacts on employment in the electricity sector are expected to be positive, with most employment created under the long run extended FTA scenario.

The FTA facilitates the privatisation process encouraging foreign capital participation thus boosting investments in new machinery and equipment and the adoption of new and improved production methods. The FTA is expected to generate similar positive changes in working conditions standards as in raw materials production.

Finally, since the overwhelming majority of labour employed in the energy sector (97%) is low-skilled, this part of the labour force will be most affected by the changes. While, the coal, oil, and gas sectors will suffer especially in the short-run from employment reductions, the electricity sector is expected to create additional employment. Thus, it is important to be taking regional employment effects and re-education into account (Eastern regions of the Ukraine - where coal mining is mostly concentrated).

11.3.4 Environmental impacts

An overall key expected impact is that the Ukrainian energy balance as a result of the FTA will lead to an increase in prices and therefore promote a shift towards coal away from natural gas in the short run. The environmental impact is expected to be most

⁸⁸ Source: Korrespondent, August 4, 2007, based on Ministry of Extraordinary Situations data.

significant for the greenhouse gas and SO₂ and NO_x emissions into the atmosphere with an overall increase higher than the increase in production due to the lower industrial standards in Ukraine. Since air does not stop at borders, these environmental effects also partially spill over to the (eastern) EU.

The energy sector impact on climate change originates partly from fuel combustion at power stations (above 15 percent of total GHG emissions in Ukraine). However, the key contributors are coal based methane emissions and leakages during extraction and transportation of natural gas (already covered in the in-depth analysis of transport services). The FTA will modestly increase the power sector GHG and SO₂ and NO_x emissions. Assuming that the volumes of natural gas transported through Ukraine to the EU will not considerably increase from current levels, the new methane emissions from natural gas pipelines can be omitted.

Concerning the *atmosphere*, assuming that the FTA enhances the current trend of annual growth in electricity production in Ukraine by 2.7 percent each year (4 year average), an estimated 4.4 million tons CO₂ per year emission is expected if no flanking measures are set up in Ukraine. However, highly accumulated arrears of the electricity and gas sector together with access to new investment funds can reduce the increase of CO₂ emissions. The air pollution impacts together with the increased pressures from transport emissions damage the ecosystem and man made environment with acidifying substances, and in relation to health, ground level ozone and particulate matter (“fine dust”) from coal fired power stations are the pollutants of most concern.

The *land use* impacts in the EU would be concentrated near the power utilities supplying electricity to Ukraine, provided that the long term effect of increased import of energy from the EU would materialise. Increased flows of imported coal, oil and natural gas would mainly have impact outside the EU. However, the negative impacts would be highly localised and the overall impact is negligible in terms of this FTA.

The impact on *biodiversity* in the EU ecosystems is assessed to be negligible due to the already high negative baseline from energy and transport. However, concerns remain about the overall impact of acidifying and ozone depleting pollution originating from Ukraine.

The *environmental quality* in the EU will potentially be improved as a result of implementation this FTA. Especially, in the long run the FTA would stimulate the implementation of the EU energy policy goals towards more efficient use of energy, recycling of waste for energy use, and increased share of renewable energy. However, the risks related to nuclear energy and nuclear waste management might reverse this positive impact.

The FTA would increase localised pressures for *fresh water resources and wastewater treatment* especially adjacent to coal fired power stations.

The summary of environmental effects for Ukraine and the EU are presented in the Tables below.

Table 11.3 Summary of environmental impacts for the Ukrainian energy sector

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from energy ⁸⁹	▽	--	▽	No	H
Air pollution and ozone depletion	▽	--	○	No	H
Land					
Use of energy resources (coal)	▽	-	▽	No	M
Management of contaminated sites	△	-	○	Yes	H
Biodiversity					
Acid rain, ecosystem damage	?	--	▽	Yes	M
Environmental quality					
Waste management	?	-	○	Yes	M
Use of energy	▽	-	▽	Yes	H
Energy efficiency	▽	--	○	Yes	H
Fresh and waste water					
Quantity of water use	○	-	○	No	M
Quantity of waste water	▽	-	○	Yes	M/H
Cleaning of waste water	?	-	○	Yes	L

* For the meaning of the signs in the Table, we refer to section 2.4.

Table 11.4 Summary of environmental impacts for the EU energy sector

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from energy ⁹⁰	▽	--	○	No	M/H
Air pollution and ozone depletion	▽	-	○	No	M
Land					
Use of energy resources (coal)	○	0/-	▽	No	L
Management of contaminated sites	+	-	○	Yes	H
Biodiversity			○		
Acid rain, ecosystem damage	?	-	○	Yes	L/M
Environmental quality					
Waste management	○	-	○	No/Yes	L/M

⁸⁹ Energy CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

⁹⁰ Energy CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Use of energy	+	–	?	Yes	M/H
Energy efficiency	?	--	o	Yes	H
Fresh and waste water					
Quantity of water use	o	–	o	No	M
Quantity of waste water	o	–	o	Yes	M/H
Cleaning of waste water	?	–	o	Yes	M

* For the meaning of the signs in the Table, we refer to section 2.4.

Overall, trends that will influence these impacts include the phasing out of outdated facilities, nuclear safety, increased dependency for imported energy resources both in the EU and in Ukraine, increased environmental requirements and technology development for low carbon options.

11.4 Conclusions

A key conclusion from the **economic impact** assessment to date is that the Ukrainian energy sector is likely to restructure significantly – with an FTA even more than without. This implies that new investments will come in, with new economic opportunities as a possibility however also with job losses as a likely consequence – especially so in the case of privatisation of coalmines. A key determinant will be the energy mix – including the one for electricity production. Nuclear energy from Ukraine is expected to be rather competitive due to international support for nuclear safety and low prices for nuclear fuel from Russia, with subsequent impacts for the EU. An increase in gas prices will further stimulate the use of coal in the short run, which may have severe negative environmental and social consequences if not accompanied by measures. EU energy security is likely to increase because of stronger and deeper levels of cooperation.

The **social impacts** of the FTA are potentially very large, especially in the coal sector where worker safety and health issues for miners need drastic improvements. Through restructuring and modernisation, FDI and approximation it is expected that such improvements will be initiated. Employment effects are mixed with an increase in employment in electricity and decreases in employment in coal, oil and gas. Large redundancies in these sector have substantial social effects, the more since the coal industry is regionally concentrated, well organised in terms of concentrated worker's power and alternative jobs are not readily available. Also changes in the energy mix would have great social impacts.

The **environmental effects** of the FTA in the energy sector take place in the bigger picture of rising gas prices. If gas prices continue to rise, a shift to coal – also hinted at in Ukrainian development plans by the Ukrainian authorities – will lead to significant polluting effects. Coal mining is very polluting and old-fashioned production methods

used do not do the environment any good. Also aerial pollution is significant with greenhouse gas and SO₂ and NO_x emissions into the atmosphere that are likely to increase unless the FTA clearly breaks with past Ukrainian energy production methods and sets new standards. Moreover, since air does not stop at borders, these environmental effects also partially spill over to the (eastern) EU.

The framework conditions (e.g. the MoU) are of vital importance, and the links between this initiative and the FTA deserves full attention, especially given the importance of this sector for Ukraine and its neighbours as well as its social and political sensitivity.

The overall impact effects of the FTA are summarised in Table 11.5.

Table 11.5 Summarised sustainable impacts on the energy sector⁹¹

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	▽	+	▽	Yes	L/M
Fixed capital formation	△	-	▲	No	M
Trade	▽	+	▽	Yes	L/M
Social					
Employment & decent work	?	+	▽	Yes	M
Poverty	▽	0	▽	Yes	M
Equality	▽	-	▽	Yes	M
Health	?	--	△	Yes/No	M
Education	?	0	?	Yes	M
Environment					
Atmosphere	▲	--	▲	No	M/H
Land	○	--	△	Yes/No	L/H
Bio-diversity	○	--	△	Yes	L/M
Environmental quality	△	--	△	Yes	L/H
Fresh and waste water	○	--	△	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

⁹¹ A. Overall direction and magnitude of change from baseline (WTO accession) to scenario; B. Extent of existing economic, social and environmental stress in affected areas; C. Equity of change: how it affects different sectors of the population; D. Potential for irreversibility; E. Regulatory and institutional capacity to implement ameliorating measures.

The sustainable impact assessments show the sector picture, but they are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

12 Trade in Services

12.1 Overall description of trade in services

12.1.1 Recent developments in services trade

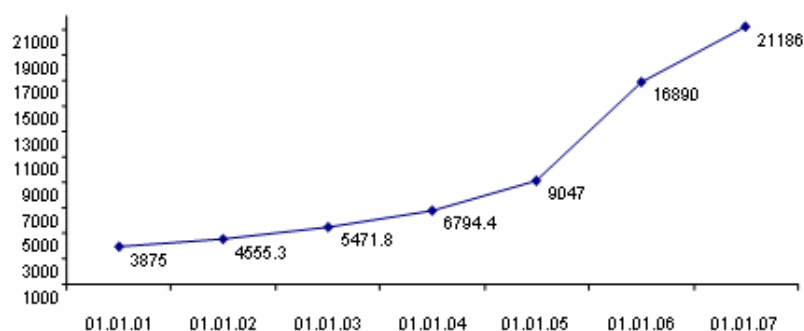
Over the last five years, services accounted for 17.5 percent of the overall recorded Ukrainian exports and 7.4 percent of total imports. Russia (41.8 percent) and the EU (30 percent) are the leading export markets for Ukrainian services. Ukraine benefits from its geographical position and provides transportation services by water, roads, railways, and pipelines, which collectively account for 71 percent of the overall services exports. Pipeline transportation is a major source of export revenues and in 2006 Ukraine earned about US\$ 2.5 billion in 2006 transporting Russian gas and oil to Europe. The export of professional and technical services has been steadily increasing over the last decade and currently they account for about 11.3 percent of total service export value; construction services provide for 3.4 percent. Despite its huge potential, the tourism sector in Ukraine plays a modest role; according to the estimates of the State Statistics Committee, tourism services exports amounted to a modest US\$ 0.25 billion in 2006.

Services imports from the EU account for nearly half of Ukraine's total service imports, while the share of Russia is around 16 percent. Professional and technical services are the most important import group (18.3 percent of overall volumes). Financial services remain the second most important import group, reflecting increased spending by Ukrainian companies involved in international trade for access to high-quality foreign banking and insurance services.

12.1.2 Foreign investment (commercial presence) in services

Foreign, and in particular EU companies, are increasing their presence in most service sectors. For instance, the last-year wave of mergers and acquisitions made the EU the largest FDI holder in the Ukrainian banking sector. Besides, Ukrainian companies owned by EU residents are playing a more and more important role in retail and wholesale trade, insurance, transport and telecommunications. Following a drop in 1999, FDI inflows (for all sectors) to Ukraine resumed their upward trend in 2000. Cumulative FDI estimated as of January 1, 2007 equalled US\$ 21,186.0 million, which is 25.4 percent more than in the beginning of 2006 (see Figure 12.1). The share of FDI from the European Union (EU) to Ukraine in total foreign direct investment has been increasing rapidly from 54 percent (US\$ 4,946.3 million) in 2004 to 75 percent (US\$ 15,924.0 million) in 2006; the leading EU investors are Germany, Cyprus, Austria, United Kingdom, and The Netherlands. An FTA that further facilitates FDI generates further mutual economic benefits.

Figure 12.1 Cumulative FDI into Ukraine (million US\$)



As of January 1, 2007, the financial sector had the largest share of accumulated FDI and in 2006 the sector was also the leader in FDI inflows. The lion's share falls under banks' acquisitions by foreign financial groups. The financial sector is followed by wholesale trade and real estate sectors, for which the FDI stocks as of January 1, 2007 amounted to US\$ 2,264 million and US\$ 1,773.4 million respectively. The summary of the Ukrainian services imports and exports for 2006 are presented in Table 12.1 below.

Improving the investment climate through non-discriminatory, transparent and predictable business conditions, simplified administrative procedures and the fight against corruption are among the priorities of the EU. Ukrainian legislation enables foreign investors to freely invest into the Ukrainian economy, on the same basis as domestic investors; the Law "On the Regime of Foreign Investment" addresses specific issues of foreign investment. There are, however, certain restrictions for foreign investors in the fields of insurance, publishing, information agencies and broadcasting. These restrictions mostly concern juridical limitations on the rights of establishment or maximum percentage rate of the foreign investments in the statutory fund of the enterprise.

Table 12.1 Structure of Ukraine' services exports and imports (2006)

	Exports			Imports			balance
	USD. mln	Share of the total. %	Yoy growth. %	USD. Mln	Share of the total. %	Yoy growth. %	
Services, total	7505.5	100.0	122.3	3812.4	100.0	129.8	3693.1
Transport	5354.7	71.3	119.5	789.0	20.7	125.8	4565.7
including:							
Sea transport	806.1	10.7	103.4	96.6	2.5	108.4	709.5
Air transport	722.7	9.6	128.6	248.7	6.5	131.0	474.0
Railways	860.2	11.5	107.6	338.0	8.9	123.0	522.2
Pipeline transport	2500.6	33.3	127.6	5.2	0.2	87.5	2495.4
Travel services	248.3	3.3	120.0	230.1	6.0	150.2	18.2

	Exports			Imports			balance
	USD. mln	Share of the total. %	Yoy growth. %	USD. Mln	Share of the total. %	Yoy growth. %	
Business services of all kinds⁹²	846.9	11.3	145.0	700.7	18.4	150.2	146.2
Communication services	258.1	3.4	127.3	90.9	2.4	99.8	167.2
Construction	164.3	2.2	103.9	181.7	4.8	114.7	-17.4
Insurance	70.5	0.9	283.5	103.6	2.7	171.8	-33.1
Financial services	80.1	1.1	224.7	521.1	13.7	203.8	-441.0
Computer services	86.8	1.2	251.3	111.6	2.9	88.6	-24.8
Royalty and licensing	13.4	0.2	137.4	227.7	6.0	108.6	-214.3
State services	3.2	0.1	160.7	563.0	14.8	95.0	-559.8
Maintenance	279.0	3.7	84.2	32.2	0.8	151.9	246.8
Trade in services with the EU	2218.5	29.5	128.5	1867.1	48.97	145.4	351.4

12.1.3 WTO commitments

Ukraine has made substantial concessions in the area of trade in services and is committed to fully liberalise cross border supply of services as well as the provision of services through consumption abroad. As part of WTO accession, the supply of services through mode 3 (commercial presence) will be completely liberalised in 139 out of 155 sectors. Among others Ukraine will open the banking market by allowing branches of foreign banks to operate in the country and insurance market by allowing non-resident re-insurers dealing with certain kinds of risks. The limitations on commercial presence will be preserved in education, wholesale distribution of books, newspapers and magazines

and news agency services. Ukraine also commits to allow access of key personnel in a commercial presence (managers executives and specialists), contractual services suppliers and independent professionals within the fourth mode of service supply (presence of natural persons). In the transport service sector, maritime transport, road transport and auxiliary transport services are liberalised, but not passenger and freight rail and internal water transport services.

12.1.4 EU-Ukraine FTA

Trade in services is a key issue for the EU-Ukrainian partnership. On top of the substantial coverage of Ukraine's GATS commitments, further opening the financial and

⁹² Include: legal services, accounting, advertisement, research and development, etc

other key service sectors such as telecommunications and transport services to foreign investment and best international practice could constitute key element of reforms to be implemented within the context of an FTA. Under the liberalisation scenarios, the overall modelling results show that an extended FTA will have major positive economic and social impacts overall and specific impacts through changes in the production structure of Ukraine. For overall trade in services, the substantial reduction in terms of output and employment, following WTO accession, of the financial services and insurance sector may be aggravated by the extended FTA (on top of the WTO), and a similar reduction is expected for the transport sector in the short run (this sector looks potentially strong in the long run) while, as a consequence of the FTA (on top of the WTO) distribution services will grow and so do communication services. The incumbent firms will suffer from the increases in competition from EU firms, while in the long run, overall employment and production rebounds. This suggests that there will be social sustainability issues regarding employment and employment opportunities as well as equality and poverty, environmental sustainability issues related to environmental quality and CO2 emissions and economic issues related to changes in income across sectors and changes in Ukraine's trade patterns.

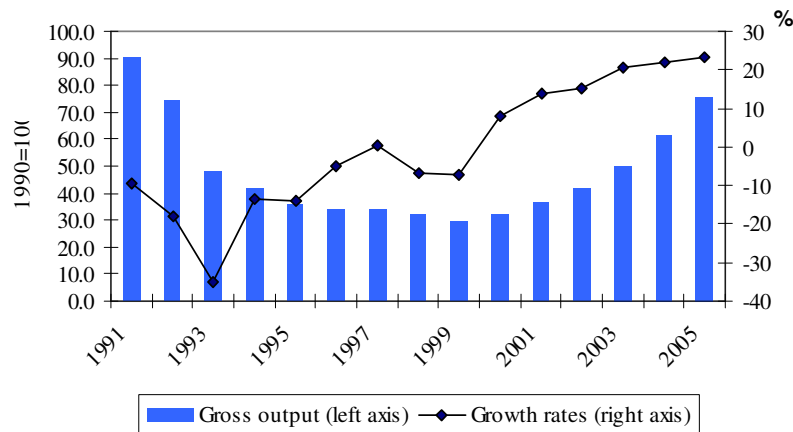
12.2 Current policies and crucial sector issues

12.2.1 Distribution services (wholesale, retail, other)

Sector overview and recent developments

The sector of distribution services is among the largest service sectors of the Ukrainian economy. Its contribution to the economy gradually increased during the transition period and currently accounts for almost 13.0 percent of GDP (2006) and around 20.0 percent (2005) of the total number of employed persons. However, during the transformation period the volume of provided distribution services decreased significantly, in line with a general macroeconomic deterioration and it was only in the middle of the nineteen-nineties some recovery took place after strengthening of household incomes. By 2005, the volume of retail turnover had only reached 75 percent of the 1990 level (see Figure 12.2).

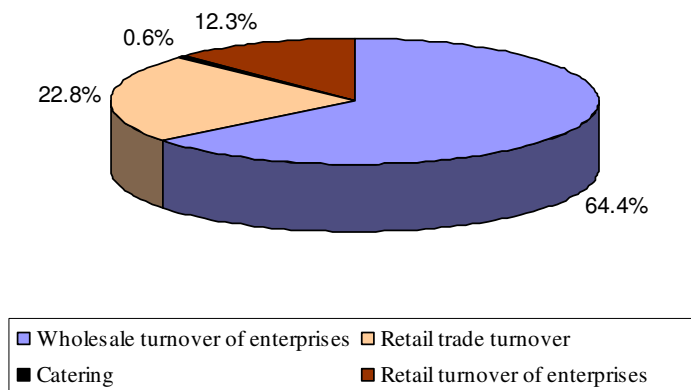
Figure 12.2 Retail trade turnover, 1991 – 2005



Source: State Statistics Committee of Ukraine

In 2005 the wholesale segment accounted for 64.4 percent of total turnover of enterprises (see Figure 12.3) with fuels and ferrous metals being of particular importance. The retail sector is composed of foods (41.6 percent) and non-food products (58.4 percent) with significant contributions of petroleum and pharmaceutical products.

Figure 12.3 Structure of distribution services sector, 2005



Source: State Statistics Committee of Ukraine

According to official statistics, in 2006 distribution services was the third most profitable sector in Ukraine. Moreover, according to the Global Retail Development Index 2006⁹³, Ukraine ranked fourth - after India, Russia, and Vietnam - in terms of potential development perspectives. It is not surprising therefore that the sector has attracted significant levels of investment and in 2007 the sector claimed second place – after financial services – in terms of the volume of FDI inflows. As of January 1st, 2007, the

⁹³ Emerging market priorities for global retailers. http://www.atkearney.com/shared_res/pdf/GRDI_2006.pdf

FDI stock of the sector amounted to US\$ 2.3 billion which is 10.7 percent of total foreign direct investments in Ukraine.

Development has, however, been geographically uneven, especially for retail trade for which the highest growth rates are being observed in the industrial regions with higher levels of household incomes and greater concentrations of consumers. This can be qualified as the sector's response to social and demographic changes, such as increasing urbanization and the growth of income-rich and time-poor consumers in the industrial/urban regions.

Institutional and market structures

Prior to 1992, wholesale trade within Ukraine was organised on the basis of a centralised government system for the supply of products, whereby consumers and suppliers were connected through mandatory links. With the development of the market economy in Ukraine, the system of the former distributive bodies (ministries and committees) was eliminated and new structures began to develop within a framework of 'free' wholesale markets. The decentralisation of the wholesale sector brought about an increase in trading agents acting as a connecting link between producers and consumers.

The retail trade market has followed a similar path and has experienced significant structural transformations since the launch of market reforms in the country. The privatisation process of the state-run trading enterprises was launched, and many new trading enterprises – especially smaller ones – entered the sector. The first part of retail market emergence was dominated by the development of small stores. Since financial resources were scarce, supermarkets appeared at a later part, when capital accumulated in other sectors (such as the oil and gas industry) could be used by national industrial groups for the development of their own retail chains.

Food retail accounts for almost half of the entire retail market, and is highly fragmented. The top five food retailers have a market share of 21.3 percent (based on 2005 sales). This is much lower than, for example, 36 percent in Italy, 76 percent in the UK, and 88 percent in France⁹⁴. The low concentration can be explained by the relative youth of Ukrainian retail in its modern form, low market saturation and limited competitive pressure from foreign retail operators. Among the top five operators only one is international – Metro Cash & Carry – and the market shares of these companies are rather moderate: Fozzy Group (6.1 percent), Furshet (4.5 percent), Metro (4.3 percent), ATB (3.4 percent), and Velyka Kyshenya (3.0 percent). Currently, with many Ukrainians beginning to prefer shopping in malls and supermarkets, we observe the tendencies of further capturing of market share by super- and hypermarkets from open markets and traditional (smaller) retail formats.

Given its low saturation, fragmented structure and high sales growth rate, spurred by increasing personal income, the Ukrainian retail market remains one of the most attractive Eastern European markets for foreign investors. International retailers began to enter Ukraine in the early 2000s. Metro, Spar, and Billa were some of the pioneers and many international retail giants are currently actively looking for retail space in Ukraine, among

⁹⁴ Source: Industry Research 'Ukrainian Consumer Goods and Retail', Renaissance Capital, July 2006

them Auchan and IKEA. Meanwhile, Italy's Kings Cross, which builds and operates large shopping centres, is constructing a massive shopping centre in Lviv that is due to open in 2008 and the company is already planning to expand into other Ukrainian cities. Domestic retailers are preparing for the upcoming increased competition. Furshet, for example, hopes to beat out foreign entrants by nearly doubling its number of supermarkets. Nonetheless, the overall competition in the retail sector is still moderate, especially in small and mid-sized cities. However, EU-Ukraine FTA will most likely serve as an additional prerequisite for heating up the competition.

Current policy and sector issues

Significant liberalisation of the distribution services sector is envisaged within the WTO accession process, with no restrictions on modes 1 and 2 of trade in services – cross border supply and consumption abroad. For mode 3 (commercial presence) some minor limitations will remain in place, namely restrictions on foreign investment for companies distributing printed editions (limited to 30 percent maximum in the statutory fund of the enterprise) and for new agencies. Mode 4 (presence of natural persons) will be substantially liberalised beyond current practice of WTO Members– Ukraine will allow access of key personnel in a commercial presence 'up to 5 years' of temporary visa and contractual services suppliers and independent professionals for up to 3 years.

Efforts are currently underway to remove restrictions imposed on the import of specific products. A good example of progress towards WTO commitments is the harmonisation of the licensing fee for wholesale trade of alcoholic beverages. Prior to 2006, the licensing fee for importers of alcoholic products was twice as high as that for domestic wholesalers. This was viewed as a violation of national treatment and therefore, by the end of 2006, an amendment equalising these fees was adopted into the law on alcoholic beverages. Further going agreements on regulatory approximation are expected in various sub sectors of distribution services inside the FTA.

The distribution services sector in Ukraine is largely domestically orientated, with Ukrainian wholesalers and retailers undertake little significant activities abroad. However, this is likely to change as business processes and supply chains are transformed by overall globalisation processes and new technologies, which are accelerated by WTO accession and will undoubtedly be further sped up by an EU-Ukraine FTA. One area in which this will be felt is likely to be internet-delivered e-commerce. Currently trade in distribution services takes place mainly through commercial presence but, as a result of advances in e-commerce, cross-border supplies are likely to experience fundamental increases.

Some steps have already been taken to promote e-commerce in Ukraine. The process started in 2000 with a Presidential decree supporting the creation of a national global information Internet network and ensuring broad access to that network in Ukraine. The decree specifically addressed e-commerce, stating that the Ukrainian authorities will "ensure state support for the development of Internet infrastructure and the creation of conditions for the development of e-commerce". An important step towards further progress was taken at the March 2007 meeting of the Inter-Parliamentary Assembly of the Commonwealth of Independent States (CIS IPA), including Ukrainian representatives where a draft model law on e-commerce was considered. The purpose of the model law is

to create a legal basis for e-commerce, determination of principles of state regulation and support of the activities in e-commerce field, as well as establishment of the legal regime for e-contracts and communications for the sale of goods, execution of works, and provision of services.

12.2.2 Transport services (road, rail, air, water and sea, other)

Sector overview and recent developments

The transportation sector accounts for 8.6 percent of total GDP - or 28.7 percent of all services - and is responsible for 14.4 percent of the total budget income. Despite recent strong developments – freight traffic grew by 20.2 percent and passenger transport by 5.4 percent between 2000 and 2005 - passenger and freight transportation are only 54.7 percent and 45.6 percent of their pre-1990 levels respectively. Increased transport activity in Ukraine is inevitable and necessary for economic growth, under the scenario of vigorous trade expansion, but initially a significant traffic recovery seems unlikely under the FTA terms.

Due to Ukraine's geographic position, it is an important transit country between Russia and the European Union and a major part of transportation services is provided to foreign companies.

Institutional and market structures

Before 1990, Ukraine had a relatively efficient transportation system with widespread use of public transport. Today, there is an increasing push for greater individual mobility that creates a constantly increasing demand for road based transportation. Further impetus to improve the quality of services and modernise the transport infrastructure comes from Ukraine's huge transit transport potential. So far, however, progress towards modernisation has been quite limited and many long-term infrastructure projects failed to start as the authorities could not develop a coherent development strategy. Attempts to attract private capital for infrastructure projects were not successful because the country lacked an effective regulatory regime and long-term investment risks remain too high.

The transport sector suffers from a state monopoly: the entire national road network, railway system, ports and airports as well as many organisations involved in transport-related maintenance and construction are still state-owned units reporting to the Ministry of Transport. This strong state presence coupled with limited investment capacity, limits technical innovations in transport and leads to a pace of reform in the sector that is too slow to take full advantage of the opportunities offered.

With the significant presence of the public sector in the provision of transport infrastructure and services, existing user charges, tariffs and fares are often insufficient or inappropriate to cover the cost of maintenance and renewal of the core assets required. Consequently, the asset base of the transport sector is eroding, and rehabilitation, maintenance and renewal backlogs are mounting. The situation is aggravated by the oversupply of outdated transport infrastructure. During the middle and the end of the twentieth century Ukraine's infrastructure was designed to handle much higher volumes of traffic than are currently using the infrastructure. As a result Ukraine faces a very high

level of maintenance compared to its traffic levels and subsequently technical innovation and technological upgrading needs are not being sufficiently addressed.

Current policy and sector issues⁹⁵

Although significant liberalisation will be part of Ukraine's WTO accession, some segments of the transport sector are not covered by the WTO and Ukraine's commitments under GATS (passenger and freight transport by rail and internal waterways). Among the main areas where WTO-related issues arise are:

- **Rail transport:** one of the main issues of conformity with WTO obligations in transport is the existence of differential tariffs applied domestically and those for the transportation of exports/imports on railway transport. The issue was raised many years ago and since then some of the tariffs have been already equalised (e.g. for the transportation of coal and ferrous metal scrap);
- **Port fees:** Ukraine charged differentiated rates (regular or reduced) for port fees according to the flag of the vessel. However in 2003, Ukraine committed itself to equalise port fees for foreign vessels. In December 2006 a limit for reductions was introduced. Then, from July 17, 2007, four types of discounts for loading and unloading of cargo (bulked coal, coke, and ore) were abolished (bulked coal discounts were abolished in two ports)⁹⁶; and
- **Transit procedures:** Ukraine has committed itself to consider transit of goods through the territory of Ukraine as a subject of simplified and express control procedures and, in the event of relevant agreements, custom controls may be performed jointly by neighbouring states. In April 2007 a law was adopted enabling the possibility of railway cargo transit under cover of CIM/SMGS consignment notes. The aim was to facilitate procedures for transit cargo and decrease the time needed for these procedures. This is also why Ukraine takes part in the work on the convention on international customs transit procedures for the carriage of goods by rail under cover of SMGS consignment notes.

The lack of development of transport infrastructure and services is seen as a serious impediment to the smooth operation of Ukraine's economy and an important 'non-tariff barrier' to the effective movement of goods and people and the integration of Ukraine with the EU and other international markets. Improving transport connections and services is seen as a major precondition for effective market integration, as well as a necessary component for Ukraine to exploit opportunities as a hub for transit transport. Accordingly, the transport sector – especially air and road transport – is seen as an area where multiple initiatives are required that go beyond free trade towards convergence on EU standards and enhanced investments in infrastructure.

⁹⁵ For an overview of policy issues and developments in the transport sector in Ukraine see: "Back to the drawing board: Restructuring Ukraine's network industries" Ildar Gazizullin, March 2006, International Centre for Policy Studies (ICPS, Ukraine), available at: <http://indeunis.wiwi.ac.at/index.php?action=content&id=publications> and "Free Trade between Ukraine and the EU: an Impact Assessment", (2007), International Centre for Policy Studies, Kiev, available at: <http://www.icps.kiev.ua/eng/project.html?pid=110>

⁹⁶ These types of cargo form more than a half of loading-unloading works in two ports - Nikolaev and Kerch - where discounts ranged from 18 to 35 percent. It has been estimated that under the condition of unchanged amount of cargo shipped through these ports, the abolishing of these discounts will generate additional revenues of USD 800-900 million to each of the ports.

The EU-Ukraine Action Plan defined some priorities in reforming of Ukrainian transport sector, among them are:

- Elaborate and start implementing a national transport strategy, including transport infrastructure development and identify and commit sources of financing for this programme;
- Strengthen co-operation on regional and international issues through continuing consultations on the possible EU use of Ukraine's long haul air transport capacities;
- Take further steps for the integration of environmental considerations into transport sector
- Implement selected measures and reforms in all transport sectors, among them improve efficiency of freight transport services, obtain full member status in the European Joint Aviation Authorities and encourage the restructuring of the state-owned port sector

The Partnership and Cooperation Agreement (PCA) has fully liberalised international maritime transport between Ukraine and the EU, including non-discriminatory access to port services and the FTA is not expected to have any impacts in this field. It also provides for the following actions in relation to the transport sector:

- Abolishment of all obstacles which could have restrictive or discriminatory effects on the free supply of services in international maritime transport.
- Modernisation and development of railways, waterways, road, port, airport and air navigation including modernisation of management and, in particular, the modernisation of major routes of common interest and the trans-European links for the above modes;
- Promotion of joint research and development programmes;
- Preparation of the legislative and institutional framework for policy development and implementation including privatisation of the transport sector.

Specific initiatives and outstanding issues – that may eventually be incorporated in an FTA - in the transport field include:

- **Integration into Pan-European transport networks:** The EU-Ukraine action plan covers Ukraine's participation in the joint development of the Pan-European Corridors and Areas⁹⁷ as well as in the TRACECA programme⁹⁸;
- **Aviation sector reform:** EU and Ukraine have made progress in cooperation in the aviation sector with the signature in 2005 of the agreement on certain aspects of air services. This "horizontal agreement" removes nationality restrictions in the bilateral air services agreements (ASA) between EU Member States and Ukraine allowing any EU airline to operate flights between any EU Member State where it is established and Ukraine. It therefore demonstrates that there is an external dimension to the internal market for air transport. Also by aligning ASA with the EC Treaty the "horizontal agreement" brings legal certainty for all EU air carriers operating to

⁹⁷ Ukraine is party to 3 pan-European Transport Corridors: Corridor III: Brussels-Aachen-Köln-Dresden-Wrocław-Katowice-Kraków-Lviv-Kiev; Corridor V: Venice-Trieste/Koper-Ljubljana-Maribor-Budapest-Uzhhorod-Lviv-Kiev; and Corridor IX: Branch B – Kaliningrad to Kiev.

⁹⁸ TRACECA (TRANsport Corridor Europe Caucasus Asia) is one of four Euro-Asian Land Transport Corridors, also called a 'New Silk Road'. It should result in creation of a railway line that will follow the ancient Silk Road from the Chinese port of Lianyungang on the Yellow Sea to the Georgian ports of Poti and Batumi on the Black Sea and then on into Western Europe.

Ukraine. As a next step, in December 2006 the EU Council of Transport Ministers adopted a mandate authorising the European Commission to start negotiations on a comprehensive Common Aviation Area Agreement with Ukraine. The CAA agreement should not only open the respective markets but also integrate Ukraine into the European aviation structures, including the possibility to sign working arrangements with the European Aviation Safety Agency (EASA) and mutual recognition of certificates and licences. Under the CAA agreement Ukraine will harmonise its legislation with European standards and implement a large part of the European aviation acquis. The agreement will thus be a further important step in the creation of a wider Common Aviation Area between the EU and its neighbours by 2010, but will require significant efforts from both the Ukrainian government and economic operators. Both aviation markets are closely connected and air traffic between them is growing. In 2006, 2.2 million passengers travelled by air between the EU and Ukraine - over 350% more than in 2000.

- **Development of combined rail and road transport:** this segment is underdeveloped in Ukraine compared to the EU;
- **Elimination of border barriers (customs control reforms):** Ukrainian border controls are seen to be too long and complicated;
- **Restrictions on transportation of excisable goods:** currently some restrictions are set on the movement of excisable goods in transit, which need to be transported along specific routes and through designated points of entry at the customs border;
- **Competition policy and privatisation:** Even if in principle there are Ukraine does not impose constraints on market access (or will remove constraints as part of ongoing reforms), the transport sector is characterised by state ownership and natural monopolies in transport infrastructure. Attracting investment into the transport sector will require, therefore, opening the transport infrastructure and services to (foreign) capital; for example, privatisation of port terminals and operations, granting concessions for airport, container terminal, or highway operations etc;
- **Uncompetitive situation of transport service suppliers:** enterprises in the Ukrainian transport sector are seen to be highly uncompetitive. This is attributed partly to the absence and lack of correspondence to international supply standards; for example, vehicles do not meet international environmental standards.⁹⁹ This lack of competitiveness raises obvious concerns from domestic service providers over the impact of rapid liberalisation on their market position;
- **Training programmes:** provision of training programmes in economics, legislation and technical matters for transport operators and senior civil servants with an aim of promoting operating standards;
- **Harmonisation of transport statistics:** Ukraine's transport statistics are thought to be subject to considerable distortion by transport operators;
- **Information exchange:** covering information on transportation policies, interconnection and interoperability of multimodal transport networks and other issues of mutual interest.

⁹⁹ For instance, the stocks of soviet-era trucks with large loading capacities do not correspond to modern logistics requirements.

12.2.3 Communication services (postal and courier, telecommunication, data services, other)

Sector overview and recent developments

Telecommunications services

In 2005 the telecoms sector employed 250 000 people and accounted for 3 percent of Ukrainian GDP. The telecoms sector is among the fastest growing sectors of the Ukrainian economy; since 2000 revenues from communication services have increased with an average annual growth of 32 percent. Within this figure, revenues from mobile communication increased by a factor of 12 between 2000 and 2005 and accounted for 52 percent of all telecom services in 2005. The rapid development of the telecoms sector and spread of the internet have been associated with high levels of investment; in 2005 the sector attracted UAH 7.2 billion of investment. Nonetheless, a geographical imbalance remains with modern services concentrated in major cities, leaving rural population with traditional analogue land line services only.

Postal services

Postal services in Ukraine are operated by the state monopolist – Ukrposhta. The market has been growing steadily from 2006 and value for postal services was estimated at around USD 260 million in 2006 (USD 265mln in 2005). The revenue was received through delivery of 1409 million newspapers and magazines, 390 million letters, 5.7 million telegrams and 13.2 million parcels. Among the main issues concerned with the development of the sector are the following:

- Customers complain on a low level of service (delays in deliveries, incorrect deliveries, etc.);
- Increasing competition from courier service companies, especially in the sector of subscription press deliveries;
- Under-use of modern technologies in mail sorting procedures.

Courier services

The market of courier services in Ukraine is around USD 10 million annually; for which the breakdown is: 15 percent of which is delivery of subscription material, 55 percent - advertisement, and 30 percent is a “pure” delivery of different orders. Around 10 companies can be described as major players at the market. They are represented by both foreign (DHL, TNT, City Express) and local companies. Foreign representatives of the foreign companies are involved not only in international delivery service, but also play an important role in domestic service.

Institutional and market structures

The telecommunications sector has recently been opened for foreign investment and competition and substantial liberalisation is integral to Ukraine’s WTO access. Ukraine’s mobile communications sector is quite competitive and has attracted substantial foreign investment but fixed telephony is still controlled by the state monopolist Ukrtelecom.

Current policy and sector issues¹⁰⁰

Current Ukrainian legislation in the telecoms sector corresponds closely to the EU Telecommunications Legislation Package of 1998. Within the context of Ukraine's WTO accession process, the country has undertaken commitments to open up all forms of telecommunications and to carry out certain international demands regarding sector management. Among the main areas where WTO-related issues arise are:

- According to the WTO commitment Ukraine has abolished the 49 percent limitation on foreign ownership in the telecommunication sector;
- In compliance with the European telecommunication area conditions, starting from the beginning of 2007 Ukraine is changing city codes and the major part of short numbers as well as changing 8-digits numbers to 10-digits;
- Privatisation of the former state monopolist telecom supplier Ukrtelecom is in progress;
- Since the beginning of 2006 restrictions on the share of foreign capital in the charter funds of television and radio broadcasting companies have been removed; and
- Ukraine has committed to preserve the independence of the regulatory authorities from service suppliers in telecommunication services.

The EU-Ukraine Action Plan defined some priorities in reforming the Ukrainian communications sector, among them are:

- Establishing a National Committee for Communication Regulation; its competence includes matters related to licensing and registration of service suppliers as well as tariff regulation;
- Adopting regulations concerning licensing, interconnection, numbering and generally accessible telecommunications services in accordance with the Law of Ukraine on Telecommunications. This stated priority of the Action Plan remains unfulfilled despite being seen as essential and vital element of the plan.

The Partnership and Cooperation Agreement (PCA) provides for the following actions in relation to the Communications Sector:

- The establishment of policies and guidelines for the development of the telecommunications sector and postal services;
- Development of principles of a tariff policy and marketing in telecommunications and postal services;
- Encourage the development of projects for telecommunications and postal services and attracting investment;
- Enhancing efficiency and quality of the provision of telecommunications and postal services, amongst others through liberalisation of activities of sub-sectors;
- Advanced application of telecommunications, notably in the area of electronic funds transfer;
- Management of telecommunications networks and their "optimisation";
- An appropriate regulatory basis for the provision of telecommunications and postal services and for the use of a radio frequency spectrum; and

¹⁰⁰ For an overview of policy issues in the telecoms sector in Ukraine see: "Back to the drawing board: Restructuring Ukraine's network industries" Ildar Gazizullin, March 2006, International Centre for Policy Studies (ICPS, Ukraine), available at: <http://indeunis.wiwi.ac.at/index.php?action=content&id=publications>.

- Training in the field of telecommunications and postal services for operations in market conditions.

As with other infrastructure sectors, the challenges for the telecoms sector are to upgrade infrastructure, enhance competitiveness and provide an appropriate regulatory framework. In terms of an FTA with the EU, therefore, key issues relate to the practical implementation of WTO commitments/liberalisation and of the corresponding EU *acquis* (e.g. introducing EU norms and standards, strengthening national regulatory capacity¹⁰¹, etc.) Attracting the much needed investment in the telecommunications sector is linked to the privatisation of Ukrtelecom, the state monopoly supplier of fixed telephony. In turn, the effective privatisation of Ukrtelecom is linked to strengthening the capacity of the national regulator.

From the perspective of an FTA, key issues for the telecoms sector relate to the speed of transition towards a liberalised market and the adoption of international norms and standards. Although WTO/GATS provides the flexibility for gradual transformation, an FTA may push for more rapid adoption of measures to comply with current EU standards. There is, however, concern that the current institutional capacity is largely insufficient to manage the development and implementation of wide-scale reforms. More generally, the sector needs to address the challenges of globalisation, new technologies, institutional and sector restructuring, and the developing gap in basic information services and in advanced services i.e. satellite technology;

Specific initiatives and outstanding issues – that may eventually be incorporated in an FTA - in the communications field include:

- Infrastructure modernisation: modernisation of Ukraine's electronic infrastructure and its integration into European and world networks, with a focus on improvements at a regional level and international cooperation;
- International standardisation: cooperation within European structures especially those involved in standardisation, information exchanges and possible technical assistance on regulation, standardisation, conformity testing and certification of information and communications technologies and the use of frequencies;
- Joint research: promotion and implementation of joint research, technological development on projects in the field of new technologies related to the information society;
- Postal sector cooperation: postal cooperation in the exchange of information and dialogue on postal matters in relation to, inter alia regional and international activities, regulatory aspects and policy decisions.

12.2.4 Financial services (banking, insurance, other)

Sector overview and recent developments

Providing investment resources for companies, the financial service sector remains one of the main drivers of accelerated structural reforms in Ukraine. Although weak in international comparison, the sector is raising its efficiency as intermediate between

¹⁰¹ For example strengthening the Antimonopoly Committee and the Communications Regulation Commission.

borrowers and lenders. A spur of investment activities in the industry would not be possible without proper resources provided by banks. Households increase consumption of domestic appliance and cars taking advantage of credit services variety. Increasing number of M&A deals, bond issuances and IPOs drive demand for investment banking services both domestic and imported. Insurers expand their presence as more market participants opt to minimise losses through purchases of high-quality insurance services.

The sector provided for 3.5 percent of total output in 2004 (6.2 percent of GDP) in 2004 and 2.6 percent (4.5 percent of GDP) in 2006. About 2.7 percent of employees work for the sector's companies. The sector remains mostly home market oriented: export to value added ratio was 1.2 percent in 2004 rising a bit to 2.4 percent in 2005. Financial services provide for a modest 3 percent of total services export. Weak engagement of the financial service providers in foreign trade results from low price and quality competitiveness of the sector as well as differing prudential standards complicating provision of services abroad. On the other hand, the financial services role in imports is more important (18 percent of total services imports). The import to value added ratio for the sector was 28 percent in 2004 and 11 percent in 2005. Variation in financial services imports shares signals that the market is still far from being stable and balanced.

Institutional and market structures

Banking

Ukraine has a two-tier banking system consisting of the Central Bank – National Bank of Ukraine (NBU) – and commercial banks. The NBU is responsible for conducting monetary policy and banking system supervision. The banking sector is governed by the Law of Ukraine “On Banks and Banking Activities” adopted in 2001.

According to the NBU, there are 173 commercial banks in the Ukrainian market as of June 2007. Overall assets of the banking system totalled UAH 340 billion (USD 68 billion) by the end of 2006 which is equivalent to 63.2 percent of GDP. Out of 173 banks, 134 are joint stock companies (91 – open JSC and 43 – closed JSC). The remaining 35 banks are limited liability companies. Since September 2006 newly founded commercial banks in Ukraine may operate either as open JSC or cooperative banks (with participation of at least 50 persons) only.

Key players among commercial banks are Privatbank (accounting for 11 percent of banking systems assets), Raiffeisen Bank Aval (8.95), Ukrsibbank (7.2 percent), Ukrsotsbank (5.8 percent), Ukreximbank (5.5 percent), and Oshchadbank (4.1 percent). Two Ukrainian commercial banks (Ukreximbank and Oshchadbank) are fully state-owned and the Ukrainian authorities do not intend to privatise them in the near future. These banks, however, have no special privileges to serve the government; they participate in government tenders on general terms. The government keeps its assets out of commercial banks on the treasury accounts at the NBU.

Since 2006 the Ukrainian banking sector is the leader among economy sectors in terms of the FDI inflow. The sale of Ukrainian Aval bank to Raiffersen International for USD 1.08 in October 2005 paved the way for foreign investment into the domestic banking system.

Since then up to June 2007, non-residents acquired major or minor stakes in about 20 Ukrainian banks.¹⁰² As of June 2007, 42 Ukrainian commercial banks enjoy participation of foreign capital of which 18 are 100 percent owned by non-residents¹⁰³. This is already a rather strong presence of foreign banks.

European banks acquired over 95 percent of stakes sold to non-residents in the last two years, while Russian residents bought the remaining stakes. Controlling stakes in Ukrainian banks are usually sold with a high premium.¹⁰⁴

Insurance market

The basic regulation in the insurance market is the Law of Ukraine “On Insurance Activities” adopted in 1996 (revised in 2001). The Law states that companies possessing a licence for life insurance activities cannot be engaged in other types of insurance. This regulation explicitly distinguishes Ukrainian companies into life and non-life insurers, which is consistent with EU regulations. The law lists 35 types of obligatory insurances. Ukraine’s State Commission on Financial Services Market Regulation is responsible for supervision of insurance companies.

As of the beginning of 2007, 411 insurance companies worked in the Ukrainian market of which 55 are life insurance companies and 356 are non-life insurance companies. According to the Commission estimates, the share of the three biggest life insurance companies in overall volume of premiums paid equalled 58.5 percent, while this share was much smaller for non-life insurers (12.2 percent).

All in all, Ukrainian insurance companies collected UAH 13.83 billion (US\$ 2.76 billion) of risk premium, of which 36.6 percent are re-insurance premiums. The structure of a premium is dominated by property insurance (55.4 percent of overall premiums collected), while financial risks premiums – the second largest group – account for 24.9 percent. Life insurance premiums provide for a modest 3.3 percent of total volume.

About 4 percent (US\$ 110 million) of total volume of premiums collected have been paid by Ukrainian companies to non-resident insurance companies to reinsure risks. Re-insurance activities have been of concern to the Commission as many companies were engaged into risk reinsuring to minimize tax obligations.

Similarly, bank insurance companies are becoming increasingly attractive to foreign direct investors. Non-residents owned 13 percent of paid capital in statutory funds of Ukrainian insurance companies. 66 companies had shares of foreign capital in their statutory funds.

Other financial services (security market)

The security market showed substantial progress in the last year. Improved infrastructure of the securities market, a favourable investment environment, and inflow of short and long term capital into the country contributed to strong developments of the market. The

¹⁰² The latest M&A deal in the banking system is the announced acquisition of Ukrspotsbank (the forth largest bank) by Unicredit Group for over USD 2.2 billion. The deal is to be completed by the end of 2007.

¹⁰³ As of 1 January 2007, non-residents accounted for 28% of statutory capital in Ukrainian banks.

¹⁰⁴ The P/B (price to book) ratio for the latest M&A deals exceeds 3.5.

main securities market normative document is the “Law on Securities and Stock Market”. The State Commission on Securities and Stock Market is the regulator responsible for prudential supervision of the market.

The FSTS – the major securities market index – grew rapidly and the volume of FSTS trade in securities went up from US\$ 1.31 billion in 2004 to US\$ 5.47 billion in 2006. As of January 1, 2007, about 1576 securities market participants were licences by the Commission, of which 805 are securities traders.

About 1600 types of securities issued by 917 issuers were listed at trading platforms in Ukraine as of April 2007. This is a signal about the huge potential of securities market growth as there are more than 10.000 open JSCs in Ukraine, whose equity shares may be potentially traded in the market¹⁰⁵. The overall market capitalisation of companies listed at FSTS totalled UAH 376.3 billion (US\$ 74.5 billion) – about 57 percent of the projected 2007 GDP.

*Current policy and sector issues*¹⁰⁶

The financial sector is now being opened for foreign investment, which is seen as the crucial step at this stage towards improved resource allocation because it disconnects the financial system from both government and domestic monopolistic power.¹⁰⁷ Ukraine abolished many limitations regarding participation of foreign capital in the statutory funds of the sector’s companies and the financial sector on the whole. However, establishment of branches of foreign banks, insurance companies and stock market participants is still prohibited.¹⁰⁸ Ukraine also maintains prohibitions for insurance intermediaries (brokers and agents) to distribute services of non-resident insurance companies. At the same time local insurers can reinsure risks abroad.

In spite of the many overall potential benefits of financial service sector liberalisation for the Ukrainian economy, there is concern that any premature attempt at total compliance with EU regulatory norms would be too costly. This may lead to employment losses and growth reductions by incumbent financial service companies going bankrupt and further automation of jobs by EU firms, which leads to further losses. In this respect, major issues for the financial services sector concern corporate governance, oversight and supervision standards, transparency and procedures for combating money-laundering.

Ukraine made extensive commitments within the WTO accession process. First, Ukraine committed to fully liberalise provision of most financial services through modes 1 and 2 (the main exclusions concern direct insurance other than transport insurance and trading of derivatives and of exchange rate and interest rate instruments; as regards

¹⁰⁵ As of January 1, 2007, there were 32 822 JSCs in Ukraine, of which only 10 943 are open JSCs.

¹⁰⁶ For an overview of policy issues and developments in the financial services sector in Ukraine see: “*Free Trade between Ukraine and the EU: an Impact Assessment*”, (2007), International Centre for Policy Studies, Kiev, available at: <http://www.icps.kiev.ua/eng/project.html?pid=110>

¹⁰⁷ As of 1 January 2007, non-residents accounted for 28% of statutory capital in Ukrainian banks.

¹⁰⁸ Technically, the Law on Banks and Banking allows opening of branches and representative offices of foreign banks from the day of Ukraine’s accession to the WTO. The Law on Insurance states explicitly that only residents are allowed to be engaged in insurance activities in Ukraine. The Law on Securities and Stock Market and the Decision of the Commission on Securities and Stock Market #60 state that stock market participants must be legal entities registered in accordance with the Law on Business Partnerships.

intermediation of direct insurance, Ukraine will only allow the cross-border supply of this services five years after accession).

Commitments within mode 3 have been under hot debates during the bilateral negotiations. Ukraine agreed to allow opening of foreign insurance branches only five years after accession to the WTO. With respect to bank branches and representative offices, there is no transitional period but the following conditions apply¹⁰⁹:

- Government of the bank's home country cooperates with FATF;
- Banking supervision rules in the bank's home country comply with the Basel committee regulations;
- NBU concluded agreement on cooperation in the sphere of bank supervision rules with the Central bank of the home country;
- Minimum endowment capital of the bank's branch (money that banks provide to their branches in Ukraine) must be not less than EUR 10 million;
- The NBU is authorised to establish financial performance indicators obligatory to the foreign banks' branches. As of June 2007, the NBU did not develop the by-law regulations relevant to the branches functioning in Ukraine;
- The qualification criteria for branches of foreign banks should not be an obstacle for European companies. The only requirement, which seems to be burdensome for foreign banks' branches is the USD 10 million endowment requirement.

The specific initiatives and outstanding issues – that may eventually be incorporated in an FTA - in the financial services field include monitoring of the implementation of the WTO agreement as well as:

- Banking regulations and supervision;
- Branch operations opening up; and
- Credit and debit card provisions.

12.3 Potential impacts of an FTA

Before we present the potential impacts of the FTA, we stress the fact that except for mode 3, the tax equivalents used in the CGE modelling are hypothetical and assumed to be equal to mode 3 tax equivalents. This means that liberalisation results from the CGE modelling that are associated with their removal are based on these assumptions and therefore need to be interpreted with care. Based on these assumptions, we warn against detailed impacts and subsequent policy implications.

12.3.1 Distribution services

Results from the CGE modelling

The outputs of the modelling exercise show important positive effects for the distribution sector in Ukraine – beyond those resulting from WTO accession – for the implementation of an FTA. In the long run model variant, production and employment in the distribution

¹⁰⁹ According to the government officials, the current version of the Laws fully account for requirements of Ukraine's bilateral protocols. It is assumed that the Law norms are in full compliance with the schedule of commitments.

sector are estimated to increase by slightly under 3 percent in the limited FTA scenario and by close to 5 percent in the extended FTA scenario. In the latter case this is translated into an increase in employment within the sector of some 100,000 persons.

The large positive outcome is understandable if the inter-relationship between trade liberalisation and the role of the distribution sector is considered. Expanding the volume of physical trade between the EU and Ukraine will inevitably increase demand for the intermediary services provided by the wholesale segment of the distribution sector; both in terms of services related to supply of goods to the Ukrainian market and also through Ukraine's role as a transit location between the EU and Russia and the surrounding region.

Positive impacts can also be expected in the retail segment of the market. Despite the restructuring of the retail segment that may come about through the entry of EU and other major international retail suppliers and the potentially negative impacts that this may have on smaller local retailers, it needs to be remembered that trade expansion will expand both the volume and range of products entering the Ukrainian retail market that overall should expand the value of output/production in the sector. Further, the adoption of retail concepts emphasising consumer service elements within retailing should further increase employment demand.

Table 12.2 Overview of scenarios for distribution services

Scenario	Description	Model hypothesis
Base scenario		
WTO accession	Cancellation of the limitations during the five-year transition period on the share of foreign capital in the authorized fund of enterprises which distribute printed editions.	
Limited FTA	Limited liberalisation in modes 1-4; limited increase in goods for distribution; limited extent of regulatory approximation to lower NTBs	Limited elimination of barriers to FDI
Extended FTA	Liberalisation in modes 1 – 4; increases in goods for distribution from trade liberalisation, increases in FDI into services, far-reaching agreement on regulatory approximation leading to removal of NTBs	Full elimination of barriers to FDI

Table 12.3 Overview of model outputs for distribution services

	Production		High skilled employment		Low skilled employment		Prices	Exports (in general)	Imports (in general)	Exports to EU	Imports from EU
	US\$										
	bn	%	number	%	number	%	%	%	%	%	%
Base scenario	14.46		98,363		1,989,800						
Change on Base											
WTO accession	0.014	0.1	148	0.1	2,985	0.2	0.8	-5.0	3.0	-5	3
Change on WTO											
Limited FTA: short run	0.044	0.3	285	0.3	5,770	0.3	0.4	-4.2	1.9	-4	2
Limited FTA: long run	0.405	2.8	2,833	2.9	57,505	2.9	-1.3	-1.1	1.0	2	1
Extended FTA: short run	0.174	1.2	1,141	1.2	23,221	1.2	0.7	-7.4	4.9	-7	5
Extended FTA: long run	0.695	4.8	4,924	5.0	100,226	5.0	-0.2	2.1	2.9	2	3

Economic impacts

As the wholesale and retail market is far from being saturated in Ukraine, the EU-Ukraine FTA will most likely make this sector even more attractive for the new entrants from the EU, thus, increasing FDI inflows into the sector. This will lead to increased competition, which will have both positive and negative impacts in which the former outweigh the latter: positive – since the overall enhanced competitiveness will increase productivity, lower prices and higher growth of the sector; negative – because some domestic operators (especially smaller ones) may not survive and lose their market share to the more competitive international service providers.

Despite strong competition for domestic operators, overall employment in the sector will most likely increase, since incoming international distribution service providers will create more work places within their Ukraine-wide chains than those lost because of increased competition. This is supported by the modelling results, where employment for both high- skilled and low-skilled workers substantially increases especially in the long-run extended FTA scenario.

In both scenarios, the exports are expected to decrease in short run, while in the long run they will increase slightly. Hence, an FTA would increase the trade deficit slightly in the trade with the EU in short run, while in long run it will even out again. The imports are increasing slightly, which means that there are more European retail and wholesale companies entering the Ukrainian market. This will boost competition and increase the number of varieties of products for consumers. As mentioned before, fuels and ferrous metals are of particular importance for the wholesale segment. Since trade in both these

product categories is expected to increase substantially because of the FTA, trade in distribution services is further enhanced.

Consumers/service users will benefit from the increased competition in several ways. First, increased competition will lead to the improvements in quality of services and to the enhanced product variety available through the wholesale and retail chains. Second, as a result of increased competition there might be reduction in prices.

Part of the positive impact depends on the degree to which the FTA achieves agreement on regulatory approximation for specific sectors and goods products – that subsequently needs to be distributed. The deeper the integration through regulatory approximation and implementation, the larger the positive effects.

Social impacts

As pointed out in the economic impacts and our further analysis, the Ukraine FTA will have a positive impact on employment in the distribution services sector.

Modelling results show that both low-skilled and high-skilled employment increases in the short-run amount to 0.3 percent for the limited FTA and 1.2 percent for the extended FTA, while in the long run we have even more optimistic estimates of 2.9 percent and 5 percent respectively. Given the low share of high-skilled workers characteristic for the sector, in the long run this translates into over 57.500 low-skilled and approximately 3.000 high skilled work places in the limited FTA scenario and over 100.200 low-skilled and 5.000 high-skilled work places in the extended scenario.

Derived from strong employment growth and employment opportunities is the fact that we expect poverty to decrease – the more because the distribution sector is an enabling sector that has an impact economy-wide – and health impacts to be positive, with increasing life expectancy and lower mortality rates. This latter effect can be enhanced even further, if – in parallel to employment growth – enough emphasis is placed on decent work and improvements of the quality of work and employment circumstances and surroundings. The FTA provides the perfect vehicle to emphasise these effects.

During this transition process, for this sector, the strong skewness towards low-skilled employment in the sector needs to be kept in mind. Care should be taken that the incentives for higher education among young Ukrainians do not diminish, especially given that the EU-Ukraine FTA will most likely lead to a closing income gap (on average) as presented in the Global Analysis Report.

Another important social impact is the fact that development in distribution services (especially retail trade) is geographically uneven, benefiting the industrial areas in Ukraine more than the agricultural countryside.

Environmental impacts

Looking at distribution trade, the size of Ukrainian distributive trade is 635 smaller than the EU distributive trade size. This has been accounted for when estimating the environmental impacts and conclusively the overall environmental impact of the EU Ukraine FTA is mostly negligible.

- In Ukraine, the environmental impact of changes in distribution services is connected with a negative influence of further increases of motor vehicles use, as private cars are more and more used for shopping. Increase of packaging waste is to follow as well. Both factors are aggravated by specific Ukrainian conditions, like low quality and sometimes even faked motor fuels, poor state of car fleet because of traditionally long use of cars and widespread import of old second hand cars from Europe, almost complete absence of waste separation, very limited recycling programmes, no programmes for utilisation of dangerous substances, electronic waste, batteries, etc.

Thus motor vehicles evoke of greenhouse gases and air pollutants emissions like PAH, particulates, CO, NOx, and SOx when diesel engines.

The distributions sectors impact on the *atmosphere* is expressed in overall emissions of greenhouse gases, but these emissions are mainly related to the transport emissions. Additional air pollution and ozone depletion is to some extent generated from plastic packaging procedures and use of refrigerators. However, the change induced by this FTA is negligible to the baseline value in the EU.

The impact on *environmental quality* is more tangible; increased amounts of packaging waste increases pressures on waste management during collection and on landfills. All new recyclable and eligible for energy use packaging materials induced by this FTA need to be taken care of in the existing waste incineration and power facilities. Currently it is not possible to estimate the actual amount of additional packaging waste generated by this FTA. As for use of energy and energy efficiency we assume that this FTA has no negative impact on the baseline development in the EU.

The estimated impact on the *fresh and waste water* indicator follows the distributive sector development in the EU, and the impact of this FTA on it is negligible.

Table 12.4 Summary of environmental impacts for Ukrainian distributive trades

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO2 emissions from transport ¹¹⁰	▽	–	▽	No	H
Air pollution and ozone depletion	○	–	○	No	H
Land					
Use of raw materials, land use	○	–	○	Yes/No	M
Management of contaminated sites	△	–	○	Yes	H
Biodiversity					
Protected areas, ecosystem, species	○	–	○	Yes	M

¹¹⁰ Transport CO₂ emissions include all greenhouse gas emissions recalculated as CO₂ emissions.

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Environmental quality					
Waste management	△	–	○	Yes	M
Use of energy	○	–	○	Yes	H
Energy efficiency	△	--	○	Yes	H
Noise pollution	○	--	○	Yes	H
Fresh and waste water					
Quality of ground water	○	0/–	○	Yes	M
Quantity of waste water	△	–	○	Yes	H
Cleaning of waste water	△	–	○	Yes/No	M

* For the meaning of the signs in the Table, we refer to section 2.4.

12.3.2 Transport services

Results from the CGE modelling

The outputs of the modelling exercise show negative initial effects for the transport sector in Ukraine – beyond those resulting from WTO accession – for the implementation of a FTA but a major rebound in the longer-run. In the short-run version of the extended FTA, production and employment in the domestic transport companies are estimated to decrease by 7.8 percent. In the longer term, the model results show that a part of the short-run losses are offset again by improvements in the production and employment situation. This is shown in Table 12.6.

As described in this Chapter, the transport sector is characterised by oversupply of outdated transport infrastructure, inefficient service provision – often through state monopoly service providers – and, as a consequence suffers from insufficient investment, for example in maintenance and technological development. Major structural reform within the transport sector is required and the FTA can be seen as providing a catalyst for this necessary development. Opening up Ukraine's transport sector (internal water transport, computer reservation systems (Amadeus) and basic transport of passengers and freight) to increased international competition – which may involve private sector participation in provision of services currently in government hands – will necessitate considerable efforts to improve efficiency and productivity. However, the negative consequences this may have for the domestic transport companies in the short-run need to be weighed against the positive contribution that efficient and cost-effective transport services will provide to enhancing other sectors of the Ukrainian economy and the sector itself in the long run.

Table 12.5 Overview of scenarios of transport services

Scenario	Description	Model hypothesis
Base scenario		Tariff equivalent barrier to foreign service

Scenario	Description	Model hypothesis
		provider estimated at 16.7%
WTO accession	Cancellation of the limitations on the share of foreign capital in the authorized fund of enterprises which supply transport services; Internal waterways transport Passenger transportation and freight transportation: no obligations in terms of commercial presence; Air Transport Services Computer Reservation System (CRS): no obligations in terms of cross-border supply and commercial presence; Rail Transport Services Passenger and freight transportation no obligations in terms of cross-border supply and commercial presence; Road Transport Services Passenger and freight transportation no obligations in terms of cross-border supply and commercial presence	Tariff equivalent barrier reduced to 11.7% (-30%)
Limited FTA	Allowance of FDI into the transport services sector with some exceptions in the public transport sector, partial opening of rail, road, ports and airports for investments and limited elimination of border barriers	Tariff equivalent barrier reduced to 6.7% (-60%)
Extended FTA	Complete allowance of FDI and investment into the transport sector; breakdown of monopoly and state-owned structure of public transport and heavy improvements in infrastructure. Opening of rail, road, ports and airports for foreign investments and deep aviation sector reform, integration of Ukraine into the pan-European transport networks, elimination of border barriers (including visa procedures for transport service providers)	Full elimination of barriers to FDI: Tariff equivalent barrier reduced to 0% (-100%)

Table 12.6 Overview of model outputs for transport services

	Production		High skilled employment		Low skilled employment		Prices	Exports (in general)	Imports (in general)	Exports to EU	Imports from EU
	US\$ bn	%	number	%	number	%	%	%	%	%	%
Base scenario	10.53		83,288		2,236,311						
Change on Base											
WTO accession	0.337	3.2	2,695	3.2	72,389	3.2	2.5	-5.0	-12.0	-5	-7
Change on WTO											
Limited FTA: short run	-0.358	-3.3	-2,895	-3.4	-77,757	-3.4	-0.3	-5.3	6.8	-5	3
Limited FTA: long run	-0.053	-0.5	-355	-0.4	-9,325	-0.4	-4.3	1.1	6.8	-1	3
Extended FTA: short run	-0.821	-7.6	-6,600	-7.7	-177,831	-7.7	-1.0	-9.5	16.2	-9	10
Extended FTA: long run	-0.369	-3.4	-2,987	-3.5	-80,283	-3.5	-1.4	-4.2	17.3	-4	10

Economic impacts

Calculations show that the total market of transport services is expected to decrease substantially through the liberalisation of trade in goods as both output and employment is reduced, because due to very low competition between national transport service providers, Ukrainian operators will suffer decreases in production output and employment especially in the short run. The state monopoly structure with respect to roads and the railway system, ports and airports as well as many maintenance systems, has lead to low production, low productivity, over-employment, low R&D levels and low levels of service. An FTA that includes liberalisation of the transport services market with a focus on the post-WTO situation like internal water transport (bound in WTO), computer systems (IATA, AMADEUS) and basic transport of passengers and freight will lead to major restructuring due to foreign competition, streamlining of the industries, lower prices, and more attention to maintenance for the long-run.

The short-run transition pain may be less severe than this study suggests, as on the other hand, ICPS (2007) mentions in their study, that there is scope for positive growth effects and externalities to the secondary transportation market. This would include e.g. gasoline stations and hotels and other sectors in the Ukrainian economy.

Ukrainian companies supplying transport services to consumers on the Ukrainian market are likely to face greater competition from EU firms. This greater competition will come

from the removal of tariff and non-tariff barriers. However, what will be a loss for Ukrainian transport companies will be a gain for Ukrainian consumers, who will enjoy lower prices as a consequence. At the same time the Ukrainian consumers can enjoy improved transport safety and better protection of consumer rights if the Ukrainian aviation legislation is harmonised with the EU standards. Also the variation and quality of services is expected to go up thanks to competitive pressures.

Effects of the FTA will be different depending on the transportation sector. No significant changes are expected in pipeline transportation, as the volume of services provided by pipelines depends on other variables (mostly oil and gas demand), maritime transport and auxiliary transport services are already liberalised in the WTO accession, and foreign companies are not expected to be allowed to enter the market.

Ukrainian air transportation services may suffer the greatest losses in terms of production as national carriers cannot compete with efficient European airlines. The latter experience much larger economies of scale, have reduced costs, are integrated into worldwide airline alliances and have monopsony powers to negotiate for example fuel price reductions. They will also experience significant employment losses inevitable in order to maintain competitiveness. A mitigating factor may come from the experience of other CEE countries, where the number of passengers has gone up significantly, reducing the potential negative impact of the FTA on the Ukrainian aviation industry. Ukraine is also an important aircraft producing country. As such, adhering to technical standards may open a large EU market for Ukrainian aircraft.

High skilled employment will decrease among administrative staff partially due to a possible computer reservation system introduction. Demand for labour is expected to fall in transit trucks transport and sea transport sectors where the share of low skilled employment is rather high.

Our trade estimations show that more transportation services will be imported from the EU with an extended FTA, which means that many European companies will enter the Ukrainian market. Also training opportunities increase for EU firms. Yet the increase in imports from EU is significantly less than from all countries in total. Due to the relatively low level of competitiveness of the Ukrainian transport companies, their exports to other countries will decrease, though in the long run exports decrease less than in the short run. Additionally, the EU aviation sector is expected to gain from an integration of Ukrainian air transport into worldwide distribution networks.

As before with distribution services, the depth of the FTA agreement determines the exact potential for economic gains. Road, rail, port fees and transit procedures are improving but can be further harmonised to generate more potential for transport, international trade and serve as an engine for Ukrainian economic growth. Liberalising maritime transport, auxiliary transport and computer systems as well as modernisation of the infrastructure have similar enhancing positive economic impacts.

Social impacts

The extended FTA envisages full elimination of barriers to FDI, which stipulates a stiffer competition from foreign services providers than in the case of a limited FTA. Increased

competition can create pressures to reduce costs and raise labour productivity, thus, leading to employment reductions. Moreover, domestic providers will most likely lose their market shares to more competitive foreign operators. Worth mentioning is also the fact that the extended EU-Ukraine FTA envisages liberalising the service sectors including the free movement of those providing these services. Therefore, the extended FTA may also cause employment reductions as a result of labour migration to the EU. However, in the longer run, it should be noticed, that the foreign operators can employ (cheaper) Ukrainian transport sector workers, hence mitigating the negative effect to employment in the sector.

In light of Ukraine's integration into the European Common Aviation Area, the aviation sub-sector might appear the most vulnerable in terms of employment effects due to significant increases in competition. Experts acknowledge that already today Ukrainian carriers are faced with increasing competition from the foreign airlines. This competition is likely to become much more stringent, since the Ukrainian market, where passenger turnover increases by 30 percent every year, tends to be very attractive for European operators, which enjoy up to 5 percent passenger turnover annual growth rates.¹¹¹ Thus, local carriers might be faced with a risk of loss of market share to foreign airlines, accompanied by employment reductions. However, there is a positive side to it as well: Ukraine will have to abide by the European safety standards, including working conditions of the pilots and flight attendants, which will undoubtedly improve passenger safety and contribute to the goals of decent work.

Passenger safety is an important issue for rail and road transportation, where the accident rates have been increasing. Among the main reasons for this negative trend, experts name poor infrastructure maintenance. If the FTA has the effect of improving the infrastructure, this leads to a positive indirect effect on passenger safety through the promotion of EU investment in rail and road infrastructure and improvements in infrastructure management.

Environmental impacts

Ukraine transports services by water, roads, railways, and pipelines, which collectively account for 71 percent of the overall services exports. Pipeline transportation is a major source of export revenues and in 2006 Ukraine earned about US\$ 2.5 billion transporting Russian gas and oil to Europe.

The geopolitical and geo-economic location of Ukraine determines to a large extent its transport services development with their significant negative environmental impact due to new infrastructure projects and land use, destruction of habitats and transit freight and passenger traffic increase. But to some extent these should be softened by the renovation of the present inefficient and polluting system.

The immense potential for improvement is available in all its constituents of road, rail, air, water and sea transport. As it was noted earlier, there are considerable difficulties in the interoperability of transport systems between Ukraine and European countries, aggravated by the underdevelopment of physical infrastructure for all transport modes,

¹¹¹ Source: Korrespondent # 31 (270), August 11, 2007

obsolete transit traffic management techniques, rigidity in the legal base regulating international transport between Ukraine and its neighbours.

Looking at the transport sector, Ukraine has one of the most developed railway networks in Europe. Its density index is the highest among all the CIS countries. 43 percent of the total length (22,000 kilometres) is electrified. Measured by freight traffic flows, the Ukrainian rail network is number four in the world after China, Russia and India. But the poor state of railroads and carriages contributes to losses during transportation. Losses of loose goods as well as leakages of liquids. It also leads to dangerous accidents like with the derailment of 15 railroad cars carrying yellow phosphorus in Western Ukraine in July 2007, when the poison cloud produced by the fire contaminated 90 square kilometres containing 14 villages.

Also, if the FTA will support and facilitate air transport, the recovery in the post-1990s period will continue. This will put a strain on the environment through greenhouse gas emissions of planes. Several of the Ukrainian airlines use old machinery-parc aircraft, which cause more CO₂- and noise pollution than is currently the standard. Also these aircraft are not fuel-efficient. Therefore, investments in this sector may have large positive environmental effects.

However, the most significant environmental impacts are connected with the development of pipelines, like the Odessa-Brody project of a 674 km long crude oil pipeline, and participation in the International Transport Corridors system, because four out of nine trans-European transport corridors traverse the territory of Ukraine. Modernisation of the gas transportation system gives the possibility to use the Kyoto Protocol mechanisms with a view of reducing methane emissions through leakages.

The Table below summarises the impact of transport services on the environment in Ukraine.

Table 12.7 Summary of environmental impacts for Ukrainian transport sector

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
CO ₂ emissions from transport ¹¹²	▽	--	▽	No	M/H
Air pollution and ozone depletion	○	--	○	No	M
Land					
Use of raw materials, land use	▽	0/-	○	No	L
Management of contaminated sites	△	-	○	Yes	H
Biodiversity					
Protected areas, ecosystem, species	○	-	○	Yes	L/M

¹¹² Transport CO₂ emissions include all greenhouse gas emissions recalculated as CO₂ emissions.

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Environmental quality					
Waste management	△	–	○	Yes	M
Use of energy	○	–	○	Yes	H
Energy efficiency	△	--	○	Yes	H
Noise pollution	○	--	○	Yes	H
Fresh and waste water					
Quality of ground water	○	–	○	Yes	M
Quantity of waste water	△	–	○	Yes	M/H
Cleaning of waste water	△	–	○	Yes	M

* For the meaning of the signs in the Table, we refer to section 2.4.

Relevant to the environmental impacts of this FTA for the EU is the increased transport between the EU and Ukraine. The magnitude of change in the long run is estimated to 3-15 percent assuming that the monetary value of transport can be directly correlated to freight tonne per kilometre. These effects are measured against the White Paper defining the EU transport policy until 2010¹¹³.

Currently, in the EU the following environment related challenges have to be faced – challenges the EU-Ukraine FTA should not make significantly larger:

- Despite significant improvements, serious air pollution impacts persist¹¹⁴;
- In relation to health, ground level ozone and particulate matter (“fine dust”) are the pollutants of most concern;
- Ecosystems are also damaged by the deposition of the acidifying substances – nitrogen oxides, sulphur dioxide and ammonia – which lead to loss of flora and fauna, and by ground level ozone that results in physical damage and reduced growth of agricultural crops, forests and plants
- Air pollution also causes damage to materials leading to a deterioration of buildings and monuments
- Air pollutant emissions of SO₂ and NO_x from ships are a serious concern, and they are expected to exceed those of all land-based sources in the EU by 2020.

Table 12.8 Summary of environmental impacts for EU transport sector

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					

¹¹³ White Paper entitled ‘European transport policy for 2010: time to decide’, 12 September 2001, COM(2001) 370 final, http://ec.europa.eu/transport/white_paper/index_en.htm.

¹¹⁴ Commission of The European Communities, Brussels, 21.9.2005 COM(2005) 446 final, Thematic Strategy on air pollution

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
CO2 emissions from transport ¹¹⁵	▽	--	○	No	M/H
Air pollution and ozone depletion	▽	--	○	No	M
Land					
Use of raw materials, land use	▽	0/-	○	No	L
Management of contaminated sites	○	-	○	Yes	H
Biodiversity					
Protected areas, ecosystem, species	○	-	○	Yes	L/M
Environmental quality					
Waste management	△	-	▽	No/Yes	L/M
Use of energy	○	-	○	Yes	M/H
Energy efficiency	?	--	○	Yes	H
Noise pollution	▽	--	○	Yes	H
Fresh and waste water					
Quality of ground water	▽	-	○	No	M
Quantity of waste water	○	-	○	Yes	M/H
Cleaning of waste water	?	-	○	Yes	M

* For the meaning of the signs in the Table, we refer to section 2.4.

The EU-Ukraine FTA needs to consider:

- The carbon dioxide emissions of the transport sector depend on the specific fuel consumption of vehicles – vehicle park upgrades reduce the CO2 emissions (Euro 4 standards for new passenger cars and Euro 5 for heavy transport vehicles);
- Transport related volatile organic compounds (VOC) emissions originating at petrol filling stations induce the formation of ground level ozone;
- The impacts of this FTA on the *atmosphere* can not be ignored because older road vehicles and low quality transport fuels originating from Ukraine cause disproportionate levels of pollution in terms of CO2, NOx, VOC, and PM2,5 emissions and ozone depletion;
- The *land use* impacts in the EU would be concentrated near the border crossings with Ukraine where increased use of raw materials for road and parking areas would be needed;
- The impact on *biodiversity* in the EU ecosystems is assessed to be negligible due to the already high negative baseline from transport;
- The *environmental quality* in the EU will not improve as a result of implementing this FTA but also not deteriorate. In the short-run there may be some adverse effects, but in the long run the FTA would increase the amount of more fuel efficient and less emission vehicles;

¹¹⁵ Transport CO₂ emissions include all greenhouse gas emissions recalculated as CO₂ emissions.

- The FTA would induce pressures for *fresh water resources and waste water treatment* because of increased risk for motor oil and fuel spills into ground and sewage systems.

12.3.3 Communication services

Results from the CGE modelling

The outputs of the modelling exercise show relatively modest effects for the communication sector in Ukraine – beyond those resulting from WTO accession – for the implementation of an FTA. Even under an extended FTA, the long run-impacts on production and employment in the communication sector are increases of 2.6 and 2.7 percent respectively. These estimates can be set against the rapid underlying growth rates being observed within the sector. More noticeable however, are the large increases in imports of communications services that are estimated to accompany an extended FTA. This can be seen as part and parcel of the increased access to international communications service providers that would be available to Ukrainian customers and the increased demand for such services that would accompany greater integration and trade between the Ukraine and the EU.

Table 12.9 Overview of scenarios for communication services

Scenario	Description	Model hypothesis
Base scenario		Tariff equivalent barrier to foreign service providers estimated at 4.9%
WTO accession	Cancellation of the limitations on the share of foreign capital in the authorised fund of enterprises which supply telecommunications services; Cancellation of the limitations on the share of foreign capital in the charter funds of television and radio broadcasting companies; With regards to telecommunication services Ukraine bounded itself to provide market access in the first three modes of supply without limitations in all types of telecom services. Services include, but are not limited to following sub-sectors: voice telephone, telex, telegraph, electronic mail, on-line information and database retrieval	Tariff equivalent barrier reduced to 3.4% (-30%)
Limited FTA	Implementation of most WTO based commitments, limited regulatory approximation of telecom services, some limits remain in place regarding share of foreign capital in funds of new services and in postal services	Tariff equivalent barrier reduced to 2.0% (-60%)
Extended FTA	Strong check on implementation of WTO based commitments; further liberalisation and regulatory approximation of telecom services (licensing, interconnection, numbering, etc.), no more limits remain in place on share of foreign capital in funds	Full elimination of barriers to FDI: Tariff equivalent barrier reduced to 0% (-100%)

Scenario	Description	Model hypothesis
	of news services, no more limits to in place on share of foreign capital in funds of postal services, strong upgrade in infrastructure	

Table 12.10 Overview of model outputs for communication services

	Production		High skilled employment		Low skilled employment		Prices	Exports (in general)	Imports (in general)	Exports to EU	Imports from EU
	US\$ bn	%	number	%	%	%	%	%	%	%	%
Base scenario	3.62		22,262								
Change on Base											
WTO accession	-0.025	-0.7	-153	-0.7	-5.0	7.0	0.8	-5.0	7.0	-5	7
Change on WTO											
Limited FTA: short run	-0.029	-0.8	-179	-0.8	-6.3	7.5	0.5	-6.3	7.5	-6	7
Limited FTA: long run	0.076	2.1	478	2.2	1.1	5.6	-1.3	1.1	5.6	1	6
Extended FTA: short run	-0.058	-1.6	-369	-1.7	-12.6	17.8	1.1	-12.6	17.8	-12	18
Extended FTA: long run	0.094	2.6	589	2.7	-2.1	15.0	0.0	-2.1	15.0	-2	16

Economic impacts

Trade in communication services is likely to experience a short run transition period in which the sector will have to adjust and adapt after which – when capital flows and investments enter – the sector will grow, generate employment and production and international trade.

Telecommunication services are linked to the overall growth of economic relations between countries. In order to have high volumes of exchange in this kind of service, economic partners need to represent economic interests to each other. The ability to attract outside funds and consequently increase communication frequencies between countries depends on the attractiveness of a country. In this respect the regulatory principles advanced in trade agreements can anchor a strategy to enhance transparent predictable regulations. The FTA provisions can act as an incentive to invest in modernising the present digital infrastructure and present institutions and regulators in order to achieve higher competitiveness and greater independence for the country in developing the ability to collect and analyse market information.

Competition between mobile telephone service providers is rather open and fair. The market is relatively mature and we do not expect any noticeable changes because of the FTA. The situation is different in the traditional telephone services sector. The FTA is likely to increase the presence of large mobile operators including foreign companies, and thus encourage competition between them and the traditional telephone service provider (Ukrtelecom) on international and national destinations putting a downward pressure on prices and increasing pressure on service provided. A key turning point in the provision of communication services will be a provision in the FTA to liberalise traditional telecom services, to allow leasing elements of the telecom network in order to resell services and allow new companies to enter the market and build their own physical networks.¹¹⁶

The FTA can help to set standards for the telecom networks and pave the way for more service competition options. This issue is crucial for newly appearing services (WiFi, VOIP, 3G) and the question of their non-interference with radio frequencies. The standards issue also relates to liberalisation of the equipment supply market that enables telecom services. The satellite service providers are extremely sensitive to the risk that they could hold a license to provide service in a country but not have the necessary approvals needed to certify, and thus sell, their equipment. The FTA can reduce a number of requirements that Ukraine maintains which has a lowering effect on the fixed costs of entry or establishment.

With an extended FTA the imports of communication services especially from EU countries will increase significantly in the short and long run. A limited FTA would create slightly smaller increases in imports and in both scenarios the long run increase is lower than the short run. As production in Ukraine grows in the long run, imports decrease. Hence, the increase in competition is likely to strengthen the competitiveness of Ukrainian production in the long run.

Because of the enabling nature of the communication sector, and importance for intra- and inter-firm communication, the FTA must have the effect of lowering costs for communication, allowing cheap access to digital means of communication and increasing competition between digital knowledge and information providers.

Social impacts

The model predicts negative employment impacts in the short run and positive effects in the long run – for both extended and limited FTA scenarios. The difference between the short-run and long run effects can be explained by the model assumptions on capital stock, which is kept constant in the short run but allowed to adjust in the long run. Thus, in the long run investments are likely to reach sizeable enough levels to evoke output increases, and as a result – increases in employment. In-depth analysis of this sector, confirms these model outcomes.

¹¹⁶ It is worth to note that the government may be more amenable to introducing resale competition faster than facilities-based competition since the former still guarantees leasing revenue to the facilities operators.

Employment issues in the telecommunications sector are related to the privatisation of Ukrtelecom, the state monopolist in fixed telephony. Experts consider Ukrtelecom an inefficient and hugely overstaffed company with substantial social burdens. Thus, Ukrtelecom's privatisation is expected to be accompanied by employment reductions needed to reduce costs and raise productivity. Further liberalisations of the communications markets like telecommunications are also expected to lead to the introduction – through FDI and international competition – of decent work standards through multinational (telecommunication) companies and more gender equality over time (in the longer-run).

With respect to communication services, the positive social impacts of the FTA may accrue mainly to the services provided in major cities like Kyiv, Odessa, Lviv, Kharkiv, Dnipropetrovsk and Donetsk while leaving the rural population further behind.

Ukraine's integration into European networks necessitates infrastructure modernisation and introduction of new technologies that will most likely entail rising labour productivity in the sector. Consequently, in the long run, increases in real wages are possible, fuelled by rising labour productivity. The latter is also predicted by the CGE model analysis.

Environmental impacts

The environmental impact of communication services can be omitted in this FTA because the only serious impact comes from the disposal of electronic waste (mobile phones, portable PC's and their accumulators). As a safeguard flanking measure, safe disposal of old transformers and spent accumulators including recycling of electronic waste could be recommended.

As it was noted earlier, poor waste management in Ukraine nowadays resulted in almost complete absence of waste separation and recycling programmes. Implementation of European best practices and provisions of The Waste Electrical and Electronic Equipment Directive (WEEE Directive) for all types of electrical goods may greatly contribute to environmental safety in Ukraine.

All environmental impacts are considered negligible referred to the current EU baseline.

Table 12.11 Summary of environmental impacts for communication services

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
Land	○	–	○	Yes/No	M
Biodiversity	○	0	○	Yes	M
Environmental quality					
Use of energy	○	–	○	Yes	H
Energy efficiency	△	–	○	Yes	H
Noise pollution	○	–	○	Yes	H

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Fresh and waste water	○	0	○	Yes/No	M

* For the meaning of the signs in the Table, we refer to section 2.4.

12.3.4 Financial Services

Results from the CGE modelling

While estimating the quantitative affects of the FTA between Ukraine and EU we assumed a 28.9 percent tariff equivalent for imported services based on the original study of existing NTBs in the financial sector concentrated on provision of services by subsidiaries established through FDI (Movchan, 2007). For the purpose of the current study we assumed similar level of tariff equivalents for all types of financial service import modes. The model assumes increases in the cost of imported financial services compared to domestic services. The assumptions for the scenarios are summarised in Table 12.12 and the FTA effects for the financial service market are summarised in Table 12.13. It is clear that the domestic financial services sector is hit by the envisaged FTA, even though the long-run effects are less negative than the short-run ones, suggesting a longer-run rebound.

As with the transport sector, the outputs of the modelling exercise show important negative short-run effects for the domestic financial sector in Ukraine – beyond those resulting from WTO accession – for the implementation of a FTA. In the short-run variant of the extended FTA, production and employment in the financial sector are estimated to decrease by 14.6 and 15.0 percent respectively. In the longer term, the model results suggest offsetting effects due to capital mobility, though even in the long run, reductions in production and employment are 11.4 and 12.1 percent respectively.

The general indications of the CGE outcomes are clear, but this quantitative analysis does not tell the whole story about potential effects of free trade in financial services for several reasons:

- First, one should keep in mind, that dynamic effects (i.e. stemming from an improved competitive environment and R&D) of liberalised trade which are difficult to quantify may outweigh negative effects related to increases in imports;
- Second, restructuring of the Ukrainian financial sector is likely to have immense positive externalities for other sectors of the Ukrainian economy because companies will start consuming cheaper and better services, price competitiveness of production will increase and risks will be dealt with in a better and cheaper way;

Financial services in the EU FTAs

FTAs signed between the EU and its trading partners differ in scope. Beside liberalising trade in financial services through MFN, market access and/or National Treatment provisions) EU FTAs often require the adoption of a common accounting system compatible with EU standards, strengthening and restructuring of the banking, insurance and financial sectors as well as improvement of supervision in the financial sector. Most of the EU FTAs state that parties shall not be prevented from taking measures for

Comment [CGV1]: No EU FTA focuses exclusively on this issue. All of them focus on liberalisation

prudential reasons and to ensure integrity and stability of financial system. Unlike most agreements (that look at long-term FDI capital flows only), the FTA with Croatia contains provisions regarding short-term capital whereby the parties commit to ensure free movement of capital with maturity shorter than one year. The EU FTA signed with Chile is the most ambitious FTA so far for a non-accession country and should be the minimum reference point for the FTA with Ukraine. What makes the EU-Chile FTA agreement a distinct one are provisions extending the scope of cooperation in the financial sector.¹¹⁷ An Enhanced Agreement with Ukraine is expected to go beyond these provisions alone.

What the EU-Ukraine FTA may envisage

As Ukraine made rather comprehensive commitments during the WTO accession negotiations, the scope for further concessions remains limited at first sight. However, the main value added of the FTA on top of the WTO commitments may include important issues such as:

- Alignment of the national financial regulations with the EU “acquis” and improvement of institutions relating to financial market operations;
- Elimination (with respect to the EU banks) of discriminatory capital endowment requirement concerning the branches of foreign banks to facilitate market access;
- Elimination of limitations as to the types of allowed activities for branches of EU insurance companies;
- Harmonisation of Ukrainian financial legislations with the EU norms that focus on implementation of the EU Capital Requirements Directive (including Basel-II requirements), life and non-life insurance Directives, Markets in Financial Instrument Directive;
- Adoption of the International Financial Reporting Standards (IFRS) in Ukraine;
- Development of financial market infrastructure (i.e. related to payment settlement);
- Prevention of financial malpractices.

In fact the EU aims to agree on a deeper FTA with Ukraine in financial services than with any other non-accession country before, which includes not only a focus on market access but also on regulatory approximation and integration; to create an integrated financial market that does not stop at national borders.

Table 12.12 Overview of scenarios for financial services

Scenario	Description	Model hypothesis
Base scenario		Tariff equivalent barrier to foreign service provider estimated at 28.9%
WTO accession	Branches and representative offices of foreign banks will be allowed to operate in the country since Ukraine's joining the WTO.	Tariff equivalent barrier reduced to 20.2% (-30%)

¹¹⁷ For example regarding new financial services and data processing in service sector, the possibility of recognition of prudential measures of the other party through harmonisation, the establishing of a Special Committee on Financial Services to consider further actions with the aim to facilitate and expand trade in financial services.

Scenario	Description	Model hypothesis
	Permission to foreign insurance companies to establish branches and deal with risks relating to maritime shipment and commercial aviation and space launching and freight, and insurance intermediation related to those risks, as well as risks reinsurance and consultancy services. Local insurance intermediaries will be allowed to distribute services of non-resident foreign companies.	
Limited FTA	Concessions following Ukraine's WTO accession will be followed by alignment of the Ukrainian laws and by-laws with the EU norms. In particular, the process includes partial harmonisation of the Ukrainian legislation with the EU Capital Requirements Directive, life and non-life insurance Directives. Ukraine is also expected to bring its prudential supervision regulations in line with the EU requirements.	Tariff equivalent barrier reduced to 11.5% (-60%)
Extended FTA	Full implementation of the EU "acquis communautaire" in the "financial sector" leading to full removal of regulatory barriers impeding international trade as well as long and short run capital flows. Permission to branches of foreign insurers to provide all kinds of insurance services in Ukraine, elimination of discriminatory endowment capital requirement in relation to branches of foreign banks.	Tariff equivalent barrier reduced to 0% (-100%)

Table 12.13 Overview of model outputs for financial services

	Production		High skilled employment		Low skilled employment		Prices	Exports (in general)	Imports (in general)	Exports to EU	Imports from EU
	US\$ bn	%	number	%	number	%					
Base scenario	5.08		142,590		602,058						
Change on Base											
WTO accession	-0.188	-3.7	-5,381	-3.8	-22,728	-3.8	0.0	-4.0	n.a.	n.a	n.a
Change on WTO											
Limited FTA: short run	-0.269	-5.5	-7,694	-5.6	-32,601	-5.6	-0.7	-4.2	n.a.	n.a	n.a
Limited FTA: long run	-0.152	-3.1	-4,500	-3.3	-19,115	-3.3	-1.0	0.0	n.a.	n.a	n.a

	Production		High skilled employment		Low skilled employment		Prices	Exports (in general)	Imports (in general)	Exports to EU	Imports from EU
	US\$ bn	%	number	%	number	%		%	%	%	%
Extended FTA: short run	-0.741	-15.1	-21,369	-15.6	-90,850	-15.7	-2.4	-6.3	n.a.	n.a	n.a
Extended FTA: long run	-0.579	-11.8	-17,123	-12.5	-72,849	-12.6	-2.7	-1.0	n.a.	n.a	n.a

Economic impacts

Evaluation of consequences of an FTA between the EU and Ukraine for the financial sector is a challenging task as effects of liberalised trade regime for service providers come in through several channels and mechanisms. Trans-border trade in financial services is complicated by administrative regulations, differing prudential standards, capital account controls etc. Noteworthy, a precise evaluation of FTA effects in the financial sector is impossible since market players will be affected mostly by factors which are difficult to quantify. Here follows a brief discussion on how financial sector trade liberalisation in different modes might affect the functioning of the Ukrainian financial market as a consequence of the FTA.

Modes 1 and 2

As a part of the WTO schedule, Ukraine committed to fully liberalise both modes of service provision for most financial services. It is expected that more natural persons and legal entities are willing to buy financial services from companies located abroad. We expect that short run effects of the trade liberalisation measures will be negligible, but will become more important in the long run. First, in the short run, information uncertainty regarding quality of services of foreign companies may prevent Ukrainian clients from entering into contracts with foreigners. This is primarily true for retail services market as people tend to have more trust in companies located in their districts. Second, financial companies located abroad are unlikely to provide most of services to Ukrainian consumers (i.e. credits, insurances etc.) due to high transaction costs related to evaluation of clients' financial state and risk monitoring. However, as information uncertainty decreases (for instance, following advertising campaigns and because of increased transparency), natural and legal entities are likely to take advantage of cheaper services of foreign providers. Provision of financial services through modes 1 and 2 requires further liberalisation of operations of the Balance of Payments financial account. The potential FTA agreement is likely to include provisions towards further liberalisation but allowing the parties to impose restrictions relating to short-term capital flows. In this respect, it is important to emphasise that financial service trade liberalisation and the opening of the capital account are two distinct issues. The Ukrainian authorities and the NBU will be able to take prudential measures to ensure stability of the financial system.

One may expect, however, that as capital account liberalisation proceeds, mode 1 will become more important in financial services trade and more similar to mode 3. The long-run effects of trade measures relating to this mode are likely to be more significant and

foreign service providers are likely to get several percent of the Ukrainian market by providing services across the borders.

Mode 3

Most of the trade liberalisation effects in the financial sector relate to increasing presence of subsidiaries and branches of foreign financial institutions in the Ukrainian market. An increase in the share of foreign capital in the financial sector is inevitable under international integration of markets. Experience of the EU clearly demonstrates that subsidiaries and branches of foreign companies are becoming increasingly present in the market of most EU member states, not only new ones¹¹⁸.

We expect that subsidiaries will become the prevailing form of commercial presence of foreign companies in Ukraine. The role of non-residents' branches, however, is likely to be insignificant even in the long run. Although Ukraine already committed to allow foreign branches under the WTO accession, the high level of minimum capital endowment needed for foreign branches seems to be a key obstacle for foreign banks to expand activities in Ukraine. Thus, presence of foreign banks' branches will not be too pervasive: banks are not willing to establish networks as the cost of presence in Ukraine may become burdensome. The capital endowment requirement also means that only reputable banks from developed countries like EU and the USA may want to come to Ukraine.

To estimate the potential impact of foreign banks' presence in the Ukrainian market on top of the WTO commitments, it may be useful to look at the experience of the former EU candidate countries. As a number of researches indicate, "branches of foreign banks rarely penetrate the markets traditionally served by domestic banks, concentrating their activities primarily on wholesale operations"¹¹⁹. It is expected that branches will focus on corporate clients rather than retail banking services. In 2001, when EU-15 banks were free to open branches in the EU-10, foreign banks did not affect substantially the domestic banking sector of the branches' host countries¹²⁰.

Further trade liberalisation under the FTA is likely to encourage further consolidation of the sector and new M&A deals will follow. However, some time after the Ukraine and the EU are implementing a full-fledged FTA in services, the intensity of mergers and acquisitions is likely to decline. Foreign companies, primarily the EU ones, are currently taking advantage of the favourable investment climate in banking and insurance sector created by the WTO and upon signing the further going FTA will even more expand in the market.

¹¹⁸ In 2003, market share of foreign branches and subsidiaries in non-life insurance was 12.6% in Germany, 21.25% in Spain, 32.7% in Italy, 48.8% in Austria, 88.5% in Check Republic, 97.5% in Slovakia. The share of foreign subsidiaries and branches in life insurance was 14.2% in Germany, 23.5% in Italy, 57.1% in Check Republic, 99.3% in Slovakia. In banking sector by the end of 2004, the share foreign branches and subsidiaries in the EU stood at 24.7%. In particular, in new member states 71% of the banking sector was foreign controlled (of which 63.5% by EEA banks), compared to 15.5% in the euro area.

¹¹⁹ Tochitskaya I., Giucci R., Pelipas I., Should Branches of Foreign Banks be Allowed to Operate in Belarus, IPM Research Center, PP/01/04.

¹²⁰ In 2001, 35 commercial banks and 7 branches of foreign banks functioned in Bulgaria, 33 banks and 8 branches in Romania, 19 banks, 2 branches and 10 representative offices in Slovakia.

Access of Ukraine's banks to the market of the EU through the third mode is allowed under the PCA in line with the EU GATS commitments. In practice, entry of Ukrainian suppliers of financial services into the EU market mainly takes and will take place through subsidiaries as the strict regulatory regime in the EU may make it de facto difficult for Ukrainian services to enter. Further concessions on the EU side regarding this point depend on harmonisation of Ukrainian financial legislation to the "acquis communautaire" and implementation of proper institutions.

Mode 4

Ukraine committed to allow market access of key personnel in a commercial presence for up to five years, contract service suppliers and independent professionals for up to three years and 180 days of stay for services sellers. Foreign companies coming into Ukraine are likely to appoint managers picked from the inside staff to design development strategy of subsidiaries. However, as experience of foreign banks' subsidiaries shows, most investors choose to hire local top level staff that proves to be perfectly acquainted with both the local financial market situation and European banking and insurance business technologies.

The EU mobility regulations are more strict with three years for key personnel, six months for contractual services suppliers in specific sectors and 90 days for services sellers. Liberalisation of EU Mode 4 for Ukrainian services suppliers will likely be a sensitive issue because of the fact that even citizens from EU new member states face restrictions to provide their services in other EU member states and due to the fears of labour migration from the EU and Ukrainian sides.

The economic impacts regarding Mode 4 depend to a large extent on the degree of mobility that is agreed. The more far reaching mutual service liberalisation the more integrated the financial markets of the Ukraine and EU become.

Social impacts

The modelling results show negative effects for the financial sector in Ukraine, especially in the short run, regarding employment. Unlike the other service sectors financial services are represented by a substantial share of high-skilled labour in Ukraine – comprising about 20 percent of total labour. Therefore, at first sight, it looks alarming that the outcomes for reductions in high-skilled employment for this sector are the same as for low-skilled – over 15 percent. However, this result is mainly the consequence of CGE model specifications.¹²¹

Even if domestic providers of financial services in the Ukraine would find the competition too strong under the extended FTA, the negative effects to the employees are not likely to be as strong. Foreign financial service providers entering the Ukrainian market will need also Ukrainian employees to serve the local market. This will naturally alleviate the negative effects for the employment and workers could only change from a domestic employer to a foreign one.

¹²¹ In all sectors changes in low- and high-skilled worker employment levels appear to be very similar.

Irrespective of the scenario, in the short run the social issues related to unemployment are expected to be more pronounced than in the long run. This suggests that care needs to be taken in the short-term transition perspective.

Since the extended FTA envisages liberalisation of services sector including a certain degree of free movement of service providers, next to stronger competition, labour migration to the EU can be a consequence, while capital will flow from the EU to Ukraine (which is not directly shown).

Overall impacts for host and sending countries of Mode 4 liberalisation are positive, and although such liberalisation often provokes (legitimate) political and social concerns, most of these can be addressed through appropriate policies.¹²² However, actual commitments under Mode 4 are still limited, while at the EU level, labour migration policies are still over-ruled by Member States' policies and even within the EU-27 there is still no complete free movement.

Employment mobility effects will differ, depending on the type of Mode 4 liberalisation considered. In addition, each mode brings with it its specific political and social issues and effects in the host 'country' (EU) and sending country (Ukraine). An indication of such issues is summarised in Table 12.14 below.

Table 12.14 Possible Mode 4 scenario commitments and associated political and social issues

Mode 4 scenario commitments*	Social / political issues EU	Social / political issues Ukraine
Positive list of Mode 4 commitments with numerical ceilings	<p>Advantage: Possibility to solve measured labour shortages in specific sectors and control influx of workers at overall and sectoral levels.</p> <p>Issues/effects: Limited flexibility, danger of illegal movement if ceilings are set at low levels and/or certain sectors excluded; Danger of lobby interests determining lists and ceilings; Clear needs assessment has to be made for both selection of sectors and determination of ceilings. Difficult to realise.</p>	<p>Issues/effects: Competition among labourers for the limited positions available, danger of illegal trafficking.</p>
Positive list of Mode 4 commitments without numerical ceilings	<p>Issues / effects: Flexibility for selected sectors; possibly unfair competition for sectors that are not included on positive list but complementary;</p>	<p>Possible worker shortages in selected sectors in Ukraine.</p>

¹²² http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2004/04/14/000009486_20040414171539/additional/130530322_20041117160102.pdf

Mode 4 scenario commitments*	Social / political issues EU	Social / political issues Ukraine
Free movement with safeguard clauses**	Efficient allocation of resources, with possibility to limit influx of foreign service suppliers if it is too large or to sudden and potentially causes negative social impacts. Need to agree on fair and reasonable clauses and criteria.	Uncertainty for service suppliers as to the possibilities and duration of their stay.
Free movement without safeguard clauses	<p>Advantage: Efficient allocation of resources and flexibility of firms to enter into contract with foreign service suppliers to work on specific projects.</p> <p>Issues / effects</p> <p>If large influx in specific sector and/or region social tensions among 'threatened workers' in host countries; difficulties in enforcing temporariness.</p>	

* Specific social issues and effects will be influenced by the actual sectors selected for the positive list as well as the length of stay, level of skills and nature of the contracts.

** Described effects are generic, as the nature and extent of safeguard mechanisms determine specific effects.

Among the possible positive social impacts should be mentioned the effects of increased competition in the sectors which puts a downward pressure on prices for financial services, which will have an overall positive effect on many facets of the Ukrainian economy. Not only the financial service sector, but all sectors in Ukraine will benefit. This decrease in cost levels can positively affect the well-being of households, increasing household's disposable incomes.

Finally, in the longer run increased employment opportunities – not just in the services sectors – but particularly increases in wages and the quality of work, may reduce out-migration of labour and particularly the worst forms of this migration: illegal migration and 'slave' trade of women into prostitution. As such it should improve the position of some of the weakest groups (low-skilled / uneducated and poor persons and particularly women) in Ukrainian society.

Environmental impacts

The environmental impact of financial services can be omitted in this FTA because the impacts come from the disposal of electronic waste (mobile phones, portable PC's and their accumulators), slightly increased use of paper, energy and CO₂ emissions related to increased travel between the EU and Ukraine. As a safeguard flanking measure, safe disposal of old transformers and spent accumulators including recycling of electronic waste could be recommended as well as reduction of ecological footprint from travel and resource use.

In official data, emissions of the sector are usually presented by zero values, which means they are rounded off to zero, and a direct impact of the sector on the environment is fairly low. But financial services belong to the main factors that in reality co-determine the state of the environment and the current acute Ukrainian environmental problems since they

may be explained to some extent by insufficient conditions for environmental financing. That is true both for the domestic market and involvement of international financing institutions and bilateral donors.

The FTA can help to solve the existing problems of environmental finance, including:

- In spite of the ear-marked tax on natural resources from the early 1990s the only reliable source of public funding is the State Environmental Protection Fund of Ukraine, which revenues comes from pollution charges;
- No long term loans for environmental financing are available. Short-term loans are issued with very high interest rates;
- No post closure and site remediation financial mechanisms are available;
- Environmental insurance programmes are still at the inception stage;
- No reliable financial administration for public money is available. The same is true for international environmental assistance;

Solving of these problems may increase international environmental assistance to the level of former PHARE programmes, secure efficient use of public money and be a catalyst to leverage private domestic funding, resulting in real breakthrough environmental finance and corresponding improving the state of the environment.

All environmental impacts for the financial sector are considered negligible referred to the current EU baseline.

Table 12.15 Summary of environmental impacts for financial services in Ukraine

INDICATOR	Overall Direction magnitude	Existing conditions	Equity	Reversibility	Capacity to Change
Atmosphere					
Land	○	–	○	Yes/No	M
Biodiversity	○	0=	○	Yes	M
Environmental quality					
Use of energy	○	–	○	Yes	H
Energy efficiency	△	–	○	Yes	H
Noise pollution	○	–	○	Yes	H
Fresh and waste water	○	0=	○	Yes/No	M

* For the meaning of the signs in the Table, we refer to section 2.4.

12.4 Conclusions

The FTA will have significant impacts on trade in services and – like our approach to agriculture sub-sectors showed – these effects can vary widely within this overall sector.

The **economic impacts** of the FTA on distribution services are positive beyond the WTO accession of Ukraine. The same applies to trade in communication services albeit of a

smaller magnitude. For transport services and financial services, the FTA has a negative impact on the domestic sector in Ukraine but a positive impact on EU transport and financial services. Trade in all sectors with the EU intensifies with improvements in the trade balance in distribution and communication services and deteriorations in the trade balance in transport and financial services.

The **social effects** entail gains in employment in the distribution and communication services but job losses in the transport and financial services. Productivity of the service sectors is expected to increase and profit margins are expected to decrease.. The FTA is expected to have a positive effect on decent work and work standards through regulatory harmonisation of Ukrainian practices with EU practices and through increased levels of FDI that come with international production and work standards.

The **environmental effects** are primarily linked to transport services and not so much to distribution services, financial services or communication services. The negative economic impacts on transport services are positive for the environment as emissions of greenhouse gases will likely reduce and leakages of pollutants into the environment will decrease. Overall, investments in transport and distribution services lead to cleaner means of transport because of upgrading.

For distribution services the envisaged reductions in border costs and NTBs have significant positive effects as does the increase in international trade that is the result of the FTA. This will not only boost the distribution service sector but also the wholesale and retail markets. Higher levels of competition lead to increased productivity but also to bankruptcy of firms in the immediate FTA aftermath. Employment is expected to increase overall with positive effects on poverty reduction and GDP growth. Consumers benefit from reduced prices and increases in product varieties reaching them through wholesale and retail markets. Development of distribution services has a regional effect in that it will benefit the industrial areas in Ukraine more than the agricultural countryside. Upgrading of the engines used for trucks, planes and ships will have positive environmental impacts and so does an improved car park. There will be an expected negative impact for the environment through more emissions and pollution.

Domestic transport services are expected to experience a significant drop in output and employment in the short run that partially bounce back in the longer run. The highly regulated and monopolised structure of the industry is challenged and opened to competition by the FTA, which leads to major restructuring efforts. An outdated transport system, inefficient service provision, and outdated transport vehicles warrant high levels of investments to increase competitiveness and productivity. Pipeline transportation is not expected to be heavily affected by the FTA. Imports of transport services from the EU may increase while exports may not, due to failure of Ukrainian transport vehicles to meet EU environmental standards (e.g. Euro-4 and Euro-5 in the EU compared to Euro-2 in Ukraine). Income levels will come under pressure in this sector and so will work practices as the Ukrainian transport sector – in the short run – will try to remain competitive. In the long run the FTA is expected to have a positive effect on passenger safety (roads, air) because it encourages infrastructure improvements. The initial negative economic impact on transport services will have a positive environmental effect due to less CO₂ and other polluting emissions. In the longer run, the competitive position of the

Ukrainian transport sector depends on approximation of standards. If regulatory approximation of Ukraine's environmental standards is successful, the transport sector may become 'cleaner' which means it can grow without becoming more polluting and gain access to the EU market. Improvements in infrastructure also reduce leakages of harmful substances into the environment.

The estimated FTA impacts on communication services are not expected to be large. Economically, competition will increase and prices are expected to drop, which will likely lead to increases in production and employment in the long run. The initial effect of the FTA is expected to be a reduction in production and employment due to lack of investments. The FTA can lead to more harmonisation of communication standards between Ukraine and the EU. The positive impact of the FTA on communication services may be felt much more in cities than on the rural countryside. Environmental effects of changes in communication services are negligible and can be omitted.

The fourth sub-sector, financial services, is initially hit by the FTA as the domestic sector will decline. We believe that the CGE model restrictions play a role in the envisaged outcomes (e.g. the assumption of full employment and inability to incorporate dynamic FDI effects); a belief strengthened by expert opinions who expect the financial sector to benefit from the FTA. Nonetheless, production and employment are expected to drop in the short run, though capital investments in the long run do partially offset this short run effect. Prices for financial services are expected to drop – which is expected to have a strong positive impact on the rest of the Ukrainian economy. Increased competition through modes 1, 2 and 3 can lead to inclusion of international standards in the Ukrainian financial service sector. Environmental effects of changes in the financial services are expected to be negligible with only minimal effects through disposal of electronic waste (e.g. mobile phones) and a slightly increased use of paper, energy and CO2 emissions.

The summary conclusions are presented below in Table 12.16.

Table 12.16 Summary of trade in services sustainable impacts¹²³

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	△	-/0	↓	Yes	L/M
Fixed capital formation	△	+/0	↓	No	L/M
Trade	△	-	↓	Yes	L/M
Social					
Employment & decent work	△	+	↓	Yes	M
Poverty	△	+	↓	Yes	M
Equality	△	-	↓	Yes	M

¹²³ A. Overall direction and magnitude of change from baseline (WTO accession) to scenario; B. Extent of existing economic, social and environmental stress in affected areas; C. Equity of change: how it affects different sectors of the population; D. Potential for irreversibility; E. Regulatory and institutional capacity to implement ameliorating measures.

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Health	○	0	↑	Yes/No	L/M
Education	○	0	↑	Yes	M
Environment					
Atmosphere	▽	--	▲	No	M/H
Land	○	-	▲	Yes/No	L/H
Bio-diversity	?	-	▲	Yes	L/M
Environmental quality	○	-	▲	Yes	L/H
Fresh and waste water	○	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the trade in services picture, but the impacts are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

13 Competition Policy

13.1 Overview and recent developments in competition policy

The rationale for inclusion of competition policy provisions into FTAs is to prevent anti-competitive practices (such as competition-distorting subsidies, collusion of domestic companies against foreign competitors, abuse of dominant position on foreign markets, exclusive discriminatory rights for domestic enterprises, etc.) that may substantially undermine market-opening benefits of FTAs and hurt competition and trade between the FTA partners. At the same time, implementation of the effective competition policy is indispensable for establishing a fully functioning market economy in Ukraine, as well as enhancing efficiency and competitiveness of Ukrainian enterprises and industries. The latter is especially important given that Ukraine has been in transition from a centrally planned to a market economy.

Notwithstanding that Ukrainian competition legislation (except state aid) is well developed and close to international standards, estimates of the Anti-Monopoly Committee of Ukraine (AMC), suggest that the Ukrainian economy is still substantially monopolised and concentrated. In particular, enterprises operating in markets with competitive structures account for only around half of total sales in Ukraine (55.4 percent in 2004)¹²⁴, while about one third of total sales (31 percent in 2004) are conducted by enterprises operating in monopolised markets (pure monopolies and one firm dominance markets), and a substantial part of total sales (13.6 percent in 2004) – by enterprises from markets with oligopolistic competition¹²⁵ (see Table 13.1). The degree of concentration of Ukrainian industry further confirms this general picture.

Table 13.1 Structural preconditions for competition development in certain sectors of the Ukrainian economy (2004)

Sectors	Share of enterprises in total sales, in %		
	Markets with competitive structure	Oligopolistic markets	Monopolies and one firm dominance markets
Trade and distribution services	96.0	2.0	2.0
Metallurgy and mining	81.6	9.4	9.0
Agriculture and food industry	53.0	26.9	20.1
Machine building	50.2	6.9	42.9

¹²⁴ These are the latest available statistics.

¹²⁵ These numbers were calculated based on the data on around 300 national and 2000 local markets. See Kostusev O, et al. 2006,

Sectors	Share of enterprises in total sales, in %		
	Markets with competitive structure	Oligopolistic markets	Monopolies and one firm dominance markets
Energy and coal industries	23.3	21.5	55.2
Transport and telecommunications	15.4	2.1	82.5
Economy	55.4	13.6	31.0

Source: Anti-Monopoly Committee of Ukraine

By sectoral breakdown, the market structures are most restrictive for competition in the sectors where infrastructure network services dominate (such as transport and telecommunications, energy), other heavy industrial industries with high capital intensity (chemical industry, mining¹²⁶, etc.), while the most favourable are for trade and distribution services, publishing, construction, textile, and agricultural sectors.

Monopolistic markets are usually comprised by natural monopolies markets and monopolies authorised by the Ukrainian authorities (e.g., paid services for implementing certain state functions such as safety control, certification, fire safety expertise, etc.). The AMC reports about 10 nation-wide (such as pipeline transportation of oil and natural gas; transmission and distribution of electricity by main-line and interstate networks; railway services; air traffic support management; specialised services by transport terminals, specific telecommunications services including relay of radio and television signals) and 2300 regional and local markets of natural monopolies in Ukraine. Regional markets of natural monopolies usually include markets of transmission and distribution of electricity and natural gas by local networks, local telecommunication services, and centralised supply of heating and water. Regulation of natural monopolies in Ukraine is rather weak and incompliant with the best international standards thus resulting in widespread cross-subsidising of sub sectors, unjustified and high tariff rates for their services, low quality of provided services and high and inefficient expenses being translated into the monopolies' tariff rates. Reforming and strengthening their regulation is on the agenda of the countries' economic reforms.

The markets of rendering services related to implementation of state and municipalities functions are also highly monopolised in Ukraine (according to the AMC, about 900 of these markets are monopolised)¹²⁷. Due to the inadequate regulation of rates for the services provided by these monopolised markets, they are usually overrated and serve an instrument of government authorities financing. Maintaining such a big number of monopolies in this sphere financed by private firms and other taxpayers is often not justified.

Oligopolistic markets in Ukraine embody amongst others the following markets: production of cement, beer, tobacco, and coke, mobile telephone services, petrol distribution services, etc. Many of these markets are highly dynamic and competitive, still their participants are often prone to concerted actions. Markets with one firm domination

¹²⁶ Excluding coal mining,

¹²⁷ Kostusev O, et al. 2006, p. 9.

prevail in certain machine building sub sectors, chemical industry, water transport, and mining industry, etc. The widespread presence of these monopolised sectors is economically grounded in some cases (by high capital intensity ratio, economy of scale effects, etc.), while in others it is explained by inadequate implementation of market oriented and structural reforms, privatisation and bankruptcy policies. The situation concerning structural restrictions to competition is even worse on the regional level with a number of highly concentrated markets for food processing, milk and meat products, markets of bread and bakeries and flour.

Among the violations of competition legislation revealed by the Anti-Monopoly Committee, the abuse of dominant position is the most frequently observed (7300 cases over 2000-2005). About 85 percent of all abuses of a dominant position related to setting of higher monopoly prices, restriction of production or supply to markets, partners' enforcement of unfavourable contracts conditions¹²⁸. A second place went to illegal anticompetitive actions of state bodies that reduced or restricted competition in particular markets (3500 cases over 2000-2005 or about 25 percent of all detected violations). Concerted actions are rated third in the AMC's violations list (it detected about 500 cases of such anti-competitive actions over 2000-2005 period) with unfair competition concluding the list (470 cases).

Apart from market structure, being only a precondition for competition development, and competition policy per se, the level of competition on certain markets is also well determined by a number of institutional and regulatory factors, which legally restrict or depress competition, such as sector specific regulatory policy, trade policy, state aid policy, and land market regulations. For example, although the coal industry and some sectors of agriculture (e.g., sugar industry) are not concentrated sectors, the level of competition is not high due to extensive and in many cases competition distorting subsidies, weak bankruptcy procedures, and protective trade policies. Therefore, competition development of particular sectors should be implemented by addressing all these related policies.

13.2 Competition Policy and crucial issues

13.2.1 EU-Ukraine relations

Section of the EU-Ukraine Action Plan relating to economic reforms stipulate Ukraine's commitments to establish a *fully functioning market economy*, which implies market based price formation, effective control of state aid and a legal environment that ensures fair competition between economic agents¹²⁹.

In the area of competition policy, Ukraine's commitments address *state aid* and *anti-trust policies*. In regard to state aid, Ukraine is urged to develop and adopt state aid national legislation, which will be compatible with that of the EU and which will include an appropriate state aid definition, a principle of prohibition of state aid, which distort trade

¹²⁸ Kostusev O, et al. 2006, p. 10.

¹²⁹ EU-Ukraine Action Plan, Article 2.2.

between Ukraine and the EU. Equally important, Ukraine is to establish a transparent and adequate control regime to ensure a credible enforcing of this legislation¹³⁰.

The EU-Ukraine Action Plan points out the necessity of assessment of the compatibility of Ukraine's current antitrust legislation with the EU relevant legislation¹³¹ in practice, and in particular with the principles of *non-discrimination, transparency and procedural fairness*¹³². Also, it is envisaged to increase independence and functional capacity of the Anti-monopoly Committee, and reinforce staff training.

13.2.2 FTA comparison on competition policy

There is not a uniform approach to formulation of competition policy provisions in the EU FTAs. The content and wording of competition provisions in the EU FTAs depend on how well the competition policy *legislation and competition authorities* are introduced and implemented in the EU trading partners when the agreements were signed (Szepesi 2004)¹³³. For example, some EU agreements explicitly refer to the EU competition legislation (on converted practices, abuse of dominant position and state aid) as criteria for the assessment of anti-competitive practices (agreements with Tunisia, Jordan, Morocco, the Palestinian Authority, and Croatia), thus obliging these countries to reform their competition policy in line with the EU standards (within established transition periods). At the same time, agreements with Chile and Mexico stipulate the mutual recognition of competition legislation and relevant authorities and envisage their close cooperation with regard to early notifications, consultations, exchange of information and technical assistance¹³⁴. There is also the third type of competition policy chapters of the EU FTAs concluded with the group of MED countries (Lebanon and Algeria), which contain a rather general and brief description of parties' cooperation to prevent anticompetitive practices (Szepesi 2004).

Competition provisions of the EU FTAs generally include the major competition issues: concerted practices, abuse of dominant position, discrimination of state monopolies and special or exclusive treatment for domestic enterprises, and state aid. According to all agreements, *concerted practices and the abuse of a dominant position* affecting trade between countries are incompatible with the FTA; as such, parties of FTA are empowered to impose remedial measures against such anti-competitive activities upon consultations with their partners.

¹³⁰ The same commitments are repeated in the Partnership and Cooperation Agreement between the EU and Ukraine, 1998.

¹³¹ Namely, Article 31, 81-85 and 86 of the EC Treaty, etc.

¹³² EU-Ukraine Action Plan, Article 2.3.5.

¹³³ Szepesi, S. 2004. Comparing EU free trade agreements: Competition Policy and State aid (ECDPM InBrief 6E). Maastricht: ECDPM.

¹³⁴ For example, the competition chapter of the EU-Chile FTA include the following components: objectives; definitions of competition laws and authorities, as well as enforcement activity; notifications; coordination of enforcement activities; consultations when the important interests of one Party are adversely affected in the territory of the other Party; exchange of information and confidentiality; technical assistance; public enterprises and enterprises entrusted with special or exclusive rights, including designated monopolies; dispute settlement. The EU-Mexico FTA also specifies information to be included in notifications of administrative or judicial proceedings and any measures affecting other party's interests, as well as information be exchanged between parties.

State aid provisions usually concerns transparency requirements, including reporting on the total amount and distribution of state aid (on an annual basis), and providing information about individual cases upon request of the other party (Chile), or reference and obligation to approximate national state aid legislation and institutional framework to the EU standards (e.g., agreement with Croatia, certain MED countries)¹³⁵. In particular, the EU-Croatia agreement prescribes Croatia to establish an operationally independent authority, which is assigned with the powers to authorise state aid schemes and individual aid grants and to order the recovery of state aid that has been unlawfully granted in conformity with the EU rules¹³⁶. The FTAs usually explicitly stipulate discriminatory and competition-distorting state aid of both parties to be incompatible with them, still allowing for state aid when it concerns certain agricultural products (Israel, Croatia) or state aid for specific public policy objectives, such as provision of services of general economic interest, environment protection, rescue and restructuring of firms in difficulty, training, employment, regional support, etc. (EU-South Africa agreement). In addition, the EU partners (Croatia, Tunisia, Morocco, Jordan) were granted transition periods during which they were regarded as those EU areas described in Article 87(3)(a) of the Rome Treaty thus authorising most of state aid in these countries¹³⁷.

Provisions on *discrimination of state monopolies of a commercial character and special or exclusive treatment for domestic enterprises* appear in some EU agreements. In particular, they provide for an elimination of any discrimination of state monopolies of commercial character and termination of any measures that disturb trade by granting special or exclusive treatment to public enterprises after a transition period (e.g. Lebanon, Algeria, Croatia), or recognition of the national laws regulating public or private monopolies (Chile) (Szepesi 2004).

Given Ukraine's current stance in regard to legal and institutional framework of competition policy, we envisage the EU-Ukraine FTA to contain:

- An obligation to approximate Ukraine's *state aid* legislation and institutional framework to that of the EU (as being the most unsettled issue among the competition policy issues in terms of its alignment with the EU standards);
- Provisions on close cooperation of the European and Ukrainian competition authorities in the area of anti-trust policy (as well as a possible requirement to further approximate Ukraine's anti-trust legislation to that of the EU);
- A requirement to eliminate a discrimination of state monopolies of a commercial character, as well as of state enterprises with special or exclusive rights (within a transition period);
- The EU-FTA will contain a requirement to strengthen functioning and independence of Ukraine's competition authorities and provide for its close cooperation with the EU competition authorities; and
- Guarantees to ensure transparency of competition policy will also be included.

¹³⁵ At the same time, there are the EU FTAs that do not include state aid provisions (e.g. EU-Mexico agreement).

¹³⁶ See the EU-Croatia stabilisation and Association Agreement, Article 70.

¹³⁷ See, for example, EU-Croatia Stabilisation and Association Agreement, Article 70.

Taking into account experience of other EU partners, Ukraine may negotiate transition periods (of up to 4-5 years) before ensuring a full approximation of its legislation in the state aid area, as well as exceptions from general rules on state aid for certain goods, namely agricultural goods). Transition periods may be also envisaged for commitments concerning state monopolies and special and exclusive treatment of domestic enterprises.

13.2.3 Crucial issues of competition policy

In short, the major issues that the FTA between the EU and Ukraine will address are:

- *Anti-trust policy:*
 - Approximation of the remaining issues of national legislation to that of the EU; and
 - Strengthening functioning and independence of the competition authority.
- *State aid policy:*
 - Adoption of state aid legislation compatible with that of the EU;
 - Introduction of state aid control and monitoring system and adequate institutions; and
 - State Aid Practices.
- *State monopolies and state-trading enterprises*
 - Inventory of state-trading enterprises with special and exclusive rights; and
 - Regulation of state monopolies.

Approximation of the remaining issues of national anti-trust legislation to that of the EU (Anti-trust policy)

The basic legal framework for regulating competitive business practices in Ukraine consists of the following legislative acts: Constitution of Ukraine¹³⁸; the Law of Ukraine "On Protection of Economic Competition" No. 2210-III of 11 January 2001; the Law "On the Protection from Unfair Competition" No. 236/96 of 7 June 1996; the Law of Ukraine "On Natural Monopolies"¹³⁹ No. 1682 of 20 April 2000, the Law of Ukraine "On Antimonopoly Committee of Ukraine" No. 3659-XII of 26 November 1993, the Commercial Code of Ukraine, in force since January 2004, and many others.

The Law "On Protection of Economic Competition" prohibits anti-competitive concerted actions¹⁴⁰ and abuse of a dominant position and provides for a system of merger control. The level of approximation of current Ukrainian antitrust legislation (in particular, concerning "the abuse of dominant position, anticompetitive concerted actions, merger control and restrictive agreements) to the EU law is estimated by the State Department for Legislation Approximation within the Ministry of Justice of Ukraine as rather high¹⁴¹. Nevertheless, there are issues that still need to be harmonised to achieve full

¹³⁸ In particular, Article 42 – about the rights for the business undertakings.

¹³⁹ This Law specifies the exhaustive list of natural monopoly activities in Ukraine, namely: pipeline transportation of oil and oil products, natural gas and petroleum gases, and other substances; the distribution of natural gas and petroleum gases; the transmission and distribution of electric energy; railway services; air traffic control; centralized supply of heating, water and the drainage system; and the rendering of specialized services by transport terminals, ports and airports.

¹⁴⁰ Under certain conditions the authorization for concerted actions may be granted.

¹⁴¹ State Department for Legislation Approximation, 2007. Overview of the Status of Approximation of Ukrainian Legislation to *acquis communautaire* — K.: «Professional», ISBN 966-370-034-3 — 544 p. (<http://sdla.gov.ua/atachs/ADAPT.pdf>).

compatibility of national legislation with the *Acquis Communautaire*¹⁴². The most important once concern, for example, the list of possible conditions for granting authorisation to anti-competitive concerted actions (contains two EU incompatible conditions – SME development and export or import optimisation); problematic application of materiality threshold triggering merger clearance, given the lack of a clear definition of the notion of a “market where concentration occurs” and the consideration of any local activity of any of the parties to a merger as sufficient grounds to claim jurisdiction over it). Moreover, the Commercial Code of Ukraine contains inadequate competition provisions (Chapters 3 and 28) that contradict the provisions of the Law “On Protection of Economic Competition”, as well as the EU legislation, and add disorder to the entire framework for regulation of competition (judges apply both of these laws) (Svechkar (2006)).

Strengthening functioning and independence of the competition authority (Anti-trust policy)

A national competition authority, the Anti-monopoly Committee of Ukraine (AMC), has been established in 1993 to carry out Ukraine's competition policy. It is responsible for developing, enforcing and monitoring the implementation of competition legislation; preventing, detecting and publishing violations of the competition law, controlling the economic concentration, and promoting fair competition. The AMC deals with merger controls, concerted practices, abuses of a dominant position, unfair competition, as well as anticompetitive actions of state and local authorities (including state aid, government procurement and administered pricing).

The important issue of effective functioning of the competition authority is its independence and adequate powers to implement control and supervision over the implementation of competition policy (see also our analysis of government procurement). To be independent and effective the Antimonopoly Committee should be free from political influence of different business structures. Also it should be empowered to participate in government decisions affecting competition and to prevent anticompetitive activities of powerful financial-industrial groups. According to the legal provisions, the AMC is assigned with such powers (e.g., it reviews the primary and secondary legislation and certain decisions of executive authorities). Still, the lack of full-fledged independence of the Antimonopoly Committee from the Ukrainian authorities appears evident when the government takes decisions contradicting the competition law with no reaction from the AMC, or when the AMC serves as an instrument to support government policies or decisions such as the introduction of price or sale margin regulations on particular markets. The independence of the AMC will be addressed during the FTA negotiations.

Adoption of state aid legislation compatible with that of the EU (State Aid policy)

Currently, the Ukrainian legal system is missing the framework law providing for the systematic control and monitoring of state aid in Ukraine and bringing all state aid

¹⁴² In line with the implementation of the State Program for Adaptation of Ukrainian Legislation to the legislation of the European Union¹⁴², the Antimonopoly Committee has prepared a draft law on the Procedural Competition Code developed in compliance with the EU procedural competition rules. This draft law intends to improve the procedure of granting authorisation for concerted actions, to strengthen the interactions between the Antimonopoly Committee and economic entities, and to create the efficient procedures of investigating violations of the competition legislation. So far, this draft law has not been submitted to the Parliament and is still being amending by the Antimonopoly Committee.

schemes under the jurisdiction of an independent executive authority. State aid is provided in accordance with sector specific or other regulations (on special economic zones, regional aid etc.), which are fragmented and frequently adopted without strong economic justifications for government interventions in the market operations.

State aid provisions are embodied in the Commercial Code of Ukraine, Law “On Protection of Economic Competition”, Law “On Facilitation of Regional Development”, etc. Still, none of them stipulates legal provisions defining state aid and its forms, neither a distinction between acceptable and unacceptable state aid with regard to its objective and its effect on competition and trade, all envisaged by EU legislation. The strict and precise procedures of state aid notification, provision, control and monitoring are also lacking in Ukrainian legislation.

In 2003-04, the AMC prepared and submitted to the Parliament a draft law “On state aid”, which in general incorporated the EU approach to state aid governance and provides for the creation of a state aid control and monitoring system in Ukraine, but still had important drawbacks (e.g. exemption of regional aid from the scope of the law, not well-defined procedures, etc.). Eventually, the Parliament did not adopt this draft law. After that, the AMC made another trial to address this issue in the Parliament in 2007, but it was unsuccessful again. The future EU-Ukraine FTA negotiations may serve as an additional strong incentive for the deputies to revert to this issue and adopt the needed legislative framework on state aid in Ukraine.

Introduction of state aid control and monitoring system and adequate institutions (State Aid policy)

The Antimonopoly Committee of Ukraine, as an authorised body to protect economic competition including state aid related issues, is not provided with the adequate powers usually envisaged for the independent supervisory authority to exercise the control on state aid. According to EU legislation they include: authorisation of state aid provision; monitoring and control over implementation of state aid legislation; assessment of the efficiency and effectiveness of state aid programmes (ex-ante and ex-post evaluations); demanding any relevant information from granting institution as well as from recipients; demanding recovery of state aid if its provision violates legislation.

There are no periodical official reports making public all state aid legislation changes as well as detailed reports on state aid and its volumes. There is no official accurate information about the measure of the country’s total state aid to enterprises (direct and indirect subsidies on the national and local level).

State Aid Practices (State Aid policy)

Ukraine’s state aid system proves to be inefficient and not transparent. Moreover it provides additional possibilities for corruptive actions and prevents structural restructuring of the economy. For a long time, the Ukrainian authorities have been tolerating indirect sector specific subsidies in the form of tax privileges (main sector recipients included shipbuilding, aircraft construction, automobile industry, coal mining, space industry, publishing of books and agriculture), as well as ad-hoc aid. These subsidies are known as rather non-transparent and detrimental to economic competition and trade. On the contrary, state aid for horizontal objectives accounted for a small share

of the total amount of state aid in Ukraine (according to the estimates of the Ukrainian Centre for International Integration, horizontal state aid accounted for only about 3 percent of the total state aid to industrial sectors in Ukraine in 2002, whereas regional aid reached 26 percent and sectoral aid – 71 percent)¹⁴³. The situation started improving in 2005, when the Ukrainian authorities abolished a majority of tax privileges provided to industrial sectors in Ukraine, as well as eliminated special investment regimes for business entities registered in special economic zones, territories of priority development and technological parks¹⁴⁴. As such, the positive tendency towards lessening the total amount of state industrial subsidies and increasing the share of state aid for horizontal objectives can currently be observed.

In the framework of the EU FTA negotiations, Ukraine may also be asked to commit itself to the strategic objective of total state aid reduction and its re-orientation on horizontal objectives.

State monopolies and state-trading enterprises

The widespread presence of monopolised markets and state enterprises with exclusive and special rights (or state-trading enterprises under the definition of Article XVII of GATT) may affect trade between partners and depress competition between them.

Exclusive access to services of natural monopolies, such as transport infrastructure and networks is an example of a special right to state-owned or specially authorised enterprises. For example, there are no legal restrictions on foreign trade of natural gas and electricity, but still these markets are *de facto* monopolised by two authorised operators, which have exclusive rights of accessing national and interstate gas and electricity networks: the CJSC “UkrGasEnerg” – a 50-50 joint venture between “Naftogas” of Ukraine and “RosUkrEnerg”; and the state enterprise “UkrInterEnerg”.

Other exclusive rights granted to Ukrainian state owned enterprises in the area of foreign trade include: export of ethyl spirits (six companies of the State Concern “Ukrspyt” granted with an appropriate licence), import or export of certain narcotics (State and municipal enterprises, including State joint-stock company “Liky Ukrainy”), import or export contracts for military equipment (“Ukrspetzexport”). The inventory of other possible state monopolies or enterprises with special and exclusive rights engaged in international trade should be implemented.

13.3 Potential impact of an FTA

13.3.1 WTO commitments

Even though there is no single legal framework on competition policy under the WTO, as of today, many WTO agreements address competition issues in the respective sectors or

¹⁴³ Vavryshchuk V., Kalizschuk Y., Taran S., Hoyna Y., and N.Yasko, 2004. State Aid in Ukraine: Reforming in Accordance with the WTO and EU's Requirements. Nora-Druk, ISBN 966-8321-55-3; 86 pages.

¹⁴⁴ This was done in the framework of Ukraine's WTO accession process and as well in order to increase efficiency of budget spending.

economic spheres such as the Agreement on Subsidies and Countervailing Measures (about state aid), the Agreement on Agriculture (domestic support for agriculture), Article XVII of GATT (state trading enterprises), Agreement on Trade Related Investment Measures (discrimination of foreign investors), etc. Ukraine is obliged to ensure a full compliance and effective implementation of these mandatory WTO agreements favouring the competitive environment in the country.

In particular, Ukraine's WTO commitments on *state aid* include:

- Abolishing and abstaining from introduction and maintenance of prohibited subsidies granted at all levels of government upon accession to the WTO, namely export and import-substitution subsidies (to date no such subsidies are maintained in Ukraine);
- Application of domestic taxes including the excise taxes and the value added taxes in full compliance with the WTO norms, including the Agreement on SCM, without any discrimination in regard to imports from the WTO Members and to domestically produced goods;
- Administration of free economic zones in compliance with WTO provisions, including the Agreement on SCM and other WTO agreements, and ensuring the application of normal taxes, tariffs, customs charges and other regulations to goods, which are produced in these zones and enjoy tax and import tariff exemptions, during their entering the rest of Ukraine; and
- Notification requirements: obligation to notify the relevant WTO Committee about all existing state aid schemes and individual aid, as well as on legislative and administrative provisions and their changes (on an annual basis)¹⁴⁵.

With regard to *state-trading, state-owned and state-controlled enterprises*, Ukraine's WTO commitments envisage that all they will act in full conformity with Article XVII of the GATT, the Understanding on Article XVII and other WTO provisions upon Ukraine's accession to the WTO. In particular, these enterprises are to make purchases of goods and services, which are not intended for governmental use, and sales in international trade in accordance with commercial considerations (including price, quality, availability, marketability, and transportation) and to afford other enterprises of the WTO Members to compete for such purchases or sales. Ukraine will have to notify all such enterprises to the WTO.

13.3.2 Economic impacts

Competition is a basic mechanism that defines the market structure of the market economy that encourages companies to provide consumers products that consumers want at low prices and with high quality. Competition policy aims at ensuring that all companies operate on a level-playing field, where competitive companies succeed. It ascertains that government interventions do not interfere with the smooth functioning of

¹⁴⁵ In regard to agriculture, Ukraine has committed not to introduce and maintain export subsidies to agricultural producers (Ukraine has been providing no such subsidies at all). Upon the tough rounds of the agricultural support negotiations, 2004-2006 years have been agreed as a base period for binding of Ukraine's commitments on the aggregate measure of domestic support to agriculture (AMS). According to the estimates of the Ministry of Agricultural Policy of Ukraine, the product specific support in agriculture will total about US\$ 609 million, while non-product support - about US\$ 594 million annually upon Ukraine's accession to the WTO¹⁴⁵.

the internal market or harm the competitiveness of companies. However, the level-playing field may require strict regulation on the environmental, health and safety issues.

In the area of competition policy Ukraine committed itself, as part of the Action Plan, to approximating its legislation with respect to antitrust and state aid to that of the EU, as well as to ensuring a credible enforcing of this harmonised legislation and maintaining a well-functioning independent competition authority.

Anti-trust policy

Improving the anti-trust policy – combined with flanking measures – will have the following anticipated impacts:

- Increased competition and a level-playing field for competition;
- Increased levels of protection and enforcement of economic competition in Ukraine's markets and thus reductions in static inefficiencies;
- Lower prices and improved quantities of services and outputs.

State aid policy

An improved state aid system will allow fulfilling important economic and social objectives with minimal detrimental impact to competition and international trade.

- Lower budget expenses from the side of the Ukrainian authorities on state aid – funds than can be allocated elsewhere in the economy;
- Increased competition and a more equal playing field for competition;
- Reduction in static inefficiencies by subsidising economic sectors at the expense of other sectors and with the use of public funds;
- Increased focus and attention for horizontal issues like R&D and SME development instead of looking at specific sectors;

State monopolies and state-trading enterprises

Obligations concerning state monopolies and state-trading enterprises under the EU-Ukraine FTA can tie the country and safeguard it against discriminatory practices during and after the transition period. Also FTA provisions may increase transparency of the functioning of the state monopolies, and thus improve the general competitive environment in the country.

13.3.3 Social impacts

The EU-Ukraine FTA through its competition policy leverage is expected to have rather ambiguous social impacts. The key issues to be negotiated within future FTA - state aid, anti-trust, and state monopolies policies – should increase competition in the most monopolised sectors and in general improve the overall competitiveness of Ukrainian enterprises. These impacts can lead to lower goods and service prices. On the other hand, increased competition also creates pressures to reduce costs and raise labour productivity, thus, leading to potential employment reductions.

The most affected sectors are expected to be those with a highly monopolistic structure and state ownership dominance, such as the transport and telecommunications, energy and coal industries. However, since the harmonisation of the FTA competition provisions

is rather a long process, the competition policy effects are expected to be long term in nature.

Ukraine – since 1990 – has gone through a tough transition period from a centrally planned economy to a market economy. Even though formally Ukraine is a fully functioning market economy, several aspects of market forces still need to be implemented and enforced – especially in the utilities markets of Ukraine – which will lead to a further (and final?) reallocation of resources in the Ukrainian economy.

Competition policy, through its lowering effect on prices, will generate more income and thus lead to less poverty among poor Ukrainians, especially when price reductions involve basic commodities or services.

A final expected social impact is the potential reduction of corruptive practices. Due to the reductions in state aid and increased competition, potential abuse of funds or potential re-direction of state funds are eliminated.

13.3.4 Environmental impacts

The magnitude of the overall impact of competition policy is defined by the ratio of GDPs. In 2005 the EU-25 GDP was €10.794 billion while the Ukrainian GDP was about €90 billion, so correspondingly the EU-Ukraine GDP ratio is about 100.

Crucial issues

The environmental impact covers the following crucial issues:

- Business environment index (BEI) and FDI inflows;
- Antitrust policy;
- State aid policy; and
- Energy sector special issues i.e. the relationship between competition and energy security.

Ukraine-specific issues

Competition policy is especially important for Ukraine where business and society has no necessary tradition with market forces. Moreover they inherited traditions of the Soviet time including high alleged levels of state corruption and arbitrary regulation. A functioning market is one of the most important factors for environmental protection activities.

Environmental projects contain important aspects that should be addressed by competition policy. By their nature they are traditionally supported by public funds, international assistance, etc. For instance grant awards for businesses for pollution abatement measures is common practice for the Ukrainian environmental funds system. But criteria of such support have never considered fair competition, and this evidently may result in the environmental funds system causing market distortions.

Environmental protection activities first of all need proper ranking and a set of priorities. Any further development of Ukrainian competition policy with its specific and common

issues needs to come with support of the FTA negotiations. The requirements of environmental protection need to be integrated into the definition and implementation of competition policy, in particular so as to promote sustainable development.

Business environment index (BEI) and FDI inflows

As a result of the FTA the amount of potential FDI inflows would increase annually from 417 to 525 million US\$ if the business environment improves by 10 to 30 percent correspondingly. FDI would increase between 85 and 612 percent of the current value because of a 10 to 30 percent increase of the BEI. The *environmental impact* of this FDI inflow is generally considered to be positive, however increased demand for electricity and water will increase CO₂ emissions and pressures for wastewater treatment. The same applies for waste management. In addition, rules have to be agreed on the level of environmental standards applied to new industrial sites with reference to the *environmental acquis*.

Antitrust policy

The antitrust area covers two prohibition rules set out in the EC Treaty to ensure that competition is not distorted or restricted:

- Agreements between two or more firms which restrict competition are prohibited (e.g. cartels); and
- Firms in a dominant position may not abuse that position (e.g. predatory pricing aiming at eliminating competitors from the market).

Opening up of electricity, gas and rail transport in Ukraine for competition may have *adverse environmental impacts* if the technical standards and environmental performance requirements are not regulated at the same time. Also monopoly rights of state funded providers should be covered by environment, health and safety regulation.

Agriculture is an economic activity where competition rules should apply also. The governing principle is to increase the competitiveness of agriculture by reducing support prices and possibly and temporarily compensating farmers through direct aid payments. In the long run this sector does not require specific antitrust exemptions. Harmonisation of the Ukrainian agricultural environmental indicators and performance with the *environmental acquis* needs to be included in the goals of this FTA.

Energy sector special issues

Competition policy has to take into account the specifics of the sectors, hence a linkage to energy security is required. The *environmental impact* of this FTA culminates in the changes that the energy sectors in both the EU and Ukraine will undergo. The increased emissions of CO₂, SO₂ and NO_x have to be taken into account when designing policy and flanking measures. Security of supply considerations in FTA negotiations may only in exceptional cases override the possible distortions of competition, health and safety issues and negative *environmental impacts*. This is especially valid since most of the energy sector in Ukraine is publicly owned and energy efficiency of the gas and electricity markets is low. The FTA negotiations need to provide sufficient incentives for investment in energy infrastructure to increase the environmental performance of the sector. Also the regulatory framework for energy liberalisation and enhanced competition rules (anti-trust, merger control and state aid) need to act to improve the environmental

performance of the sector. Striving for reliable energy supplies at reasonable prices whilst respecting environmental protection is crucial for the European and Ukrainian economies.

13.4 Conclusions

Competition policy is very important in Ukraine because of the country's transition path from a centrally planned to a market economy. The more competition between firms without interfering with government actions and policies – with the exception of situations of market failure – the better the market economy functions.

This means that state aid should in principle not be allowed – unless (again) to combat market failures – if it leads to a discriminatory playing field. Antitrust policies need to be enforced in order to increase competition. **The economic impacts** of competition increases are likely to be lower prices, more output, and increases in international trade. For the EU and EU firms, this may open up a Ukrainian market for doing business in areas that were previously 'closed' (e.g. construction). Successful competition policy can yield also positive **social impacts** as a result of the economic impacts. These include decreases in poverty, more employment and higher wages. Also the potential for corruptive practices will be reduced leading to increases in static efficiency.

Environmentally, each aspect of competition policy and all competition policy measures have to be checked ex ante to avoid trade distortions and constitute sustainable policies, environmental issues and health and safety safeguards. Otherwise, only opening up of the markets can result in higher pollution, emission and neglect of health safeguards due to increasing competition. Even though there are no direct environmental impacts, the potential of competition policy for environmental policy is there.

Table 13.2 below summarises the sustainability impacts related to competition policy.

Table 13.2 Summarised sustainability impacts related to competition policy

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	△	-	▲	Yes	M
Fixed capital formation	△	+	▲	No	M
Trade	△	+	▲	Yes	M
Social					
Employment & decent work	○	+	▽	Yes	M
Poverty	△	-	▲	Yes	M
Equality	?	-	?	Yes	M
Health	△	-	○	Yes/No	M
Education	△	0	△	Yes	M
Environment					
Atmosphere	○	-	▲	No	M/H
Land	○	-	?	Yes/No	L/H

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Bio-diversity	○	-	▲	Yes	L/M
Environmental quality	○	-	▲	Yes	L/H
Fresh and waste water	○	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the picture for competition policy, but the effects are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

14 Government procurement

Government procurement is an important issue for the Ukrainian economy as we will present below. With government procurement – unlike the other sectors and horizontal issues – the separation between WTO (GPA) initiatives and FTA procurement initiatives is impossible to make. Ukraine will possibly start negotiations on the terms of her eventual accession to the GPA after joining the WTO. These negotiations are then held with current GPA members and are likely to take many years. Potentially at the same time, upon becoming a WTO member, the EU and Ukraine will start discussing the FTA within the framework of the Enhanced Agreement including provisions of government procurement. Indeed there is a range of issues that may be included in the FTA between the EU and Ukraine bilaterally, and not in the GPA in general, but these distinctions can at this point in time – for a still-to-be-negotiated agreement – not be made. We therefore look at the possible improvements that may be implemented in Ukrainian government procurement and the respective impacts without making a distinction between possible WTO and FTA commitments.

14.1 Overview and recent developments in government procurement

Government procurement plays an important role in the social and economic development of Ukraine. The overall value of public procurement in Ukraine in 2005 totalled UAH 20.75 billion (about 5 percent of GDP), from which 51 percent was spent to procure goods, 36 percent to procure works, and 11 percent to procure services (see Table 14.1). This is however a lower estimate (partially depending on the definition of government procurement) as it excludes government military procurement, for example.¹⁴⁶ In 2005, 79,925 procedures of procurement of goods, works and services were implemented, out of which 91.5 percent were made up by competitive procurement procedures.¹⁴⁷ In value terms, government funds were spent mostly through the application of the following procurement procedures: open tenders (68.7 percent), purchase from one participant (15.3 percent), and request for price proposals (quotations) (11.4 percent) (see Table 14.2). Noteworthy, the role of sole source contracts in government procurement in Ukraine has been constantly declining over the recent years (in 2004, the percentage of sole source contracts by value was 26 percent), but still remains rather high. Shares of local budgets and the State Budget are most significant in the structure of total public funds planned by state entities for procurement of goods, works and services (49.4 percent and 45.4 percent respectively in 2005).

¹⁴⁶ In other countries the share of government procurement as part of GDP varies between 8% and roughly 30%. A DG Market study (2004) estimates average government procurement as share of GDP for EU countries between 10% and 21.5%.

¹⁴⁷ A competitive tender is defined as a tender with more than one participant, including open tenders (26%).

The level of competition of government procurement in Ukraine as measured by the amount of participants in tenders remains rather low with 2.6 participating bidders on average in case of an open tender procedure, and 2.79 participating bidders in case a price quotation procedure is used. Moreover, the available statistics clearly show very modest participation of foreign companies in government procurement in Ukraine (see Table 14.2). The overwhelming majority (99.8 percent) of successful bidders are domestic companies (those established and registered in Ukraine), while foreign companies accounted for merely 0.2 percent of successful bidders. Access, participation and success of foreign bidders to the Ukrainian government procurement process is expected to improve after recently the Ukrainian authorities abolished discriminating provisions against foreign suppliers in national legislation (in particular, in the agricultural sector), effective from March 12, 2007.¹⁴⁸ Notwithstanding this improvement of the legislative framework, both domestic and foreign suppliers often complain about inappropriate procurement practices that “effectively” restrict competition in government procurement markets in Ukraine, such as inadequate information on tenders, unclear bidding documents and ambiguous technical specifications, insufficient time for preparing bids, unjustified cancellation of tender procedures, and frequent delays in contractual payments (WB, 2006). Due to widespread violations of procurement legislation, an inefficient and constantly changing institutional framework along with a weak national legal system, government procurement has become one of the most non-transparent, allegedly corrupted and inefficient spheres of economic activity in Ukraine from which the entire country suffers.

Ukrainian procurement policy & law changed several times in attempts to address the abovementioned issues and further changes have been announced (one has been announced for September 2007). Even though changes in legislation may lead to changes that are positive for the Ukrainian economy, too many and rapid changes are not good for (foreign) investments as uncertainty is increased.

Furthermore it should be noted that Ukrainian improvements in government procurement (in the direction of EU standards) need to keep a fast pace, because EU legislation is also evolving. DG Internal Market is working on public procurement improvements related for example to reducing the costs of the procurement process further (by implementing e-procurement), furthering transparency (DG Market, 2004)¹⁴⁹ and improving the Public Procurement Remedies Directives 89/665EEC and 92/13EEC to include a ‘standstill period’¹⁵⁰.

¹⁴⁸ See amendments to the Law on Procurement of Goods, Works and Services for Public Funds as of 1 December, 2006.

¹⁴⁹ ‘A report on the functioning of public procurement markets in the EU: benefits from the application of EU directives and challenges for the future’, DG Market study, 3rd of February 2004.

¹⁵⁰ More information can be found on the EU website of DG Market: http://ec.europa.eu/internal_market/publicprocurement/remedies/remedies_en.htm

Table 14.1 Structure of Procurement Procedures by Value (Million UAH)

	Open Tenders	Tenders with Limited Participation	Two-level Tenders	Price Quotations	Purchase from one Participant	TOTAL
2004						
Goods	7 657.9	528.0	96.9	2 907.5	1 700.5	12 890.7
Works	3 630.6	504.1	403.0	473.7	3 814.8	8 826.2
Services	1 249.2	288.1	6.7	576.3	1 023.3	3 143.6
TOTAL	12 537.7	1 320.1	506.7	3 957.4	6 538.6	24 860.5
2005						
Goods	7 985.9	197.3	222.8	1 736.5	471.4	10 613.9
Works	5 125.7	281.5	41.1	119.8	1 837.0	7 405.1
Services	1 136.5	227.2	7.8	499.9	858.5	2 729.9
TOTAL	14 248.1	706.0	271.7	2 356.2	3 166.9	20 748.9

Source: Ministry of Economy of Ukraine

Table 14.2 General Statistics on Procurement

	2004	2005
Number of Announcements Regarding Tenders	14 068	19 527
Number of Announcements Regarding Tender Results	12 269	16 733
Number of Implemented Procurement Procedures (for goods, works and services)	127 799	79 925
Total Number of Participants of Tenders	355 233	248 735
Number of Successful Bidders, including:	145 514	95 867
- Domestic	145 332	95 658
- Foreign	182	209
Number of Concluded Contracts, including:	153 504	100 723
- With Domestic manufactures	136 185	89 212
- With Foreign suppliers	264	193
Number of Complaints Received by State Clients from Participants	380	623

Source: Ministry of Economy of Ukraine

Legislative and institutional framework of government procurement in Ukraine

Ukraine's legal framework concerning public procurement consists of the set of laws and bylaws regulations, the main of which is a *Law of Ukraine "On Procurement of Goods, Works and Services for Public Funds" № 1490-III* (hereinafter the Procurement Law).¹⁵¹ It was enacted in February 22, 2000 and since then it has been amended 10 times.¹⁵² The Procurement Law provides for the general legal and institutional framework of procurement of goods, works and services using public funds, describes various procurement methods and tendering procedures connected with submission and opening of tenders and awarding of procurement contracts. This Law is based on the UNCITRAL model law on government procurement and incorporated basic principles and procedures of the WTO Agreement on Government Procurement (GPA) and Directives of the

¹⁵¹ Two important bylaws are the Law of Ukraine 'On State Defence Order' and the Law of Ukraine 'On State Order for Satisfaction of Priority State Needs'

¹⁵² The most recent amendments were passed by the Parliament of Ukraine on 1 December 2006 and came into effect on 12 March 2007. This report is based on this most recent version of the Procurement Law.

European Union (namely, Directive 2004/18/EC of 31 March 2004). Nevertheless, some important discrepancies between Ukraine's Procurement Law and international standards still exist and require further harmonisation (see section 14.2.4 below).

Other important laws in this sphere include:

- *Law of Ukraine "On State Defence Order" No. 464-XIV of 3 March 1999* that is a special law that regulates public procurement in the sphere of state defence and national security. It stipulates the legal and institutional basis for formation, allocation, financing and implementation of state defence orders.
- *Law of Ukraine "On State Order for Satisfaction of Priority State Needs" No. 493/95 of 22 December 1995* establishes the general framework for formation, allocation and implementation of the State orders to supply goods, perform works, and render services for the satisfaction of priority state needs.

The Procurement Law provides for a decentralised government procurement system implying that procurement is carried out directly by the purchasing entities (managers of public funds). The procuring entities establish a tender committee, which consists of at least five representatives of procuring entities. The committee is responsible for organising and implementation of procurement procedures and for ensuring the efficient use of the public funds. The Procurement Law envisages the following public procurement methods:

- Open tender with price reduction;
- Limited participation tender;
- Two-stage tender;
- Request for price proposals (quotations);
- Procurement from a single participant (sole source), and
- Reverse auction.

Until the end of 2005, the Ministry of Economy of Ukraine was the central policy body with respect to government procurement and was assigned the functions of procurement coordination, monitoring and control. The 2005 amendments to the Procurement Law have changed the institutional structure of the procurement system in Ukraine, eliminated the previous role of Ministry of Economy and split its functions among several government bodies and organisations in an attempt to depoliticise the procurement process. According to the most recent version of the Procurement Law (of December 1, 2006), state control and supervision over the government procurement is implemented by the Parliament (responsible also for overall supervision), the Cabinet of Ministers, an authorised agency in government procurement (Anti-Monopoly Committee – AMC), the State Treasury, the Accounting Chamber, the State Auditing and Inspection Service, the State Statistics Committee, and law enforcement authorities. We note, however, that in spite of the legal efforts, in line with the World Bank Country procurement assessment report (2006), the current Ukrainian legislative set-up leads to politicisation of the government procurement process.

The *Anti-Monopoly Committee (AMC)* is designated as the authorised agency with respect to government procurement. Nevertheless, the AMC is not given a full range of functions that are typically given to a central procurement policy and monitoring body; functions, which were previously assigned to the Ministry of Economy and that would allow it to

operate more separate from political pressures. The AMC is responsible mostly for preparing reports and providing general oversight but it lacks the real control functions over the procurement system, such as issuance of standard tendering documentation, granting authorisations for resort to alternative methods of procurement, or making decisions on complaints from bidders. Also, there are concerns that ~ the AMC expertise capacity in the spheres of authorisations, alternative methods of procurement and deciding on bidder complaints is not adequate due to financial limitations.

The *Interdepartmental Commission on Government Procurement* is a public collective body, which is assigned key functions of the central procurement policy body including authorisation of the use of alternative procurement methods and deciding upon complaints from bidders, maintaining the list of blacklisted tender committee members, and the list of debarred bidders, introducing innovative procurement practices, certification of procurement trainers, and certification of procurement training institutions. The Commission consists of 11 members (one representative each from the Accounting Chamber, the State Auditing and Inspection Service, the State Treasury, the Anti-Monopoly Committee, and the Ministry of Economy, and three representatives each from the Parliament and the Tender Chamber). Some of the bodies participating in the Commission are themselves involved in the control of the procurement process. As a result the important requirement of independence of the Commission as a control and monitoring body highly questionable. Moreover, inclusion of representatives from the private sector (Tender Chamber) and the Parliament implies their participation in the implementation of standard governmental and operational functions of the executive power and (potentially) creates functional conflicts of interest. The existing fragmentation of authority (between the Anti-Monopoly Committee and the Interdepartmental Commission) and the lack of independence of the procurement policy and monitoring bodies, undermine the efficiency of the control and supervisory system over government procurements in Ukraine.

The *Tender Chamber of Ukraine (TCU)* is a non-governmental and non-profit entity (a union of NGOs) that was created in 2005 to ensure the civil society participation in the process of formation and control over the government procurement policy in Ukraine. The Supervisory Council of the Tender Chamber is composed of representatives of governmental and parliamentary bodies, which are already involved in control over the procurement system.¹⁵³ This again raises concerns about the threatened independence of the TCU as a non-governmental monitoring organisation and the built-in possibility for conflicts of interest. Procuring entities and bidders are obliged to provide all required information about tenders upon request to the TCU. Also the Interdepartmental Commission is to provide the TCU with copies of all its decisions and conclusions. It should be noticed, that the Tender Chamber is assigned with a right to provide its opinions and conclusions upon complaints from bidders and upon the use of an alternative procurement procedure (being stipulated as advisory, these functions may lead to interference into the procurement administration process and therefore are not typical

¹⁵³ Namely, three representatives from the Anti-Monopoly Committee of Ukraine and one representative each from the Ministry of Finance of Ukraine, Ministry of Justice of Ukraine, Main Auditing Administration of Ukraine, Accounting Chamber, State Treasury of Ukraine, as well as three deputies of the parliamentary committee concerned with issue of government procurement regulation.

for a non-governmental entity). The Tender Chamber is empowered with other important functions of rather operational (as opposed to mere oversight) nature. Pursuant to the Procurement Law, the Tender Chamber issues an official information bulletin on government procurement, develops and publishes methodological materials for procuring entities, works out improvements to legislation, etc. It has the right to block publication of a procurement notice in its bulletin in case it detects a violation. The December 2006 amendments to the Procurement Law introduced a new operational function of the Tender Chamber, namely to maintain a thematic catalogue of participants of procurement procedures, listing those who are eligible for participation in procurement procedures. The Tender Chamber is also empowered to publish the list of certified Internet service providers, which are to digitally publish the mandatory procurement information (as of today only one Internet service provider has been certified). Against the Tender Chamber activities, appeal is only possible via legal procedures.

According to the World Bank's Country Procurement Assessment Report (WB, 2006), various press publications (see, for example, www.zn.ua¹⁵⁴), and numerous complaints from domestic and foreign suppliers, the management of the Tender Chamber is having too close relationships with and promoting business interests of certain private consulting firms providing public procurement services.¹⁵⁵ Moreover, the access to standard bidding documents is also dominated by private companies, like the European Consulting Agency and the Centre for Tender Procedures and Business Planning (an NGO), both of which officially possess patents and copyrights for many bidding documents and methodologies. Such a dominant position of a private company allows it to abuse its monopoly power¹⁵⁶ by charging excessively high fees for its services and by pressing procuring entities into the use of expensive complementary consulting services as a "necessary" condition for obtaining the required Internet publication services or standard bidding documents (the fees for such consultancy services are calculated as a percentage of the value of a contract and usually reach up to 2-6 percent (and even more¹⁵⁷) of the contract value). Bidders are also required to pay considerable fees for being included in the catalogue of participants of procurement procedures, as well as monthly fees and listing of participants' information has to be renewed annually. These practices result in a substantial cost burden to both procuring entities and bidders, hurt competition (high participation costs in procurement procedures hurts small businesses the most) and lead to inappropriate use and distribution of public funds.

To conclude, the current institutional framework of the procurement system has substantial drawbacks and a low level of compliance with the internationally recognised principles and standards of good governance. In his decree of July 12, 2007, the president of Ukraine acknowledged an urgent need for comprehensive reforming and strengthening of the national procurement system and specified a number of critical steps in this regard. Among others, they include drafting amendments to the Procurement Law and submitting

¹⁵⁴ Zerkalo Nedeli, No 27(656) 14-20 July 2007 (<http://www.zn.ua/1000/1550/59964/>).

¹⁵⁵ One of them is the European Consulting Agency, which owns the only Internet service provider certified for electronic publishing of mandatory procurement announcements.

¹⁵⁶ The Anti-Monopoly Committee acknowledged the monopoly power abuse of the European Consulting Agency on the market of Internet publication of procurement information and fined it in 2006 (UAH 100000) and in 2007 (UAH 875700).

¹⁵⁷ Zerkalo Nedeli, No 27(656) 14-20 July 2007 (<http://www.zn.ua/1000/1550/59964/>).

them to Parliament as a priority draft law in September 2007. In particular, these amendments envisage increasing the threshold levels for participation in procurement procedures, abolishing of the register of participants, eliminating of mandatory tender security requirements and mandatory listing in the catalogue of participants of procurement and creating the official digital information system providing its services free of charge.

14.2 Government procurement policy and crucial issues

14.2.1 The EU – Ukraine Action Plan

In line and beyond Ukraine's WTO commitments, the public procurement section of the EU-Ukraine Action Plan commits Ukraine to improve the functioning of the current procurement system through further approximation of Ukraine's legislation to EU legislation on public procurement in order to ensure effective implementation of the key principles of *transparency, non-discrimination, competition and access to legal recourse*.

Other important steps pointed out in the Action Plan include the limited use of exceptions from procurement procedures, access to independent/judicial review in the event of disputes, adequate access to information about public procurement procedures, effective dissemination of tendering opportunities and time limits and co-operation with the EU in the application of modern e-tendering technologies.

Ukraine's commitments on approximation of its procurement legislation to the *Acquis Communautaire* are reflected in the State Programme for Approximation of Ukraine's Legislation to the EU Legislation.¹⁵⁸

The EU legislation on public procurement is primarily and foremost based on the Treaty of Rome (1957). Further secondary and tertiary legislation includes Directive No. 2004/18/EC (on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts), Directive No. 89/665/EEC of 21 December 1989 (on the coordination of the laws, regulations and administrative provisions relating to the application of review procedures to the award of public supply and public works contracts), Directive No. 2004/17/EC of March 31, 2004 (coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors) and Directive No. 92/13/EEC coordinating the laws, regulations and administrative provisions relating to the application of Community rules on the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors.¹⁵⁹

¹⁵⁸ Adopted by the Law No 1629-IV of 18 March of 2004.

¹⁵⁹ In his most recent report, the State Department for Legislation Approximation under the Ministry of Justice of Ukraine, which regularly monitors the legislation approximation process, defines the level of compliance of national procurement legislation to the EU norms as satisfactory and as such that still need further approximation (see State Department for Legislation Approximation, 2007. Overview of the Status of Approximation of Ukrainian Legislation to *acquis communautaire* — K.: «Professional», ISBN 966-370-034-3 — 544 p. (<http://sdla.gov.ua/atachs/ADAPT.pdf>).

14.2.2 FTA Comparison on government procurement

Given its significant economic and social role, government procurement is one of the key issues in EU free trade agreements. Still, the provisions on government procurement vary considerably among them.

For instance, EU FTAs with developing countries and Mediterranean countries contain only very general non-specific provisions requiring mutual opening of procurement markets.

At the same time, the most comprehensive chapter on government procurement is included in the EU Association Agreement with Chile (this agreement is one of the most recently concluded by the EU, effective from 2003). The procurement chapter of this FTA incorporates GPA equivalent measures concerning transparency, market access and non-discrimination, even though Chile is not a GPA Member (the EU is already a Member of the WTO GPA and its procurement regime is in line with the WTO norms). It is most likely that a similar approach – but maybe even farther reaching because of the neighbourhood status of Ukraine – with respect to government procurement, as taken in the EU-Chilean Association Agreement, will be used in the EU-Ukraine FTA negotiations, given the mutual interest of both countries in getting better market access to each others' considerable procurement markets.

The other agreement is that of the EU with Croatia, explicitly envisaging the introduction of the EU rules in the national procurement legislation, especially in the utilities sector¹⁶⁰. With respect to other contracts, it is agreed that all Croatian companies will be granted national treatment according to the EU procurement rules just upon joining the Agreement, while the European companies, not originating from Croatia, will receive national treatment pursuant to the Law on Public Procurement at least within three years upon entry into the Agreement. The possibility of Croatia to introduce access to procurement award procedures for all EU companies is to be determined by the Stabilization and Association Council. The chapter begins with reference to the non-discrimination and reciprocity in the WTO context being a desirable objective which is part of Ukraine's WTO accession process. Even though Ukraine and Croatia differ in their accession processes to the European Union, further far reaching levels of government procurement approximation can be part of an extended FTA.

Having studied various GPA chapters in the past, we take the EU-Chile Association Agreement as a model for how the structure of a future EU-Ukraine FTA chapter on government procurement within the FTA can look like. We envisage including the following major components and respective obligations (they are placed in the same order as in the EU-Chile Agreement):

¹⁶⁰ It is stipulated that access of Croatian companies to contract award procedures in the EU utilities sector will depend on Croatia's progress in introducing the referred legislation.

- *Scope and coverage*: central government entities, sub-central government entities, and other procuring entities (such as utilities); as well as goods, services and works subject to agreement over respective threshold levels¹⁶¹;
- *National treatment and non-discrimination*: a mutual obligation of parties to ensure national and MFN regime and lack of discrimination;
- *Prohibition of offsets and national preferences* (such as margins allowing price preference): spheres of application (in the qualifications and selections of suppliers, in the evaluation of bids and in the award of contracts);
- *Valuation rules*: obligation to prevent the avoidance of the application of the agreement's provisions and the split of a procurement contracts; calculation of the value of a contract;
- *Transparency*: obligation to promptly publish any legal acts and other relevant information regarding procurement in the appropriate publications and officially designated electronic media;
- *Tendering procedures*: description of possible tendering procedures applicable to procurement among countries (they may include open tenders, selective tenders, limited tenders, and sole source tenders), as well as rules and conditions allowing their application;
- *Qualification of suppliers*: obligation to ensure non-discrimination of requirements, possibility to establish permanent lists of qualified suppliers under certain conditions;
- *Publication of notices*: obligation concerning effective dissemination of tendering opportunities with all the information required for participation in the procurement (the widest possible and non-discriminatory access, free of charge and through a single specified point of access); list of compulsory information requirements to the notice of intended procurement; encouraging of early publishing of planned procurement; requirements for notices regarding permanent lists of qualified suppliers, if any;
- *Tender documentation*: obligation to include all information necessary for preparing and submitting responsive tenders and to ensure its availability to suppliers;
- *Technical specifications*: priority to performance and functional requirements rather than design or descriptive characteristics; use of international standards; exceptions;
- *Time-limits for the receipt of tenders*: adequate time to prepare and submit tenders; specification of time-limits;
- *Negotiations*: possible reasons for negotiations; rules of negotiations;
- *Submission, receipt and opening of tenders*: way of submission; transparency and non-discrimination;
- *Awarding of contracts*: conditions and criteria for awarding of contracts (lowest price or compliance with specific objective evaluation criteria);
- *Information on contract award*: obligation to promptly inform tenderers of decisions on contract award, characteristics and relative advantages of the selected tender, as well as reasons for the rejection of a tender (the latter - upon request); exceptions;
- *Bid challenges*: obligation to implement impartial and timely consideration to any complains from suppliers; existence of an impartial and independent reviewing

¹⁶¹ EU's and Chile's thresholds were set the same: central government - SDR 130,000 for goods and services and SDR 5,000,000 for works contracts; sub-central government - SDR 200,000 for goods and services and SDR 5,000,000 for works, utilities sector - SDR 400,000 for goods and services and SDR 5,000,000 for works (only for provision of airport facilities, maritime or inland port or other terminal facilities).

authority; interim measures to correct breaches (such as, suspension of the procurement process under certain conditions; compensation for the loss or damages suffered);

- *Information technology*: endeavour to use electronic means of communication for efficient dissemination of information (tender opportunities, etc.); endeavour to implement an electronic information system, which is compulsory for respective entities;
- *Cooperation and assistance*: development of training programs, etc.
- *Statistical reports*: collect and provide statistics on procurement covered by the FTA on an annual basis (upon request); specification of the content of statistics reports;

The procurement chapter may also include provisions envisaging possible modifications of its coverage, further negotiations on the agreement, exceptions (such as protection of public morals, order or safety, protection of human life, health, intellectual property, etc.), and review and implementation of the agreement. The FTA may also contain a chapter on the prohibition of using rules of origin specifically for government procurement.

14.2.3 Government procurement in the EU

The EU legislation concerning public procurement is based on the principles of equal treatment, non-discrimination and transparency and in first principle stems from the (amended) Treaty of Rome that applies if the directives do not cover all aspects. The directives No. 2004/18/EC, No. 89/665/EEC of 21 December 1989, No. 2004/17/EC of March 31, 2004 (as mentioned earlier as well) and 92/13/EEC Remedies directive coordinate the sector in the EU.

The EU Procurement Directives apply above the threshold of €137.000,- for procurement of supplies and services (€422.000,- in the case of utilities) and of €5.278.000,- for procurement of works. The EU member states generally apply the same or similar procurement procedures for lower amounts, because of synergy and cost effects of similar legislation; besides, below the thresholds and outside the scope of the Directives, procurement is still regulated by the principles of the Treaty. The EU public procurement procedures are worked out in line with the WTO GPA and set international standards.

14.2.4 Crucial government procurement issues

As mentioned before repeatedly, it is not always easy to separate the WTO effects from the further going FTA effects. This is especially challenging in the area of government procurement because Ukraine is only expected to start discussing government procurement changes upon joining the WTO.

Based on the previous descriptions and analyses, we identify the major issues that the EU and Ukraine are likely to address as the following – some in the WTO setting (GPA), others in the FTA:

- Scope and coverage of government procurement procedures;
- National treatment & non-discrimination;

- Procurement procedures & practices;
- Bid challenge procedures; and
- Institutional framework.

Scope and coverage of government procurement procedures

The Procurement Law is applicable to procurements of goods, services and works carried out by:

- All levels of public administration in Ukraine including central government, regional administrations and self-government bodies;
- Social insurance funds, the Pension Fund, the National Bank, organisations funded by State and local budgets; and
- State-owned enterprises, communal enterprises and businesses in which the state stake is over 50 percent.

According to the most recent version of the Procurement Law, the provisions of the law should be applied if the value of a contract equals or exceeds UAH 20,000 for procurements of goods and services, and UAH 50,000 for procurements of works.¹⁶² For state-owned enterprises¹⁶³, the threshold level is higher: UAH 50,000 for procurement of goods and services, and UAH 400,000 for works.¹⁶⁴ As mentioned, these amounts are higher in the EU procurement legislation (over €137,000,-) but member states apply similar procedures for lower amounts.

At the same time, the Law contains a rather long list of exclusions from the scope of its application, which includes:

- Procurement carried out by enterprises of the defence-industrial complex (instead regulated by the *Law of Ukraine "On State Defence Order" № 464-XIV* of 3 March 1999);
- Procurement of goods and services, which are produced by natural monopolies such as water, heat and power supply; waste water disposal and maintenance of sewage systems; postal services, including postal stamps; railway transport services; pipeline transport of oil and oil products, natural gas and petroleum gases, and other substances; electric energy and its transmission and distribution; air traffic management telecommunications services, including relay of radio and television signals (except for mobile telephony services and Internet services); and
- Procurement of some special goods, works and services such as precious metals, natural gas for technical use, nuclear fuel, certain financial services, etc.

With regard to the scope and coverage of government procurements of Ukraine under the future FTA and their compliance with international standards, the following major conclusions can be drawn:

- The existing list of exclusions from the government procurement regime should be analysed on the compliance with the GPA and the EU provisions requiring a limited

¹⁶² The December 2006 amendments has lowered thresholds for government procurements, which were before UAH 30 000 for goods and services and UAH 300 000 for works.

¹⁶³ Provided these enterprises carry out procurement without using budgetary funds.

¹⁶⁴ If the request for quotations method is applied, the threshold level for state-owned enterprises is UAH 100,000 for goods and services, and UAH 500,000 for works.

use of such exclusions.¹⁶⁵ In the context of FTA's, all goods (with rare exceptions) are covered in the agreements while the coverage of services, including construction services, and the utilities sector, are a matter of further negotiations.

- Application of the Procurement Law to all state-owned enterprises, regardless of the nature of their activities, is not in line with the EU and GPA norms. Pursuant to the GPA, covered procurement means only procurements *“for governmental purposes not procured with a view to commercial sale or resale, or for use in the production or supply of goods or services for commercial sale or resale”*.¹⁶⁶ Therefore, in order to comply with international practice, state-owned enterprises procuring for commercial purposes should be excluded from the scope of the Procurement Law, albeit this is a difficult issue. It should be noticed that current thresholds are rather low (UAH 20,000) and cover almost all purchases by public entities (including hospitals, schools, transport companies, etc., which often suggest low value contracts). At the same time, costly and burdensome procurement procedures discourage potential bidders from participation in these low valued contracts. As such, there are cases when hospitals and schools, etc. cannot organise tenders and purchase essential products, goods, etc.

National treatment and non-discrimination

According to Article 5 of the Procurement Law, national and foreign bidders participate in the procurement procedures on an equal basis¹⁶⁷, and procuring entities are to ensure equal access to information concerning government procurement to all bidders. Furthermore, the Law stipulates that procuring entities cannot set up discriminative qualification requirements for suppliers.

The earlier legal impediments to equal treatment of foreign companies on the procurement markets were eliminated by the December 2006 amendments to the Procurement Law, which entered into effect on March 12, 2007.¹⁶⁸ As a result, the current Procurement Law does not have any stipulations that allow for discrimination between foreign and domestic suppliers or between foreign suppliers from different countries.

At the same time, discrimination of foreign suppliers is still present during competition-restrictive procurement practices, in particular formulation of discriminatory qualifications of suppliers and technical specifications and rejection of tender proposals due to highly technical and/or formal reasons (e.g., particularly relevant for the pharmaceutical sector), manipulations with technical specifications after their approval by special technical review committees to the advantage of a particular bidder, acceptance of

¹⁶⁵ For example, according to EU Directive No. 2004/17/EC, entities operating in the utilities sector, being state or private enterprises, should not be excluded from the procurement procedures even though they may be given a more flexible treatment compared to other procuring entities.

¹⁶⁶ Article 2(a)(ii) of GPA

¹⁶⁷ Still, national treatment is not ensured in the area of national defense: according to Article 1 of Law of Ukraine “On State Defense Order”, only Ukrainian persons (regardless of form or property) can participate in government procurement in this sector except for procurement of weapons and ammunitions where a special license of Ukrainian persons is required.

¹⁶⁸ These violations of national treatment in public procurements included: Domestic producers had a 10% price advantage over foreign suppliers (their bid was accounted 10% lower compared to proposal of foreigners) under certain level of the contract value; If services or works were to be performed on the territory of Ukraine, non-residents could be requested to use domestic materials and labour; In case of procurement of agriculture products only domestic producers could participate in the tenders; Enterprises of invalids and persons in the penitentiary system enjoyed preferences over other tender participants.

tenders only from companies registered in Ukraine, i.e. resellers of imported products or domestic manufactures (e.g. procurements of pharmaceuticals in health sector). These issues will be inevitably raised and have to be settled during the GPA negotiations, as well as FTA negotiations with the EU.

Corruption aspects: There are violations of the Law provision stipulating that procuring entities cannot set up discriminative qualification requirements for suppliers, for example as observed in the *pharmaceutical sector*. In particular, Resolution #252 of the Cabinet of Ministers of March 7, 2006, envisages only one recommended criterion to producers: availability of the Ukrainian GMP certificate (General Manufacturing Practice). As such, foreign suppliers are almost entirely excluded from the procurement proceedings since procuring entities almost always require this certificate and foreign suppliers do not have it. The European Business Association (EBA) appeal to government bodies with a suggestion to amend the existing criterion with two more criteria: original preparations and generics from the PIC/S countries.

Major procurement procedures and practices

Existing procurement procedures and practices often create barriers to entry for domestic and foreign suppliers and therefore reduce competition in the government procurement market of Ukraine. As such, they should be revised in line with international and European standards, as part of the FTA with the EU.

- According to international practices, *standard bidding documents* are usually prepared and disseminated free of charge to procuring entities by an authorised agency in the field of government procurement (any fee for acquiring these documents, if any, should only reflect expenses on their printing and distribution). There are no official standard bidding documents in Ukraine. The Ukrainian high fees for acquiring standard bidding documents, which are copyrighted¹⁶⁹ and are currently being provided by a private company¹⁷⁰, substantially increase costs of participation in government procurements in Ukraine. This is not in line with EU standards. Having the right to provide standard bidding documents, the only private company imposes unregulated excessively high prices for its services, which are much higher than the real costs of providing services;
- The *estimation of a contract value* is not clear. Contrary to GPA and EU legislations, the Procurement Law in Ukraine lacks detailed provisions on estimating the value of procurement contracts. These provisions are important for defining if a contract is subject to procurement proceedings, for what procurement method to use, and for preventing possible manipulations with avoiding the procurement procedures;
- The Procurement Law stipulates a *mandatory requirement to publish procurement notices and other information* in three different sources: a specialised countrywide publication, the information bulletin of the Tender Chamber¹⁷¹ and internet publication through one of certified internet service providers (currently only one internet service provider has been certified). The drawbacks of the current institutional framework in government procurement have made it possible for private entities to come to dominate the markets of printed and internet publications leading

¹⁶⁹ By the Center for Tender Procedures and Business Planning, an NGO.

¹⁷⁰ The European Consulting Agency.

¹⁷¹ Printed publication in the TCU informational bulletin is usually determined as mandatory by the TCU.

to expensive fees charged for any services provided. As a result, the publication requirement turns out rather burdensome for participants in procuring procedures. According to international practices, the situation can be changed by establishing a single free-of-charge official state website for government procurement, as well as an officially printed procurement publication. There seems to exist some corruption as well: existing monopolisation of the spheres of Internet procurement publications and standard bidding documents provision enable the private company to pressure procuring entities for using complementary procurement services. According to the State Auditing and Inspection Service estimations, participants of tender procedures paid to procurement consulting companies about UAH 930 million only in the first half of 2007¹⁷². There are also manipulations with how fast a procuring entity wants to have its procurement notices posted in the internet: fast posting are more costly;

- *Registration requirements* to tender procedures are an issue. Maintenance of the thematic catalogue of participants of procurement procedures is assigned to the Tender Chamber. Being mandatory, listing in the catalogue is another expensive burden for participants that substantially restrict competition for tenders (see section 13.1). *Issue:* The Tender Chamber that is empowered with operational function, seems to charge unjustifiably high prices to participants for its services concerning the catalogue maintenance;
- Unclear and inadequate *technical specifications* constitute one of the biggest problems of government procurement in Ukraine, seriously restricting competition in this area. Therefore, provisions of the Procurement Law on technical specifications need to be harmonised with international standards of the EU and the WTO that focus on performance rather than on detailed design specifications;
- The December 2006 revision of the Procurement Law imposed *tender security requirements* (such as deposits, bank guarantee, checks, etc.), which are mandatory for procurement contracts valued above UAH 100,000 for goods and services and over UAH 500,000 for works. Given the high fees for such banking services in Ukraine, this requirement presents a real barrier for many suppliers and discourages them from participation in procurement tenders. This is especially discriminatory against small businesses resulting almost entirely in their *de facto* exclusion from the procurement process. This has a huge impact, both socially and economically on the Ukrainian economy, since SMEs are one of the engines for economic growth and development. *Issue:* What is notably strange is that some bidders (especially, in case of big procurement contracts) are “recommended” to use services of particular banks thus promoting particular business interests;
- The application of *procurement methods* should also be scrutinised for transparency and the possibility for manipulation and collusive actions (in particular, price reduction stage of the open tender method (when a successful bidder is proposed to reduce the price thus encouraging bidders to inflate their initial prices) or reverse auction (two-stage procedure ending with an auction to reduce tender prices));
- In practice possible *negotiations and collusive actions* among bidders that are not allowed by international standards do occur;
- *Time periods for submission of tenders:* to be non-discriminatory, time periods should provide foreign and domestic suppliers with enough time to prepare and submit tenders no matter what type of procurement method is being used. Currently,

¹⁷² See Zerkalo Nedeli, No 27(656) 14-20 July 2007 (<http://www.zn.ua/1000/1550/59964/>).

Ukrainian time limits are inadequate compared to the relevant GPA and EU provisions.¹⁷³ Foreign suppliers are very sensitive to this issue, since manipulations with time periods may exclude them from tender procedures; and

- *Cancellation of procurement procedures:* The Procurement Law provisions on cancelling procurement proceedings do not comply with the respective EU and GPA provisions. The law contains a number of provisions providing for cancellation of procurement proceedings¹⁷⁴ that may be abused or manipulated by procuring entities. This leads to a lack of certainty and the possibility that the tender will eventually be cancelled even though proper regulations have been followed. Instead, according to international practice these provisions should be well defined and have an exceptional character.
- *Black lists:* An Article addressing the use of a "black list" of bidders (Article 16) has been added to the GP Law by December 2006 amendments. Particularly, it stipulates possible grounds for the blacklisting (such as groundless rejection of the signing of the contract; substantial and groundless violations of the contract conditions resulting in a break of the contract; anticompetitive concerted actions; other violations of the legislation on protection of economic competition; provision of invalid information in tender documents). The Interdepartmental Commission on Government Procurement is designated to maintain the black list. It also provides for a compulsory internet publication of the list on the official site of the Commission, as well as publication in the thematic catalogue of participants of procurement procedures (maintained by the Tender Chamber of Ukraine). In April 2007, the Interdepartmental Commission on Government Procurement adopted a procedural regulation of maintaining and operating of the black list of bidders.

Bid challenge mechanism

In accordance with the Procurement Law, procurement procedures carried out by a procuring entity (except for the choice of the procurement method) may be challenged by a bidder or any one else through an administrative challenge and/or a court challenge. The international standards in government procurement provide for an independent and impartial review mechanism for bidders' complaints. Pursuant to the Procurement Law, the Interdepartmental Commission, whose independence is questioned (as mentioned in section 14.1), is the body empowered to provide a review of bidders' complaints of an administrative nature. The other important problem is that, pursuant to the Law, the receipt of a bidders' complaint by the Commission automatically leads to suspension of the procurement procedure for up to 20 days.¹⁷⁵ Provided that the review subject is not defined and justifications are not required by Law, in practice bidders usually use this instrument to postpone tender deadlines.

Institutional framework

As described in section 14.1, the existing institutional framework of government procurement is inadequate and inefficient. Its reform requires the establishment of an

¹⁷³ For example, the Procurement Law allows a normal period of 30 days (minimum 15 days) for receipt of tenders following the date of publication of a procurement notice (in the EU, 52 days (minimum 22 days) are normally provided (in case of open tender). Moreover, this normal term can be even shortened (up to 10 days for limited tenders) by a procuring entity (the Law does not stipulate clear grounds for such reduction).

¹⁷⁴ One of the conditions for cancellation of a procurement procedure is a participation of less than three bidders.

¹⁷⁵ Non-bidders' complaints do not require suspension of the procurement procedure.

independent authorised agency implementing standard functions of central procurement policy and controlling the draft of legislation, preparation of and distribution of standard bidding documents, publication of procurement notices and awards, monitoring, etc. (WB, 2006). At the same time, the Tender Chamber of Ukraine should be transformed into a real non-governmental entity, which is not involved in any administration of the Ukrainian procurement system.

Additionally, one of the main features of the current situation in government procurements in Ukraine is a weak *procurement legislation enforcement*. This is explained by weaknesses of national court system and anticorruption legislation. The legal procurement framework is also characterized by inadequate sanctions against possible violations.

14.3 Potential impact of an FTA

Reform – more specifically, the nature of reform – of the government procurement system in Ukraine has potentially huge benefits for the country.

14.3.1 CGE modelling results

As part of the CGE modelling, we have looked at including government procurement effects through modelling a reduction in non-tariff barriers, notably for large investments in sectors, as is summarised in Table 14.3.

Table 14.3 Overview of scenarios for government procurement

Scenario	Description	Model hypothesis
Base scenario		
WTO accession	Legislation passed as part of the process of WTO negotiations, the last amendment dating from December 1, 2006 (coming into effect March, 2007)	
Limited FTA	Limited success in further passing and implementation of government procurement procedures; limited legal approximation to EU standards.	Reduction in NTBs related to participation in government procurement by 25% - 40% (depending on sectors)
Extended FTA	Ongoing and successful improvements in government procurement legislation through legal approximation to EU procurement standards, and successful monitoring of implementation.	Reduction in NTBs related to participation in government procurement by 35% - 50% (depending on sectors) showing deep progress in this area

With respect to this horizontal issue, it is important to note – as presented at the start of this Chapter, that Ukraine will only seek regulatory approximation in the field of government procurement after joining the WTO, which means its approximation efforts

to WTO standards are likely to coincide with its EU FTA negotiations, albeit the latter require a much deeper level of approximation.

The effects of improvement in government procurement are felt throughout the entire Ukrainian economy, leading to increased levels of welfare, lower prices and a higher rate of return on investments because of allocative efficiency. More specifically, government procurement in relation to large public works, services provision and advice, in the transport sector, energy sector, (financial) services sector, machinery & electronics sector, metallurgy sector (to name a few), is entangled with the entire economy at all times. Properly functioning government procurement thus has economy-wide economic, social and environmental impacts.

It is important to note the distinction between government procurement encouraging competition throughout the tendering procedure and market access. Government procurement is aimed at the right to participate in a tender procedure, not about creating market access and influencing the market structure. From the procurement perspective it does not matter whether a monopolist or several competing firms all bid for a tender as long as there is a fair and open system. Competition within the tendering procedures is increased though, and even though this does not change the actual market structure, it may increase potential competition, thus affecting those firms operating on the markets in line with the theory of contestable markets.

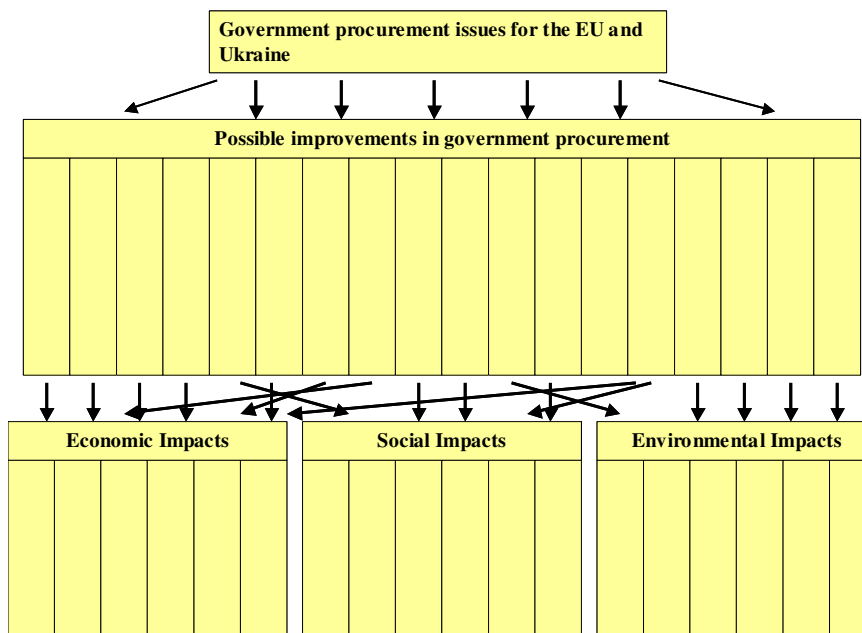
14.3.2 WTO commitments

In line with the WTO accession negotiation process, Ukraine has committed itself to start negotiations on joining the plurilateral WTO Agreement on Government Procurement (GPA) upon its accession to the WTO. Ukraine is obliged to obtain an observer status to the GPA at the time of WTO accession and to start the GPA negotiations one year later. Upon joining the GPA, Ukraine will have to carry out procurement in a transparent manner and apply equal non-discriminatory treatment to all foreign suppliers.

Should Ukraine start the GPA negotiations, it will be required, first, to ensure compliance of its national procurement legislation with the GPA principles and provisions, which provide for an open and international competition and non-discriminatory procurement regime, and second, to strengthen transparency, the institutional framework and procedural aspects in this area. Third, each country joining the GPA tabulates an entity offer and negotiates with interested members of the WTO GPA those procurements that will be covered by the GPA. In addition, Ukraine will have to submit to the WTO Procurement Committee a checklist of issues with detailed information concerning the GPA accession (GPA/35).

As mentioned at the outset of this Chapter, we realise that a different depth is reached bilaterally between the EU and Ukraine regarding government procurement, when compared to the GPA commitments Ukraine is likely to engage in. However, due to the fact that both lie very far in the future and a clear distinction cannot be made, we refrain from trying to separate the effects.

Figure 14.1 Schematic overview of Government procurement improvements and impacts



14.3.3 Economic impacts

After the negotiations, Ukraine is obliged to integrate FTA obligations on government procurement into its legislations and to ensure their effective implementation. It means that Ukraine will further continue reforming its government procurement system towards compliance with the best international practices of governance in the government procurement area. The expected economic impacts linked to specific reform measures are summarised in Table 14.4 below.

Table 14.4 Economic impacts of government procurement reform

FTA induced Reform	Expected economic impact
Reduce the list of exclusions to government procurement and broaden its scope and coverage to include utility monopolies, postal services, railway transport, pipeline transport, natural gas, financial services, and telecommunications services	Increase competition in the areas that the broader government procurement now encompasses leading to lower (bidding) prices and higher quality of procured work. If transparent, the exclusions reduction also leads to less opportunities for corruption, better use of public funds because of more accountability
Exclude from the Procurement Law the possibility that state-owned enterprises can procure for commercial purposes	Increase transparency and reduce the seemingly high levels of corruption to win commercial contracts
Increased market access to Ukraine for foreign suppliers of goods, services and works (specifications on monopolisation of domestic procurements, FDI	Higher levels of competition on the Ukrainian government procurement market, leading to higher efficiency of domestic bidders but also pressure on

FTA induced Reform	Expected economic impact
regulations and restrictions,	margins of competing firms, access to best practices and technologies from abroad, more efficient work for lower prices, better use of public funds
Enforcement and practical implementation of the national treatment and non-discrimination principles: the removal of discriminatory and anti-competitive practices	Increased openness of the Ukrainian procurement markets and higher levels of competition
<p>Improve procurement procedures and practices:</p> <p>Make more use of open tenders and competitive procedures;</p> <p>Make standard bidding documents digitally available, do so free of charge and specify distribution channels and organisation;</p> <p>Approximate EU legislation in estimation procedures of a contract value;</p> <p>Provide clear, precise and non-discriminatory technical specifications;</p> <p>Create a mechanism to decide on the use and transparency of different procurement methods;</p> <p>Increase the time periods for submission of tenders to give domestic and foreign suppliers more time to prepare and submit bids;</p> <p>Reduce the provisions for cancellation of procurement proceedings that make the process prone to abuse and manipulation;</p>	<p>Higher value for money for procuring entities, cheaper participation in tenders for bidders, more time to develop high-quality proposals, and a more stable and transparent procurement system</p> <p>Lower acquisition prices because of competition and increased efficiency of the use of public funds</p> <p>Better access of procuring entities to high-quality and cheaper goods, services and works (very important public entities procuring for social needs, e.g. health sector, education, etc.)</p> <p>Encouragement of SME activities and entrepreneurship in Ukraine because of lower procurement costs and higher inclusion of SMEs into the procurement procedures</p>
Ensure independent and objective review of bidders' complaints	Higher discipline of domestic officials of the Ukrainian authorities, improved law enforcement and an increased reliability of the procurement system leading to lower costs, lower acquisition prices and more trust in the system
Strengthening and improving the institutional framework of government procurement	Increase suppliers' trust in the Ukrainian procurement system, depoliticisation of the procurement system in Ukraine, create a more consolidated, transparent and efficient coordination, monitoring and control system at lower costs, ensure a level playing field in national procurement and reduce <i>de facto</i> corruption levels

FTA induced Reform	Expected economic impact
Overall impacts of these measures on the government procurement system: <ul style="list-style-type: none"> • A more stable procurement system; • Increased levels of competition leading to lower prices and increased pressure for delivering quality – better use of public funds; • Increased competition between domestic and international bidders reduces bidders' margins; • Easier access to EU procurements because of approximation of Ukrainian to EU procurement legislation; • Lower tendering costs for bidders due to more transparent, cost-effective and administratively streamlined procedures; • More equity in public tendering through increased transparency and less discrimination and opportunities for corruption against participants (e.g. SMEs or international participants); • Higher quality of inward investments because of improved management & technical competences and skills; • Reduced levels of (potential) corruption in the government procurement system and thus better use of public funds; 	

In the short-run, the effective market access of Ukrainian suppliers to the huge EU procurement markets upon the EU-Ukraine FTA, it is not expected to increase considerably. This is not due to impediments in the procurement scheme of the EU with respect to Ukrainian bidders, because they are expected to decline as regulatory approximation of Ukrainian to EU procurement regulation continues. However, due to the highly competitive character of the EU procurement markets combined with the less-developed supply chains and technological capacities of Ukrainian companies to compete efficiently, in the short-run we do not anticipate large effects. This short-run situation may improve in the medium to long run only if certain policies are put in place. When, as a consequence, competition and international openness increase productivity and technology levels of Ukrainian industries, this situation is expected to change. A study by DG Market (2004) shows that although price dispersion for products remains quite large, application of EU procurement rules has decreased prices by around 30%.¹⁷⁶ Given the fact that the government procurement sector is a large one and given the non-transparent system and alleged widespread levels of corruption, we expect 'invisible resistance' against government procurement reforms in order to protect these 'hidden' interests.

14.3.4 Social impacts

Next to economic impacts, the government procurement system also has significant social impacts.

First of all, the difference between a well-functioning government procurement system and a non-functioning system (e.g. because of various possible fraudulent practices) is the difference between employing public money to conduct works and services that generate work, earn wages and reduces poverty versus the absence of these effects.

¹⁷⁶ 'A report on the functioning of public procurement markets in the EU: benefits from the application of EU directives and challenges for the future', DG Market study, 3rd of February 2004.

Secondly, a functioning government procurement system is expected to be a lot more efficient (see the abovementioned DG Market study) which frees money for addressing social issues. A better managed government procurement system can also increase the number of social projects (e.g. improvements in health care, and the creation of food safety laboratories) in the country and hence generate positive social impacts.

Thirdly, the non-transparent and highly corrupted system of government procurement in Ukraine indirectly influences the health status of the Ukrainian population. Population and specifically the health sector are affected through the channels of government procurement of medicines and medical equipment and through government procurement of food for children (including catering for kindergartens, schools, orphanages, etc. If procured at too high prices consumers pay too much for their health care and medicine.

Fourthly, improved government procurement procedures will lead to an increased quality of life in general, not only through health care. For example, public works are conducted cheaper and with higher quality (e.g. building bridges, dikes), transport levels improve (e.g. quality of buses), corruption levels are decreasing, and money is available for social projects.

Fifthly, improvements in the government procurement procedures in Ukraine can lead also indirectly to improvements in the education system and level of education. With a better organised public procurement system, which is more cost-efficient, schools can be improved at lower costs and better equipment and better educated and paid teachers can be bought and work respectively. Also additional measures may further improve education and lead to a virtuous circle with government procurement improvements.

Sixthly, lower costs for participating and gathering information regarding government procurement procedures, are expected to lower the participation threshold, allowing SMEs to become much more involved. This is expected to have a significant positive impact on employment and levels of innovation.

Finally, the effects on employment – besides the previous SME argument – depend on the level of public procurement projects carried out. Improvements in the system can lead to more public projects implemented during one year. With well-managed budgets, enhanced competition and cheaper cost, more projects can be carried out with the same amount of money. As the demand for services goes up, employment can go up as well. An important social consequence is linked to quality of work: approximation and implementation of EU procurement rules (Article 28) lead to specific preferences for less able people and allows for clauses related to prison labour.

In general, an FTA, which covers public procurement, is likely to cause significant improvement of social aspects of life in Ukraine.

14.3.5 Environmental impacts

This chapter summarises the key environmental themes and potential impacts to be taken into account while negotiating procurement issues within the Ukraine-EU FTA including the WTO Agreement on Government Procurement (GPA) as a baseline.

Government procurement is one of the most important factors that defines the effectiveness of public environmental funding. Improvement of the system leads to a better allocation of public environmental funding that currently leaves a lot to be desired.¹⁷⁷

Financing of environmental projects may rise sharply in the nearest future, because Ukrainian authorities plan to disburse up to 10 billion US\$ of the Kyoto Protocol "green scheme" investments through the newly created National Agency of Ecological Investments of Ukraine. It will be a new test for the government procurement system, similar to the realisation of the first joint implementation projects under the Kyoto Protocol. During the preparations a new inconsistency was revealed, which is not yet resolved.¹⁷⁸ Important steps pointed out in the Action Plan to be covered also from the point of view of environmental aspects are: limited use of exceptions from procurement procedures; and adequate access to information about public procurement procedures. Omitting these points increases greatly the risk for irreversible environmental damage. The major issues that the FTA between the EU and Ukraine will need to address are:

Sustainable environmental policies:

Short-term economic gains should not override long term environmental objectives throughout the procurement cycle. Approximation to EU government procurement rules (Article 39) allow Ukraine to address and include environmental concerns into its procurement system.

In general the improvement of the public procurement system in Ukraine in line with the European standards is expected to enhance the environmental situation in all fields and the use of public funds directed towards environmental protection.

14.4 Conclusions

In order to achieve regulatory approximation of one of the allegedly most fraudulent parts of the Ukrainian economy, government procurement, to EU standards, much still needs to

¹⁷⁷ Evidently, it is one of the most complex issues to regulate, as it requires clear-cut procedures and transparency that does not provide room for interpretation of corruptive practices. Regrettably Ukraine cannot so far boast many successes in this sphere as also *The Global Corruption Report 2007 of Transparency International* shows. From its establishment in the early 1990s the system of environmental funds in Ukraine is the only reliable source of environmental expenditures. The *OECD 2006 Performance Review of the State Environmental Protection Fund of Ukraine* states that in general, the performance of the funds has benefited from wider reforms in public finance that have strengthened their financial discipline. The Fund's resources significantly increased and almost doubled between 2000 (about €7.4 million) and 2004 (€14.5 million). For comparative purposes, the investment need for renewal and modernisation of technological infrastructure, aimed at approximation to EU standards is about €50-60 billion.

¹⁷⁸ Namely in accordance with existing Ukrainian legislation any public funding of services from 20,000 UAH onwards and works from 50,000 UAH onwards should go through sophisticated bidding procedures, but the project participants are already defined at very first stage of its implementation.

be done as part of the FTA: procedures need to be cleared, legal amendments put through and transparency enhanced.

A well-functioning government procurement system can have significant **economic impacts** through introduction ‘fair’ competition and better spending of public funds through improved levels and management of inward investments. Efficiency is improved and public investments are less prone to crowd out private investments. Well invested public funds through government procurement lead to higher levels of GDP growth and more trade (mostly in services). The price levels of properly procured tenders are significantly lower leaving room for alternative uses of public funds. An improved procurement system, with lower tendering costs, allows for an increased participation of SMEs which will have a strong positive economic impact. For the EU an improvement in Ukrainian government procurement can mean that more EU firms will tender and win procedures to carry out work in Ukraine.

Socially, government procurement – through better allocation of resources, for example in the health care sector, leads to higher quality of products and a better health care system. Also the education system in Ukraine stands to gain from an efficient government procurement system, which is a clear **social impact**. Overall, well spent resources as investments in the Ukrainian economy lead to employment creation, wage increases and lower levels of poverty.

Environmental impacts are harder to measure, but overall, inclusion of sustainable development considerations in the government procurement system can lead to funds invested in a more sustainable way, if legal provisions are adopted. An example would be the use of the ‘green scheme’ of the Kyoto protocol to enhance environmentally sound investments. This would be a true test for Ukrainian government procurement.

The overall impacts of government procurement for the Ukrainian economy are presented below in Table 14.5.

Table 14.5 Summary of overall impacts of the FTA on government procurement

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	▲	-	▲	Yes	M
Fixed capital formation	▲	+	▲	No	M
Trade	○	+	▲	Yes	M
Social					
Employment & decent work	△	+	▲	Yes	M
Poverty	△	-	▲	Yes	M
Equality	△	-	▲	Yes	M
Health	▲	-	▲	Yes/No	M
Education	▲	0	▲	No	M
Environment					

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Atmosphere	△	-	▲	No	M/H
Land	△	-	▲	Yes/No	L/H
Bio-diversity	△	-	▲	Yes	L/M
Environmental quality	△	-	▲	Yes	L/H
Fresh and waste water	△	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the government procurement effects, but they are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

15 Technical standards

15.1 Overview and recent developments in technical standards

Technical norms are important in a world of free trade. Normally, they play several roles: correct information asymmetries, provide incentives for quality by specifying minimum levels of performance, reduce health, safety and environmental hazards, and ensure compatibility of complementary products produced at other ends of the globe. Although beneficial *persé*, technical norms may become impediments to free trade in case they differ across countries. In that case they create additional non-tariff barriers to trade that lead to deadweight losses.

The issue of technical standards and regulation has been of special importance for Ukraine. The country inherited the Soviet technical regulation system (including technical norms), incompatible with that of the EU. The reform progress on technical standards and norms has been moderate so far. Most outdated technical norms are still in place and are unlikely to be updated or replaced in the near future. As a result, Ukrainian producers, exporters, and importers view technical regulations as one of the major impediments to expand exports to the EU market and access modern technologies and equipment produced in the EU. For Ukraine as a country, technical regulations are one of the major impediments to benefit fully from a free trade agreement, hampering economic growth, employment creation, exports and income and wage increases.

Formally, we should not call this chapter 'technical standards' but 'technical norms'. The latter includes technical standards as well as regulations and therefore has a broader nature that is more applicable and translatable into non-tariff barriers to trade.

15.2 Technical standards policy and crucial issues

15.2.1 Description of current developments

The issue of technical regulation is addressed in a number of Ukrainian laws. The law shaping the basics of the technical regulation system is the Law 'On Standards, Technical Regulations and Conformity Assessment Procedures' adopted in 2005 (Law hereafter). Besides, the issue is also regulated by the Law 'On standardisation' and Law 'On

Conformity Assessment'. Several special laws define technical requirements in selected sectors like telecommunication, transport, tourism, nuclear energy etc¹⁷⁹.

The Law was adopted with a view to fully harmonise Ukrainian basic technical legislation with the WTO TBT Agreement and facilitate adoption of international and EU standards in Ukraine. The key points of the Law include:

- In line with provisions of the WTO TBT Agreement, two types of technical norms are distinguished – regulations (obligatory rules specifying commodity and production process characteristics) and standards (voluntary norms which are usually implemented by companies in order to meet increasing requirements of consumers and give market signals about proper quality);
- National standards, technical regulations and conformity assessment procedures should be designed in a way that they do not create unnecessary barriers to trade. They should be based on internationally or regionally accepted norms;
- Technical norms of other countries may be acknowledged as equivalent to Ukrainian ones;
- Only residents of Ukraine may provide expertise on conformity assessment acknowledged in the country; and
- Conformity assessment documents issued in other countries may be acknowledged in Ukraine based on international agreements on mutual recognition of conformity assessment procedures and agreements between the bodies responsible for assessment procedures. Foreign conformity assessment certificates may also be recognised in Ukraine if the country of commodity origin participates in international organisation on conformity assessment.

The State Committee of Ukraine for Technical Regulation and Consumer Policy (Committee hereafter) – Derzhspozhyvstandart – is responsible for the state policy in the sphere of technical regulations. The Committee is a member of the international organisations ISO (since 1993), IEC (since 1993), has an observer status in the European Committee for Standardisation (CEN), and affiliate status at the European Committee for Electro-technical Standardisation (CENELEC).

According to the Decree of Cabinet of Ministers, assessment of product's conformity with voluntary technical norms is delegated to non-state bodies while assessment of conformity with mandatory norms must be implemented exclusively through state agencies. Currently the assessment is done through the UkeSEPRO (YKPCEIIPO) state certification system covering about 120 bodies throughout Ukraine.

Despite numerous initiatives with regard to reforming the state regulation system, progress has been modest so far. Currently Ukraine uses about 16.800 standards that have been developed and adopted before 1992 (GOST regional standards formerly common for all the USSR countries). Most of them contradict internationally accepted standards, let alone the EU norms. About 41 percent of national standards and only 10.3 percent of international (GOST) standards have been harmonised with the international norms as of

¹⁷⁹ 'Law on Telecommunications' (adopted in 2004, latest amendment – January 2007), Law on Transport (adopted in 1994, latest amendment – June 2007), 'Law on Tourism' (adopted in 1995, latest amendment – November 2003), 'Law on Permissible Activity in the Area of Nuclear Energy Use' (adopted in 2000, latest amendment – May 2003).

March 2006. All in all, as of January 2007, 3.707 national standards are harmonised with international norms. In particular during 2006, 617 national standards have been adopted by simple translation of texts of international norms and 20 standards by acknowledging international documents as national ones (the ‘cover’ method).

The programme of technical norms harmonisation has been outlined in the ‘State Program of Standardisation for 2006-2010’ adopted by the Cabinet of Ministers in March 2006 and ‘Program of Revision of the GOST Standards Developed Before 1992 and their Alignment with WTO TBT Agreement’ adopted by the Committee in March 2006. Throughout 2006-2010 the Committee is expected to approve about 8.900 national standards compatible with the international ones.

15.2.2 Ukraine’s commitments under the WTO

Ukraine committed itself to ensure full compliance of its legislation with the WTO TBT Agreement and join the Code of Good Practice from the date of its accession to the WTO without any transition periods. This means that from the moment of joining the WTO Ukraine will not be able to oblige foreign producers (willing to sell in Ukraine) to comply with Ukrainian technical norms incompatible with the international ones. This poses a big problem for the country. Since the government is not able to fully align domestic technical norms with the international ones, there will be a gap in technical regulations: imported commodities and services will be certified against international norms while Ukrainian commodities and services will be tested against domestic norms which are frequently incompatible with the international ones. In this respect caution should be taken in order to ensure smooth and in-time adoption of the missing international norms into domestic legislation.

15.2.3 The EU-Ukraine Action Plan

EU-Ukraine Action Plan sets ambitious goals in the sphere of technical regulation. Ukraine committed itself to *“continue the alignment with the EU and international regulatory and administrative practices and prepare for participation in the EU internal market in selected priority industrial sectors”*.

The priority cooperation measures outlines in Article 2.3.1 of the PCA are: identification of priority sectors for alignment with the EU and international regulatory practices and possible inclusion in an Agreement on Conformity Assessment and Acceptance of Industrial products (ACAA), harmonisation of legislation with EU technical regulations, further revision of Ukrainian standards, enforcement of institutional capacities in the technical sphere, simplification of conformity assessment procedures of industrial products in accordance with the requirements of the EU directives. Thus, Ukraine’s commitments relating to the sphere of technical regulation under the Action Plan are comprehensive and far reaching.

Ukraine and the EU held several rounds of consultations to identify priority sectors for alignment with EU and international regulatory practices and possible inclusion in the ACAA. The four priority sectors that have been chosen by Ukraine are simple pressure vessels, electro-magnetic compatibility, low voltage equipment, and machinery. The

ACAA agreement is expected to enter into force since 2011 meaning that Ukrainian products in priority sectors will be exported to the EU without need for additional testing in the EU.

15.2.4 Technical norms in the EU FTAs and Accession agreements

Most of FTAs concluded by the EU touch the issue of technical norms superficially. For example, the common approach in the FTAs with the MED countries is to include norms obliging the EU trading partners to promote the use of the EU technical rules and standards for industrial and agri-food products and certification procedures. However, no specific measures and timelines are defined regarding implementation of the FTA articles. Provisions relating to TBT in the EU-Chile FTA are more detailed. However, they also lack specificity, making the respective part of the agreement a kind of declaration rather than a binding document. One of the important issues under the EU-Chile agreement is the establishment of a Committee on Standards, Technical Regulations and Conformity assessment in order to create a forum for discussions of issues relating to reforms in technical regulations sphere.

Technical regulation provisions within the European Association Agreements (EAA) signed between the EU and candidate countries in the early 1990s were the most far reaching in terms of stated goals. In particular, the candidate countries were obliged to fully implement rules and procedures equivalent to those applied in the EU. Later all the candidate countries signed Protocols on European Conformity Assessment and Acceptance of Industrial Products (PECA). The protocols provided for mutual recognition on the basis of the *acquis communautaire*. Although PECAs are relevant to candidate countries only and were part of the pre-accession strategy, their successful implementation led the EU to initiate inclusion of similar agreements with the countries of the Mediterranean region and the CIS. From the point of view of the EU, ACAA conclusion means adoption by the Parties of standards and approaches in key sectors of technical regulation.

15.2.5 Crucial issues in the context of the FTA

Provisions of the EU-Ukraine Action Plan set an ambitious agenda for alignment of the Ukrainian technical sphere with the *acquis communautaire*. At the same time, the document leaves the choice of speed and scope of harmonisation at the discretion of Ukraine. The idea behind the document was to support Ukrainian efforts without putting much pressure and obligations. In general, the Action Plan provisions provided enough incentive for Ukraine to align with the *acquis*. The document is even more ambitious than provisions of the FTAs signed by the EU. Unfortunately, Ukraine did not manage to demonstrate substantial progress with respect to reforms in the technical sphere. Weak sector institutions, lack of political will, corruption, lack of proper financing, and poor policy implementation discipline hinder the process of harmonisation. Given this information, duplication of similar provisions will be of little value-added for the FTA Agreement. Ideally, provisions of the EU-Ukraine FTA should contain strict obligations regarding implementation of the EU technical norms in Ukrainian legislation, including timelines and control indicators.

The key issues that should be urgently addressed in the context of FTA negotiations are the following:

- More effective enforcement of respective articles of the EU-Ukraine Action Plan;
- List of products subject to obligatory certification in Ukraine should be reviewed, substantially reduced and brought in line with the EU norms. Instead, liberal conformity assessment procedures based on consumer risk management should be implemented;
- Power of the Committee with respect to assessment of product's conformity with obligatory Ukrainian technical norms should include de-monopolisation; and
- Ukraine should be recommended to acknowledge conformity assessment results from the EU without additional tests conducted by domestic certification bodies. This is a deviation from the mutual recognition principle. However, it may provide Ukraine with powerful incentives to speed up harmonisation in the technical sphere and adoption of EU norms in its national legislation.

The technical sphere alignment process should be based on adoption of the EU technical norms (based on New and Global approaches) in the Ukrainian legislation instead of harmonisation of domestic norms with those of the EU.

15.3 Potential impact of an FTA

15.3.1 Economic impacts

The economic impacts of alignment of Ukraine's technical sphere with that of the EU are multidimensional. One can distinguish direct and indirect effects. Direct effects can stem from reduction of companies' costs related to passing conformity assessment procedures. Indirect effects primarily come from additional incentives for Ukrainian producers to improve production processes, implement quality control management schemes, and invest in new technologies. Indirect effects are mostly of a long-term nature and they are difficult to quantify.

An extended survey of 500 Ukrainian exporters to the EU showed huge benefits potentially originating from alignment of Ukrainian technical norms with those of the EU¹⁸⁰. In 2005-2006 Ukrainian companies exporting to the EU had to increase their production costs by 13.9 percent on average in order to ensure their products compatibility with EU norms. Some part of these additional expenses would not have been necessary if Ukraine had aligned its technical regulation system with that of the EU *ex ante*.

As the survey reveals the EU product quality standards are the most difficult to observe by the Ukrainian producers. They are followed by requirements regarding labelling and marking, testing and certification etc. It is worth noting that companies report that Ukraine-issued certificates are recognised by the EU authorities in most cases, however, they not always enough to export commodities. All metallurgy companies manage to

¹⁸⁰ The discussion is based on the paper "Non-tariff barriers in Ukrainian exports to the EU" by Jakubiak M. et al, CASE Report # 66, 2006.

receive Ukrainian certificates that are accepted in the EU. However, the situation is more complicated for agri-food producers: 17 percent of agricultural and 38 percent of food products exporters noted that Ukrainian certificates are not valid in the EU.

Another important issue is about cost of certification. According to companies' representatives, testing and certification procedures took about 4.2 percent of total production costs. The situation is even further aggravated if companies need to duplicate their testing efforts. About 45 percent of big and 43 percent of small Ukrainian companies had to double test their production in both Ukraine and the EU. This leads to the conclusion that introduction of harmonised conformity assessment schemes and the mutual recognition principle will lead to production cost reductions and eventually enhancement of the price competitiveness of producers.

Although implementation of the EU norms reduces costs relating to certification and trade, companies may face substantial increases in costs necessary to upgrade production processes and implement quality control schemes. However, these are short terms costs in most cases, giving substantial payoffs in the long run. According to the survey results, implementation of EU standards is the most challenging for agricultural products exporters – 63 percent of them claim that meeting the EU technical norms is much more costly than those of Ukraine.

The CGE model accounts for costs relating to observance of the EU technical norms (referred to as 'standard costs') incurred by Ukrainian producers. Under the model setup the standard costs increase the cost of production for exports and they are modelled as additional value added in sectors where trade takes place. In the simulations it is assumed that additional costs are applied to exports going to the EU only as no data on other destination countries is available. It is expected that the EU-Ukraine FTA will lead to a reduction of such costs. Under the extended FTA the standard costs are expected to fall by 50 percent and 35 percent for agri-food and industrial goods respectively relative to 100 percent of the base year (which is equivalent to a reduction by 20 percentage points relative to the post-WTO state). The limited FTA scenario assumes 40 percent and 25 percent respective cost reductions (minus 10 percentage points on top of the post-WTO state). Such assumption are based on the fact that the FTA should inevitably lead to higher harmonisation of technical norms and better access to cheaper and shorter conformity assessment procedures as well as introduction of mutual recognition principles between Ukraine and the EU in key sectors. However, it is not reasonable to expect full elimination of standard costs under the FTA agreement. The reason is that Ukraine is too slow in modernising its technical regulatory system and full harmonisation of domestic legislation and institutions is a long-run perspective beyond the period of FTA implementation. Moreover, the technical regulation system is on reform headway in the EU, and Ukraine may lack institutional capacity to keep pace with the developments in the EU. Comparable experiences in CEE countries joining the EU also show that standard cost reductions of up to 50 percent are very ambitious.

Standard costs differ across sectors. Table 3.3 of the Global Analysis Report (GAR) summarises survey findings for 37 NACE codes. Output and export changes stemming from the FTA are to a large extent driven by standard costs. While tariff changes are almost insignificant for many sectors under both the limited and extended FTA, standard

costs (along with indirect effects relating to changes in the production structure) play a key role in shaping the outcomes for specific sectors. For example, weighted average imports tariffs in the 'transport equipment' sub-sector of 'machinery & electronics' fell from 0.86 percent (post-WTO tariff) to 0 percent which is unlikely to affect the sector in any substantial mode. However, the output of the sub-sector goes up by 1.5 percent-5.3 percent (relative to the WTO) depending on FTA scenario. This may be primarily explained by the fact that producers start to economise on standard-related costs which enhances competitiveness of their production. Another example is 'textiles' experiencing a tariff reduction from 1.76 percent to 0 percent as a result of the FTA. At the same time the sector sees pronounced positive economic effects – the output goes up by 21.4 percent-48.4% relative to the post-WTO scenario. Economised standard costs seem to be the key determinant of drastic changes in the sector output.

To summarise, it is worth noting that differing technical norms are one of the key impediments for Ukrainian exports to the EU. Implementation of the EU acquis will lead to lower costs relating to observance of technical standards and assessment procedures. However, at the same time companies will have to make more investments in order to meet technical regulations and standards accepted in the EU. While additional costs are one-off investments in most cases, potential benefits are of long-term nature. The net effect of introduction of the EU-compatible technical norms and institutions is overwhelmingly positive.

15.3.2 Social impacts

The process of approximation of Ukraine's technical standards and regulations with those of the EU will undoubtedly facilitate trade and improve the investment climate by ensuring transparency, predictability and simplification of regulation. The most affected sectors in this respect are expected to be those for which harmonisation of norms will significantly reduce their current costs of compliance with the EU. These include agri-food, manufacture of textiles and wearing apparel, wood and paper products, motor vehicles, machinery and apparatus¹⁸¹. Increased exports of these sectors should serve as a driving force for the production expansion and hence for potential job creation.

In the agri-food sector the improved quality of products will have an additional positive impact – in the long run it is likely to positively affect the health levels of the Ukrainian population (e.g. higher nutritional levels). While a significant expansion of textiles and wearing apparel production will increase the labour participation rate of women, and thus increase gender equality, since predominantly women are employed in these sectors. Overall, harmonisation of technical norms should reduce health and safety hazards, thus positively affecting public health, also because regulatory approximation goes hand in hand with machinery upgrades.

¹⁸¹ Based on paper "Non-tariff barriers in Ukrainian exports to the EU" by Jakubiak M. et al, CASE Report # 66, 2006.

15.3.3 Environmental impacts

Like in many other countries Ukrainian legislation has a clear cut three level structure, where the third level ordinances, like technical standards, are commenced by governmental agencies themselves and may be relatively easy updated or changed. Ukrainian institutions like The State Committee on Standardisation, Metrology and Certification, and the State Statistics Committee used this opportunity for harmonisation of Ukrainian legislation with the EU, also for environmental issues. For example the international standard ISO 14001, which specifies a framework of control for an Environmental Management System, became national standard of Ukraine already in 1997. Such approach constitutes one the mainstream activities of The Ministry of Environmental Protection of Ukraine, where every proposed emission limit value, norm or performance is checked against EU environmental legislation.

The harmonisation process is supported *inter alia* by the National programme of adaptation of Ukrainian legislation to the legislation of European Union. The National programme determines the mechanism of achievement of conformity to the criteria of membership of the European Union. It was enacted by the Law of Ukraine of March 18, 2004 No. 1629 and includes environment in its listed first stage priorities.

Ukraine ratified 27 key environmental conventions and is the Party to 26 environmental conventions. At this time, 173 standards that represent European and international standards have been introduced in Ukraine, and this work actively goes on. Corporate practice of international companies in Ukraine helps to significantly improve environmental performance and levels of responsible care, also by actual implementation of technical standards and indicators that are sometimes not required by Ukrainian legislation like material data safety sheets (MDSS).

Without doubt, the FTA will promote this environmental harmonisation process and help to achieve better levels of pollution control, safety conditions and other key environmental objectives by applied technical standards.

15.4 Conclusions

Technical standards form a core component of the FTA as it is widely recognised – also by this study – that approximation of standards in the post WTO-accession state of Ukraine will have a much larger impact on trade and development than several small tariff reductions.

The **economic impacts** of alignment of Ukraine's norms to the EU level are multidimensional. Direct effects of approximation as a consequence of the FTA include increases in competition and reduction on companies' costs related to passing conformity assessment procedures. This would most strongly apply to the aviation industry (production of aircraft), and the sector of machinery & electronics. The indirect effects come from strong incentives – with a large EU market about to open up – for Ukrainian producers to improve production processes, implement quality control schemes and invest in new technologies. Technical standards upgrade would include quality standards and

costs of certification. For the EU a major impact is an improvement of standards of imported products, leading to higher quality products and more consumer safety.

Socially, approximation of norms will make investments easier and lead to more transparency, predictability and simplification of regulations. Most affected are those sectors for whom harmonisation will reduce current costs of compliance with the EU: agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production. The latter improvements will also have positive health effects. Increases for the textiles and wearing apparel sector will lead to increased labour participation of women, hence more gender equality, since predominantly women are employed in these sectors. Also improved standards lead to increased product safety for EU consumers and businesses.

The **environmental effects** of an FTA are generally expected to be positive as it means that Ukrainian environmental standards for various sectors and sub-sectors are going to be upgraded to EU standards. Given the fact that the EU is ahead of Ukraine in these standards, this will lead to less pollution, emission of greenhouse gases, more attention to biodiversity and an increase in environmental quality. Also implementation monitoring of environmental legislation is expected to increase.

One important overall conclusion needs to be repeated: the short run costs for Ukraine to not only pass legislation but mostly to practically implement and monitor the upgrade of standards are very high and should not be underestimated. However, if we look at the long run perspective, these one-time short run costs are easily outweighed by the significantly strong and positive long run effects of harmonisation of norms.

Table 15.1 Summarised sustainability impacts related to technical standards

Core indicator	Overall direction magnitude A	Existing conditions B	Equity C	Reversibility D	Capacity to change E
Economic					
Real income	△	-	△	Yes	L/M
Fixed capital formation	△	+	△	No	L/M
Trade	△	+	△	Yes	L/M
Social					
Employment & decent work	△	+	△	Yes	L/H
Poverty	△	-	△	Yes	L/M
Equality	△	-	△	Yes	L/M
Health	▲	-	▲	Yes/No	M/H
Education	○	0	△	No	M
Environment					
Atmosphere	△	-	▲	No	M/H
Land	△	-	▲	Yes/No	L/H
Bio-diversity	△	-	▲	Yes	L/M
Environmental quality	△	-	▲	Yes	L/H
Fresh and waste water	△	-	▲	Yes/No	M/H

* For the meaning of the signs in the Table, we refer to section 2.4.

The sustainable impact assessments show the technical standards picture, but the effects are not all positive. Various policy measures can be devised to further optimise the positive and mitigate the negative sustainable impacts. This will be done in Chapter 19.

16 Social impacts for Ukraine and EU

16.1 Sustainability impact indicators

The screening of social impacts of the FTA is done using the social sustainability impact indicators listed in Table 16.1 below.

Table 16.1 Social sustainability indicators

Social Core Indicators	Specific Indicators
a) Poverty	People living under poverty line, GINI index, regional effects
b) Health	Life expectancy, Mortality rates (maternal, child), Access to health services, sanitation, nutritional levels
c) Education	Primary, secondary and tertiary enrolment rates, literacy rates
d) Labour issues (incl. Employment and decent work)	Unemployment, Productivity and quality of work, Rights at work, Employment opportunities, wage effects, self-employment
e) Equality	Gender equality in employment and employment opportunities, gender equality in education, social protection, social dialogue

16.2 Overall social impact of the FTA for Ukraine

This Chapter summarises the overall social impacts of the FTA for Ukraine. The sector impacts and their magnitudes are discussed further in the report.

16.2.1 Crucial issues

The overall social impact of the FTA for Ukraine culminates around the following crucial issues:

- Approximation of the Ukrainian government procurement legislation with the EU acquis;
- Tariff reductions;
- Improvement of health and safety standards and production methods;
- Increasing FDI flows and investments;
- Changes of energy mix and energy production;
- Approximation of competition policy;
- Short term restructuring problems and availability of training;

16.2.2 Ukraine social impacts

The social impacts are closely linked to the economic impacts, which predict employment increases and wage increases. In general, an FTA is expected to increase employment, raise real incomes and wages and hence decrease poverty in the long run. However, the short term effects are often very different from the long term effects and due to restructuring of industries there can be negative social effects in the short run. The decreases in employment in some sectors (like agriculture) in the short run and consequent temporary worsening of poverty could be addressed.

Provisions to address health and safety standards and production methods into more employee friendly ones can increase the working conditions and workers safety and health issues significantly. Investments into new technologies and increasing FDI flows are hence important as they enable the improvements in production methods and conditions. Employment effects are mixed with an increase in employment in electricity, metallurgy, machinery & electronics and agriculture (long run) and decreases in employment in agriculture (short run), financial services, transport services and sugar and confectionary.

The increase in real income thanks to the FTA is also expected to have large social effects. It will decrease poverty and hopefully reduce the gap between the poor and the rich in Ukraine, reducing the GINI coefficient. With more buying power, people can afford to buy better quality food (increasing hence the demand for e.g. fruits even further) and educate their children better.

Approximation of government procurement procedures can have large positive social effects. Better allocation of resources in the health care sector leads to higher quality of products and a better health care system. Also the education system in Ukraine stands to gain from an efficient government procurement system as the current system has created supply and resource difficulties for schools and hence decreased quality.

The changes in the energy sector and the energy mix have potentially very large social effects concerning employment, poverty and safety and health issues. Especially in the coal sector drastic improvements are needed in worker safety and health issues. Also Redundancies in the coal, oil and gas sector can have large social effects, the more since the coal industry is well organised in terms of concentrated worker's power. Alleviation of these problems should be of importance in the negotiations.

Successful competition policy can enhance the positive social effects of the FTA even further by boosting competition and production, which leads to improvements in employment, poverty and higher wages.

16.3 Overall social impact of the FTA for the EU

This chapter summarises potential crucial issues and the key social impacts to be taken into account for the EU while negotiating the Ukraine-EU FTA.

16.3.1 Crucial issues

In the long run the social effects of the FTA for the EU are expected to be very small if not negligible. Yet, the following few issues should be managed to avoid social problems in the EU area:

- Regional negative employment and poverty effects due to the FTA;
- Handling of the possible migration flows from Ukraine;
- Approximation of Ukrainian food safety standards especially in meat production

16.3.2 EU social impacts

The overall magnitude of social impacts for the EU are assessed to be modest or negligible for nearly every indicator. However, there are still a few issues that should be addressed.

The FTA – though affecting the overall EU statistics very little – may have disproportionately large regional effects in sectors that are very clustered. For example, in the metallurgy sector in southern Poland or the motor vehicles cluster in southern Germany, Czech Republic and Slovakia negative employment effects could be the result of the FTA.

The possible migration flows from Ukraine to the EU need to be handled properly in order to avoid social problems. Work permit issues are of particular importance to avoid illegal immigration and social problems related to immigrants, which many European countries have at the moment.

The approximation of food safety standards in Ukraine is also important to guarantee food safety for European consumers with increasing food imports from Ukraine to the EU. Most likely the EU stance during the FTA negotiations is that first standards must be approximated before agricultural products (notably meat and animal fats) are allowed to be exported to the EU.

Otherwise, there are also many positive social effects stemming from an FTA for the EU. The employment in the sugar and wine sectors is expected to go up slightly thanks to increasing production and exports and so are financial service and transport service provision from the EU to Ukraine. But most importantly for the European consumers are the cheaper prices for imported goods because of the FTA, like cheaper food products, lead to higher disposable incomes.

17 Environmental impacts for Ukraine and EU

17.1 Sustainability impact indicators

The screening of environmental impacts of the FTA is done using the sustainability impact indicators listed in the Global Analysis Report (page 85) in line with the TSIA Handbook. The expected significance of environmental impacts is based on the economic and social significance of a sector both in the EU and Ukraine. The magnitude of impact has been related to the projected changes in production and trade for the sector assessed. The magnitude of the overall impact of a horizontal issue is defined by the ratio of GDPs. The specific indicators for agriculture differ from indicators of other sectors. That is presented in Table 17.1.

Table 17.1 Environmental specific indicators

Environmental Core Indicators	Specific Indicators	Agricultural Indicators
a) Atmosphere	CO2 emissions, air pollution and ozone depletion	CO2 emissions from animal farming and biodegradation of agricultural waste, NH3 emissions
b) Land	Land use, use of raw materials and natural resources, management of contaminated sites	Total utilized agricultural area, soil quality (fertilizers in soil), reduction of erosion, organic farming area
c) Biodiversity	Acid rain, heavy metal contamination, ecosystem damage	Size of protected natural areas, number of endangered species
d) Environmental quality	Waste management, use of energy, energy efficiency, noise pollution	Agricultural hazardous waste, use of renewable energy in agriculture
e) Fresh and waste water	Quantity of water use, ground water quality, quantity of waste water, cleaning of waste water	Nutrients (N and P) going into waterways, irrigation water quantity, number of rural waste water treatment (WWT) plants

Note. CO2 emissions include all greenhouse gas emissions recalculated as CO2 emissions.

17.2 Overall environmental impact of the FTA for Ukraine

This chapter summarises the overall environmental impacts of the FTA for Ukraine. The sector impacts and their magnitudes are discussed further in the report.

17.2.1 Crucial issues

The overall environmental impact of the FTA for Ukraine culminates around the following crucial issues:

- Harmonisation of legislation to meet the EU Environmental Acquis;
- Reducing the environmental damage at hot spots;
- Decoupling pollution and economic growth;
- Improving the BEI and FDI inflows;
- Increasing energy efficiency;
- Introducing best available techniques in metallurgy and energy sectors; and
- Compensating increased greenhouse gas emissions with Joint Implementation (JI) and emission trading with the EU partners

17.2.2 Ukraine environmental impacts

It is expected that the harmonisation and regulatory approximation related to environment and adoption of new production technologies will provide the necessary basis for stopping the rapid depreciation of environmental assets and overcoming the environmental damage of the Soviet period. Without any changes, an FTA could just make many environmental problems worse. Implementation of the main provisions of the Environmental acquis should prevent shifting of dirty industries and stop negative environmental trends for:

- Consumption of natural resources, including water and land use;
- Pollution of ambient air, water and soil, disposal of waste;
- Destruction of habitats, wild life and natural landscapes;
- Emergency situations;
- State of public health.

The FTA negotiations aim to boost the process of regulatory environmental approximation to EU standards, so in general the Ukrainian environment may significantly benefit from the FTA, especially in industrial areas. Currently there are numerous environmental hot spots, mainly in Eastern Ukraine, but also in abandoned production locations in its Western part. Many of them are on the verge of becoming real environmental disasters.

The share of the fuel and power sector in Ukrainian industry is twice as much as in France, Germany or Italy and the share of metallurgy is almost three times more. “Dirty” industries prevail in the national economy as they have more than forty percent of key assets and are responsible for about one third of overall industrial output. The increase in the production of these industries –as estimated e.g. for metallurgy- can lead to further environmental problems.

The approximation of the Ukrainian environmental legislation and government procurement system with the EU acquis, should prevent the tendency to go back to the catastrophic pollution levels of the late Soviet period and to ensure steady growth of environmental expenditures. These goals are especially important now, as since 1999, the recovery of the Ukrainian economy has started, and environmental performance is one of the main indicators when assessing competitiveness and sustainability of businesses. Approximation of government procurement system could also increase funds for environmental projects with better budget management.

The major environmental impacts are connected with ferrous metallurgy and the energy sector. They are listed as priority sectors in the practical implementation of the Kyoto mechanisms and provisions of the IPPC directive. Implementation of the European concept of best available techniques for main industrial sectors can improve environmental regulation and environmental performance of main polluters.

The FTA can also help to develop environmentally clean and sustainable sectors as tourism, IT and communication services. At the same time the overall development of the Ukrainian economy and expected implementation of big infrastructure and transport service projects will be connected with new land use problems and may lead to moderate increases of green house gas emissions and some air pollutants.

17.3 Overall environmental impact of the FTA for the EU

This chapter summarises potential crucial issues and the key environmental impacts to be taken into account for the EU while negotiating the Ukraine-EU FTA.

17.3.1 Crucial issues

In the long run the environmental success of the FTA for the EU will depend on how the following crucial issues are managed:

- Managing greenhouse gas emissions;
- Avoiding trade distorting environmental aid;
- Harmonisation of technical standards; and
- Harmonisation of procurement and competition policy.

17.3.2 EU environmental impacts

This chapter summarises the key environmental issues and potential impacts to be taken into account while negotiating the Ukraine-EU FTA. The overall magnitude of environmental impact for the EU is assessed to be modest or negligible depending on the indicator. This difference in the significance between the EU and Ukraine is mainly related to the fact that the current GDP of the EU exceeds that of Ukraine by 100 times. Another defining factor is the difference in the level of environmental performance; Ukraine is lagging far behind the EU in energy and resource use efficiency, waste management, pollution abatement and public health indicators.

Managing greenhouse gas emissions

The amount of CO₂ emissions resulting from the FTA will increase in the EU. Therefore the FTA would benefit from promoting greenhouse gas emission reduction projects against increased access to the EU market (e.g. metallurgy, agriculture and machinery). This type of interaction would not be trade distorting, and would be beneficial for all parties involved. It is assumed that the other EU energy sector issues, like security of energy supply, related to the EU- Ukraine FTA are addressed under the ongoing energy dialogue.

Avoiding trade distorting environmental aid

Environmental projects have traditionally been mainly supported by international grants in Ukraine. The FTA needs to regulate the rules how and where state aid and international grant funding should channelled in the future. Especially metallurgy, agriculture and energy sector subsidies require special attention. In terms of environmental impacts the governing policy rule should be that all ex-ante and ex-post evaluations of state aid would include agreed scopes of environmental assessment.

Harmonisation of technical standards

Removal of barriers of trade is the fastest way to economic growth. Technical standards constitute one of the key issues, and technical specifications on environmental performance have to be harmonised with international and EU standards with a focus on performance rather than detailed design specifications. Strict health and safety regulations are needed especially for livestock, food and feed products.

Harmonisation of procurement and competition policy

Environmental impact assessment (EIA) for entities operating in the utilities sector, being state or private enterprises, should not be excluded from the procurement procedures, and prior to accepting exceptions from procurement procedures environmental health and safety safeguards need to be cleared. The competition policy aims at ensuring that all companies operate on a level-playing field and it ascertains that government interventions do not interfere with the smooth functioning of the internal market or harm the competitiveness of companies. However, increased competition can affect negatively especially the greenhouse gas emissions, atmospheric pollution, water use and waste water indicators. Environmental standards applied to industrial sites with reference to the environmental *acquis* could alleviate the negative effects significantly.

18 Assessment of impacts

In this Chapter we refrain from making policy recommendations (mitigating or enhancing) but focus on the expected impacts, economically, socially and environmentally. Policy recommendations will be made in Chapter 19.

18.1 Economic sustainability impacts of the FTA

In general, the **(initial) economic impacts** of the FTA are estimated to be overwhelmingly positive for the extended FTA and slightly less positive for the more limited FTA. This happens because in the extended FTA scenario we assume the EU and Ukraine cut tariffs deepest and achieve the highest levels of regulatory approximation, leading to lower standard costs, border costs and costs for trade in services and FDI. Also in the long run, the economic impacts are more positive than in the short run. The reason for this is that capital is assumed mobile only in the long run, allowing capital to find the highest rate of return across the Ukrainian economy only in the long run, causing the marginal product of labour to rise. This analysis is corroborated in Table 1.2, showing that the welfare gains are largest in the long run extended FTA with 5.3% welfare gains for the Ukrainian economy.

Across sectors and horizontal issues, we identify the main expected economic impacts by looking at the sustainability impact indicators presented in **Error! Reference source not found..**

18.1.1 Real income

GDP per capita

Overall GDP per capita is expected to go up as a consequence of the FTA – more in the extended FTA than in the limited one and more in the long run than in the short run. Assumed improvements in competition policy are expected to lead to increases in production and GDP per capita as productivity goes up. For the cereals sector, the FTA will lead to growth if the tariff rate quota (TRQ) and quotation of exports are sufficiently reduced. Ukrainian meat and animal fat may experience growth if SPS measures are sufficiently implemented to approximate the EU food and safety standards, albeit this is expected to be a long run development. The metallurgy sector is expected to show significant increases in GDP per capita from the FTA. Distribution services and communication services will benefit but transport and financial services will show negative real income effects. The latter is expected due to restructuring of the sectors (e.g. banking), consolidations and existence of scale economies. A well-functioning

government procurement system can lead to growth in specific sectors where it enhances efficient investments (e.g. infrastructure, transport, hospitals, education). The assumption of technical standards approximation is expected to have positive growth effects in the agri-food sector, machinery & electronics, manufacturing of textiles and wearing apparel, motor vehicles and agriculture due to lower costs of compliance. Short-term approximation costs should not be underestimated though.

Net value added

Overall, the net value added, will go up as a consequence of the FTA. Especially in meat and animal fat (agriculture sub sector) if SPS is sufficiently harmonised, metallurgy, and machinery & electronics, if technical standards and sufficiently harmonised.

Improvements in the distribution sector may lead to secondary positive net value added effects in the retail & wholesale sectors. Also improvements in government procurement and technical standards potentially lead to higher net value added because of regulatory cost reductions, which make sectors more competitive, allow more firms to tender and increase value added. The net value added in EU industries is also likely to go up because of (limited) production reallocation to Ukraine.

Consumer effects

Consumers are expected to benefit significantly from the FTA, mostly because of cheaper prices for agricultural and manufacturing products and services. If sugar tariffs are dropped consumers pay less for sugar, but also the confectionary industry will benefit from cheaper prices for the major input in their production processes. Modelled reductions in tariffs in metallurgy and machinery & electronics lead to lower prices for intermediate goods, having a positive impact for price levels of consumer goods all across the Ukrainian economic sectors. In agriculture, due to the FTA, food security may increase if SPS standards are being implemented which can have a positive effect on people's health and even life expectancy. For industrial goods, if technical barriers to trade are reduced, more efficient and cleaner production may be the consequence, and more attention for workers' safety and health. The expected energy effects of the FTA are not clear. There will be more pressure for environmentally sound production of energy, which is positive for consumer health, but due to external effects, coal production with current production technologies may continue and even increase (at least in the short run) which is not a positive effect from a sustainable point of view. Lower prices for transport services due to the break up of monopolies in public transport and infrastructure may lead to better quality of transport services and cheaper prices. The same goes for financial services where clear standards, rules and regulations improve consumer confidence in the sector. Government procurement is expected to lead to public investments that are much more effective and yield higher returns with tax money, having positive effects in areas like infrastructure, construction, financial services, and communication services. Finally lower prices can spill over into the Ukrainian economy from technical standards approximation to EU legislation. EU consumers will also benefit due to increased trade with Ukraine, mostly in agricultural products and steel, which will have a downward effect on prices for consumer products and is expected to lead to more choice.

Effect on prices

Generally – as explained under consumer effects – the FTA scenario predicts lower prices in the Ukrainian and EU economies due to the use of scale economies. In the meat and

animal fat sub-sector, prices go down depending on the level of approximation of Ukrainian production standards to EU food safety rules. For sugar the drops in prices are expected to be significant and also prices for beer and wine will go down because of increased international competition. When metallurgy and machinery prices drop this will have a positive impact on downstream sectors that need steel and machines for production, also in the EU. The effects on energy prices are not clear because of other factors, outside the FTA, that have a significant impact. Energy security for Ukraine and the EU can increase because of the FTA if addressed properly in the Enhanced Agreement. Also in the services sector, international competition can lead to lower prices. If technical standards are harmonised with EU legislation, especially agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production can experience lower costs of compliance and customs controls. This is expected to lead to more trade between the EU and Ukraine and lower prices.

Variety of goods and services

With respect to agricultural products the number of varieties of products is expected to increase (e.g. meat offer, wine, beer, fruits and vegetables) and the same applies to the confectionary industry with sugar as its main raw material input. For the manufacturing sectors metallurgy and machinery & electronics variety in intermediate products may increase because of the integration of the Ukrainian economy into the worldwide (and especially EU) steel and machinery production networks. For consumers, liberalisation of the electronics sector is expected to lead to more choice in terms of electrical appliances and electronic equipment. The positive effect of the distribution services on retail and wholesale will also increase varieties of products. We expect a strongly increased offer of service products from the financial sector – both from foreign and domestic suppliers – to the Ukrainian consumers, multinationals and SMEs.

18.1.2 Fixed capital formation

Gross fixed capital formation

GFCF formation – the total value of additions to fixed assets by resident producer enterprises – is most commonly applied to tangible assets like plants & machinery equipment, vehicles, land-improvements and building (excluding their depreciation). But also intellectual property and discoveries of mineral deposits are included. The FTA is expected to have an impact on the GFCF in the cereals sub-sector through investments in upgrading the production methods, including the machine parks at farms. Most investments in the long run are expected in the production upgrading of the metallurgy and machinery sectors. There are large investment opportunities for EU capital in these sectors. Also in the major restructuring of the energy sector that is likely to follow an extended FTA, including energy production with open hearth furnaces, outdated coal plants, unsafe nuclear power plants, etc. large investments will occur – and are desperately needed. In the transport sector, transport equipment is expected to be upgraded to meet EU environmental standards (Euro-5 level) as part of the FTA. This also is in line with the reduction of the level of concentration in transport services. An improved competition policy – where state aid and anti-trust policies are reduced and enforced respectively – leads to more gross fixed capital formation and so do an

improved government procurement system and harmonisation in technical standards. Regarding the latter, the process of regulatory approximation of technical standards can make sectors like agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production much more attractive to investmentss from the EU because these sectors will get access to EU markets over time.

Private and public capital formation

In the beer and wine as well as cereals sub-sectors of agriculture, we expect public and private capital formation to have positive impacts. Also private capital formation is encouraged and has a strong potential in metallurgy. The latter may improve environmental effects – i.e. cleaner production – in this sector in the longer run.

Foreign Direct Investment (FDI)

FDI is of crucial importance for the positive impacts of the FTA because it can give a boost to sectors in Ukraine that is not possible with the (limited) amounts of domestic money and with FDI come modern standards and new (read: also cleaner) production technologies. FDI can support the wine and beer industries, help in SPS approximation to EU levels and contribute to technology upgrades and more efficient and cleaner production methods using less energy in metallurgy, chemicals, and machinery & electronics. FDI in the energy sector can be used for new and ‘sustainable’ projects and upgrades of energy production, including increasing safety standards at work. The FTA is expected to increase FDI in the services sector because of its liberalisation, allowing for foreign investments, take-overs, stakeholdership, etc. Our gravity estimations show that the larger the increase in Business Climate Index (BEI), the larger the expected FDI inflows in Ukraine will be. The Ukrainian financial services sector can potentially integrate with the EU (and other) financial markets. If the broad FTA includes provisions for improving government procurement procedures, they may lead to more foreign bidders in the process. Increases in technical standards lead to more foreign investments into those sectors that harmonise enough to EU standards to get export approvals into the EU markets. The need for FDI in Ukraine, provides EU firms with large investment opportunities in the years to come.

18.1.3 Trade

Balance of trade in goods and services

Overall the trade balance for Ukraine will improve and for the EU it will worsen in relative terms. In absolute terms also EU exports to Ukraine will rise significantly. However, due to the fact that the trade balance of the EU is over 100 times larger than Ukrainian trade, the effects for the EU are insignificant. Improvements in the trade balance for Ukraine are expected in cereals, meat and animal fats (depending on the depth of the SPS agreement if it is included in the FTA (and EA)), machinery & electronics, metallurgy and distribution services, while an improvement for EU industries is expected in beer and wine, sugar, transport services, and financial services – these are the sectors where imports are expected to increase faster than exports. Improvements in domestic competition policy may enhance the competitive force of Ukrainian industries and will lead to a further improvement of the trade balance.

Volume of trade in goods and services

The FTA may lead to large increases in the volume of trade for cereals (if TRQs are sufficiently reduced), sugar, steel products, machinery & electronics. Growth in distribution services is limited and initial growth rates in trade in transport and financial services are negative. Overall, FDI inflows, competition policy, reductions in customs procedures, clearer and more transparent government procurement procedures and harmonisation of technical standards are horizontal issues that we expect to lead to significant trade increases for Ukraine and increases for the EU also because of more understanding and mutual recognition of each others product quality.

Terms of trade (ToT)

The terms of trade apply to the Ukrainian economy as a whole and it is hard to use the sum of some sector impacts to determine the ToT impacts of the FTA. Given import prices, the terms of trade for sugar and transport services are expected to worsen, while the terms of trade for metallurgy and machinery & electronics is improving. An overall effect, however, is impossible to give due to the fact we need detailed information regarding all sectors in Ukraine.

18.2 Social sustainability impacts of the FTA

Overall, **social impacts** are closely linked to the economic impacts, which imply employment increases for both Ukraine and the EU – although the CGE outcomes may present an upper limit to this effect – and wage increases. Employment increases are lower initially and more marked in the long run, while the nature of employment – required skills and skill levels demand – may be subject to change. For the EU in relative terms the employment increases are very small, albeit that in absolute terms they are large. Wage increases that are positive for both the EU and Ukraine, next to employment effects, are important in the light of differences in regional income distribution in Ukraine. Increased employment opportunities and wages should lead to lower levels of poverty and may have a mitigating effect on labour migration. Again, the predicted effects are much stronger in the long run in an extended FTA than in the short-run and the transition from the short to the long run may bring with it losses to specific groups or regions.

The FTA is also expected to encourage an overall improvement of working conditions, health & safety standards (via regulatory approximation) and quality of work along the lines of the decent work indicators as identified by the EU and ILO. This effect will be both direct, due to the need to adjust to and comply with EU standards and more indirect, through the fact that the FTA will further encourage and speed up ongoing restructuring and modernisation in certain sectors which still use out-dated (and often more hazardous) technologies and production methods.

Finally, growth potential in some sectors, may spur investments, entrepreneurial activities and self-employment, which all have positive potential impacts on income and poverty levels.

In the longer run increased employment opportunity, but particularly increases in wages and the quality of work, may reduce out-migration of labour and particularly the worst forms of this migration: illegal migration and ‘slave’ trade of women into prostitution. As such it should improve the position of some of the weakest groups (low-skilled / uneducated and poor persons and particularly women) in Ukrainian society.

18.2.1 Poverty

People living below the poverty line

Most poverty in Ukraine is concentrated in the rural agricultural areas. The model outcomes for the FTA for the agricultural sector predict both employment and wage growth, which will be more pronounced in the long run. This implies poverty can be reduced, both in depth and in breadth, also through flanking policy measures as will be further discussed in Chapter 19 of this study. The positive effects would be most noticeable in the cereals, meat and animal fats and fruits sectors. Harmonisation of technical standards can further enhance agricultural performance leading to further poverty reductions. Also increasing employment opportunities in metallurgy, machinery & electronics, the electricity and distribution services sectors lead increased job opportunities and income, hence to lower poverty levels. However, especially in the short run, large scale restructuring of the coal industry – a possible FTA outcome – would have a negative impact on poverty levels in areas where this industry is concentrated, because it raises unemployment in a sector with workers that are not easily re-allocated to other industries or sectors.

GINI index

The GINI index is a measure for income equality in a country: the higher the GINI coefficient, the greater the difference between rich and poor. Since the lowest incomes are found in the rural areas and agricultural sector, predicted impacts of an FTA in terms of improvement of employment and wage levels in this sector could contribute an improvement of the GINI coefficient – depending on the overall size of these effects. But improvement of the GINI coefficient hinges most crucially on issues that are not necessarily directly related to the FTA, such as the tax and education systems, ownership structures and factor returns. An FTA would lead to increased openness, competition and approximation of standards and regulations, in turn further encouraging restructuring and modernisation in certain sectors and the Ukrainian economy at large. As such it may indirectly affect these systems and structures, thus reducing income disparities. There are no effects foreseen of the EU Ukraine FTA on the EU GINI index.

Regional effects

Through various mechanisms, the FTA is expected to have regional effects in Ukraine. Regional effects are important in the country because of political sensitivities and because of regional development and poverty reduction programmes. Agricultural productivity, growth – albeit not so large in the short run – tends to positively affect the (mostly Western) rural agricultural countryside. If FDI leads to improved productivity in wine production the wine producing areas in the south of Ukraine benefit. If the FTA leads to increased importance of metallurgy and machinery, that are pre-dominantly located in the (south)east of Ukraine, this should lead to employment and income growth in these

regions. Possible closure of the coal mines for environmental reasons and because of a change in the energy mix resulting from an FTA will have large negative social and economic impacts in Eastern Ukraine where most miners live and work. The development of distribution services has a regional effect in that it will benefit the industrial areas in Ukraine more than the agricultural countryside. Development in communication services is expected to be stronger for cities than for the countryside unless accompanied by flanking measures. Also competition policy may lead to regional effects due to reductions in state aid for specific sectors and enforcement of antitrust policies in others (e.g. coal subsidies, metallurgy subsidies, agricultural subsidies, transport service monopolies). Also for the EU there may be regional effects, with the bordering countries to Ukraine being affected more strongly than those EU member states that are located further away. For example, in some 'new' EU member states, agricultural production may experience some pressure from the FTA, while the transport sectors are expected to benefit.

18.2.2 Health

Life expectancy

Life expectancy increases when living conditions in general improve. One effect of the regulatory approximation of SPS standards to comply with EU food safety regulations and harmonisation of technical standards for industrial products to EU levels is that food quality goes up. This means that product safety and health aspects in Ukraine and the EU improve. Both these effects lead to an increase in life expectancy. Also envisaged improvements in working conditions, worker safety, and quality of work in manufacturing and agriculture will lead to higher life expectancy. On the other hand, negative environmental impacts like increased CO₂ and SO₂ emissions, more chemicals in the air, and increased water and waste pollution lead to a less healthy environment and reductions in life expectancy. In general, if poverty decreases and disposable incomes increase, people have more money and will live healthier lives, leading to higher life expectancies. For coal miners, an FTA that improves production technologies, working conditions and worker safety can have a significantly positive impact on their life expectancies. Government procurement improvements resulting from the FTA can have a positive effect on life expectancy in the long run through increase procurement quality of facilities like roads, infrastructure, hospitals, better advice and policies, etc. For the EU we do not identify any significant impact.

Mortality rates (maternal, child)

Studies show that higher income levels (in this case for Ukraine because of the FTA) can lead to purchase of better and more diverse food products and – based on research of the relation between income and lifestyle – a healthier lifestyle. In many sectors, worker safety and working conditions will be improved because of the FTA. Upgrading of production methodologies as well as vehicles and planes, investments in road, rail and airport infrastructure lead to more road, rail and air safety. A negative impact stems from the mixed environmental aspects related to air pollution, greenhouse gas emissions, waste increases, and chemicals in the air. Maternal and child health is likely to improve due to increasing income levels and more transparent government procurement for maternity and child hospitals. Although labour migration of health professionals (especially obstetricians and paediatricians) may have negative effects, it must be noted that such

migration is still limited as long as Ukrainian diplomas and certificates are not yet recognised in the EU.

Ageing of population

Although the ongoing process of an ageing population due to low birth rates and high mortality rates represents an autonomous demographic process, an FTA with the EU may indirectly affect this process. The extent of these effects should not be overestimated though. On the positive side, improved public health (systems) may decrease the mortality rate, while on the negative side labour migration may reduce further the share of the working population and the availability of health professionals.

Access to health services

We identified no direct links between the FTA and access to health services. However, indirectly, higher incomes make it easier to access health services and improved government procurement procedures improve the quality of constructed hospitals and other health-related buildings. Services liberalisation, including mode 4, can lead to migration of surgeons, doctors and other health specialists.

Sanitation

There is an expected indirect positive effect of government procurement schemes on the quality and availability of sanitation. Also, if the FTA leads to poverty reductions and more unlocking of the Ukrainian countryside, sanitational quality is likely to improve. For the EU we do not identify any effects.

Nutritional levels

Through improved Ukrainian SPS standards as a consequence of the FTA effects on approximation of the EU food safety standards, meat, fruits, cereals enjoy higher quality and increased nutritional levels. Technical agri-food standards improvements have the same effect.

18.2.3 Education

Primary, secondary and tertiary enrolment rates

Reductions in poverty, and increases in income will likely have a positive effect on enrolment rates, as less children will be required to supplement household income at a young age. This is a medium to long run effect, which is also strongly influenced by Ukraine's overall education policy (e.g. importance of the MDGs). However, in the short run, trade liberalisation leads to increased levels of competition in most sectors of the Ukrainian economy, which will lead to both intra- and inter-sector restructuring. Thus on the one hand this implies skills and skill levels required in specific sectors may change, while on the other hand while labour will have to transfer from losing to gaining sectors. Both of these effects place an adjustment burden on the Ukrainian education system, not just in terms of the quality of existing basic and higher education systems, but also in terms of the need for adult education, vocational training, on the job training and retraining, etc. For EU educational policy and educational institutions there are cooperation opportunities (e.g. joint programmes) that can serve mutual interests.

Literacy rates

Reductions in poverty, increases in employment and consequent increases in enrolment rates will have long term positive effects on literacy rates. However, no immediate effects of the FTA on literacy rates have been identified, neither for Ukraine nor for the EU.

18.2.4 Labour issues (including employment and decent work)

Employment and unemployment

Unemployment overall is expected to go down. However, this is not the case for all sectors, while in Ukraine the unemployment rate is only part of the story since a large share of the Ukrainian population does not participate in the labour market and is thus not registered as unemployed. The model outcomes need to be interpreted with some caution, especially for certain sectors. Thus, although the model predicts strong employment gains for the Ukraine, these effects may be more moderate in reality, particularly in the short run. On the one hand the current labour participation rate is low, implying that increased job opportunities may result in more people 'returning' to the official labour market and official unemployment figures remaining at the same level or even increasing. On the other hand, in many companies more people are employed than strictly necessary. Production, sales and export growth may therefore not immediately translate into new jobs, but rather lead to increased productivity of the existing workforce.

In addition, in certain sectors the FTA will not substantially change the direction of more structural and ongoing transition and modernisation processes. Thus, for instance, in the long run the number of jobs in the agricultural sector is expected to decrease, as the sector is modernised and becomes more efficient and as employment shifts from agriculture to manufacturing and services.

At the sectoral and sub-sectoral levels effects will likely vary. For agriculture the employment effects would be negative in the short run and positive in the long run, while the nature of the jobs may change over time (more technology intensive). Employment in the meat and animal fat sub-sector would go up if SPS standards are approximated to EU levels. Also for metallurgy and machinery & electronics we expect employment to increase. The energy sector shows mixed results with employment increases for the electricity sub-sector but decreases for coal, gas and oil. In the energy sector deep restructuring is needed so in the immediate aftermath of the FTA implementation employment is expected to go down. Particularly the coal industry is expected to experience employment declines due (in part) to the FTA. Unemployment in transport and financial services sector are expected to go up but only to a limited extent. Employment changes in communication services are negligible and positive in distribution services. Increased competition policy should lead to lower margins initially and increased unemployment, especially in non-competitive (sub)sectors (e.g. transport, and meat and animal fat production). In the long run competition is good for employment as it keeps wage increases within limits and raises productivity. Technical standards are expected to have positive effects (if harmonised) for employment in agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production because approximation of standards may lead to the opening up of new, large markets and because of lower compliance costs to higher standards.

For the EU we expect very small and at most regional effects. Based on the modelling results, in-depth analyses and engagement with civil society, we see the main benefits for the financial sector, transport sector and sugar sector if the extended FTA scenario is analysed. However, also very small positive effects occur in leather products, beverages and tobacco sectors in the EU. There are negligible negative effects in the wearing apparel, vegetable oils & fats and oil & petroleum production sectors as the FTA will cause a small shift towards Ukraine.

Employment opportunities

As becomes clear from the above, the effect of the FTA on employment opportunities would be on the one hand more of the same type of jobs and on the other hand new and/or different jobs. Examples of the first effect would be the metallurgy sector, and machinery & electronics sector, where more similar jobs are expected to be created due to increased outputs of those sectors. At the same time, in the coal industry and in some service sectors, employment opportunities will likely decrease. Examples of the second type of effect include agriculture, financial and transport services. The nature of employment in agriculture will change due to mechanisation. This will have implications for the skills required for these jobs, for instance the use of new tractors and machines (e.g. hydraulics, electronics), IT skills for administrative and management purposes, knowledge of dosing, use and registration of pesticides and fertilisers etc. and the acquisition of certain certificates (e.g. EUREP-GAP). Government procurement and competition policy is expected to generate further employment opportunities in the long run.

For the EU there are employment opportunities in the sugar and confectionary industry as well as in beverages (beer & wine mostly) and tobacco sectors. In the service sectors, most employment opportunities are created in the financial services sector.

Wage effects

In financial services and transport services wages are expected to decrease and so are wages in the coal industry. The effects on agricultural wages are expected to be mixed, with positive effects for the meat and animal fats sub-sector, if SPS standards are harmonised. Competition policy will lead to less protection and a downward pressure on wages initially. In the longer run, competition policy will make Ukrainian firms more competitive internationally and with rises in productivity allow for rises in wages. As explained in the above, increased overall wage levels should lead to poverty reduction and improvement in health and education levels.

In the EU overall, the wages will go up also, albeit with a very small amount.

Self-employment

In service and manufacturing sectors with a high minimum efficient scale (MES), such as metallurgy, chemicals and machinery, the possibilities for self-employment are low due to minimum investment levels needed to start up a successful business. However in agriculture, and various services sectors (communication, financial) these possibilities exist. The FTA will have a positive impact on self-employment in these sectors if at the same time, red tape and bureaucracy around setting up new businesses is significantly

reduced. Since cutting these costs is part of the border and standard costs reductions in the FTA, this is an expected impact for Ukraine.

Productivity

Overall, productivity is expected to increase for various reasons. For Ukraine, first, improved competition because of the FTA will force firms and industries to become more efficient in order to survive. Second, increases in investments in (new) production technologies and updated and cleaner machinery, R&D as a consequence of the FTA, would lead to higher levels of productivity. Finally, improved government procurement procedures will lead to more competition and pressure to perform on the part of the tenderers. These effects would be particularly noticeable in certain (sub) sectors. With respect to agriculture (livestock), gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods exist according to sector experts that were interviewed. These inefficiencies will alter potentially because of the FTA. Metallurgy and machinery are expected to increase productivity over time as investments come in. In turn, higher productivity also allows for payment of higher wages in various sectors of the Ukrainian economy. The FTA envisages the energy sector to become more productive by aiming for the use of more gas and for improving energy efficiency in the production of electricity. For the EU, EU capital will be an engine to increase productivity and therefore capital returns.

The enforcement of competition policy as part of an EU-Ukraine FTA is expected to have rather ambiguous social impacts. The key issues to be negotiated within future FTA - state aid, anti-trust, and state monopolies policies – should increase competition in the most monopolised sectors and in general improve the overall competitiveness of Ukrainian enterprises. This would lead to a downward pressure on goods and service prices. On the other hand, increased competition also creates pressures to reduce costs and raise labour productivity, thus leading to potential employment reductions. These effects are expected to be most pronounced in sectors with highly monopolistic structure and state ownership dominance, such as transport and telecommunications, energy and coal industries. These would all be long term effects.

Quality of work

The FTA clearly puts sustainable development as a top priority in the negotiations. We assumed in the modelling a reduction in differences in technical standards, which should be achieved through adoption of EU technical standards. Not automatically, but in addition to the existing FTA, policy measures could be developed to include environmental, health and safety aspects with regard to the work place and methods. Indirectly, restructuring and modernisation should lead to the adoption of safer and cleaner technologies and working conditions in sectors such as metallurgy, machinery & electronics, transport and the coal industry. In the energy sector, improving safety standards and their monitoring and implementation related to nuclear energy is envisaged. Likewise, inflows of FDI would lead to upgrading of machine parks, introduction of cleaner production methods, increased worker safety, and increased health standards at the workplace, e.g. through corporate social responsibility (CSR) schemes on the part of the foreign investors. For the EU there may be some very small and regional competitive pressures but overall the EU serves as an example for quality of work standards for the Ukraine.

Rights at work and social protection

The FTA impact on rights at work and social protection would taken place both through the adoption of standards and FDI inflows (see above remark about CSR). However, most of the effects will likely be indirect and require specific policy measures to take place that will be assessed in Chapter 19. In principle, the EU approach to the FTA is to grant Ukrainian workers reciprocal rights that EU workers currently enjoy in Ukraine and looking ahead to Chapter 19, social protection will likely be dealt with under the enhanced agreement.

Social dialogue

There are no identified direct effects of the FTA on social dialogue. However, overall, the FTA will lead to restructuring of the Ukrainian economy and gains and losses across sectors and high-skilled and low-skilled workers. This will likely lead to a more active involvement of social partners to protect and assert worker's rights. Such active involvement would of course depend on their ability to strengthen their capacities and the willingness of the Ukrainian authorities to enter into a dialogue.

18.2.5 Equality

Gender equality in employment and employment opportunities

As simulated in the CGE analysis, the main FTA effect on gender equality would occur due to the expected substantial employment increases in the textiles and wearing apparel sectors (if technical standard procedures are cleared). Given the fact many women work in these sectors this would have a positive impact on gender equality in terms of labour participation rates. However, wages in this sector are usually among the lowest and labour circumstances remain an issue of international debate as the sector often employs young women known to be cheap, docile and often unorganised. The effect in terms of the income gap may thus be limited or even negative, while labour rights for women may also come under pressure.

Gender equality in education

There are no identified effects of the FTA on gender equality in education.

18.3 Environmental sustainability impact effects

With respect to **environmental impacts**, increased production, growth and employment have potentially negative effects on the environment, air quality, biodiversity, land use, water use and overall environmental quality.¹⁸² The FTA however, could include provisions for upgrading environmental standards and include the environment as a sustainable factor for long-term development at an early stage – This will be done in Chapter 19. Also some issues need to be addressed at a more disaggregated level in order to show clear effects.

¹⁸² Ukraine needs to take care not to go back to the pollution levels of the final years of the Soviet period.

18.3.1 Atmosphere

CO2 emissions

Growth in the metallurgy, machinery, energy and transportation sectors will likely lead to negative environmental impacts with respect to CO2 emissions (energy in the short-run) as well as to greenhouse gas emissions in general. For machinery & electronics, there is evidence of increased (though for the EU negligible) SO2 and NOx emissions. Production upgrading and the use of ‘cleaner’ technologies that are impacts expected to occur because of the FTA can mitigate these effects somewhat. If energy restructuring leads to an intensified use of coal as the main source of energy, this may have very negative environmental impacts due to the pollution of the current coal mining process itself and because of the use of coal for electricity generation (Ukrainian coal contains a high level of polluting sulphur).¹⁸³ A smaller transport sector, combined with expected standard upgrading (e.g. car emissions from Euro-2 to Euro-5 level) is expected to lead to lower CO2 emissions. Competition policy is thought to have mixed effects on CO2 emissions: initially environmental concerns may be neglected due to competitive pressures, but in the long run, environmental aspects will be priced into the market. Government procurement system improvements can have significant positive impacts on CO2 emission reductions. A first example of this development could be the ‘green scheme’ of the Kyoto protocol. Ukraine signed the Kyoto protocol but remains below the boundary of emission rights, increasing potential for higher production or re-allocation of production from somewhere else.

For the EU the FTA has potential impacts of the CO2 emissions in that the FTA may prompt re-location of the EU industries to Ukraine that may reduce CO2 emissions in the EU. Also, in the short run, when polluting industries grow, CO2 emission levels in the eastern part of the EU may increase and only in the longer run decrease again.

Air quality

Revival of the agricultural industry and productivity increases can lead to more intense use of pesticides used for crop (e.g. cereals, fruits) protection.¹⁸⁴ If the number of livestock increases, more methane gas is going to be produced in agricultural areas. Manufacturing sector growth like metallurgy can have a negative impact on air quality due to increased levels of chemicals in the air and greenhouse gas emissions. In general, aerial pollution in Ukraine is significant with greenhouse gas and SO2 and NOx emissions into the atmosphere and it is likely to increase. Moreover, since air does not stop at borders, these environmental effects also partially spill over to the (eastern) EU. Also, a shrinking transport sector is expected to lead to less emissions and improvements of air quality. Competition policy and government procurement can have similar effects as mentioned above under ‘CO2 emissions’. The EU effects mentioned under CO2 emissions apply equally to air quality.

¹⁸³ However, if Ukraine joins the Memorandum of Understanding on Energy or the Energy Treaty, these effects are addressed and mitigated.

¹⁸⁴ FTA provisions could cover these issues in flanking policy measures as will be explained in Chapter 19.

Quantity of dangerous chemicals in atmosphere

In line with the arguments presented in the previous impact descriptions, agriculture growth may bring associated problems with eutrophication and the use of chemicals and dangerous pesticides. Like in the cereals sector, increased fruit production may lead to increased use of fertilisers and pesticides in order to increase fruit production output. This will have adverse environmental effects. Metallurgy growth leads to potentially more chemicals in the air and greenhouse gas emissions. Also aerial pollution is significant and is likely to get worse unless the FTA clearly breaks with past Ukrainian (energy) production methods and sets new standards.

18.3.2 Land

Land use in agriculture

Livestock increases in the meat production sub-sector of agriculture, and the gross inefficiencies in production can have a negative impact on land use in agriculture. Increased amounts of livestock also potentially bring problems with methane gas and phosphates and nitrates – though Ukraine is still far from the level of urgency of these issues that has been reached in the EU.

Desertification

Especially open coal mining, and the use of hearth furnaces, are expected to have a continuing negative impact on Ukrainian lands. If in the short run, the coal industry will grow this effect may exacerbate.¹⁸⁵ More intense use of agriculture is also likely to lead to a ‘giving land back to nature’ tendency. No significant EU effects are expected.

Urbanisation

We expect migration effects from rural agricultural areas to the cities to continue and even be encouraged by the FTA because of growth of manufacturing and services sectors relative to the agricultural sector. Wage differences that increase over time between cities and villages will also lead to more urbanisation. For the EU no significant effects are expected.

Natural resource stocks

The FTA is expected to lead to an increased use of natural resources, but less so than the growth rates of certain sectors would predict because the FTA in the longer run also facilitates and encourages more efficient energy use and ‘cleaner’ means of production. The use of coal, oil and gas is expected to increase because of increases in production. In the meat sector, the number of livestock will increase and the concept of bio-industry may be gaining ground to combat gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods.

¹⁸⁵ The impacts of the envisaged government procurement that include environmental standards and an attitude of awareness in general for environmental issues, can lead to combating desertification.

18.3.3 Biodiversity

Number of species

There are no indications that the FTA will have a significant impact on the number of species in Ukraine or the EU.

Protected areas

There is no significant impact of the FTA on protected areas. However, the increased attention in the FTA for environmental concerns can have a positive impact on real protection of protected areas and increase their number and size. Inclusion of sustainable development in government procurement procedures and Ukrainian authorities' thinking will also have an impact. Next to this being a model assumption, it also will come back in Chapter 19 as a policy recommendation.

Ecosystem

The ecosystems in Ukraine and the EU may – to a limited extent – be affected by the FTA. Livestock increases and meat production bring with them the problem of eutrophication, increased agricultural production may increase the use of pesticides and chemicals in the air and water and waste pollution of metallurgy and energy production can also negatively affect the ecosystem. Less transport services lead to improvements (read: decreases) in CO₂ emissions but in the long run, when transport services start to grow this effect may be reversed. Longer run effects involve upgrading to 'cleaner' production methods and investments in waste processing. Ukraine signed the Kyoto protocol but remains under the boundary of emission rights, increasing potential for higher production or re-allocation of production from somewhere else. For the EU the small impact may be an improvement of the ecosystem due to re-allocation of industries to Ukraine and due to re-allocation of some agricultural production to Ukraine – both of which reduce the pressure on the EU ecosystem.

18.3.4 Environmental quality

Waste management

Waste management applies mostly to the energy sector, metallurgy and chemicals sectors. The FTA is expected to lead to more wastewater production but also to more environmental care to address the management of waste production through FDI and production upgrading. Wastewater increases involve toxic side-products in metallurgy production, coal mining and gas transport through pipelines (gas leakages). Especially wastewater management in the Black Sea region is also potentially affecting the EU as Ukraine's sea waters are close to those of Romania and Bulgaria, EU member states.

Energy resources

Traditionally, many energy resources have been and are wasted in Ukraine through inefficient extraction methods and the use of heavily outdated and energy wasting production equipment and methodologies. In the short-run, our analysis expects the FTA to lead to increased coal production and increases in CO₂ emissions. Only in the long run, and after significant investments, the FTA may lead to significant improvements in the creation and use of energy resources. Growth of the economy and specific sector growth will lead to the use of much more energy. Through investments, foreign and domestic, the

FTA can enhance production techniques and reduce leakages of energy in metallurgy production, machinery production, chemicals production, etc. This will make the sectors more competitive (important in an age of rising energy prices) and energy-efficient. Coal extraction is very inefficient in Ukraine and so is electricity generation, which leads to negative impacts on Ukrainian ecological standards. In addition to the traditional sources of energy, sunflower seed oils and cereals are more and more used as bio-fuels.

For the EU an intensified agreement with Ukraine has the potential impact of higher energy security and increased energy interdependency. Through EU funds and FDI, the Ukrainian energy sector may increase efficiency and more energy exports to the EU.

18.3.5 Fresh and waste water

Quantity of water use

Overall, water use is expected to increase because of the FTA as water is used for irrigation in agriculture, input in metallurgy and machinery production. Also, macro-economically, if incomes rise, consumers start using more water. For the EU, no impact of the FTA on quantity of water use is expected.

Access to safe drinking water

There are potential negative effects of environmental and wastewater pollution on access to safe drinking water. This FTA impact has however not been found, nor for Ukraine, nor for the EU.

Water quality

Ukraine has to be careful with the water quality – keeping in mind the enormous pollution of water in the late Soviet period – when more fertilisers and chemicals are used in agricultural production (e.g. cereals, fruits). Also the metallurgy sector seems to create a negative environmental impact by water and waste pollution generation. However, we need to note that economic growth in general has these environmental impacts unless sustainable growth allows policy makers to address the polluting issues *ex ante*. The FTA is expected to lead to more growth and thus to growth of industries that can affect the water quality. There is space for flanking measures here. For the EU, FTA impacts on water quality are not found.

Quantity of waste water

The quantity of wastewater in Ukraine is expected to go up due to sector growth as a consequence of the FTA. Especially in metallurgy this environmental impact is expected. For the EU no such effects are found.

Cleaning of waste water

Regulatory approximation of environmental standards envisaged are designed to lead to higher environmental standards, including the cleaning of waste water (see also the section on water quality above). However these effects will be dominated by the increased need of cleaning of wastewater due to larger amounts of wastewater production as a consequence of the FTA. For the EU impacts in cleaning of wastewater are not found.

Water supply

The FTA will impact the utility companies by introducing more market access and thus competition as well as increased competition in the government procurement markets.

These improvements in public utilities as a consequence of the FTA can have a positive impact on quality and productivity of water utilities, including the water supply. For the EU no significant impacts of the FTA on the water supply are envisaged.

19 Mitigating and enhancing policy measures

19.1 Introduction

The CGE analysis and in-depth analysis have made the advantages and disadvantages of the FTA clear by showing the economic, social and environmental impacts. Many people, and the Ukrainian economy as a whole, will benefit, but some people will lose. It is to the stronger impact outcomes of the analysis, both positive and negative, that we now turn. From an economic viewpoint, the social and environmental effects are positive or negative externalities that have to be strengthened or dealt with in order to reach the sustainability goals set at the outset of the FTA. This Chapter will provide some sustainable policy recommendations flanking the FTA outcomes.

Given the TSIA structure, we start by looking at what is an optimal set of policies. In sections 19.3 and 19.4 we look at policy measures, both mitigating and enhancing, that have to be dealt with from within the FTA, the EA, the EU private sector development (including partners) or the Ukrainian authorities.

19.2 Choosing the optimal set of policy measures

How is a ‘right’ structural set of mitigating and enhancing policy measures chosen, especially when keeping sustainability issues as a top priority? Rodrik (2004) provokes economic science – once again – by stating that (developing) countries that want to increase their growth performance do not just have the luxury of following a short list of 10 or 20 policy reforms to spur growth.¹⁸⁶ Instead a specifically designed set of policies accompanied by legal transformation and focus on implementation and enforcement is required. To devise flanking measures, the academic literature draws heavily upon the theory related to (positive and negative) externalities. Without going into the theoretical details, there are two approaches: the normative analysis and the positive analysis. This is presented in Table 19.1 below.

Table 19.1 Normative and positive policy analysis

Normative analysis	Positive analysis
Static efficiency	Political pressure from interest groups
Information intensity	Geographical distribution
Ease of monitoring and enforcement	Social/cultural influences

¹⁸⁶ Rodrik, Dani (2004), ‘Rethinking growth policies in the developing world’ – Luca d’Agliano Lecture in Development Economics, October 8, 2004.

Normative analysis	Positive analysis
Flexibility in the face of economic change Dynamic incentives Political considerations	

Normative analysis is based on efficiency and benchmarking to choose the set of instruments. Bohm and Russell (1985) have developed a list of such criteria as presented below. Positive analysis tries to explain why one instrument (or combination of instruments) was chosen over another set (Kathleen, Segerson, 1996). Instead of looking at normative analysis, the positive analysis looks at the factors that influence the outcomes and process that lead to establishing the instruments.

When proposing our flanking policy measures, we also keep in mind the Tinbergen rule, stating that a government can only achieve any number of policy objectives if it has at least the same number of independent policy instruments available (Tinbergen, 1952).

19.2.1 Normative analysis

The normative analysis looks at the economic efficiency of a flanking measure as such and is therefore closely linked to the economic analysis conducted in Phases 1 and 2. When applying the normative analysis to the FTA between the EU and Ukraine within the framework of the Enhanced Agreement, some interesting observations can be made, given the specific character of the FTA and EA.

- Static efficiency (NC1).¹⁸⁷ The proposed policies need to enhance (at least) static efficiency in the Ukrainian economy. For example, tariff reductions under the FTA lead to overall welfare gains for Ukraine because consumer surplus gains outweigh producer considerations and approximation of standards of production lead to lower adaptation costs in the end. Both measures increase static efficiency.
- Information intensity (NC2). The proposed policies need to enhance information intensity. In Ukraine, given the historical Soviet and subsequent transition development, the free use of information is an issue that people need to become more used to. For Ukraine, a good example of a measure that encourages information dissemination is government procurement regulation. We argue for costless, transparent and full dissemination of tender information for government procurements.
- Ease of monitoring and enforcement (NC3). When proposing policies to flank the FTA expected outcomes, we watch carefully that the instruments are easy to monitor and enforce or in line with monitoring and enforcement already occurring for other policy objectives. This is especially important for the FTA between the EU and Ukraine. It means that we aim to include incentives in the regulations that drive the economic actors in the envisaged policy direction.
- Flexibility in the face of economic change (NC4). The proposed policies need to be flexible and allow for adaptation in case the economic situation of Ukraine is

¹⁸⁷ NC1 = Normative Criteria 1; We will use the normative and positive criteria to check against every flanking measure we propose.

changing. This means that for example, support for restructuring can only be short-term transitional support and a focus on training and acquiring (vocational) skills and education is the more important.

- Dynamic incentives (NC5). The policy measures proposed need to address carefully – and in light of the research outcomes of Phase 2 that show the importance of dynamic effects of the FTA – and decisively the issues of increases in FDI and desire for R&D as well as upgrading of production and productivity in all sectors and industries.
- Political considerations (NC6). When devising a set of flanking policies, we need to keep in mind that the FTA is a structural shock from which some benefit and others don't. This is likely to lead to political and lobby reactions from those who are expected to lose out. For example, the estimated negative impacts on the coal mining industries will be challenged. Or proposals to change the institutional structure surrounding Ukrainian government procurement, de-politicizing the process, may lead to 'invisible' resistance.

19.2.2 Positive analysis

The positive analysis adds a few interesting insights to the discussion on flanking policy measures, insights, that do not become clear when conducting the economic analysis and insights, we feel are important to guarantee maximum impact and possibility for successful implementation. When applying the positive analysis to the FTA between the EU and Ukraine within the framework of the Enhanced Agreement, some interesting observations can be made, given the specific character of the FTA and EA.

- Political pressure from interest groups (PC1).¹⁸⁸ The imbalance of 'political pressure power' in Ukraine between the different players is large. It is to be expected that flanking measure by the Ukrainian authorities (economic, social or environmental) will be easiest to develop and implement if they are not detrimental to vested interests. However, the conflict between producer interests on the one hand and environmental and social communities on the other, may yield very different results than in Western European societal cultures.
- Geographical distribution (PC2). Several expected outcomes of the FTA lead to regional effects. For example if the agricultural sector is benefiting a little, but misses out on digital developments and if the metallurgy and machinery industries are likely to gain, economic redistribution effects inside Ukraine are expected. These redistribution effects are challenging to deal with from an economic point of view, but even harder to address given the political sensitivities in Ukraine, relating to social, political and cultural differences across the country. On top of this, strategic behaviour may occur amongst political representatives if intended improvements in social and environmental aspects take the form of a widely dispersed public good. This could, for example, apply to subsidies for cleaner technologies to mitigate negative environmental impacts. It remains the question who then benefits from the flanking measures.
- Social & cultural influences (PC3). Any policy measure that mitigates or enhances the expected FTA impacts has to be viewed in light of the social and cultural context

¹⁸⁸ PC1 = Positive Criteria 1; We will use the normative and positive criteria to check against every flanking measure we propose.

in which it is applied. The reason is that by affecting the costs and benefits of the FTA, it affects groups within the Ukrainian society and implicitly establishes rights and duties related to who will be protected from environmental and social damage and who has the right to inflict such damages. However, the policy measures and their impacts are strongly influenced by the public perception regarding the acceptability of certain actions, which are in turn influenced by society.

19.2.3 Some conclusions on the optimal set of policy measures

While negotiating and subsequently implementing the FTA – including flanking measures – both the EU and Ukraine need to be aware of the political pressure and geographical distribution effects the FTA and its mitigating and enhancing measures have and the socio-cultural environment in which they are being implemented. These factors, no matter how normatively optimal the policy measures are, may yield different outcomes.

It is therefore imperative to keep the following risks and challenges in mind for the FTA (and EA):

- The abovementioned factors may be the cause why the developed regulations and liberalisations may not lead to internalised social and environmental externalities even though they set out to do exactly that. So the FTA may not result in the ‘envisaged’ sustainable outcomes;
- Given the historical development and short time period in which Ukraine had the possibility to work actively with civil society and consequently the relative inexperience on the part of both Ukrainian authorities and Ukrainian civil society with policy influencing and dialogue, it is imperative that the EU take into account the views of different stakeholder groups in Ukraine, both during the negotiations and during the implementation of the FTA and its flanking measures. Otherwise the FTA may not lead to optimal mitigating measures for sustainable development;
- Support for the FTA throughout Ukrainian society and its regions is crucial for its success. Without broad support, the FTA will not yield significant (sustainable) impacts. Therefore, the EU and Ukraine need to take care to involve, listen to and react to concerns in society and regions and create ownership among Ukrainians to achieve sustainable development.

The overview of mitigating and enhancing measures is given in Figure 19.1. There are two approaches to mitigating and enhancing measures: the legal approach through regulation and the economic approach through economic instruments. It is a large mix of instruments that can be employed in order to generate the desired outcomes – taking into account the aforementioned challenges.

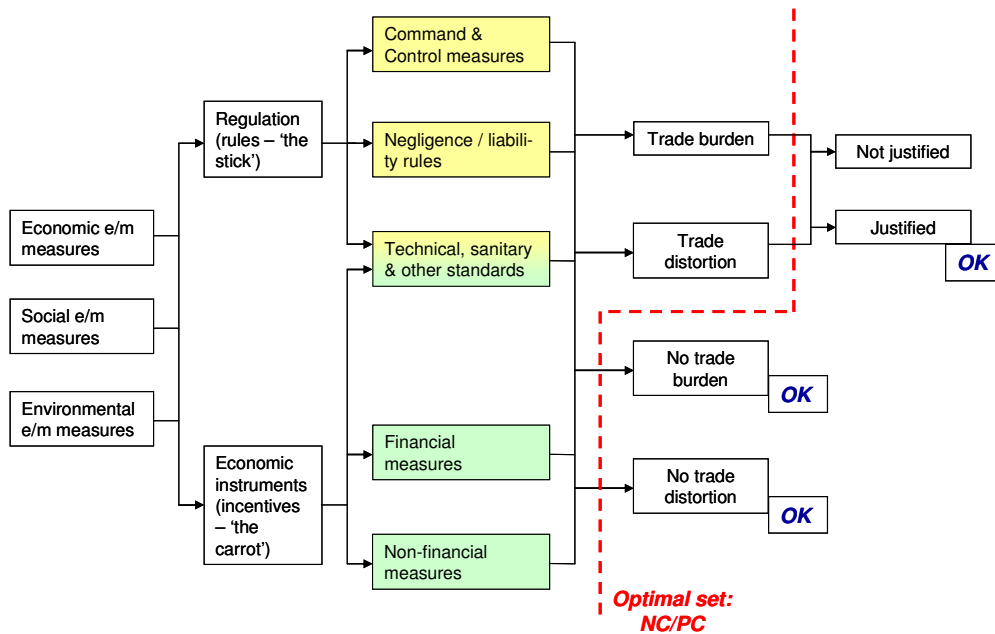
Schematically, we need to look at:

- What measures to employ (from Command & Control to Non financial measures);
- Check whether these measures create trade burdens or distortions;
- Check whether they meet the normative and positive criteria for an optimal policy mix (the dotted line);
- If the measures create a trade burden or distortion, check whether these are justified;

- Then determine the flanking measures to be imposed: those that to not create trade burdens and/or distortions and those that do but are deemed justified.

Several flanking measures that do not create trade burdens or distortions may be implemented. But regarding several environmental and/or social regulations and economic instruments, we may create trade distortions or burdens knowingly because they fit in the ex ante agreed decision making framework as 'justified'.

Figure 19.1 Mitigating and enhancing measures - overview



19.3 The FTA as part of the Enhanced Agreement (EA)

EU – Ukraine relations since the late 1990's have been shaped by the Partnership and Cooperation Agreement (PCA) of 1998, which includes the EU – Ukraine Action Plan (February 2005), specifying the policy objectives for supporting Ukraine's reform agenda. The PCA will be replaced by the Enhanced Agreement (EA), which is currently being negotiated.

Official assistance of the EU to the Ukraine over the 2007 – 2013 period, as outlined in the Country Strategy Paper (CSP) will be provided under the new ENPI. The principal objective of cooperation at this stage is to develop a relationship that goes beyond the levels of past cooperation to gradual economic integration and deeper political cooperation, including foreign and security policies. Support to the Ukraine is therefore focused on a selected number of key areas including:

- Democratic development and good governance;
- Regulatory reform and administrative capacity building;

- Infrastructure development, in particular in the transport, energy and environment sectors.

The CSP and ENPI specify the means and modes of EU assistance to the Ukraine, while the PCA, Action Plan and EA focus on policy objectives for cooperation and approximation between the Ukraine and EU. EU assistance should by definition be aligned to these policy objectives and as such can be used for supporting flanking measures for an FTA. Indeed many of the policy recommendations made in this report can be found in some form or other in these existing plans and programmes.¹⁸⁹ Flanking policy measures for enhancement or mitigation of the economic, social and environmental FTA impacts must thus be seen in the broader context of EU-Ukraine relations, the more so because trade policy is limited in its scope for addressing non-trade issues.

Although the EA has not yet been concluded, its broad outlines include a five-pillar structure, with an FTA forming the second pillar. The five pillars consist of:

1. Setting up an institutionalised political dialogue on common values in line with mutually accepted general principles governing future relationship between the EU and Ukraine;
2. Establishing a WTO compatible FTA for goods and services including binding disciplines in non-tariff and regulatory areas;
3. Specifying provisions regarding energy;
4. Provisions on cooperation in a broad range of areas of mutual interest;
5. Developed institutional structures to ensure effective implementation of the Agreement (including dispute settlement mechanism)

Thus the FTA is just one of the elements of the cooperation between the EU and Ukraine and similarly just one of the instruments to guide EU-Ukraine relationships, albeit one with substantial possible impacts. In the remainder for this chapter we will focus on concrete flanking policy recommendations, divided by policy measures that are directly related to the FTA and non-FTA policy measures, which would have to be covered under other agreements, or national policies.

19.4 FTA impacts on sustainable development and FTA related policy measures

The in-depth assessment of sector specific and overall economic, social and environmental impacts has enabled us to identify the main economic, social and environmental issues that need to be addressed through policy measures. We have divided our policy recommendations into FTA related and ‘Broad’ policy measures.

¹⁸⁹ Where possible and necessary we will therefore refer to these.

19.4.1 Main sustainability impact issues

Economic

The economic analysis shows that the overall economic impact for both the Ukraine and the EU are positive. More so for Ukraine in relative terms (5.3% growth) and more so for the EU in absolute terms (8.5bn \$). However, for some sectors short run impacts are less positive than long run effects and in some cases short run effects are even negative. This strengthening of comparative advantage and disadvantage for sectors warrants mitigating policy measures for the relevant sectors (in the short run) to ease the transition or in some cases their more general restructuring.

Overall the transition from short run to long run effects will be accelerated by investments. This implies the need for enhancing policy measures to improve the investment climate in the Ukraine and encourage entrepreneurship and SME development.

Finally, the transition from short to long run effects will depend crucially on Ukraine's ability to approximate its standards, particularly in specific sectors, with those of the EU. Policy measures should therefore be aimed at supporting the approximation process.

Social

Social impacts present a more mixed picture. Overall increased expected trade, growth, and employment, the reduction in prices compared to wages should have positive effects in terms of poverty reduction, improved public health, and education (enrolment rates and levels of attainment). However, employment effects are spread unevenly across sectors and regions, urban and rural areas and over time.

Work conditions in certain sectors in the Ukraine are still far from safe and occupational health and safety standards are still below EU standards. Again, FDI, modernisation and restructuring of sectors and approximation to EU standards as a consequence of an FTA should improve these standards. Policy measures enhancing this positive effect of the FTA should therefore be implemented.

In Ukraine there are a number of pre-existing socially unstable and perhaps unsustainable issues that will be affected by the FTA, although the trade agreement cannot be said to be the root cause of these situations. In most of these situations, the issues are related to the existence of a dual economy and to difficulties with fair and fully efficient regulation or with title to land.

The overall impact on employment means that urban opportunities for self employment, including in the informal sector must be created. On the other hand, many small farmers face an existing sustainability crisis reinforced by increased investment and competition from large commercial farmers from the EU. Poverty is expected to be reduced by the additional employment but will be made worse in areas where negative employment outcomes are expected. In the area of education, there is no obvious impact of the FTA agreement, direct or indirect. However, in the area of health we do expect limited positive impacts resulting from the EU – Ukraine FTA for the Ukrainian population, albeit in the long run.

Women's access to employment, to capital, to land rights on equal terms is not yet universally achieved. While employment in some sectors where women are employed, such as food processing and textiles, will increase, no necessary change is created by the agreement to the pre-existing inequalities.

The overall magnitude of social impacts for the EU is assessed to be modest or negligible for nearly every indicator. However, there are still a few issues that should be addressed. The FTA – though affecting the overall EU statistics very little – may have disproportionately large regional effects in sectors that are strongly clustered. For example, in the metallurgy sector in southern Poland and the motor vehicles cluster in southern Germany, Czech Republic and Slovakia has face negative employment effects as a result of the FTA.

The possible migration flows from Ukraine to the EU need to be handled properly in order to avoid social challenges. Work permit issues are of particular importance to avoid illegal immigration and social problems related to immigrants, which many European countries have at the moment.

Without the EU – Ukraine FTA, the existing social problems will continue. While the agreement will not solve all of these problems, it will bring considerable social benefits to a large part of the population. The agreement will also bring opportunities to address some of the pre-existing social problems.

Environmental

Increased industrialisation and urbanisation implies negative scale effects that for air, water and land quality generally outweigh benefits from technique effects (certainly in the short run). Land and water quality are also affected negatively by agricultural intensification. For these indicators, some localised environmental improvements could occur from technique effects but we also note the potential local seriousness of mine-induced pollution. Biological diversity impacts are largely a function of the electricity strategy chosen; a strategy that may cause such impacts is therefore not a necessary consequence of the EU-Ukraine FTA. As concerns the mining industry, the technique effect is rather unlikely to cancel the negative environmental impact resulting from the scale effect. Chemical and non-ferrous metals industries are heavily involved in the pressure operated on the environment, but companies are increasingly aware of the problem. However, despite voluntary engagements and new regulations, the environmental scale effect resulting from the EU-Ukraine FTA is likely to outweigh the expected technique effect. Policies supporting the introduction and use of new technologies could be introduced as enhancing flanking measures while in other areas policy recommendations could lead to lower direct negative environmental impacts.

Changes in the electricity production and in transport activities are positively linked to variations in the other economic activities. Positive economic effects expected from the EU-Ukraine FTA should firstly be translated into higher environmental pressure. Also, here again, the technique effect is rather unlikely to be able to cancel the scale effect, especially about transport. Since the main environmental issue related to electricity

production consists in air emissions, improvement could come from the use of gas instead of coal. At a cost in terms of impact on bio-diversity, air pollution can be improved by producing hydro-power electricity. Increased electricity production as a consequence of the EU-Ukraine FTA need not lead to a significant sustainability impact on bio-diversity.

19.4.2 Issues to be kept in mind

Before elaboration on actual policy measures recommended to address these various impacts there are a few issues that need to be kept in mind.

Institutional setting

Most of the potential sustainability issues have not been experienced in Ukraine before. Efforts to improve social and environmental quality are recent. Because of this, especially concerning social and environmental sustainability, many of the structures required for the mitigating (flanking) measures do not yet exist. This is especially important, for example, for SPS approximation and Technical Standards. In cases where a consensus exists, there is usually a fully effective regulatory body, which is not the case for Ukraine. The role of the EU in acting to mitigate the negative sustainability consequences of the EU-Ukraine FTA could first of all be seen as a supporter to start-up efforts or of efforts already under way, also in institutional design; as a source of support where new resources are required for research; and as a partner in a two-way EU-Ukrainian mutual education dialogue in those situations where a consensus is still to be built.

The sectors where the sustainability impacts have been most noted are the greatly (economically) benefiting manufacturing industries. As the sustainability impacts are closely related to existing effects, the mitigating measures must address the underlying situations affecting these sectors. In developing the approach, an important question to be asked is why an existing regulation has not already been effectively addressed. Is this due to lack of resources, to a sub-optimal regulatory system or to a lack of consensus about objectives, leading to evasion of regulation.

Technology transfer

In a number of sectors in Ukraine there are factories that do not have access to pollution-reducing technology, although other companies may well have this access. The objective of technology transfer as a mitigating action is to provide the technical means to reduce various forms of pollution that would otherwise result from increased production from the EU-Ukraine FTA. The sectors where such an action could prove useful include mining and metals, food processing, chemicals, and machinery & electronics. Care will have to be taken to avoid giving unfair advantages to plants that are assisted with technology transfer and to avoid providing a disincentive to companies to invest themselves in pollution reducing equipment.

Monitoring

Periodic monitoring and evaluation should analyse the impact of the EU-Ukraine FTA (and thus implicitly the projections contained in this study); and the relevance and impact of the mitigation and enhancement measures adopted. The aim should continue to be to understand why, how and where sustainability impacts occur; what can be done to

ameliorate the sustainability impacts; and what counteracting policies do and do not work and why. The aim of monitoring and evaluation is thus both continuing analysis and policy prescription and should cover both the trade policy itself and the mitigating measures.

Invisible resistance

We imagine invisible resistance against several policy measures from those who lose out – as is to be expected. This resistance can come from all corners of society and tends to be gathering in momentum faster than the support from those who benefit economically. For example, changes to improve the government procurement system are expected to significantly reduce the level of alleged corruption. This may cause resistance against those policy changes even though they are beneficial for Ukraine as a whole. Another example is the potential for abuse of funds when we recommend monetary or fiscal incentives in support of the environment or short term adjustment support for specific sectors. Caution is in order to design such incentive schemes in light of the set of normative and positive policy analyses provided above.

Foreign direct investments

A stable political and macro-economic climate is of highest importance for investment and FDI inflows. Given the importance of investment and FDI for several sectors in the Ukrainian economy (agriculture, metallurgy, machinery and electronics, etc.) and for social and environmental policy, and given the enabling nature of investments, all policies need to adhere to the idea to enhance inward investments.

19.4.3 FTA related policy measures

Many of the policy measures to mitigate or enhance impacts of an FTA formulated below are also part of the ENP Action Plan for Ukraine and to the extent they have not been implemented / fulfilled may likely become part of the Enhanced Agreement. What the impact study allows us to do is identify a number of specific priority areas in relation to economic, social and environmental issues. In addition, the emphasis in the Action Plan is still mostly on Ukraine, while in the context of the FTA, the EU may also adopt some potentially effective flanking measures, as is illustrated in this section.

In line with our positive and normative policy analysis, we want to mention that the success of policy measures starts with proper drafting of legislation but subsequently depends to a large extent on successful implementation and enforcement.

Economic

FTA policy measures to address economic impact issues may include:

- Establishment of a transition period in tariff and subsidies reductions for (1) the agricultural sector and specifically the meat and oils sub-sector, the beer & wine sub-sector and the sugar & confectionary sub-sector; (2) Machinery and Electronics sector; and (3) the services sub-sectors transport, financial services and retailing. These transition periods should be determined through an assessment of the restructuring needs and time for each (sub)sector, and accompanied by a clear restructuring plan with timetable and monitoring system.

- Improvement of the investment climate through trade facilitation measures, competition policy and strengthening market forces.
- Enhancement of approximation and adoption of EU SPS and technical standards – particularly in agricultural sectors, transport, machinery & electronics, textiles & wearing apparel – through upgrading of laboratories, revising of SPS and other control systems (certification), capacity building for relevant institutions, etc. Joint programmes and action plans should be defined and timetables set, which will allow for close monitoring of progress.
- Inclusion of a *Sustainable development chapter* to the FTA, including a possibility to establish a Trade and Sustainable Development Forum providing for consultation with civil society.

*Social*¹⁹⁰

- Inclusion of a *Sustainable development chapter* to the FTA. Social clauses in this chapter could include for instance:
 - references to the requirement that both parties commit themselves to the effective implementation of core labour standards and other basic decent work components.
 - statement that parties to the agreement will ratify the ILO standards concerned.
 - a requirement for both parties to submit regular reports on general progress to implement all the commitments made under the sustainable development agreement,
 - engagement to respect the OECD Guidelines on Multinational Enterprises and the ILO Tripartite Declaration on Multinational Enterprises and Social Policy, and not to lower labour standards in order to attract foreign investment.
 - a system where complaints about social problems should be subject to consideration by genuinely independent and well-qualified experts.
 - possibility to establish a Trade and Sustainable Development (SD) Forum providing for consultation with civil society, including workers' organisations, employers' organisations and NGOs, with a clearly defined, appropriate balance between those three groups of members.
- Conduct, within the scope of the sustainable development mechanism, ex-post impact assessment studies to evaluate impacts in particular areas of concern (e.g. as commissioned by the SD Forum and identified through a review mechanism based on civil society consultations).

Environmental

FTA policy measures to address environmental impact issues may include a

- *Sustainable development chapter* to the FTA. Environmental clauses in this chapter may include for instance:
 - commitment to multilateral environmental agreements, such as the Kyoto Protocol;
 - creating a system of standards for objective measurement of pollution;
 - include environmental standards in government procurement;

¹⁹⁰ We would like to thank the International Trade Unions Confederation and the European Trade Unions Confederations for their contributions to this section.

- engagement to respect the IPPC directive and focus on practical implementation;
- working towards ratification of the Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone;
- promote voluntary Environmental Management Systems;
- engagement with respect to the Kyoto protocol guidelines;
- possibility to establish a Trade and Sustainable Development Forum providing for consultation with civil society on particular areas of concern in the context of environmental impacts.
- Incorporate the upgrading of Ukrainian engine technology to EU standards (currently Euro-4 or Euro-5) and provide incentives for the upgrade like access to the EU or lower environmental tax obligations.
- Tie the speed at which a sector may produce and export to the EU or obtain other benefits to the level of environmental progress.

19.4.4 Non-FTA policy measures

Economic

The main flanking policy measures addressing economic impacts should be aimed at enhancing the positive effects of investments, restructuring and modernisation and SME development.

1. Improvement of the **Investment Climate** and investment promotion. Policy measures to achieve this range from the promotion of macro-economic stability to reductions in the cost of doing business. More specific measures that could be considered include:
 - infrastructure improvements;
 - reduction of red-tape, cost of setting up a business, obtaining licenses, etc.;
 - investment promotion schemes and incentives;
 - education (see also under social policy measures).
2. Encourage **restructuring and modernisation** of economy and particularly specific sectors. Such sectors would include coal mining, metallurgy and agriculture. Specific policy measures that could be considered include:
 - develop restructuring programmes for rationalisation (capacity reduction) and upgrading, tied to time-frame and monitoring system;
 - phase out remaining subsidies, tax exemptions and other forms of state aid. Tie this phase out process to restructuring programmes and possibly transition phase for tariff reduction under FTA.

The restructuring programmes and trajectories followed by the steels sectors in the new member states and accession countries could serve as an example of how to set up such programmes, while Ukraine and the EU may also learn from the experiences of these countries.

3. Promote **entrepreneurship and SME development**. In part this would be achieved through improvement of the investment climate and further development of the SME policy, but a number of additional measures, sometimes linked to social policies (see below) could be beneficial as well. For instance:
 - training and education (addition of curricula on entrepreneurship in higher education, vocational and professional training schools, business administration, etc.);
 - making the tax and social security system conducive to entrepreneurship.

Generally speaking, there is often an overlap between economic, social and environmental policies and in the best case scenario they are even mutually reinforcing.

Social

The main flanking policy measures to mitigate negative and enhance positive social FTA impacts relate to the improvement of employment, core labour standards and decent work principles, overcoming regional differences, education, migration and equality. Generally speaking, the involvement of social partners and civil society in the design and implementation of social policies is recommended. This would imply the need for an inclusive approach by Ukrainian authorities and the need for capacity development to act as legitimate and well informed partners for dialogue on the part of the social partners and civil society.

More policy measures include:

1. Encourage **employment creation** and promote **improvement of labour conditions**.

The FTA is expected to have an overall positive impact on employment and on labour circumstances in terms of health and safety standards. These effects could be further enhanced through a number of flanking policies measures including for instance the following:

- Promotion of **SME development and entrepreneurship** (see point 3 under economic policy measures) as new sources of employment creation.
 - Support **adoption and implementation of EU labour standards and decent work principles** in Ukrainian business and society. The experience of EU accession countries demonstrate that successful adoption of such standards requires time and capacity building. In Poland, for instance, the adoption of the EU occupational safety and health (OHS) *acquis* took place in three stages: (1) transposition of the EU *acquis* and directives; (2) development of organisational and technical solutions supporting enterprises in implementation of the OSH regulations; (3) Enforcement of new regulation, dissemination of good practices, training and education, implementation of tools, promotion of OSH management systems, etc. In Latvia the entire process took at least 10 years. Experiences in New Member States also illustrate the importance of the involvement of key stakeholders in the different steps of this process, including for instance the Labour Inspectorate and the Social partners. Finally, experiences in these countries illustrate the difficulties that particularly SMEs encounter in effectively adopting such standards. These experiences should be taken into consideration when developing policies for the improvement of labour circumstances in Ukraine.
2. Provide **skills retraining** in short run and refocus and improve **training and education** system in Ukraine for longer run.
- provide skills retraining for workers in sectors set to decrease employment (e.g. agriculture (short run), coal mining and transport services;
 - approximation with EU education system and promotion of educational exchanges, resulting in long run in achievement of similar levels of qualifications;
 - increased emphasis on professional training and education (addition of curricula on entrepreneurship in higher education, vocational and professional training

schools, business administration, etc.) to encourage entrepreneurship and facilitate modernisation of different sectors.

3. **Address migration issues** (labour migration, illegal migration, brain drain) in concerted and cooperative way.
 - Policy Dialogue Facility for migration issues, dealing for instance with issues related to recognition of professional qualifications and coordination of social security systems, etc.;
 - Promote cultural and other exchanges (e.g. study and/or professional exchange programmes);
 - Facilitate remittances and encourage productive investments of remittances (e.g. through tax exemptions).
4. Develop **regional strategy** to deal with issues regarding regions suffering from industrial decline and migration (for EU, address this issue through structural funds instrument).
5. Work towards approximation of the law on **equal rights of women** with the relevant EU *acquis*.

Environmental

Develop a **regional strategy** to deal with issues regarding regions suffering from changes in land use and environmental degradation. Include biodiversity issues and the promotion of alternative land uses, e.g. for bio-fuels.

- Include environmental provisions in government procurement tenders and make them part of the evaluation grid
- Commence negotiations with Ukraine on the Energy Community Treaty
- Compensating increased greenhouse gas emissions with Joint Implementation (JI) and emission trading with the EU partners
- Increase in nature conservation and soil remediation projects
- Compensating increased greenhouse gas emissions with Joint Implementation (JI) and emission trading with the EU partners
- Regulate transport related carbon dioxide emissions (CO₂) and volatile organic compounds (VOC) in accordance with the Best International Practice
- When devising investment promotion schemes / encouraging inward investments, give priority / provide extra incentives to environmentally sustainable investments, solutions and technologies

19.5 Conclusions

The Global Analysis Report and in-depth studies of sectors and horizontal issues, have provided us with a wide range of expected impacts as a consequence of the FTA within the Enhanced Agreement.

Overall, within the existing conditions our flanking measures aim to increase economic growth and production in a sustainable way. That is, we focus strongly on the social and environmental impact policies have. In the short-run support for structural adjustment and production upgrading is necessary. Not only legal approximation but also implementation and enforcement mechanisms for policy recommendations have to be looked at.

Improving the business climate of Ukraine – and consequently drawing in more FDI – is one of the most crucial aspects the flanking measures address – in order to financially support and engage in the changes that apply to the Ukrainian economy upon signing the Enhanced Agreement. Several policy recommendations are geared towards improving the quality of work, worker safety and health as well as to improving environmental practices. The FTA is expected to lead to higher levels of production that may or may not – in case environmental provisions are successfully included in the EA, implemented and enforced – lead to significant deteriorations in environmental quality of life.

20 Conclusions

This study has analysed the potential impacts for Ukraine and the EU of a Free Trade Agreement within the framework of an enhanced agreement. Applying the methodology of the Trade Sustainability Impact Assessment, we have reached the following two sets of conclusions:

1. The potential economic, social and environmental impacts of the FTA
2. Implementation – policy recommendations

20.1 Overall sustainability impacts of the FTA

20.1.1 Economic impacts

The CGE analysis, as presented in Chapter 6 shows that several sectors gain and some loose because of the FTA (on top of the WTO scenario). Overall, the impact of the EU-Ukraine FTA is to reinforce existing trends in Ukraine. The Agreement results in additional economic growth for Ukraine, equivalent to not more than a year's normal economic growth (5.3% for Ukraine). This is the result of increased demand and some economic restructuring in favour of sectors in which Ukraine has a comparative advantage, such as processed foods, agriculture, chemicals, machinery & electronics and metallurgy. Sectors in which Ukraine has a comparative disadvantage are financial services and transport services. These sectors lose employment, as does mining due to increased labour-saving investment. None of these employment losses are large in the long run. While the greatest per person economic gains are realised in Ukraine, the EU's gains are larger in absolute value. In the European Union, the increase in value or income is spread thinly over a large number of activities. The overall gain in real income is around \$ 8.5 billion. The positive economic impact of the FTA for the EU and its wide dispersion mean that no strong social and environmental sustainability analyses are required in the EU. In both Ukraine and the EU, the FTA is expected to bring about a combination of increases in employment and a reduction in prices relative to wages.

20.1.2 Social impacts

In Ukraine, the combination of increases in employment and a reduction in prices relative to wages will help to increase the standard of living and reduce poverty among the majority of the people living in urban areas. On the other hand, in Ukraine there are a number of pre-existing socially unstable and perhaps unsustainable issues that will be affected by the FTA, although the trade agreement cannot be said to be the root cause of these situations. In most of these situations, the issues are related to the existence of a

dual economy and to difficulties with fair and fully efficient regulation or with title to land.

The overall impact on employment is clearly positive. This does not preclude negative employment impacts in specific sectors that might be quite persistent in some circumstances. The overall impact on employment means that urban opportunities for self employment, including in the informal sector must be created. On the other hand, many small farmers face an existing sustainability crisis reinforced by increased investment and competition from large commercial farmers from the EU. Poverty is expected to be reduced by the additional employment but will be made worse in areas where negative employment outcomes are expected. In the area of education, there is no obvious impact of the FTA agreement, direct or indirect. However, in the area of health we do expect limited positive impacts resulting from the EU – Ukraine FTA for the Ukrainian population, albeit in the long run.

In terms of overall equity, inclusion in the usual economic processes through employment will be an important step for many people. However, these opportunities will be limited for many people by the existing inequalities in terms of practical rights and access to social and economic opportunities. Women's access to employment, to capital, to land rights on equal terms is not yet universally achieved. While employment in some sectors where women are employed, such as food processing and textiles, will increase, no necessary change is created by the agreement to the pre-existing inequalities.

Without the EU – Ukraine FTA, the existing social problems will continue. While the agreement will not solve all of these problems, it will bring considerable social benefits to a large part of the population. The agreement will also bring opportunities to address some of the pre-existing social problems.

20.1.3 Environmental impacts

Increased industrialisation and urbanisation implies negative scale effects that for air, water and land quality generally outweigh benefits from technique effects (certainly in the short run). Land and water quality are also affected negatively by agricultural intensification. For these indicators, some localised environmental improvements could occur from technique effects but we also note the potential local seriousness of mine-induced pollution. Biological diversity impacts are largely a function of the electricity strategy chosen; a strategy that may cause such impacts is therefore not a necessary consequence of the EU-Ukraine FTA. As concerns the mining industry, the technique effect is rather unlikely to cancel the negative environmental impact resulting from the scale effect. Chemical and non-ferrous metals industries are heavily involved in the pressure operated on the environment, but companies are increasingly aware of the problem. However, despite voluntary engagements and new regulations, the environmental scale effect resulting from the EU-Ukraine FTA is likely to outweigh the expected technique effect.

Changes in the electricity production and in transport activities are positively linked to variations in the other economic activities. Positive economic affects

expected from the EU-Ukraine FTA should firstly be translated into higher environmental pressure. Also, here again, the technique effect is rather unlikely to be able to cancel the scale effect, especially about transport. Since the main environmental issue related to electricity production consists in air emissions, improvement could come from the use of gas instead of coal. At a cost in terms of impact on bio-diversity, air pollution can be improved by producing hydro-power electricity. Increased electricity production as a consequence of the EU-Ukraine FTA need not lead to a significant sustainability impact on bio-diversity.

For the detailed and summarised impact assessments per sustainability indicator we refer to Chapter 18.

20.2 Detailed sustainability impacts of the FTA

20.2.1 Agriculture

Overall, the FTA has positive **economic impacts** on the post-WTO agricultural sector in Ukraine and a negligible impact on the EU agricultural sector. In the long run, the FTA will have positive growth and development effects, facilitates the inflow of domestic and foreign investments, causes wages to rise, lowers prices for agricultural products due to competition, cause employment to increase and GDP per capita in the agricultural sector to go up. Also trade flows will significantly increase and overall Ukraine's trade balance will improve, especially with the EU. The more extended the FTA, the larger the long run gains for the agricultural sector. This is why we argue to include significant reductions in standard and border costs through regulatory approximation (e.g. SPS) and reductions in corruption and bureaucracy. The **social impacts** are closely linked to the economic impacts and predict employment increases (though the CGE outcomes may present an upper limit to this effect) and wage increases. Wage increases are important in the light of differences in regional income distribution in Ukraine. The employment and wage effects lead to lower levels of poverty and may have a mitigating effect on labour migration. Also the FTA is expected to lead to an improvement of working conditions, health & safety standards (via regulatory approximation) and quality of work. Growth potential in the agricultural sector, due to its relatively minimum efficient scale requirements, may increase entrepreneurial activities and self-employment. The **environmental impacts** relate mostly to problems with eutrophication and the use of chemicals, dangerous pesticides and the like in agricultural production. If the FTA includes clear provisions and standards for the use of these substances, environmental impacts can be monitored and controlled, having a positive effect on the quality of the environment and soil protection.

Cereals and grains

For the cereals sector, the FTA (if sufficiently liberalised) will have large positive impacts in terms of sector growth, increases in exports and investment in production efficiency increases. This also leads to employment increases in Ukraine, higher wages for the workers in the sector and increases in both productivity and working circumstances. For the EU the impact on exports of grains and cereals to Ukraine is negligible. The FTA is also expected to lead to price decreases in this market, which may

benefit consumers. Fertiliser and pesticide increases may have negative impacts on the environment and biodiversity in Ukraine.

Sunflower seed oil and oils

The production of sunflower-seed oil only benefits from trade liberalisation in a limited way. Tariffs are already low and Ukrainian products are accepted according to EU SPS standards already. For the EU, Ukrainian oil production may become more important as a product for bio-fuel production. Trade in oils will intensify between the two countries.

Meat products, meat offal and animal fats

The FTA impact on meat production and animal fats is expected to be positive if SPS standards are harmonised. The sector is expected to grow into a major exporter of meat, meat products and animal fats into the EU. Growth, employment and wages will go up. In the short-run costly investments in productive capacity and upgrading of outdated machinery to comply with EU food safety requirements will be necessary. Employment effects are predicted to be positive by the CGE model, but sector experts point at limitations not included in the quantitative analysis: gross inefficiencies of many pig-breeding and cattle-breeding enterprises and outdated production methods. Furthermore, SPS standards will increase food quality and thus have positive health effects. Environmentally, the FTA may lead to increases in bio-industry production of meat.

Sugar and confectionary

The sugar sector is heavily protected in both the EU and Ukraine. Reductions in tariffs would lead to significant changes in trade patterns and a reduction in output for the Ukrainian sugar sector. Prices for sugar will drop significantly which is positive for consumers and for the confectionary industry. Lower tariffs are also expected to lead to increases in product varieties in the confectionary industry.

Edible fruits and nuts

Fruit production will face strong competition in the short-run which may have an initial suppressing growth effect but will benefit significantly from the FTA in the longer run, also because in this sector EU SPS standards are met. Investments will go up, and so do employment and wages. This sector is expected to show an increasing trade surplus with the EU because of the FTA. Increased fruit production may lead to increased use of fertilisers and pesticides in order to increase fruit production output.

Beverages, spirits and vinegar

The beverage sector in Ukraine may get hurt by the FTA agreement because of the strong competitive position of the EU in the production of beer and wine. Liberalisation will lead the EU to increase its market share of these products in Ukraine at the expense of domestic producers. Vodka production – on the other hand – is expected to increase slightly. Overall a consequence of the FTA is increased levels of investment in new technologies and equipment and increased competition.

20.2.2 Metallurgy

The **economic impacts** on the metallurgy sector are significant and positive. Tariff reductions in the FTA lead to production increases of both the ferrous metal sector and metal products sector. Lower tariffs also lead to more trade between the EU and Ukraine. Increased competition also leads to lower prices and in the long run a drive to upgrade production methodologies. Investments in the sector lead to increases in productivity and better and more environmentally friendly production in the longer run. As a consequence of increased production, also employment, a **social impact**, increases because of the FTA, and so do wages. Poverty levels among the formerly unemployed and low-skilled workers are reduced. Improvements in production methods and machines lead to higher levels of work safety and improved working conditions in general in line with decent work directives of the ILO. Also a positive impact on health can be possible due to cleaner and better work circumstances. The **environmental impacts** of changes in the production structure of the metallurgy sector are significant and among the most important of the FTA. Increased production leads to more greenhouse gas emissions, lower quality of the air and higher levels of dangerous chemicals in the air and in the water. Wastewater may pollute (international) waters and increase in quantity. Investments into cleaner and more productive production techniques may partially offset these effects and so may provisions for more effective control of metallurgy plants on pollution issues.

20.2.3 Machinery & electronics

The **economic sustainable impacts** in machinery & electronics are positive with a significant sector growth, lower prices of intermediate and final consumption goods and projected increases in FDI in the long run that lead to upgrading of the machine park and increases in production. Lower tariff protection and subsidies lead to more competition from abroad and more efficiency in the sector. Ukraine's trade balance with the EU in machinery & electronics will improve as exports to the EU grow faster than imports from the EU. Because of increased openness to trade, we also expect Ukraine and the EU to enjoy an increased variety in types of machinery. One should note, however, that production upgrading may take years and is a costly endeavour for the industry. **Social impacts** of the FTA in the machinery & electronics sector include positive employment effects in the short run and stronger employment effects in the long run, increases in wages in the industry, upgrading of factories and production sites with improved worker safety and health standards at the workplace, and reduced levels of poverty. We expect FDI to play a significant role in this sector because of resource reallocation and production fragmentation of large multinationals. Foreign investments will encourage social workers' rights, and the health situation at factory floors. The overall **environmental sustainable impact** of the FTA in machinery & electronics in the EU is considered to be negligible in magnitude, also in the long run. Waste management is one of key concerns for machinery and electronics industry. There is evidence of increased SO₂ and NO_x emissions, in spite of production upgrading. Also increased production of finished products based on intermediate products supplied from Ukraine can have a negative environmental impact.

20.2.4 Energy

A key conclusion from the **economic impact** assessment to date is that the Ukrainian energy sector is likely to restructure significantly – with FTA even more than without. This implies that new investments will come in, with new economic opportunities as a possibility however also with job losses as a likely consequence – especially so in the case of privatisation of coal mines. An increase in gas price will further stimulate the use of coal, which has severe negative environmental and social consequences if not accompanied by measures. The **social sustainable impacts** of the FTA are potentially very large, especially in the coal sector where worker safety and health issues for miners need drastic improvements. Employment effects are mixed with an increase in employment in electricity and decreases in employment in coal, oil and gas. Large redundancies in this sector have large social effects, the more since the coal industry is well organised in terms of concentrated worker's power. The **environmental sustainable effects** of the FTA in the energy sector take place in the bigger picture of rising gas prices. If gas prices continue to rise, a shift to coal will lead to significant polluting effects. Coal mining is very polluting and old-fashioned production methods used do not do the environment any good. Also aerial pollution is significant with greenhouse gas and SO₂ and NO_x emissions into the atmosphere that are likely to increase unless the FTA clearly breaks with past Ukrainian energy production methods and sets new standards. Moreover, since air does not stop at borders, these environmental effects also partially spill-over to the (eastern) EU.

20.2.5 Trade in services

The **economic impacts** of the FTA on distribution services are positive beyond the WTO accession of Ukraine. The same applies to trade in communication services albeit of much smaller magnitude. For transport services and financial services, the FTA has a negative impact. Trade in all sectors with the EU intensifies with improvements in the trade balance in distribution and communication services and deteriorations in the trade balance in transport and financial services. The **social effects** entail gains in employment in the distribution and communication services but job losses in the transport and financial services. Productivity of the service sectors is expected to increase and profit margins will be lower. The FTA is expected to have a positive effect on decent work and work standards through regulatory harmonisation of Ukrainian practices with EU practices and through increased levels of FDI that come with international production and work standards. The **environmental effects** are primarily linked to transport services and not so much to distribution services, financial services or communication services. The negative economic impacts on transport services are positive for the environment as emissions of greenhouse gases will be reduced and leakages of pollutants into the environment will decrease. Overall, investments in transport and distribution services lead to cleaner means of transport because of upgrading.

Distribution services

For distribution services the envisaged reductions in border costs and NTBs have significant positive effects on economic growth, trade, retail and wholesale markets and the level of competition leading to higher productivity. Employment is expected to increase overall with positive effects on poverty reduction and reduced prices for consumers and producers. Development of distribution services has a regional effect in that it will benefit the industrial areas in Ukraine more than the agricultural countryside. Upgrading of the engines used for trucks, planes and ships will have positive environmental impacts and so does an improved state of the car fleet. There will be a negative impact for the environment through more emissions and pollution.

Transport services

Transport services will experience a significant drop in output and employment in the short run and partially bounce back in the longer run. The FTA leads to major restructuring efforts and puts pressure on an outdated transport system, inefficient service provision, and outdated transport vehicles. These warrant high levels of investments to increase competitiveness and productivity. Pipeline transportation is not expected to be heavily affected by the FTA. Imports from the EU will increase while exports will not due to failure of Ukrainian transport vehicles to meet EU environmental standards. The FTA will have a positive effect on passenger safety (roads, air) through encouraging infrastructure improvements. Environmentally, the reduction in transport services will have a positive effect due to less CO₂ and other pollutant emissions. In the longer run, through regulatory approximation of Ukraine's environmental standards, the transport sector will become 'cleaner' which means it can grow without becoming more polluting.

Communication services

The estimated FTA impacts on communication services are not expected to be large. Economically, competition will increase and prices are expected to drop, which will lead to increases in production and employment in the long run. The positive impact of the FTA on communication services may be much more felt in cities than on the rural countryside. Environmental effects of changes in communication services are negligible and can be omitted.

Financial services

Financial services experience drops in production and employment, because of strong foreign competition and restructuring in the sector (e.g. banking sector) as well as liberalisation of modes 2, 3 and 4. We believe that the CGE model restrictions play a role in the envisaged outcomes here too (e.g. the assumption of full employment and inability to incorporate dynamic FDI effects). Environmental effects of changes in the financial services are expected to be negligible.

20.2.6 Competition policy

Competition policy is very important in Ukraine because of the country's transition path from a centrally planned to a market economy. The FTA will lead to more competition in Ukraine through lower barriers to trade but also due to regulatory impacts with respect to state aid and antitrust policies. **The economic impacts** of competition increases are lower

prices, more output, increases in trade and more employment. Successful competition policy will create also **social impacts** as a result of the economic impacts. These include decreases in poverty, more employment and – in the long run – higher wages.

Environmentally, each aspect of competition policy and all competition policy measures have to be checked ex ante to avoid trade distortions and constitute sustainable policies, environmental issues and health and safety safeguards. Otherwise, only the opening of the markets can result in higher pollution, emission and neglect of health safeguards due to increasing competition.

20.2.7 Government procurement

In order to achieve regulatory approximation of one of the most corrupt parts of the Ukrainian economy – government procurement – to EU standards, a lot still needs to be done with respect to procedures that need to be cleared, legal amendments that need to be put through parliament and transparency that needs to be enhanced. The impacts of a well-functioning government procurement system – as an FTA outcome – are very large. Significant **economic impacts** come from introduction of ‘fair’ competition and better spending of public funds. Efficiency and the quality of public investments are improved higher levels of GDP growth and more trade (mostly in services) are the result. Socially, can improve the health care sector and the quality of products. Also the education system in Ukraine stands to gain from an efficient government procurement system. Well spent resources as investments in the Ukrainian economy lead to employment creation, wage increases and lower levels of poverty. **Environmental impacts** are harder to measure, but overall, inclusion of sustainable development considerations in the government procurement system can lead to funds invested in a more sustainable way, if legal provisions are adopted.

20.2.8 Technical standards

Technical standards form a core component of the FTA as it is widely recognised – also by this study – that approximation of standards in the post WTO-accession state of Ukraine will have a much larger impact on trade and development than several small tariff reductions. The **economic impacts** of alignment of Ukraine’s norms to the EU level include increases in competition and reduction of companies’ costs related to passing conformity assessment procedures. The indirect effects come from strong incentives – with a large EU market about to open up – for Ukrainian producers to improve production processes, implement quality control schemes and invest in new technologies. **Socially**, approximation of norms will make investments easier and lead to more transparency, predictability and simplification of regulations. Most affected are those sectors for whom harmonisation will reduce their current costs of compliance with the EU: agriculture, manufacturing of textiles and wearing apparel, motor vehicles and machinery and electronics and food production. The latter improvements will also have positive health effects. Increases for the textiles and wearing apparel sector will lead to more gender equality since predominantly women are employed in these sectors. The **environmental effects** of an FTA on technical standards, is generally positive as it means that Ukrainian environmental standards for various sectors and sub-sectors have to be upgraded to EU

standards level which will lead to less pollution, emission of greenhouse gases, more attention to biodiversity and an increase in environmental quality. Also implementation monitoring of environmental legislation is expected to increase.

20.3 Implementation – mitigating and enhancing policy measures

The following section covers the more important sustainability impacts and some cross-cutting issues. Other issues are considered in the detailed policy analyses of Chapter 19.

20.3.1 Preconditions for policy measures

Institutional setting

Most of the potential sustainability issues have not been experienced in Ukraine before. Efforts to improve environmental quality are recent. Because of this, especially concerning environmental sustainability, many of the structures required for the mitigating (flanking) measures do not yet exist. In cases where a consensus exists, there is usually a fully effective regulatory body, which is not the case for Ukraine. The role of the EU in acting to mitigate the negative sustainability consequences of the EU-Ukraine FTA could first of all be seen as a supporter to start-up efforts or of efforts already under way, also in institutional design; as a source of support where new resources are required for research; and as a partner in a two-way EU-Ukrainian mutual education dialogue in those situations where a consensus is still to be built.

The sectors where the sustainability impacts have been most noted are the greatly (economically) benefiting manufacturing industries. As the sustainability impacts are closely related to existing effects, the mitigating measures must address the underlying situations affecting these sectors. In developing the approach, an important question to be asked is why an existing regulation has not already been effectively addressed. Is this due to lack of resources, to a sub-optimal regulatory system or to a lack of consensus about objectives, leading to evasion of regulation.

Technology transfer

In a number of sectors in Ukraine there are factories that do not have access to pollution-reducing technology, although other companies may well have this access. The objective of technology transfer as a mitigating action is to provide the technical means to reduce various forms of pollution that would otherwise result from increased production from the EU-Ukraine FTA. The sectors where such an action could prove useful include mining and metals, food processing, chemicals, and machinery & electronics. Care will have to be taken to avoid giving unfair advantages to plants that are assisted with technology transfer and to avoid providing a disincentive to companies to invest themselves in pollution reducing equipment.

Monitoring

Periodic monitoring and evaluation should analyse the impact of the EU-Ukraine FTA (and thus implicitly the projections contained in this study); and the relevance and impact of the mitigation and enhancement measures adopted. The aim should continue to be to

understand why, how and where sustainability impacts occur; what can be done to ameliorate the sustainability impacts; and what counteracting policies do and do not work and why. The aim of monitoring and evaluation is thus both continuing analysis and policy prescription and should cover both the trade policy itself and the mitigating measures.

20.3.2 FTA related policy measures

Economic

FTA policy measures to address economic impact issues may include

- The establishment of a transition period for (1) the agricultural sector and specifically the meat and oils sub-sector, the beer & wine sub-sector and the sugar & confectionary sub-sector; (2) Machinery and Electronics sector; and (3) the services sub-sectors transport, financial services and retailing.
- Improvement of the investment climate through trade facilitation measures, a stable macro-economic climate and lower alleged levels of corruption.
- Enhancement of approximation and adoption of EU SPS and technical standards – particularly in agricultural sectors, transport, machinery & electronics, textiles & wearing apparel – through upgrading of laboratories, revising of SPS and other control systems (certification), capacity building for relevant institutions.
- Inclusion of a *Sustainable development chapter* to the FTA, including a possibility to establish a Trade and Sustainable Development (SD) Forum providing for consultation with civil society.

Social

FTA policy measures to address social impact issues may include a

- *Sustainable development chapter* to the FTA. Social clauses in this chapter could include for instance: commitment to effective implementation of core labour standards and other basic decent work components, agreement to ratify the ILO standards concerned, reporting on general progress, engagement to respect the OECD Guidelines on Multinational Enterprises and the ILO Tripartite Declaration on Multinational Enterprises and Social Policy, and not to lower labour standards in order to attract foreign investment;
- possibly develop – in the scope of the SD mechanism - review mechanisms and conduct ex-post impact assessment studies to evaluate impacts in particular areas of concern, e.g. through a Trade and SD Forum providing for consultation with civil society.

Environmental

FTA policy measures to address social impact issues may include a

- *Sustainable development chapter* to the FTA. Environmental clauses in this chapter should include for instance: commitment to multilateral environmental agreements, such as the Kyoto Protocol, creating a system of standards for objective measurement of pollution, engagement with respect to the Kyoto protocol guidelines, and possibility to establish a Trade and SD Forum providing for consultation with civil society on particular areas of concern in the context of environmental impacts.

- Incorporate the upgrading of Ukrainian engine technology to EU standards (currently Euro-4 or Euro-5) and provide incentives for the upgrade like access to the EU or lower environmental tax obligations.
- Tie environmental progress to the speed at which a sector may produce and export to the EU or obtain other benefits.

20.3.3 Broader policy measures

Economic

The main policy measures addressing economic impacts should be aimed at enhancing the positive effects of investments, restructuring and modernisation and SME development.

- Improvement of the **Investment Climate** and investment promotion. Policy measures to achieve this range from the promotion of macro-economic stability to reductions in the cost of doing business (see Chapter 19);
- Encourage **restructuring and modernisation** of economy and particularly specific sectors. Such sectors would include coal mining, metallurgy and agriculture (see Chapter 19);

The restructuring programmes and trajectories followed by the steels sectors in the new member states and accession countries could serve as an example of how to set up such programmes.

- Promote **entrepreneurship and SME development**. In part this would be achieved through improvement of the investment climate and further development of the SME policy, but a number of additional measures, sometimes linked to social policies could be beneficial as well (see Chapter 19).

Social

The main policy measures to mitigate negative and enhance positive social FTA impacts relate to:

- The improvement of employment, core labour standards and decent work principles;
- Overcoming regional differences, education, migration and promote equality;
- Encourage the involvement of social partners and civil society in the design and implementation of social policies. This would imply the need for an inclusive approach by Ukrainian authorities and the need for capacity development to act as legitimate and well informed partners for dialogue on the part of the social partners;
- Encourage **employment creation** and promote **improvement of labour conditions** (see Chapter 19);
- Promotion of **SME development and entrepreneurship** as new sources of employment creation;
- Support **adoption and implementation of EU labour standards and decent work principles** in Ukrainian business and society;
- Provide **skills retraining** in short run and refocus and improve **training and education** system in Ukraine for longer run (see Chapter 19);
- **Address migration issues** (labour migration, illegal migration, brain drain) in concerted and cooperative way (see Chapter 19);

- Develop **regional strategy** to deal with issues regarding regions suffering from industrial decline and migration (for EU, address this issue through structural funds instrument);
- Work towards approximation of the law on **equal rights of women** with the relevant EU *acquis*.

Environmental

- Develop a **regional strategy** to deal with issues regarding regions suffering from changes in land use and environmental degradation. Include biodiversity issues and the promotion of alternative land uses, e.g. for bio-fuels;
- Include environmental provisions in government procurement tenders and make them part of the evaluation grid;
- The moment Ukraine meets pre-defined obligations and standards, commence negotiations with Ukraine on the Energy Community Treaty;
- Compensating increased greenhouse gas emissions with Joint Implementation (JI) and emission trading with the EU partners;
- Increase in nature conservation and soil remediation projects;
- Compensating increased greenhouse gas emissions with Joint Implementation (JI) and emission trading with the EU partners;
- Regulate transport related carbon dioxide emissions (CO₂) and volatile organic compounds (VOC) in accordance with the Best International Practice;
- When devising investment promotion schemes / encouraging inward investments, give priority / provide extra incentives to environmentally sustainable investments, solutions and technologies.

21 Annex I: References

- Busse, Reinhard & Mossialos, Elias & Saltman, Richard B. (2002), 'Regulating entrepreneurial behaviour in European health care systems', WHO 2002
- Center for Social and Economic Research (CASE) (2006), 'Prospects for EU-Ukraine Economic Relations', CASE Ukraine
- Centre for European Policy Studies (CEPS, Brussels), Institut für Weltwirtschaft (IFW, Kiel) and International Centre for Policy Studies (ICPS, Kiev) (2006), 'The prospect of deep free trade between the European Union and Ukraine' (2006).
- Chernyshev, I. (2005) "Socio-economic security and decent work in Ukraine: A comparative view and statistical findings." Working Paper No. 76, Policy Integration Department, Statistical Development and Analysis Group, ILO, Geneva.
- Commission of the European Communities (2003), Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions, 'Employment and social policies: A framework for investing in quality', COM(2003)728 final, Brussels, 26 Nov. 2003.
- Commission Staff Working Document, 'Communication from the Commission to the Council and the European Parliament on Strengthening the European Neighbourhood Policy', ENP Progress Report, Ukraine, 4th of December 2006.
- DG Trade 15 Sept. 2006 (2006), 'EU Ukraine Bilateral Trade', Eurostat - DG Trade http://trade.ec.europa.eu/doclib/docs/2006/september/tradoc_111613.xls
- Dimaranan, Betina V. & McDougall, Robert A (2002), 'Global Trade, Assistance, and Production: The GTAP 5 Data Base - Skilled and Unskilled Labor Data, Chapter 18D', Center for Global Trade Analysis, Purdue University.
- European Commission (1998), 'Partnership and Co-operation Agreement with Ukraine', EC
- European Commission (2006) 'Handbook for Trade Impact Assessment', DG Trade, Brussels (2006)
- EU-Ukraine Cooperation Council (2005), 'EU/Ukraine Action Plan', EC
- Eurostat (2007), <http://epp.eurostat.ec.europa.eu>

Eurostat (2007), Eurostat Yearbook 2006-2007, Eurostat

GFA Consulting Group (2006), ‘Regional Analysis on the three priority regions Zhytomyr, Chernigiv and Rivne’, Ukraine SME support in priority regions –project funded by EC http://www.sme.ukraine-inform.org.ua/docs/SMEUA_Regional_Analysis_v1_eng.pdf

Harrison, G., T. Rutherford and D. Tarr, 1994, Product Standards, Imperfect Competition, and Completion of the Market in the European Union, Policy Research Working Paper, 1293, The World Bank.

Harrison, G., F.Rutherford, D.G.Tarr (HRT) (1996), ‘Increased Competition and Completion of the Market in the European union’, Journal of Economic Integration, 11(3), September 1996, 332-365.

Hoffmann, A.N. (2000), ‘The Gains from Partial Completion of the Single Market’, *Weltwirtschaftliches Archiv*, 2000 No.4.

ILO (2007), ‘Decent Work’, www.ilo.org/public/english/decent.htm

International Monetary Fund (IMF) statistics (2007), ‘Ukraine statistics’, <http://www.imf.org/external/country/UKR/index.htm>

International Monetary Fund (2005), ‘SME database’, [http://www.ifc.org/ifcext/sme.nsf/AttachmentsByTitle/SMEDatabase.xls/\\$FILE/SMEDatabase.xls](http://www.ifc.org/ifcext/sme.nsf/AttachmentsByTitle/SMEDatabase.xls/$FILE/SMEDatabase.xls)

Jakubiak, M. et al (2006), ‘Non-tariff barriers in Ukrainian export to the EU’, CASE reports #68

Kirkpatrick, C. and N. Lee (1999), ‘WTO New Round: Sustainability Impact Assessment Study. Report to DG Trade under Framework Contract SIA of Proposed WTO Negotiations’ (1999).

Lekhan, V. & Nolte, E. & Rudy, V. (2004), ‘Health care systems in transition: Ukraine’, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies

Lekhan, V. & Rudy, V. (2007), ‘Key strategies for further development of the health care sector in Ukraine’, Rayeysky Scientific Publishers

National Bank of Ukraine (2007), www.bank.gov.ua

Ministry of Economy of Ukraine (2007), <http://wto.inform.org.ua/attach/Stenograma.doc>

Moisala, Jutta (2004) ‘Earnings in Europe. A Comparative Study on Wage and Income Disparities in the European Union.’ Labour Institute for Economic Research, Helsinki.

Pavel, F. & Burakovsky, I. & Selitska, N. & Movchan, N. (2004), 'Economic Impact of Ukraine's WTO Accession: First results from a Computable General Equilibrium Model', IER Working Paper, No. 30 (http://www.ier.kiev.ua/English/WP/2005/wp_30_eng.pdf).

Pratten, C. (1988), 'A Survey of the Economics of Scale. Research on the „Cost of Non-Europe basic findings' Vol. 2., Brussels: The EU Commission.

State Department for Legislation Approximation Ukraine (2007), 'Overview of the Status of Approximation of Ukrainian Legislation to *acquis communautaire* — K.: «Professional», ISBN 966-370-034-3 — 544 p. (<http://sdla.gov.ua/atachs/ADAPT.pdf>).

State statistics committee of Ukraine (2007), www.ukrstat.gov.ua

United Nations Development Programme (2006) "Ukraine. Poverty Alleviation." Millennium Development Goals Project. Ministry of Economy of Ukraine (<http://www.undp.org.ua/>)

Vavryshchuk V., Kalizschuk Y., Taran S., Hoyna Y., and N.Yasko, (2004), 'State Aid in Ukraine: Reforming in Accordance with the WTO and EU's Requirements', Nora-Druk, ISBN 966-8321-55-3; 86 pages.

Vinhas de Souza, L., R. Schweickert, V. Movchan, O. Bilan and I. Burakovsky (2005), 'Now So Near, and Yet Still So Far: Economic Relations between Ukraine and the European Union', Discussion Paper No. 419, Kiel Institute for World Economics, Kiel.

World Bank and OECD (2004), 'Achieving Ukraine's Agricultural Potential: Stimulating Agricultural Growth and Improving Rural Life', World Bank, Washington DC.

22 Annex II: The Model Specifications

22.1 Model structure

This model is based on the MRT - Multiregional Trade Model - by Harrison, Rutherford and Tarr (HRT) used in their evaluation of the Single Market (HRT, 1994)¹⁹¹.

22.1.1 Markets and prices

The following notational conventions are adopted:

i, j – indexes of goods

r, s – indexes of regions

f – primary factors

p – market price index, 1 in the benchmark

\bar{x} – benchmark value of quantity variable X .

The following market prices are included in the model:

PC_r – price index for final consumption in region r

PG_r – price index for government provision in region r

PA_{ir} – price index for the Armington aggregate of good i in region r , inclusive of all applicable tariffs, border costs and monopolistic markups

PY_{ir} – supply price (marginal cost) of good i from region r , excluding fixed costs associated with the production of goods in industries subject to IRTS

PF_{ir} – price index for factor inputs in sector i , region r

PT – price index for transport services.

22.1.2 Summary of the equilibrium relationships

Final demand in each region arises from a representative agent, maximising a Cobb-Douglas utility function subject to a budget constraint. Income is composed of returns to primary factors and tax revenue directed to the consumer as a lump sum.

Within each region, final and intermediate demands are composed of the same Armington aggregate of domestic and imported varieties. The composite supply is a nested CES function, where consumers first allocate their expenditures among domestic

¹⁹¹ Their code was obtained from Anders Hoffmann with the permission of Thomas Rutherford and our modelling exercise uses large parts of this code. This model in turn is based on the code employed in their evaluation of the Uruguay Round in HRT (1995, 1996, 1997), which is available for public access on Harrison's Web site.

and imported varieties and in the second level the consumers choose among imported varieties. In the imperfect competition case firm varieties enter at the bottom of the CES function.

There is no distinction between goods produced for domestic market and for exports. Goods are produced with the use of intermediate inputs and primary factors. Primary factors are mobile across sectors, but not across regions. We assume a CES function over primary factors and a Leontief production function for intermediate inputs and factors of production composite. Exports are not differentiated by the country of destination.

All distortions are represented as ad valorem price-wedges. They consists of factor and intermediate input taxes in production, output tax, import tariffs, export subsidies, taxes on government and private consumption.

22.2 Equations

22.2.1 Markets

- Regional output

$$(1) \quad Y_{ir} = \sum_s X_{irs}$$

where Y_{ir} is output of good i in region r , X_{irs} is export of good i from region r to s and if $r=s$, X_{irs} represents domestic sales.

- Regional demand

$$(2) \quad A_{ir} = C_{ir} + \sum_j a_{ijr} Y_{jr} + T_{ir}$$

where A_{ir} is total supply (production plus imports), C_{ir} is total final consumption, a_{ijr} is intermediate demand coefficient and T_{ir} is demand for good i in transport costs.

- Value added

$$(3) \quad V_{ir} = a_{ir}^V Y_{ir} + f_{ir} N_{ir}$$

where V_{ir} is total sector i value added, a_{ir}^V is value added demand coefficient, f_{ir} is the fixed cost per firm and N_{ir} is the number of firms in IRTS sectors.

- Primary factor markets

$$(4) \quad \bar{F}_{fr} = \sum_i a_{fir}^F V_{ir}$$

where \bar{F}_{fr} is the endowment of factor f in region r and a_{fir}^F is the price-responsive demand coefficient for factor f in sector i .

- Armington supply

(5)

$$A_{ir} = \bar{A}_{ir} \left(\alpha_{ir}^D \left(\frac{X_{irs}}{\bar{X}_{irs}} \right)^{\rho_{DM}} + (1 - \alpha_{ir}^D) \left\{ \sum_{r \neq s} \theta_{irs}^M \left(\frac{X_{irs}}{\bar{X}_{irs}} \right)^{\rho_M} \right\}^{\rho_{DM}/\rho_M} \right)^{1/\rho_{DM}}$$

where \bar{A}_{ir} is the benchmark supply, α_{ir}^D is the value share of domestic supply, \bar{X}_{irs} is benchmark exports of good i from region r to s , θ_{irs}^M is the benchmark value share of region r exports in region s imports and ρ_{DM} and ρ_M are determined by Armington elasticities of substitution σ_{DM} and σ_M : $\rho = \frac{\sigma}{\sigma - 1}$.

- Value added supply

$$(6) \quad V_{ir} = \bar{V}_{ir} \left\{ \sum_f \alpha_{fir}^F \left(\frac{a_{fir}^F}{\bar{a}_{fir}^F} \right)^{\rho_{fir}^F} \right\}^{1/\rho_{fir}^F}$$

where \bar{V}_{ir} is benchmark value-added, α_{fir}^F is the benchmark value share of factor f , \bar{a}_{fir}^F is the benchmark input coefficient and ρ_{fir}^F is determined by the elasticity of substitution.

- Border/transport costs

$$(7) \quad T_{ir} = \begin{cases} \sum_{js} \beta_{jrs} X_{jrs} & i = i_\tau \\ 0 & i \neq i_\tau \end{cases}$$

where τ is the index of single commodity used for transport services and β_{jrs} is the transportation cost coefficient.

- Welfare index

$$(8) \quad W_r = \prod_i \left(\frac{C_{ir}}{\bar{C}_{ir}} \right)^{\alpha_{ir}}$$

where \bar{C}_{ir} is benchmark final demand for good i in region r .

22.2.2 Profit conditions

- Value added

$$(9) \quad PV_{ir} = \frac{1+t_{ir}^F}{\overline{PV}_{ir}} \left(\sum_f \alpha_{fir}^F PF_{fr}^{1-\sigma_{ir}^F} \right)^{\frac{1}{1-\sigma_{ir}^F}}$$

where f_{ir}^F is the ad valorem factor tax rate, \overline{PV}_{ir} is the benchmark (tax-inclusive) price.

- Marginal cost.

$$(10) \quad PY_{ir} = a_{ir}^V PV_{ir} + \sum_j a_{jir} PA_{jr}$$

- Armington composite supply price

$$(11) \quad PA_{ir} = \left\{ \alpha_{ir}^D \left(\frac{PD_{ir}}{\overline{PD}_{ir}} \right)^{1-\sigma_{DM}} + (1-\alpha_{ir}^D) \left(\frac{PM_{ir}}{\overline{PM}_{ir}} \right)^{1-\sigma_{DM}} \right\}^{\frac{1}{1-\sigma_{DM}}}$$

where $\overline{PA}_{ir} = 1$

$$(12) \quad PD_{ir} = (1+\mu_{irs})PY_{ir}$$

and

$$(13) \quad PM_{ir} = \left\{ \sum_{r \neq s} \theta_{irs}^M [(1+\mu_{irs})(1+\hat{t}_{irs})(PY_{is} + \beta_{irs} PT_s)]^{1-\sigma_M} \right\}^{\frac{1}{1-\sigma_M}}$$

and

$$(14) \quad PT_{ir} = PA_{i_{\tau}r}$$

where μ_{irs} is the mark-up on marginal cost on sales of good i from a firm in region r in region s ,

\hat{t}_{irs} is the ad valorem tax rate which incorporates import tariffs and export subsidies, \overline{PD}_{ir} is the benchmark supply price for goods from domestic producers, \overline{PM}_{ir} is the benchmark supply price for imports.

- Regional income

Regional income is a sum of factor income, indirect taxes, taxes on intermediate demand, factor tax revenue, public tax revenue, consumption tax revenue, export tax revenue and tariff revenue net of investment demand, public sector demand and net capital outflows:

$$(15)$$

$$\begin{aligned}
M_r = & \sum_f PF_{fr} F_{fr} + \sum_i t_{ir}^Y PY_{ir} Y_{ir} + \sum_{ij} t_{ijr}^{ID} PY_{ir} Y_{jr} a_{ijr} + \sum_{fi} t_{fir}^F PF_{fr} V_{fir} + \sum_i t_{ir}^G PG_{ir} G_{ir} + \\
& + \sum_i t_{ir}^C PC_{ir} C_{ir} + \sum_{is} t_{irs}^X PY_{ir} X_{irs} + \sum_{is} t_{irs}^M (PY_{is} X_{isr} (1 + t_{isr}^X) + p^T T_{isr}) - \sum_i p_{ir}^D I_{ir} - \\
& \sum_i PG_{ir} (1 + t_{ir}^G) G_{ir} - p_n^C CAPFLOW_r
\end{aligned}$$

- Final demand

Public sector output consists of Cobb-Douglas aggregation of market commodities:

$$(16) \quad G_r = \Gamma_r \prod_i G_{ir}^{\theta_{ir}^G}$$

A representative agent determines demand in each region. He is endowed with primary factors, tax revenue and exogenous capital flows from other regions. He allocates his income to investment (exogenous), public demand (held constant in real terms) and private demand. Private demand is determined by the maximisation of Cobb-Douglas utility function:

$$(17) \quad U_r = \sum_i \theta_{ir}^C \log(C_{ir})$$

Aggregate final demand is then determined by regional expenditures and the unit price of aggregate commodities gross of tax:

$$(18) \quad C_{ir} = \frac{\alpha_{ir}^C E_r}{p_{ir}^C (1 + t_{ir}^C)}$$

where E_r is regional expenditure, which equals income (M_r) net of investment and public expenditures.

- Bilateral trade flows.

There are two tax margins (import and export tax) and transport costs in the model. Transport costs are proportional to trade. Transport costs are defined by a Cobb-Douglas aggregate of international transport inputs supplied by different countries:

$$(19) \quad \sum_{irs} T_{irs} = \psi_T \prod_{i,r} TD_{ir}^{\theta_{ir}^T}$$

Bilateral trade flows are determined by cost-minimising choice given the *fob* export price of commodity from region r (PY_{ir}), the export tax rate (t_{ir}^X), and the import tariff rate (t_{ir}^M), where the export tax applies on the *fob* price net of transport margins, while the import tariff applies on a *cif* price.

- Free entry zero-profit condition for monopolistic firms

$$(20) \quad N_{ir} = \frac{\sum_s [\mu_{irs} (1 + \hat{t}_{irs}) (PY_{ir} + \beta_{irs} PT_r) X_{ir}]}{PV_{ir} f_{ir}}$$

22.3 Monopolistic competition

- Goods are distinguished by firm, by region and area of origin (domestic or imported).
- Demands arise from a nested CES function with a supply from firms in a single region at the lowest level of the CES aggregate. At the next level, the firms compete with supplies from other regions from the same area and at the top level consumers choose between goods from different areas. Demand for final composite arises from a Cobb-Douglas utility function.
- Producers compete in quantities based on a Cournot model with fixed conjectural variations. Markups over marginal costs are based on the profit maximisation. There is free entry, so profits in equilibrium are zero. Markup covers the fixed costs, which are fixed at the firm level and as the markup revenue in a region changes, so does the number of firms.
- The model does not incorporate gains from variety, only the rationalisation gains. A reduction in tariffs leads to loss of the market share by domestic firms. Domestic producers reduce the markup on marginal costs, some domestic firms exit, the remaining firms slide down their average cost curves and output per firm increases.

22.3.1 Algebraic relations

The equilibrium conditions for each market where there are IRTS are estimated separately. The following notation is adopted:

X – Aggregate demand

Y_k – Supply from area k

S_r – Supply from region r

q_{fr} – Supply from firm f in region r

P – Price index for aggregate demand

P_k – Price index for supply from area k

w_r – Price index for supply from region r

π_{fr} – Sales price for supply from firm f in region r .

CES aggregators are used to create the composite goods:

$$(21) \quad X = \left[\sum_k \alpha_k^{1/\sigma} Y_k^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}}$$

$$(22) \quad Y_k = \left[\sum_{r \in \eta_k=k} \beta_{rk}^{1/\eta} S_r^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$$

$$(23) \quad S_r = \left[\sum_f q_{fr}^{\frac{\varepsilon-1}{\varepsilon}} \right]^{\frac{\varepsilon}{\varepsilon-1}}$$

The associated price indices:

$$(24) \quad P = \left(\sum_k \alpha_k p_k^{1-\sigma} \right)^{\frac{1}{1-\sigma}}$$

$$(25) \quad p_k = \left(\sum_{r \in \eta_k=k} \beta_{rk} w_r^{1-\eta} \right)^{\frac{1}{1-\eta}}$$

$$(26) \quad w_k = \left(\sum_f \pi_{fr}^{1-\varepsilon} \right)^{\frac{1}{1-\varepsilon}}$$

and associated demand functions:

$$(27) \quad Y_k = \alpha_k \left(\frac{P}{p_k} \right)^{\sigma} X$$

$$(28) \quad S_r = \beta_{rk} \left(\frac{p_k}{w_r} \right)^{\eta} Y_k \quad \text{for } k = k_r$$

$$(29) \quad q_{fr} = \left(\frac{w_r}{\pi_{fr}} \right)^{\varepsilon} S_r$$

22.3.2 Behaviour of firms

The profit of firm f in region r selling into a given market is as follows:

$$(30) \quad \Pi_{fr}(q) = \pi_{fr} q - C_{fr}(q)$$

where C is total cost. First order conditions for profit maximisation may be written as follows:

$$(31) \quad c_{fr} = \pi_{fr}(1 - m_{fr})$$

in which c_{fr} is the marginal cost of supply and m_{fr} is a markup over marginal cost (on gross basis):

$$(32) \quad m_{fr} = -\frac{1}{e_{fr}} = -\frac{\partial \pi_{fr} q_{fr}}{\partial q_{fr} \pi_{fr}}$$

where e_{fr} is the perceived elasticity of demand. The expression for the elasticity of demand arises from the nested CES structure of demand and depends on the assumed reaction of other producers.

22.3.3 The perceived elasticity of demand

Derivation of the perceived elasticity of demand begins with the inverse demand function:

$$(33) \quad \pi_{fr} = \left(\frac{S_r}{q_{fr}} \right)^{\frac{1}{\epsilon}} w_r$$

Then compute the derivative:

$$(34) \quad \frac{\partial \pi_{fr}}{\partial q_{fr}} = -\frac{1}{\epsilon} \frac{\pi_{fr}}{q_{fr}} + \frac{1}{\epsilon} \frac{\pi_{fr}}{S_r} \frac{\partial S_r}{\partial q_{fr}} + \frac{\pi_{fr}}{w_r} \frac{\partial w_r}{\partial q_{fr}}$$

Here, HRT develop further derivations with the simplifying assumption of unitary conjectural variations (Cournot conjectures). The non-unitary conjectures are introduced to reconcile the estimates of the economies of scale in production with the estimates of elasticities of substitution in demand. Under Cournot conjectures:

$$(35) \quad \frac{\partial S_r}{\partial q_{fr}} = \left(\frac{S_r}{q_{fr}} \right)^{\frac{1}{\epsilon}}$$

and the term $\frac{\partial w_r}{\partial q_{fr}}$ is computed using the chain rule the second time:

$$(36) \quad \frac{\partial w_r}{\partial q_{fr}} = \frac{\partial w_r}{\partial S_r} \frac{\partial S_r}{\partial q_{fr}}$$

Substituting (34) and (35) into (33) we get:

$$(37) \quad \frac{\partial \pi_{fr} q_{fr}}{\partial q_{fr} \pi_{fr}} = -\frac{1}{\varepsilon} + \frac{1}{\varepsilon} \frac{q_{fr}}{S_r} \left(\frac{S_r}{q_{fr}} \right)^{\frac{1}{\varepsilon}} + \frac{q_{fr}}{w_r} \left(\frac{S_r}{q_{fr}} \right)^{\frac{1}{\varepsilon}} \frac{\partial w_r}{\partial S_r}$$

Then using (32):

$$(37) \quad \left(\frac{S_r}{q_{fr}} \right)^{\frac{1}{\varepsilon}} = \frac{\pi_{fr}}{w_r}$$

make the substitution to obtain:

$$(38) \quad \frac{1}{e_{fr}} = -\frac{1}{\varepsilon} + \frac{1}{\varepsilon} \frac{\pi_{fr} q_{fr}}{w_r S_r} + \frac{\partial w_r}{\partial S_r} \frac{S_r}{w_r} \frac{\pi_{fr} q_{fr}}{w_r S_r}$$

Applying the same steps at the next level we get an analogous expression:

$$(39) \quad \frac{\partial w_r S_r}{\partial S_r w_r} = -\frac{1}{\eta} + \frac{1}{\eta} \frac{w_r S_r}{p_k Y_k} + \frac{\partial p_k}{\partial Y_k} \frac{Y_k}{p_k} \frac{w_r S_r}{p_k Y_k}$$

Applying the same operations again at the highest level of the CES, given that the demand elasticity for the aggregate X is unity, we get:

$$(40) \quad \frac{\partial p_k Y_k}{\partial Y_k p_k} = -\frac{1}{\sigma} + \frac{1}{\sigma} \frac{p_k Y_k}{PX} + \frac{p_k Y_k}{PX}$$

When equations (38)-(40) are assembled, we obtain an expression for the optimal Cournot markup as follows:

$$(41) \quad m_{fr} = \frac{1}{\varepsilon} + \left(\frac{1}{\eta} - \frac{1}{\varepsilon} \right) \frac{1}{N_{fr}} + \left(\frac{1}{\sigma} - \frac{1}{\eta} \right) \frac{\theta_{fk}^Y}{N_{fr}} + \left(1 - \frac{1}{\sigma} \right) \frac{\theta_k^X \theta_{rk}^Y}{N_{fr}}$$

where the share of supply from region r in the supply from area k is denoted as:

$$(42) \quad \theta_{rk}^Y = \frac{w_r S_r}{p_k Y_k} \quad \text{for } k = k_r$$

and the supply from area k in total supply of a given good is denoted as:

$$(43) \quad \theta_k^X = \frac{p_k Y_k}{PX}$$

In our model we assumed that products of different firms are imperfect substitutes in demand. The elasticity of demand depends on the country of origin. There are three

elasticities of substitution associated with the nested CES structure of demand discussed earlier:

- σ_{DD} – elasticity of substitution between varieties supplied by domestic firms
- σ_{MM} – elasticity of substitution between products of any two foreign suppliers
- σ_{DM} – elasticity of substitution between domestic and imported varieties.

We assume that domestically produced goods are more easily substitutable among themselves than products from different countries and that σ_{DD} is 15. In addition imported goods are assumed to be better substitutes to each other than domestic and foreign goods. The elasticity of substitution between imported goods is assumed to be equal 10, while domestic and foreign goods enter the demand function with the elasticity of substitution of 5. These are priors used by HRT (1994).

Further let θ_{rs} denote the market share of region r firms in region s . Then we can apply equation (C41) to represent the optimal markup applied in the domestic market and in the foreign markets:

$$(44) \quad \tilde{m}_{rs} = \begin{cases} \frac{1}{\sigma_{DD}} + \left(\frac{1}{\sigma_{DM}} - \frac{1}{\sigma_{DD}} \right) \frac{1}{N_r} + \left(1 - \frac{1}{\sigma_{DM}} \right) \frac{\theta_{rr}}{N_r} & r = s \\ \frac{1}{\sigma_{MM}} + \left(\frac{1}{\sigma_{DM}} - \frac{1}{\sigma_{MM}} \right) \frac{\theta_{rs}}{N_r \theta_s^M} + \left(1 - \frac{1}{\sigma_{DM}} \right) \frac{\theta_{rs}}{N_r} & r \neq s \end{cases}$$

These are the optimal markups expressed as a function of elasticities of substitution, market shares, θ_r^M the market share of imports in region r and N_r the number of firms producing in the region r .

22.3.4 Estimation of the equilibrium conditions in ITRS sectors

This paper adopts a simplification by estimating the equilibrium conditions in IRTS industries for each commodity in separate models. Demands and supplies for all regions are included into these calculations, but factor markets, intersectoral linkages and income effects are ignored. In each iteration of the IRTS models, regional demand functions are calibrated to the most recently estimated equilibrium conditions of the general model including all GE interactions. Given constant marginal cost, sales prices are determined by the markup equations.

The single commodity models are estimated as follows. The markup pricing equation (44) is specified given the benchmark elasticities of substitution, the number of firms and an adjustment parameter, the conjectural variation. First, the values of elasticities of substitution at all nests of the CES function, as well as the number of firms and therefore their market shares are specified. Further, the value of production at consumer prices at the benchmark combined with the estimates of the cost disadvantage ratio taken from the literature (see next section), determine the value of fixed costs, i.e. $FC_{ir} = CDR_{ir} YC_{ir}$. Given the assumption of zero profits, the markup over marginal cost generates the revenue equal exactly to the fixed costs. This condition appears as a constraint in a non-linear least squares calculation.

The objective in the estimation is to calibrate the conjectural variations, which are as close as possible to one. This value is consistent with pure Cournot-Nash behaviour of players. Therefore a sequence of least-squares problems is solved for each commodity subject to IRTS. These problems look for implicit numbers of firms (N_{ir}) which results in calibrated conjectural variations (CV_{rs}) which are as close as possible to 1. This looks as follows:

$$(46) \quad \min_{CV_{rs}^i, N_{ir}} \sum_{rs} (CV_{rs}^i - 1)^2$$

subject to:

$$FC_{ir} = \sum_{rs} X_{rs}^i M^G(CV_{rs}^i, N_{ir}, \sigma, \theta)$$

$$(47) \quad 0 \leq N_{ir} \leq 100$$

$$CV_{rs}^i \geq 0$$

where M^G is a markup equation, i.e. equation (44), and X_{rs}^i represents sales of i from region r in region s .

Therefore, the conjectural variations act as parameters, which allow reconciliation of the benchmark data with the estimates of the elasticities of substitution and CDR taken from the literature. In the majority of sectors calibrated conjectural variations are less than 1 indicating a more competitive behaviour than predicted by the Cournot model.

For sectors, where the assumption of free entry and zero profits in the benchmark, given values of the elasticity of substitution, is consistent with pure Cournot-Nash type behaviour, a second calculation is performed. It looks for the number of firms as small as possible subject to the consistency of conjectures with the Cournot behaviour.

$$(48) \quad \min_r N_{ir}$$

subject to:

$$FC_{ir} = \sum_{rs} X_{rs}^i M^G(CV_{rs}^i, N_{ir}, \sigma, \theta)$$

$$(49) \quad 0 \leq N_{ir} \leq 100$$

$$CV_{rs}^i = 1$$

22.3.5 Calibrating the Cost Disadvantage Ratio

The calibration of the cost disadvantage ratio (CDR) in IRTS sectors is based on the assumption of constant marginal cost. The total cost function is specified as follows:

$$(50) \quad c = f + mq$$

where f is fixed cost, m is constant marginal cost and q denotes the output level. Average cost function looks as follows:

$$(51) \quad ac = \frac{f}{q} + m$$

Assuming zero profits, the benchmark data provides the information on the industry total costs (C) and output (Q). If there are n representative firms in the initial equilibrium (1), then $nc_1=N$ and $nq_1=Q$. Since

$$(52) \quad \frac{c_1}{q_1} = \frac{nc_1}{nq_1} = \frac{C_1}{Q_1}$$

given the initial data we know already one point on the firm's average cost curve i.e.:

$$(53) \quad \frac{c}{q_1} = \frac{f}{q_1} + m$$

Given the assumption about a specific form of the average cost curve, we only need a second point in order to calibrate it. This is done with the use of information from the engineering estimates on changes in average cost accompanying changes in output. If

output declines to αq_1 then average costs increase to $\beta \left(\frac{c_1}{q_1} \right)$ where $0 < \alpha < 1$, $\beta > 1$ is

required for the marginal cost to be nonnegative. Given the values of α and β we know the second point on the industry average cost curve:

$$(54) \quad \beta \frac{c}{q_1} = \frac{f}{\alpha q_1} + m$$

By multiplying the nominators and denominators of the last two equations we obtain equations on the total output and costs of industry, on which the data is available. The equations look as follows:

$$(55) \quad \frac{C}{Q_1} = \frac{F}{Q_1} + m \text{ and}$$

$$(56) \quad \beta \frac{C}{Q_1} = \frac{F}{\alpha Q_1} + m.$$

where F is the fixed cost. Further, we solve the above equations for the fixed and marginal costs:

$$(57) \quad F = C_1 (\beta - 1) \frac{\alpha}{\alpha - 1} \text{ and}$$

$$(58) \quad m = \left(\frac{C_1}{Q_1} \right) \left(\frac{\beta \alpha - 1}{\alpha - 1} \right).$$

Since the cost disadvantage ratio is defined as f/c , which by symmetry equals F/C , we know that at the initial equilibrium:

$$(59) \quad CDR = \frac{(\beta - 1)\alpha}{1 - \alpha}.$$

We obtain the values of α and β from Pratten (1988). Since there are no estimates of the economies of scale for all 3-digit sectors according to NACE classification or the available estimates are not representative, we used a range of estimated parameters for each GTAP sector. Based on those parameters we constructed three values of the CDRs i.e. low and high using the lowest and highest values of the estimated parameters and middle one. The only exception was the food sector, where the economies of scale differ a lot by products, so we used the average production values to aggregate the CDRs for more finely defined sectors. The allocation of Pratten's NACE sectors to GTAP sectors, as well as the final CDRs are presented in Table 1 below.

Following others such as Gasiorrek, Smith and Venables (1992) or HRT (1994), I am assuming that in the benchmark equilibrium firms operate at the minimum efficient scale (MES). Firms should have difficulties competing, if they were operating at less than MES. Given the function form used in this study, at the MES further expansion of output reduces average cost of production. If initially output is lower than the MES, then the CDRs will be underestimated since the slope of the average cost curve increases in absolute value for decreases in output.

In all scenarios we assume low values for the economies of scale. We intend to use high and medium CDRs in the sensitivity analysis.

Table 22.1 Data on CDR values

	Share of MES (α)	Percentage Cost Increase at Output Level (β)	Implied CDR			Source of Data
			Low	Medium	High	
Column	1	2	3	4	5	6
Agriculture	0	0	0	0	0	
Raw materials	0	0	0	0	0	
Food, Beverages, Tobacco			7.7	11.1	14.5	
Meat	0.67	5				412
Dairy	0.67	2				413
Other food	0.67	4 to 9				414, 416, 420, 422
Tobacco	0.33	2.2 to 5				429
Textiles	0.5	2 to 10	2	6	10	43
Clothing	0	0	0	0	0	
Leather	0.33	1.5	0.7	0.7	0.7	451
Wood	0	0	0.0	0.0	0.0	

	Share of MES (α)	Percentage Cost Increase at Output Level (β)	Implied CDR			Source of Data
			Low	Medium	High	
Column	1	2	3	4	5	6
Paper	0.5	8 to 13	8.0	10.5	13.0	471, 472
Petroleum	0.33	4	2.0	2.0	2.0	14
Chemicals	0.33	4 to 19	2.0	5.7	9.4	25
Non-metallic Minerals	0.33	10 to 26	4.9	8.9	12.8	241-247
Iron, steel	0.33	10 to 11	4.9	5.2	5.4	22
Other metals	0.33	11 to 11	4.9	5.2	5.4	224
Metal prod.	0.33	10	4.9	4.9	4.9	221
Motor vehicles	0.5	11	11.0	11.0	11.0	35
Other transport	0.5	8 to 20	8.0	14.0	20.0	361
Electronics	0.33	5 to 15	2.5	4.9	7.4	23, 344, 345
Machinery n.e.c.	0.5	3 to 10	3.0	6.5	10.0	321, 322, 326
Manufacturing n.e.c.	0.5	3 to 5	3	4	5	HRT
Utilities	0	0	0	0	0	
Trade	0	0	0	0	0	
Transport	0.5	2	2	2	2	HRT
Financial services	0.5	5	5	5	5	HRT

Notes:

Column 1: Parameter α in the CDR calibration equation.

Column 2: Data corresponds to $(\beta-1)*100$ where β is from the CDR calibration equation.

Column 3-5: CDR estimated according to equation 58.

Column 6: Numbers indicated in this column correspond to NACE sectors from Table 5.1 in Pratten (1988). The assumptions on CDRs in services follow assumptions of HRT (1994).

23 Annex III: WTO trade data calculations

Here we shortly present the data mining that preceeded the CGE analysis.

- Calculated 2004 (benchmark) weighted average tariffs. Calculations were based on 10-digit nominal tariffs from the Law on Customs Tariffs and 10-digit HS trade statistics disaggregated by trading partners. Later 10-digit statistics were aggregated to a 6-digit level and transformed into GTAP 2-digit breakdown (concordance table was used).
- Based on information from the Ministry of Economy the EU-27 and RoW import tariff rates were adjusted to obtain post-WTO values. ME prepared a table of 2002 weighted average and the post-WTO binded tariffs for 2-digit HS lines (unfortunately, the table is not publicly available). The first step was to find the reduction coefficient for each 2-digit HS group, i.e to estimate by how much the binded average weighted tariff is smaller than the actual 2002 weighted average tariff. Thus, we obtained 97 coefficients for all the 2-digit HS groups (some of them were set to be equal to 1 if post-WTO binded tariff is bigger than the current value). The 2004 weighted average tariffs calculated by CASE Ukraine were multiplied by these coefficients respectively. The new HS tariffs were later again transformed into GTAP lines.
- Since the ME data are for 2002 and the trade structure changed somewhat in 2004, we recognized that such coefficient were not absolutely correct. So we made a step by step analysis of GTAP tariffs to make sure that the obtained values are to our best knowledge consistent with the Ukraine's schedule of commitments. Based on fragmentary information on Ukraine 's schedule from different sources we corrected some obtained GTAP tariffs to get reasonable post-WTO values.
- The last thing was to rescale the obtained coefficients. The actual level of tariff protection in Ukraine is somewhat lower than it should be given the structure of the tariffs. According to our estimates in 2004 the budget got only 59% of the import duty revenues that should have been paid. We assumed that the tariff protection level will be increasing gradually (the situation that is currently observed: import duty revenues are growing faster than the nominal imports). We assumed that the post-WTO tariffs protection level will be 75%. The GTAP tariffs were multiplied by the scale coefficient of 0.75.

24 Annex IV: Tables overview Modelling results

Table 24.1 Summary of macroeconomic changes

Variable	Ukraine	Russia	EU-27	ROW
Scenario: WTO Accession				
Welfare (% change)	0.654	0.018	0.006	0.006
Income (return factors and taxes) (bn US\$)	0.058	0.364	8.526	24.847
Skilled Wage (% change)	0.814	-0.004	0.001	-0.001
Unskilled Wage (% change)	0.839	-0.038	-0.001	-0.001
Scenario 1: Extended FTA (short run) – including WTO				
Welfare (% change)	2.261	0.030	0.007	-0.001
Income (return factors and taxes) (bn US\$)	0.060	0.364	8.526	24.846
Skilled Wage (% change)	2.496	0.049	0.009	-0.001
Unskilled Wage (% change)	3.066	-0.028	0.009	-0.002
Scenario 1: Extended FTA (long run) – including WTO				
Welfare (% change)	5.285	0.071	0.011	0.003
Income (return factors and taxes) (bn US\$)	0.061	0.364	8.527	24.847
Skilled Wage (% change)	4.355	0.059	0.009	-0.003
Unskilled Wage (% change)	4.970	-0.029	0.008	-0.003
Scenario 2: Limited FTA (short run) – including WTO				
Welfare (% change)	1.216	0.004	0.007	0.002
Income (return factors and taxes) (bn US\$)	0.059	0.364	8.526	24.846
Skilled Wage (% change)	1.547	-0.003	0.006	-0.001
Unskilled Wage (% change)	1.789	-0.053	0.006	-0.001
Scenario 2: Limited FTA (long run) – including WTO				
Welfare (% change)	3.295	0.032	0.009	0.004
Income (return factors and taxes) (bn US\$)	0.060	0.374	8.527	24.847
Skilled Wage (% change)	2.817	0.002	0.006	-0.002
Unskilled Wage (% change)	3.093	-0.054	0.005	-0.002

* All values are in billion US\$ unless specified to be in %

Table 24.2 Price changes per sector (% change)

Table: Changes in Prices																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Agriculture, Fisheries, Forestry	-0.7	0.2	0.2	0.2	-0.2	0.1			0.2	0.3	0.2	0.2	-0.4	0.1	0.1	0.1	-0.1	0.2	0.2	0.2
Coal, Oil, Gas	0.3	0.2	0.2	0.2	0.4	0.1	0.1		0.7	0.3	0.2	0.2	0.3	0.1	0.1	0.1	0.5	0.2	0.2	0.2
Minerals NEC	0.3	0.3	0.3	0.2	-0.5	0.1	0.1		-0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2
Bovine cattle, sheep and goats, horse meat products	0.3	0.2	0.2	0.2	-0.1	0.1			0.1	0.3	0.2	0.2	0.4	0.1	0.1	0.1	0.5	0.2	0.2	0.2
Vegetable oils and fats	-0.5	0.2	0.2	0.2	-0.8	0.1			-0.8	0.3	0.2	0.2	-0.4	0.1	0.1	0.1	-0.4	0.2	0.2	0.2
Dairy products	-0.6	0.2	0.2	0.2	-1.5	0.1			-1.4	0.3	0.2	0.2	-0.7	0.1	0.1	0.1	-0.6	0.2	0.2	0.2
Processed rice, Sugar	-1.9	0.2	0.2	0.2	-3.8	0.1			-3.7	0.3	0.2	0.2	-2.1	0.1	0.1	0.1	-2	0.2	0.2	0.2
Food products nec	-0.5	0.2	0.2	0.2	-1.3	0.1			-1.2	0.3	0.2	0.2	-0.5	0.1	0.1	0.1	-0.5	0.2	0.2	0.2
Beverages and tobacco	-1.5	0.2	0.2	0.2	-2.4	0.1			-2.3	0.3	0.2	0.2	-1.6	0.1	0.1	0.1	-1.6	0.2	0.2	0.2
Textiles	-0.2	0.2	0.2	0.2	-3.2	0.1			-3.1	0.2	0.2	0.2	-1.2	0.1	0.1	0.1	-1.2	0.2	0.2	0.2
Wearing apparel	0.1	0.2	0.2	0.2	-3.8		0.1		-3.7	0.2		0.2	-2.9	0.1		0.1	-2.8	0.2	0.1	0.2
Leather products	-3	0.2	0.2	0.2	-6.7	0.1			-6.7	0.2	0.2	0.2	-5.8	0.1	0.1	0.1	-5.8	0.2	0.2	0.2
Wood products, Paper products, publishing	-1.6	0.2	0.2	0.2	-3.3	0.1			-3.3	0.2	0.2	0.2	-2.1	0.1	0.1	0.1	-2	0.2	0.2	0.2
Petroleum, coal products	0.4	0.2	0.2	0.2	0.2	0.1			0.3	0.3	0.2	0.2	0.4	0.1	0.1	0.1	0.5	0.2	0.2	0.2
Chemical, rubber, plastic products	-0.4	0.2	0.2	0.2	-1.7	0.1			-1.6	0.3	0.2	0.2	-1.2	0.1	0.1	0.1	-1.1	0.2	0.2	0.2
Mineral products nec	0.1	0.2	0.2	0.2	-1.6	0.1			-1.4	0.3	0.2	0.2	-0.9	0.1	0.1	0.1	-0.8	0.2	0.2	0.2
Ferrous metals, Metals nec	0.1	0.2	0.2	0.2	-1.1	0.1			-1	0.3	0.2	0.2	-0.2	0.1	0.1	0.1	-0.1	0.2	0.2	0.2
Metal products	-0.1	0.2	0.2	0.2	-2.1	0.1			-2	0.3	0.2	0.2	-0.9	0.1	0.1	0.1	-0.8	0.2	0.2	0.2
Motor vehicles and parts	-0.1	0.2	0.2	0.3	-2				-1.9	0.2	0.2	0.2	-1.4	0.1	0.1	0.1	-1.3	0.2	0.2	0.2
Transport equipment	-10.6	0.1	0.2	0.2	-10.9				-10.8	0.1	0.2	0.2	-10.9		0.1	0.1	-10.8	0.1	0.2	0.2

Table: Changes in Prices																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Electronic equipment; Machinery equipment	-0.7	0.2	0.2	0.2	-2				-1.9	0.2	0.2	0.2	-1.7	0.1	0.1	0.1	-1.6	0.2	0.2	0.2
Manufactures nec	-0.6	0.2	0.2	0.2	-2	0.1			-1.8	0.3	0.2	0.2	-1.7	0.1	0.1	0.1	-1.6	0.2	0.2	0.2
Electricity	0.7	0.2	0.2	0.2	1.5	0.1			1.6	0.3	0.2	0.2	1	0.1	0.1	0.1	-1.1	0.2	0.2	0.2
Gas, Water	0.5	0.2	0.2	0.2	1.2	0.1			1.7	0.3	0.2	0.2	0.8	0.1	0.1	0.1	-1.2	0.2	0.2	0.2
Construction	0.4	0.2	0.2	0.2	0.6	0.1			0.6	0.3	0.2	0.2	0.5	0.1	0.1	0.1	-0.5	0.2	0.2	0.2
Trade	0.8	0.2	0.2	0.2	1.5	0.1			0.6	0.3	0.2	0.2	1.2	0.1	0.1	0.1	-0.5	0.2	0.2	0.2
Transport nec, Water & Air transport	2.5	0.2	0.2	0.2	1.5	0.1	0.1		1.1	0.3	0.2	0.2	2.2	0.1	0.1	0.1	-1.9	0.2	0.2	0.2
Communication	0.8	0.2	0.2	0.2	1.9	0.1			0.8	0.3	0.2	0.2	1.3	0.1	0.1	0.1	-0.5	0.2	0.2	0.2
Financial services nec, Insurance		0.2	0.2	0.2	-2.4	0.1			-2.7	0.3	0.2	0.2	-0.7	0.1	0.1	0.1	-1	0.2	0.2	0.2
Business services nec, Renting	0.7	0.2	0.2	0.2	1.6	0.1			1	0.3	0.2	0.2	1.1	0.1	0.1	0.1	-0.7	0.2	0.2	0.2
Recreational, entertainment, cultural and sporting activities, Social activities	0.8	0.2	0.2	0.2	2	0.1			1.8	0.3	0.2	0.2	1.3	0.1	0.1	0.1	-1.2	0.2	0.2	0.2
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	0.6	0.2	0.2	0.2	1.8	0.1			2.3	0.3	0.2	0.2	1.1	0.1	0.1	0.1	1.5	0.2	0.2	0.2
Aggregate investment	-0.9	0.2	0.2	0.2	-1.3	0.1			-1.2	0.3	0.2	0.2	-1.2	0.1	0.1	0.1	-1.2	0.2	0.2	0.2

Table 24.3 Percentage changes in output per sector (% change)

Table: Changes in production																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Agriculture, Fisheries, Forestry	-3.3	-0.1			-2.2	-0.2			-0.5	-0.2		0.1	-2.5	-0.1	-0.1		-1.4	-0.1		0.1
Coal, Oil, Gas	-1.6	0.1			-3.7	0.1		0.1	-3.2	0.2		0.1	-2.7	0.2			-2.4	0.2		0.1
Minerals NEC	-2.2	0.3	0.1		-5.8	0.8	0.1	0.1	-3.6	0.7	0.1	0.1	-3.7	0.4	0.1	0.1	-2.2	0.3	0.1	0.1
Bovine cattle, sheep and goats, horse meat products	7.4	0.1			9.6				-12	-0.1			8.3				10			
Vegetable oils and fats	3.6				9.1	-0.2	-0.1		-11.8	-0.2	-0.1		5.6				7.5			
Dairy products	1.7	-0.6			2.5	-1.6	0.1		5.1	-1.6	0.1		2.1	-0.8			4	-0.7	0.1	
Processed rice, Sugar	-3.3	-0.1			-8	-0.3	0.4		-5.8	-0.3	0.4		-4.1	-0.1			-2.4	-0.1		
Food products nec	1.6				5.4	-0.2			8.1	-0.2			2.7				-4.6			
Beverages and tobacco	-2.4	-1.7	0.1	0.1	-2.6	-2.2	0.1		-0.2	-2.2	0.2		-2.4	-1.7	0.1		-0.7	-1.7	0.1	0.1
Textiles	2	0.3			43.7			-0.1	50.4			-0.1	23.4	0.1			27.3			
Wearing apparel	22.6	0.2	-0.1		185.1	-1.2	-0.2	-0.3	197.9	-1.1	-0.2	-0.3	87.5	-0.9	-0.1	-0.1	93.4	-0.9		-0.1
Leather products	-0.5	-0.2		0.1	23.9	-0.3	0.2		29.6	-0.3	0.3		11.1	-0.3	0.2		14.6	-0.3	-0.1	
Wood products, Paper products, publishing	-0.2	-0.5	0.1		2.6	-0.8			5.4	-0.9	0.1		1.2	-0.5			3.1	-0.6	0.2	
Petroleum, coal products	0.9				4.5		-0.1		6.7		-0.1		3.1		-0.1		4.6		0.1	
Chemical, rubber, plastic products	0.2	-0.2			8.6	0.5			10.5	0.5			4.5	-0.2			5.8	-0.3	-0.1	
Mineral products nec	1.2	0.1			4	-0.1			5.6	-0.1			1	-0.1			2.2	-0.1		
Ferrous metals, Metals nec	-0.6	0.2	0.1		2	0.1			3.3	-0.1			-0.2	0.2			0.7	0.1		
Metal products	1.3	0.1			7.1	-0.3			8.2	-0.3			3.3	-0.1			4.1	-0.1	0.1	

Table: Changes in production																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Motor vehicles and parts	8.2				12.9	0.2			16.1	0.2			9.7	-0.1			11.8	-0.1		
Transport equipment	-11.9	3	0.1		-8.6	2.8	0.1		-6.6	3.2	0.1		-10.4	2.8	0.1		-9	-3.1		
Electronic equipment; Machinery equipment	7.1	-0.3			17.5	0.6			20.2	0.6			11.5	-0.5			13.3	-0.5	0.1	
Manufactures nec	1.9				7.7	-0.3			9.3	-0.4			2.9	-0.1			4.1	-0.2		
Electricity	-0.1				0.9				3.1				0.1	-0.1			1.7	-0.1		
Gas, Water	0.3				1.2				3.7				0.6				2.3	-0.1		
Construction	1.4				3.2				6.2	0.1			2.2				4.3			
Trade	0.1	0.1			1.3	0.1			4.9	0.1			0.4	0.1			2.9	0.1		
Transport nec, Water & Air transport	3.2	-0.3			-4.6	-0.2	0.1		-0.3	-0.3			-0.2	-0.2			2.7	-0.2		
Communication	-0.7	0.1			-2.3	0.1			1.9	0.1			-1.5	0.1			1.4	0.1		
Financial services nec, Insurance	-3.7	0.5			-18.3	2.3	0.1		-15.1	2.2	0.1		-9	1.1			-6.7	1.1		
Business services nec, Renting	-0.1	0.1			-1				2.7	-0.1			-0.6	0.1			1.9	0.1		
Recreational, entertainment, cultural and sporting activities, Social activities	-0.1	0.1			0.1				3.2				-0.1				2			
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal					0.1				2.4				-0.1				1.5			
Aggregate investment	1.6				3.6				6.6	0.1			2.5				4.5			

Table 24.4 Changes in absolute value of output per sector (mln US\$)

Table: Changes in output value		WTO Accession	Scenario 1 - short run				Scenario 1 - long run			
	<i>Production (mln US\$)</i>		Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)	Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)
Agriculture, Fisheries, Forestry	16.19	-3.3	-2.2	1.1	-0.356	0.178	-0.5	2.8	-0.081	0.453
Coal, Oil, Gas	3.48	-1.6	-3.7	-2.1	-0.129	-0.073	-3.2	-1.6	-0.111	-0.056
Minerals NEC	2.49	-2.2	-5.8	-3.6	-0.144	-0.090	-3.6	-1.4	-0.090	-0.035
Bovine cattle, sheep and goats, horse meat products	1.66	7.4	9.6	2.2	0.160	0.037	-12	-19.4	-0.199	-0.322
Vegetable oils and fats	0.99	3.6	9.1	5.5	0.090	0.055	-11.8	-15.4	-0.117	-0.153
Dairy products	2.33	1.7	2.5	0.8	0.058	0.019	5.1	3.4	0.119	0.079
Processed rice, Sugar	1.13	-3.3	-8	-4.7	-0.090	-0.053	-5.8	-2.5	-0.065	-0.028
Food products nec	3.84	1.6	5.4	3.8	0.207	0.146	8.1	6.5	0.311	0.250
Beverages and tobacco	3.71	-2.4	-2.6	-0.2	-0.097	-0.007	-0.2	2.2	-0.007	0.082
Textiles	0.51	2	43.7	41.7	0.224	0.213	50.4	48.4	0.258	0.248
Wearing apparel	0.66	22.6	185.1	162.5	1.221	1.072	197.9	175.3	1.306	1.157
Leather products	0.43	-0.5	23.9	24.4	0.103	0.105	29.6	30.1	0.127	0.129
Wood products, Paper products, publishing	2.81	-0.2	2.6	2.8	0.073	0.079	5.4	5.6	0.152	0.157
Petroleum, coal products	7.74	0.9	4.5	3.6	0.348	0.279	6.7	5.8	0.519	0.449
Chemical, rubber, plastic products	5.18	0.2	8.6	8.4	0.445	0.435	10.5	10.3	0.544	0.533

Table: Changes in output value		WTO Accession	Scenario 1 - short run				Scenario 1 - long run			
	Production (mln US\$)		Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)	Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)
Mineral products nec	2.01	1.2	4	2.8	0.080	0.056	5.6	4.4	0.112	0.088
Ferrous metals, Metals NEC	13.79	-0.6	2	2.6	0.276	0.359	3.3	3.9	0.455	0.538
Metal products	3.48	1.3	7.1	5.8	0.247	0.202	8.2	6.9	0.286	0.240
Motor vehicles and parts	1.73	8.2	12.9	4.7	0.223	0.081	16.1	7.9	0.278	0.136
Transport equipment	2.20	-11.9	-8.6	3.3	-0.189	0.073	-6.6	5.3	-0.145	0.117
Electronic equipment; Machinery and Equipment	5.72	7.1	17.5	10.4	1.000	0.594	20.2	13.1	1.155	0.749
Manufactures nec	1.33	1.9	7.7	5.8	0.103	0.077	9.3	7.4	0.124	0.099
Electricity	4.04	-0.1	0.9	1	0.036	0.040	3.1	3.2	0.125	0.129
Gas, Water	1.97	0.3	1.2	0.9	0.024	0.018	3.7	3.4	0.073	0.067
Construction	7.08	1.4	3.2	1.8	0.227	0.127	6.2	4.8	0.439	0.340
Trade	14.46	0.1	1.3	1.2	0.188	0.174	4.9	4.8	0.709	0.694
Transport nec, Water transport, Air transport	10.53	3.2	-4.6	-7.8	-0.484	-0.821	-0.3	-3.5	-0.032	-0.368
Communication	3.62	-0.7	-2.3	-1.6	-0.083	-0.058	1.9	2.6	0.069	0.094
Financial services nec, Insurance	5.08	-3.7	-18.3	-14.6	-0.929	-0.741	-15.1	-11.4	-0.767	-0.579
Business services nec, Renting	7.30	-0.1	-1	-0.9	-0.073	-0.066	2.7	2.8	0.197	0.205
Recreational, entertainment, cultural and sporting activities, Social activities	1.66	-0.1	0.1	0.2	0.002	0.003	3.2	3.3	0.053	0.055

Table: Changes in output value		WTO Accession	Scenario 1 - short run				Scenario 1 - long run			
	Production (mln US\$)		Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)	Change in output (%)	Res %	FTA effect incl WTO (mln US\$)	FTA effect on top of WTO (mln US\$)
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	12.22		0.1	0.1	0.012	0.012	2.4	2.4	0.293	0.293

Table 24.5 Changes in value of exports per sector (% change)

Table: Changes in values of exports	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Agriculture, Fisheries, Forestry	10	-1		1	21	-2		1	20	-2	1	2	14	-1		1	13	-1		1
Coal, Oil, Gas	-6	1			-11	1			-12	1	1	1	-9	1			-9	1		
Minerals NEC	-4			1	-7	3		1	-5	3		2	-6	1	1	1	-4	1	1	1
Bovine cattle, sheep and goats, horse meat products	21	1	1	-2	33	-1	1	-2	34	-1	1	-2	25		1	-2	26		1	-2
Vegetable oils and fats	17	-1			41	-2		-1	43	-2		-1	25	-1		-1	26	-1		-1
Dairy products	9	-12	1	-1	20	-33	2	-4	21	-32	2	-4	12	-17	1	-2	13	-16	1	-2
Processed rice, Sugar	8	-18	-1	4	9	-23	11	1	10	-23	11	2	7	-18	1	3	7	-18	1	4
Food products nec	7				28	-1	1	-1	29	-1	1		13				13			
Beverages and tobacco	6	-21	1	3	12	-29	2	1	13	-29	2	1	7	-23	1	2	8	-23	1	3
Textiles		1			53	1	1		59	2	1		2	1			30	1	1	
Wearing apparel	35	1			273	-4	2	-3	288	-4	3	-3	136	-4	1	-2	143	-3	2	-2

Table: Changes in values of exports																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Leather products	5	-6			34	-5	1		39	-4	1		21	-8	1		25	-8	1	
Wood products, Paper products, publishing	13	-2		1	31	-2			34	-2	1		19	-2			21	-2	1	
Petroleum, coal products	3		1		20			-2	22			-2	12			-1	13			-1
Chemical, rubber, plastic products	2	-1			14	1			16	1			9	-1			10	-1		
Mineral products nec	9				53	-4	1	-1	53	-4	1	-1	28	-4	1	-1	28	-4	1	
Ferrous metals, Metals nec			1		3		1	-1	4		1				1		1		1	
Metal products	2				11	-2	1	-1	12	-2	1	-1	6	-1			6	-1	1	
Motor vehicles and parts	9				18	7			20	8			13	-3			15	-2		
Transport equipment	7	3			11	2			13	3			9	2			10	3		
Electronic equipment; Machinery equipment	11	-1			27	2			30	2			19	-2			20	-2		
Manufactures nec	14				47	-2			47	-2			30	-1			30	-1		
Electricity	-3				-12	-1			-11	-1			-8				-7			
Gas, Water						-1				-1							-2	2		
Construction	-1	1			-5	1			-4	2			-3	1			-3	3		
Trade	-5	2			-12	5			-3	3			-9	4			-6	-1		
Transport nec, Water & Air transport	-5	-2			-14	1			-9			1	-10	-1			-4	1		
Communication	-5	1			-17			1	-7				-11	1			-4	17	1	1
Financial services nec, Insurance	-4	8			-10	33	1	1	-5	33	1	1	-8	17		1	-4	1		
Business services nec, Renting	-4	1			-14				-7				-9	1			-8			
Recreational, entertainment, cultural and sporting activities, Social activities	-5	1			-16				-13	-1			-10				-11	1		

Table: Changes in values of exports																						
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run					
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW		
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	-3	1			-14				-17				-9	1								

Table 24.6 Changes in value of imports per sector (% change)

Table: Changes in Values of Imports																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Agriculture, Fisheries, Forestry	26		1		42		2		45		2		31		1		33		2	
Coal, Oil, Gas	12		6		48				75		4		29		2		48		5	
Minerals NEC	1		1		11				12		1		4				4		1	
Bovine cattle, sheep and goats, horse meat products	-7	10	1		1	23	1		2	51	1		-5	-1	1		-4	17	1	
Vegetable oils and fats	2	3	1		7	5	2		8	11	2		4		1		5	4	2	
Dairy products	3	2		2	15	3	1		16	4	1	1	6	1		1	7	2		2
Processed rice, Sugar	10	5	1	1	36	8	2		38	28	2	1	14	-3	2		15	11	2	1
Food products nec	3				13		1		14	1	1		5				6		1	
Beverages and tobacco	13	3		1	23	3			25	4			16	1			17	2		1
Textiles	4	1			46				51	1	1		21				24		1	
Wearing apparel	5	1	1		61	1	1		68	2	2		30		1		35	1	1	
Leather products	8	1			46	2			51	4	1		25				28	1	1	
Wood products, Paper products, publishing	8				17				21	1			11				13			
Petroleum, coal products			1		5		3		6		3		1		2		2		2	
Chemical, rubber, plastic products	1				7				10	1			4				6			
Mineral products nec	6				35				40	1			23				26			
Ferrous metals, Metals nec	1				2				2		1		1				1		1	
Metal products					3	1	1		4	1	1		2		1		2		1	
Motor vehicles and parts		3		1	4	5			8	7			2	3			5	4		1
Transport equipment	9	1			12	1			15	1			10	1			12	1		

Table: Changes in Values of Imports																				
	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Electronic equipment; Machinery equipment	2	2			6	2			10	3			4	1			6	2		
Manufactures nec	7				22				25	1			18				20			
Electricity						1				1										
Gas, Water			1			3				5	1							1	1	
Construction	7				17	1			24	2			12				17	1		
Trade	3	1			8	4			6	12			5	-2			4	3		
Transport nec, Water & Air transport	-12				4	-1			5				-6	-1			-6			
Communication	7				26				23	1			15				13			
Financial services nec, Insurance	N	1			N	3			N	4			N	1			N	2		
Business services nec, Renting	6				19	1			18	2			12				11	1		
Recreational, entertainment, cultural and sporting activities, Social activities	68				239	1			276	3			143				169	1		
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	6				24	1			38	1			14				23			

Table 24.7 Changes in employment of high-skilled and low-skilled persons per sector (% change)

Table: Changes in Employment (%)																					
	Sk/Un	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
		UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Agriculture, Fisheries, Forestry	SK	-3.13	-0.06	-0.04	0.05	-2.22	-0.21	-0.05	0.05	-0.55	-0.22	-0.03	0.06	-2.59	-0.08	-0.06	0.04	-1.42	-0.08	-0.05	0.05
Coal, Oil, Gas	SK	-1.63	0.12	0.00	0.01	-3.77	0.14	-0.02	0.07	-3.37	0.21	0.00	0.11	-2.74	0.17	-0.04	0.03	-2.42	0.22	-0.02	0.05
Minerals NEC	SK	-2.25	0.29	0.09	0.04	-5.89	0.82	0.09	0.09	-3.74	0.66	0.07	0.10	-3.76	0.43	0.12	0.05	-2.22	0.32	0.10	0.05
Bovine cattle, sheep and goats, horse meat products	SK	7.50	0.05	-0.01	-0.02	9.84	-0.05	0.01	-0.03	12.50	-0.06	0.01	-0.03	8.46	0.05	-0.01	-0.03	10.27	0.04	-0.01	-0.03
Vegetable oils and fats	SK	3.67	0.01	-0.01	0.02	9.29	-0.16	-0.09	-0.03	12.32	-0.18	-0.07	0.00	5.70	0.00	-0.05	-0.01	7.70	-0.01	-0.03	0.01
Dairy products	SK	1.75	-0.60	0.04	0.01	2.57	-1.63	0.12	-0.02	5.34	-1.59	0.14	-0.01	2.17	-0.79	0.05	-0.01	4.07	-0.75	0.06	0.00
Processed rice, Sugar	SK	-3.29	-0.07	-0.03	0.05	-8.23	-0.31	0.41	0.01	-6.02	-0.32	0.44	0.03	-4.16	-0.12	0.01	0.03	-2.52	-0.12	0.03	0.05
Food products nec	SK	1.64	-0.01	0.02	0.02	5.56	-0.19	0.00	-0.01	8.42	-0.20	0.02	0.01	2.78	-0.03	-0.01	0.01	4.69	-0.03	0.01	0.02
Beverages and tobacco	SK	-2.43	-1.68	0.06	0.06	-2.70	-2.23	0.15	0.02	-0.21	-2.23	0.17	0.04	-2.46	-1.72	0.06	0.04	-0.74	-1.71	0.08	0.05
Textiles	SK	2.01	0.26	0.02	0.01	44.79	0.00	0.02	-0.10	52.64	-0.04	0.04	-0.10	23.72	0.08	0.01	-0.05	28.11	0.05	0.02	-0.04
Wearing apparel	SK	22.74	0.24	-0.05	-0.03	189.69	-1.17	-0.23	-0.27	206.48	-1.12	-0.24	-0.28	88.81	-0.91	-0.08	-0.14	96.01	-0.87	-0.08	-0.14
Leather products	SK	-0.50	-0.18	-0.04	0.06	24.47	-0.27	0.29	-0.01	30.94	-0.28	0.31	-0.01	11.30	-0.33	0.16	0.00	15.06	-0.34	0.17	0.00
Wood products, Paper products, publishing	SK	-0.21	0.48	0.06	0.02	2.70	-0.81	0.03	-0.01	5.69	-0.86	0.05	0.02	1.20	-0.53	0.03	0.01	3.23	-0.56	0.05	0.02
Petroleum, coal products	SK	0.93	-0.01	-0.03	0.01	4.65	0.01	-0.14	0.00	7.03	0.01	-0.15	0.00	3.10	-0.04	-0.09	0.00	4.72	-0.03	-0.09	0.00
Chemical, rubber, plastic products	SK	0.17	-0.20	0.03	0.01	8.79	0.54	-0.02	-0.02	10.96	0.53	0.00	-0.01	4.55	-0.23	0.02	-0.01	5.95	-0.25	0.03	0.00
Mineral products nec	SK	1.24	0.08	0.02	0.01	4.07	-0.12	0.01	-0.02	5.83	-0.10	0.03	0.01	1.04	-0.08	0.03	-0.01	2.29	-0.06	0.04	0.00
Ferrous metals, Metals NEC	SK	-0.64	0.19	0.08	0.03	2.04	0.06	0.00	-0.03	3.41	-0.05	0.03	-0.01	-0.20	0.20	0.04	0.01	0.72	0.12	0.06	0.02
Metal products	SK	1.34	0.07	0.02	0.02	7.30	-0.30	-0.02	-0.02	8.57	-0.34	0.00	-0.01	3.38	-0.11	0.00	0.00	4.20	-0.14	0.02	0.01
Motor vehicles and parts	SK	8.27	-0.02	0.03	0.03	13.27	0.16	0.00	-0.01	16.70	0.22	0.03	0.02	9.89	-0.14	0.03	0.00	12.15	-0.11	0.05	0.02

Table: Changes in Employment (%)																					
	Sk/Un	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
		UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Transport equipment	SK	-12.05	3.01	0.09	0.02	-8.82	2.83	0.07	0.01	-6.85	3.21	0.10	0.03	-10.57	2.85	0.07	0.01	-9.28	3.11	0.09	0.02
Electronic equipment; Machinery and Equipment	SK	7.17	-0.30	0.01	0.00	17.96	0.58	-0.04	-0.02	21.06	0.62	-0.02	-0.01	11.72	-0.55	-0.01	-0.01	13.69	-0.54	0.00	-0.01
Manufactures nec	SK	1.91	-0.01	0.02	0.00	7.85	-0.33	-0.01	-0.01	9.75	-0.36	0.00	0.00	2.91	-0.14	0.01	-0.01	4.17	-0.16	0.02	0.00
Electricity	SK	-0.06	-0.03	0.01	0.01	0.89	0.02	0.00	0.00	3.22	-0.01	0.00	0.00	0.12	-0.06	0.00	0.00	1.71	-0.08	0.01	0.01
Gas, Water	SK	0.30	-0.03	0.00	0.00	1.25	0.05	0.00	0.00	3.89	0.02	0.00	0.01	0.57	-0.03	0.00	0.00	2.35	-0.05	0.00	0.00
Construction	SK	0.46	0.03	0.00	0.00	3.32	0.05	0.01	0.00	6.48	0.08	0.01	0.00	2.25	0.02	0.00	0.00	4.37	0.05	0.00	0.00
Trade	SK	0.15	0.07	0.00	0.00	1.31	0.06	0.00	0.00	5.16	0.06	0.00	0.00	0.44	0.07	0.00	0.00	3.03	0.07	0.00	0.00
Transport nec, Water transport, Air transport	SK	3.24	-0.30	-0.02	0.00	-4.69	-0.20	-0.06	0.03	-0.35	-0.32	0.05	0.03	-0.24	-0.16	0.01	0.01	2.81	-0.24	0.01	0.01
Communication	SK	-0.69	0.09	0.01	0.00	-2.34	0.09	0.01	0.01	1.96	0.06	0.01	0.01	-1.49	0.12	0.01	0.01	1.46	0.09	0.00	0.01
Financial services nec, Insurance	SK	-3.77	0.51	0.02	0.01	-18.76	2.27	0.06	0.02	-15.78	2.25	0.06	0.02	-9.17	0.15	0.03	0.01	-6.93	1.13	0.03	0.01
Business services nec, Renting	SK	-0.14	0.09	0.00	0.00	-1.02	-0.01	0.00	0.01	2.85	-0.08	0.00	0.01	-0.64	0.11	0.00	0.00	2.00	0.06	0.00	0.00
Recreational, entertainment, cultural and sporting activities, Social activities	SK	-0.07	0.06	0.01	0.00	0.10	-0.01	0.00	0.00	3.31	-0.01	0.00	0.00	-0.14	0.05	0.00	0.00	2.04	0.05	0.00	0.00
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	SK	-0.05	0.03	0.00	0.00	0.07	0.01	0.00	0.00	2.51	0.03	0.00	0.00	-0.14	0.02	0.00	0.00	1.53	0.04	0.00	0.00
Agriculture, Fisheries, Forestry	UNSK	-3.31	-0.06	-0.04	0.05	-2.23	-0.21	-0.05	0.05	-0.55	-0.22	-0.03	0.06	-2.59	-0.08	-0.06	0.04	-1.42	-0.09	-0.05	0.05
Coal, Oil, Gas	UNSK	-1.64	0.12	0.00	0.01	-3.79	0.14	-0.02	0.07	-3.39	0.21	0.00	0.11	-2.75	0.17	-0.04	0.03	-2.42	0.22	-0.02	0.05
Minerals NEC	UNSK	-2.26	0.29	0.09	0.04	-5.93	0.82	0.09	0.09	-3.76	0.66	0.07	0.10	-3.77	0.43	0.12	0.05	-2.23	0.32	0.10	0.05

Table: Changes in Employment (%)																					
	Sk/Un	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
		UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Bovine cattle, sheep and goats, horse meat products	UNSK	-7.50	0.05	-0.01	-0.02	9.89	-0.05	0.01	-0.03	12.58	-0.06	0.01	-0.03	8.48	0.05	-0.01	-0.03	10.29	0.04	-0.01	-0.03
Vegetable oils and fats	UNSK	-3.68	0.01	-0.01	0.02	9.35	-0.16	-0.09	-0.03	12.40	-0.18	-0.07	0.00	5.71	0.00	-0.05	-0.01	7.72	-0.01	-0.03	0.01
Dairy products	UNSK	-1.75	-0.60	0.04	0.01	2.58	-1.63	-0.12	-0.02	5.37	-1.59	0.14	-0.01	2.17	-0.79	0.05	-0.01	4.08	-0.75	0.06	0.00
Processed rice, Sugar	UNSK	-3.29	-0.07	-0.03	0.05	-8.27	-0.31	0.41	-0.01	-6.06	-0.32	0.44	0.03	-4.17	-0.12	0.01	0.03	-2.52	-0.12	0.03	0.05
Food products nec	UNSK	-1.64	-0.01	0.02	0.02	5.60	-0.19	0.00	-0.01	8.47	-0.19	0.02	0.01	2.78	-0.03	-0.01	0.01	4.70	-0.03	0.01	0.02
Beverages and tobacco	UNSK	-2.43	-1.68	0.06	0.06	-2.72	-2.23	0.15	-0.02	-0.21	-2.23	0.17	0.04	-2.47	-1.72	0.06	0.04	-0.74	-1.71	0.08	0.05
Textiles	UNSK	2.01	0.26	0.02	0.01	41.04	0.00	0.02	-0.10	52.95	-0.04	0.04	-0.10	23.78	0.07	0.01	-0.05	28.18	0.05	0.02	-0.04
Wearing apparel	UNSK	22.75	0.24	-0.05	-0.03	190.74	-1.17	0.23	-0.27	207.69	-1.12	-0.24	-0.28	89.02	-0.91	-0.07	-0.14	96.27	-0.87	-0.08	-0.14
Leather products	UNSK	-0.50	-0.18	-0.04	0.06	24.61	-0.27	0.29	-0.01	31.12	-0.28	0.31	-0.01	11.32	-0.33	0.16	0.00	15.10	-0.34	0.17	0.00
Wood products, Paper products, publishing	UNSK	-0.21	-0.48	0.06	0.02	2.72	-0.91	0.03	-0.01	5.72	-0.86	0.05	0.02	1.20	-0.53	0.03	0.01	3.23	-0.56	0.05	0.02
Petroleum, coal products	UNSK	0.93	-0.01	-0.03	0.01	4.68	0.01	-0.14	0.00	7.07	0.01	-0.15	0.00	3.11	-0.04	-0.09	0.00	4.73	-0.03	-0.09	0.00
Chemical, rubber, plastic products	UNSK	0.17	-0.20	0.03	0.01	8.84	0.54	-0.02	-0.02	11.03	-0.53	0.00	-0.01	4.56	-0.23	0.02	-0.01	5.97	-0.25	0.03	0.00
Mineral products nec	UNSK	1.24	0.08	0.02	0.01	4.09	-0.12	0.01	-0.02	5.86	-0.10	0.03	-0.01	1.04	-0.08	0.03	-0.01	2.30	-0.06	0.04	0.00
Ferrous metals, Metals NEC	UNSK	-0.64	0.19	0.08	0.03	2.05	0.06	0.00	-0.03	3.43	-0.05	0.03	-0.01	-0.20	0.20	0.04	0.01	0.72	0.12	0.06	0.02
Metal products	UNSK	1.34	0.07	0.02	0.02	7.34	-0.30	-0.02	-0.02	8.62	-0.34	0.00	-0.01	3.39	-0.11	0.00	0.00	4.21	-0.14	0.02	0.01
Motor vehicles and parts	UNSK	8.27	-0.02	0.03	0.03	13.34	0.16	0.00	-0.01	16.80	0.22	0.03	0.02	9.91	-0.14	0.03	0.00	12.18	-0.11	0.05	0.02
Transport equipment	UNSK	-12.05	3.01	0.08	0.02	-8.87	2.83	0.07	0.01	-6.89	3.20	0.10	0.03	-10.59	2.85	0.07	0.01	-9.30	3.11	0.09	0.02
Electronic equipment; Machinery and Equipment	UNSK	7.17	-0.30	0.01	0.00	18.06	0.58	-0.04	-0.02	21.19	0.62	-0.02	-0.01	11.74	-0.55	-0.01	-0.01	13.73	-0.54	0.00	-0.01
Manufactures nec	UNSK	1.91	-0.01	0.02	0.00	7.90	-0.33	-0.01	-0.01	9.81	-0.36	0.00	0.00	2.92	-0.14	0.01	-0.01	4.18	-0.16	0.02	0.00
Electricity	UNSK	-0.06	-0.03	0.01	0.01	0.89	0.02	0.00	0.00	3.24	-0.01	0.00	0.00	0.12	-0.06	0.00	0.00	1.71	-0.08	0.01	0.01

Table: Changes in Employment (%)																					
	Sk/Un	WTO Accession				Scenario 1 - short run				Scenario 1 - long run				Scenario 2 - short run				Scenario 2 - long run			
		UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW	UKR	RUS	EU27	ROW
Gas, Water	UNSK	0.30	-0.03	0.00	0.00	1.26	0.05	0.00	0.00	3.91	0.02	0.00	0.01	0.57	-0.03	0.00	0.00	2.36	-0.05	0.00	0.00
Construction	UNSK	1.46	0.03	0.00	0.00	3.34	0.05	-0.01	0.00	6.51	0.08	0.01	0.00	2.26	0.02	0.00	0.00	4.38	0.05	0.00	0.00
Trade	UNSK	0.15	0.07	0.00	0.00	1.32	0.06	0.00	0.00	5.19	0.06	0.00	0.00	0.44	0.07	0.00	0.00	3.04	0.07	0.00	0.00
Transport nec, Water transport, Air transport	UNSK	3.24	-0.30	-0.02	0.00	-4.72	-0.20	0.06	0.03	-0.35	-0.15	0.05	0.03	-0.24	-0.16	0.01	0.01	2.82	-0.24	0.01	0.01
Communication	UNSK	-0.69	0.09	0.01	0.00	-2.36	0.09	0.01	0.01	1.97	0.06	0.01	0.01	-1.49	0.12	0.01	0.01	1.46	0.09	0.00	0.01
Financial services nec, Insurance	UNSK	-3.78	0.51	0.02	0.01	-18.87	2.27	0.06	0.02	-15.88	2.25	0.06	0.02	-9.19	1.15	0.03	0.01	-6.95	1.13	0.03	0.01
Business services nec, Renting	UNSK	-0.14	0.09	0.00	0.00	-1.02	-0.01	0.00	0.01	2.87	-0.08	0.00	0.01	-0.64	0.11	0.00	0.00	2.00	0.06	0.00	0.00
Recreational, entertainment, cultural and sporting activities, Social activities	UNSK	-0.07	0.06	0.01	0.00	0.10	-0.01	0.00	0.00	3.33	-0.01	0.00	0.00	-0.14	0.05	0.00	0.00	2.04	0.05	0.00	0.00
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	UNSK	-0.05	0.03	0.00	0.00	0.07	0.01	0.00	0.00	2.53	0.03	0.00	0.00	-0.14	0.02	0.00	0.00	1.53	0.04	0.00	0.00

Table 24.8 Changes in absolute numbers of employment of high-skilled and low-skilled persons per sector

Table: Employment effects (persons)		People working in sector	WTO Accession		Scenario 1: Extended FTA short run				Scenario 1: Extended FTA long run			
	Skilled / Unskilled		UKR	Change Empl (%)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)
Agriculture, Fisheries, Forestry	SK	135921.75	-3.13	-4255.71	-2.22	0.91	-3017	1238	-0.55	2.59	-741	3515
Coal, Oil, Gas	SK	36217.70	-1.63	-591.80	-3.77	-2.14	-1366	-774	-3.37	-1.73	-1219	-627
Minerals NEC	SK	12720.56	-2.25	-286.72	-5.89	-3.64	-750	-463	-3.74	-1.48	-475	-189
Bovine cattle, sheep and goats, horse meat products	SK	8227.77	7.50	616.92	9.84	2.34	809	192	12.50	5.00	1029	412
Vegetable oils and fats	SK	4912.31	3.67	180.48	9.29	5.62	457	276	12.32	8.65	605	425
Dairy products	SK	11522.94	1.75	202.00	2.57	0.81	296	94	5.34	3.59	616	414
Processed rice, Sugar	SK	5588.93	-3.29	-184.10	-8.23	-4.93	-460	-276	-6.02	-2.73	-336	-152
Food products nec	SK	19026.73	1.64	312.04	5.56	3.92	1059	747	8.42	6.78	1602	1290
Beverages and tobacco	SK	20654.37	-2.43	-502.11	-2.70	-0.27	-558	-56	-0.21	2.22	-43	459
Textiles	SK	3257.20	2.01	65.53	44.79	42.78	1459	1393	52.64	50.63	1715	1649
Wearing apparel	SK	4199.62	22.74	955.16	189.69	166.94	7966	7011	206.48	183.73	8671	7716
Leather products	SK	2731.48	-0.50	-13.60	24.47	24.97	669	682	30.94	31.44	845	859
Wood products, Paper products, publishing	SK	21511.61	-0.21	-46.03	2.70	2.92	582	628	5.69	5.90	1223	1269
Petroleum, coal products	SK	16640.89	0.93	155.26	4.65	3.72	774	619	7.03	6.10	1170	1015
Chemical, rubber, plastic products	SK	32280.82	0.17	54.55	8.79	8.62	2837	2783	10.96	10.79	3539	3484
Mineral products nec	SK	21020.07	1.24	260.65	4.07	2.83	856	595	5.83	4.59	1225	965
Ferrous metals, Metals NEC	SK	84786.29	-0.64	-545.18	2.04	2.68	1728	2273	3.41	4.05	2890	3435
Metal products	SK	21422.27	1.34	285.99	7.30	5.96	1563	1277	8.57	7.24	1836	1550

Table: Employment effects (persons)			WTO Accession		Scenario 1: Extended FTA short run				Scenario 1: Extended FTA long run			
	Skilled / Unskilled	People working in sector	UKR	Change Empl (%)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)
Motor vehicles and parts	SK	13880.71	8.27	1147.80	13.27	5.00	1842	694	16.70	8.44	2319	1171
Transport equipment	SK	17693.84	-12.05	-2131.40	-8.82	3.22	-1561	570	-6.85	5.19	-1213	919
Electronic equipment; Machinery and Equipment	SK	45928.03	7.17	3293.50	17.96	10.79	8249	4955	21.06	13.89	9674	6381
Manufactures nec	SK	9580.58	1.91	182.99	7.85	5.94	752	569	9.75	7.84	934	751
Electricity	SK	62801.17	-0.06	-39.56	0.89	0.95	556	595	3.22	3.28	2022	2062
Gas, Water	SK	26487.29	0.30	78.40	1.25	0.96	332	254	3.89	3.59	1029	951
Construction	SK	46731.27	0.46	214.03	3.32	2.86	1552	1338	6.48	6.02	3026	2812
Trade	SK	98362.87	0.15	147.54	1.31	1.16	1289	1141	5.16	5.01	5072	4924
Transport nec, Water transport, Air transport	SK	83288.07	3.24	2695.20	-4.69	-7.93	-3905	-6601	-0.35	-3.59	-292	-2988
Communication	SK	22261.67	-0.69	-153.16	-2.34	-1.66	-522	-369	1.96	2.65	436	589
Financial services nec, Insurance	SK	142589.71	-3.77	-5381.34	-18.76	-14.99	-26750	-21368	-15.78	-12.01	-22504	-17122
Business services nec, Renting	SK	139831.54	-0.14	-192.97	-1.02	-0.88	-1419	-1226	2.85	2.99	3991	4184
Recreational, entertainment, cultural and sporting activities, Social activities	SK	17724.69	-0.07	-11.52	0.10	0.16	17	28	3.31	3.38	587	599
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	SK	539470.23	-0.05	-264.34	0.07	0.12	372	637	2.51	2.56	13551	13816
Agriculture, Fisheries, Forestry	UNSK	4934904.59	-3.31	-163543	-2.23	1.08	-110147	53396	-0.55	2.77	-27043	136499
Coal, Oil, Gas	UNSK	1233498.97	-1.64	-20167.71	-3.79	-2.16	-46774	-26607	-3.39	-1.75	-41766	-21599
Minerals NEC	UNSK	433235.73	-2.26	-9769.47	-5.93	-3.67	-25678	-15908	-3.76	-1.51	-16290	-6520
Bovine cattle, sheep and goats, horse meat products	UNSK	161206.06	-7.50	-12090.45	9.89	17.39	15947	28037	12.58	20.08	20273	32364

Table: Employment effects (persons)			WTO Accession		Scenario 1: Extended FTA short run				Scenario 1: Extended FTA long run			
	Skilled / Unskilled	People working in sector	UKR	Change Empl (%)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)
Vegetable oils and fats	UNSK	96246.38	-3.68	-3537.05	9.35	13.02	8994	12531	12.40	16.07	11930	15467
Dairy products	UNSK	225768.02	-1.75	-3959.97	2.58	4.34	5827	9787	5.37	7.13	12133	16093
Processed rice, Sugar	UNSK	109503.46	-3.29	-3607.04	-8.27	-4.98	-9060	-5453	-6.06	-2.76	-6630	-3023
Food products nec	UNSK	372789.01	-1.64	-6113.74	5.60	7.24	20858	26971	8.47	10.11	31583	37696
Beverages and tobacco	UNSK	345058.56	-2.43	-8388.37	-2.72	-0.29	-9375	-987	-0.21	2.22	-721	7667
Textiles	UNSK	54415.83	2.01	1094.85	41.04	39.02	22330	21235	52.95	50.94	28814	27719
Wearing apparel	UNSK	70160.17	22.75	15961.44	190.74	167.99	133826	117864	207.69	184.94	145717	129756
Leather products	UNSK	45633.05	-0.50	-227.25	24.61	25.11	11230	11458	31.12	31.62	14201	14429
Wood products, Paper products, publishing	UNSK	359379.98	-0.21	-769.07	2.72	2.93	9772	10541	5.72	5.93	20557	21326
Petroleum, coal products	UNSK	278008.11	0.93	2593.82	4.68	3.75	13008	10414	7.07	6.14	19666	17072
Chemical, rubber, plastic products	UNSK	539293.94	0.17	911.41	8.84	8.67	47663	46751	11.03	10.86	59468	58557
Mineral products nec	UNSK	351168.14	1.24	4358.00	4.09	2.85	14377	10019	5.86	4.62	20592	16235
Ferrous metals, Metals NEC	UNSK	1416467.35	-0.64	-9122.05	2.05	2.69	29023	38145	3.43	4.07	48557	57679
Metal products	UNSK	357887.34	1.34	4777.80	7.34	6.00	26265	21488	8.62	7.29	30861	26083
Motor vehicles and parts	UNSK	231895.68	8.27	19180.09	13.34	5.07	30935	11755	16.80	8.53	38965	19785
Transport equipment	UNSK	295599.01	-12.05	-35616.72	-8.87	3.18	-26229	9388	-6.89	5.16	-20379	15238
Electronic equipment; Machinery and Equipment	UNSK	767288.54	7.17	55037.61	18.06	10.89	138565	83527	21.19	14.02	162573	107535
Manufactures nec	UNSK	160056.23	1.91	3057.07	7.90	5.99	12638	9581	9.81	7.90	15698	12641
Electricity	UNSK	848224.45	-0.06	-534.38	0.89	0.95	7541	8075	3.24	3.30	27491	28025
Gas, Water	UNSK	357750.72	0.30	1058.94	1.26	0.97	4511	3452	3.91	3.61	13984	12926

Table: Employment effects (persons)			WTO Accession		Scenario 1: Extended FTA short run				Scenario 1: Extended FTA long run			
	Skilled / Unskilled	People working in sector	UKR	Change Empl (%)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)	UKR	Res%	FTA effect incl WTO (nr people)	FTA effect on top of WTO (nr people)
Construction	UNSK	1552564.76	1.46	22636.39	3.34	1.88	51856	29219	6.51	5.06	101134	78498
Trade	UNSK	1989799.92	0.15	2984.70	1.32	1.17	26206	23221	5.19	5.04	103211	100226
Transport nec, Water transport, Air transport	UNSK	2236310.50	3.24	72389.37	-4.72	-7.95	-105442	-177831	-0.35	-3.59	-7894	-80284
Communication	UNSK	597732.80	-0.69	-4117.18	-2.36	-1.67	-14089	-9971	1.97	2.66	11781	15898
Financial services nec, Insurance	UNSK	602058.12	-3.78	-22727.69	-18.87	-15.09	-113578	-90851	-15.88	-12.10	-95577	-72849
Business services nec, Renting	UNSK	1004171.17	-0.14	-1385.76	-1.02	-0.88	-10253	-8867	2.87	3.01	28830	30216
Recreational, entertainment, cultural and sporting activities, Social activities	UNSK	446665.53	-0.07	-290.33	0.10	0.16	424	715	3.33	3.40	14887	15178
Public administration, Education, Health, Sewage, cleaning of streets and refuse disposal	UNSK	3447197.53	-0.05	-1689.13	0.07	0.12	2413	4102	2.53	2.58	87111	88800

25 Annex V: Other trade relations of Ukraine

As of June 2007, Ukraine has established bilateral free trade regime agreements with all the CIS countries (altogether accounting for 39.4% of Ukraine's total commodity trade in 2006, including 26.9% with Russia) and Macedonia (less than 1%) established in 2001. Free trade regime with the CIS countries provides for exemption of import duties but include no provisions with regard to trade in services, investment, government procurement and other important trade-related measures. Some of these bilateral free trade regime agreements (with Belarus, the Russian Federation, Moldova and Kazakhstan) envisage a number of limitations and exemptions from free trade regime; in particular, regarding certain sensitive commodities (i.e. sugar, spirits, confectionary, metal scrap, etc.). During 2005-2006 Ukraine and its CIS partners agreed schedules for gradual abolishment of respective exemptions.

Ukraine also participates at the Organization for Democracy and Economic Development – GUAM comprising Azerbaijan, Georgia, Moldova, and Ukraine – countries united by a common goal to create “a regional space of democracy, security, and stable economic and social development” and develop energy transport cooperation in the Black Sea region. During the summit in May 2006, the GUAM members initiated entry into force of the 2002 agreement with a view of creation of a free-trade zone. However, implementation of multilateral FTA within the GUAM still requires further efforts in terms of unification of tariff policies, customs procedures, as well as harmonization of trade-related measures.

26 Annex VI: ISIC Classification used in GTAP and CGE Modelling (ISIC rev 3.1)

- [A](#) - Agriculture, hunting and forestry
- [01](#) - Agriculture, hunting and related service activities
- [02](#) - Forestry, logging and related service activities
- [B](#) - Fishing
- [05](#) - Fishing, aquaculture and service activities incidental to fishing
- [C](#) - Mining and quarrying
- [10](#) - Mining of coal and lignite; extraction of peat
- [11](#) - Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying
- [12](#) - Mining of uranium and thorium ores
- [13](#) - Mining of metal ores
- [14](#) - Other mining and quarrying
- [D](#) - Manufacturing
- [15](#) - Manufacture of food products and beverages
- [16](#) - Manufacture of tobacco products
- [17](#) - Manufacture of textiles
- [18](#) - Manufacture of wearing apparel; dressing and dyeing of fur
- [19](#) - Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
- [20](#) - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
- [21](#) - Manufacture of paper and paper products
- [22](#) - Publishing, printing and reproduction of recorded media
- [23](#) - Manufacture of coke, refined petroleum products and nuclear fuel
- [24](#) - Manufacture of chemicals and chemical products
- [25](#) - Manufacture of rubber and plastics products
- [26](#) - Manufacture of other non-metallic mineral products
- [27](#) - Manufacture of basic metals
- [28](#) - Manufacture of fabricated metal products, except machinery and equipment
- [29](#) - Manufacture of machinery and equipment n.e.c.
- [30](#) - Manufacture of office, accounting and computing machinery
- [31](#) - Manufacture of electrical machinery and apparatus n.e.c.
- [32](#) - Manufacture of radio, television and communication equipment and apparatus
- [33](#) - Manufacture of medical, precision and optical instruments, watches and clocks
- [34](#) - Manufacture of motor vehicles, trailers and semi-trailers

- [35](#) - Manufacture of other transport equipment
- [36](#) - Manufacture of furniture; manufacturing n.e.c.
- [37](#) - Recycling
- [E](#) - Electricity, gas and water supply
 - [40](#) - Electricity, gas, steam and hot water supply
 - [41](#) - Collection, purification and distribution of water
- [F](#) - Construction
 - [45](#) - Construction
- [G](#) - Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
 - [50](#) - Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel
 - [51](#) - Wholesale trade and commission trade, except of motor vehicles and motorcycles
 - [52](#) - Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods
- [H](#) - Hotels and restaurants
 - [55](#) - Hotels and restaurants
- [I](#) - Transport, storage and communications
 - [60](#) - Land transport; transport via pipelines
 - [61](#) - Water transport
 - [62](#) - Air transport
 - [63](#) - Supporting and auxiliary transport activities; activities of travel agencies
- [64](#) - Post and telecommunications
- [J](#) - Financial intermediation
 - [65](#) - Financial intermediation, except insurance and pension funding
 - [66](#) - Insurance and pension funding, except compulsory social security
 - [67](#) - Activities auxiliary to financial intermediation
- [K](#) - Real estate, renting and business activities
 - [70](#) - Real estate activities
 - [71](#) - Renting of machinery and equipment without operator and of personal and household goods
- [72](#) - Computer and related activities
- [73](#) - Research and development
- [74](#) - Other business activities
- [L](#) - Public administration and defence; compulsory social security
 - [75](#) - Public administration and defence; compulsory social security
- [M](#) - Education
 - [80](#) - Education
- [N](#) - Health and social work
 - [85](#) - Health and social work
- [O](#) - Other community, social and personal service activities
 - [90](#) - Sewage and refuse disposal, sanitation and similar activities
 - [91](#) - Activities of membership organizations n.e.c.
 - [92](#) - Recreational, cultural and sporting activities
 - [93](#) - Other service activities

- [P](#) - Activities of private households as employers and undifferentiated production activities of private households
- [95](#) - Activities of private households as employers of domestic staff
- [96](#) - Undifferentiated goods-producing activities of private households for own use
- [97](#) - Undifferentiated service-producing activities of private households for own use
- [Q](#) - Extraterritorial organizations and bodies
- [99](#) - Extraterritorial organizations and bodies

27 Annex VII: FDI gravity model explanations

A widely accepted conceptual framework for analyzing the motives for foreign direct investment (FDI) is an OLI or eclectic paradigm due to John Dunning. According to this approach, FDI takes place when three sets of determining factors exist simultaneously (Dunning, 1993): the presence of ownership-specific advantages of property rights and intangible assets in multinational enterprise (MNE); the presence of internalization incentive advantages, and the presence of locational advantages in a host country.

While the first and second are firm-specific determinants of FDI, the third is location-specific and has a crucial influence on a host country's inflows of FDI. If only the first condition is met, firms will rely on exports, licensing or the sale of patents to service a foreign market. In the presence of internalization incentives, e.g. protection from supply disruptions and price hikes, lack of suitable licensee, and economies of common governance FDI becomes the preferred mode of servicing foreign markets, but only if location-specific advantages are present. Within the trinity of conditions for FDI to occur, locational determinants are the only ones that host governments can influence directly (UNCTAD, 1998).

The locational determinants of foreign direct investment (FDI) is an extensively researched area of international business. While scholars have yet to reach a consensus on the significant FDI determinants, a few key variables have been identified. Large market size, strong market growth, abundant natural resources along with cultural and distance proximity are attractive for FDI inflows (Aharoni 1966, Bass, McGregor and Walters 1977, Grosse, Trevino 1996, Basu, Srinivasan 2002, Benassy-Quere, Fontagne, Lahreche-Revil 2003, Blumentritt and Nigh 2002). Another widely cited FDI determinant - labour cost – have not universally been found to be significant. While Markusen, Zhang (1997), using general equilibrium simulation, showed that wage level is important for small, scarce-labour country, Loree and Guisinger (1995), who studied US investment in 48 countries, found wage rates to be insignificant.

Obviously, market size and labour costs are not the only important FDI determinants; country political and economic risk and/or friendliness of overall business environment are of great concern to foreign investors as well (Basu, Srinivasan, 2002). A number of surveys, conducted among investors (Aharoni (1966), Foster, Alkan (2003), Bass, McGregor and Walters, (1977)), have indicated that sound and stable macroeconomic policy, a positive attitude to foreign investors and supportive institutional environment are important for investment location decisions. In particular, Blumentritt and Nigh (2002),

revealed that favourable regulatory practices would facilitate an integration of a subsidiary company into the host country environment.

Another important factor for FDI flows is the level of regional economic cooperation in a particular location. In general it is found to have a positive impact on FDI for several reasons. First, it expands the size of the local market, and therefore makes the region more attractive to FDI. Second, regionalism can promote political stability and permit countries to coordinate their policies Asiedu (2006). Giovanni (2004) also finds the significance of RTAs for cross-border M&A flows. Jaumotte (2004) concluded that market size of regional trade agreement (RTA) has positive impact on the FDI inflow, but countries within the same RTA do not benefit to the same extent as those ones from different RTAs. Countries with relatively higher education and financial stability tend to attract a larger share of the FDI at the expense of other RTA members. This conclusion supports the above mentioned findings on the importance of the institutional environment and macroeconomic stability for foreign direct investment.

A related issue is the impact of a country's engagement in international trade on FDI. The OLI framework suggests that, as trade becomes concentrated in goods produced by firms using knowledge-intensive assets, FDI will gradually substitute trade. On the other hand, if a country is a recipient of largely efficiency-seeking FDI, then it would stimulate flows of imports of intermediate products and exports of final (or more completed products). Therefore, a country's engagement in international trade may have either substitutary or complementary impact on FDI. As a result, exports/imports variables are rarely employed in FDI models. In those cases when they were included, they have been reported to not have a significant impact on FDI (Bevan and Estrin, 2000). Consequently, we decided not to include trade variables in our analysis.

Yet, instead we do employ an indicator of the openness of the economy in our model. It has traditionally been measured as a ratio of exports plus imports to GDP. Kravis and Lipsey (1982) and Culem (1988) report it to have a significant positive effect on FDI. The degree of a country's openness can affect FDI in multiple ways (some of them are similar to the trade effects). Lower import barriers discourage tariff-jumping FDI but may stimulate vertical FDI by facilitating the imports of inputs and machinery. Lower export barriers tend to stimulate vertical FDI by facilitating the re-export of processed goods, and other (non-tariff-jumping) horizontal FDI by expanding the effective market size and leading to an improved business climate and expectations of better long-term economic growth. So, although it is based on trade data, it is less influenced by imports vs. exports (substitution vs. complementarity) logic and on top to the trade activity in a country, it also reflects the country's general business climate. Although the endogeneity problem – whether openness of the economy causes more FDI or more FDI result in higher engagement in international trade – is in place in this case; we cannot think of a good instrument which could have helped us to resolve this issue, hence we assume that causality runs the former way.

The scholars employed various methods - ranging from straightforward surveying of foreign investors to robust econometric modelling - to explore FDI

determinants. Following recent developments in the field, we are employing a gravity model in this analysis (Brainard 1997, Brenton 1998, Benassy-Quere, Fontagne, Lahreche-Revil, 2003 Benassy-Quere, Coupet, Mayer 2005).

The gravity model, which was developed by Linnemann (1966), is widely used in the analysis of bilateral trade. It was applied to the field of FDI analysis by Brainard (1997). He succeeded in matching the company based logic of OLI with general equilibrium trade models. According to OLI, multinational enterprises' choices in serving foreign markets are determined by the trade-off between incremental fixed costs of investing and the costs of exporting. While many of these costs are determined by the traditional factors which were discussed above - economies of scale, relative input costs, intangible assets - the success of the gravity model in explaining bilateral trade flows points strongly to the inclusion of distance variables in FDI equations.

Distance acts as a proxy for transportation costs, or economic barriers to trade. Another aspect of the distance is cultural proximity, which implies cultural and language community. The closer the countries, the more common cultural aspects are available, the easier to conduct business. The proximity is usually measured as a distance between the capital city of the host country and investing country, or a distance between a host country capital and Brussels. Most studies found positive negative correlation between distance and FDI (Bevan and Estrin (2000), Smarzhynska and Wei (2000, 2002), Resmini (2000), Johnson (2006)). However, Campos and Kinoshita found positive relation for distance from Brussels for CIS countries, which may indicate that the geographical proximity to the Western markets also play an important role in attracting FDI. Interestingly, Tondel (2001) revealed a positive correlation between geographical position and progress in transition. He noted that the most advanced countries in terms of transition are most often geographically closer to Western Europe.

In our study we estimate the following model (it is specified in logarithms):

$$\ln FDI_{ij} = \beta_0 + \beta_1 \ln_dist + \beta_2 \ln_gdp_i + \beta_3 \ln_gdp_j + \beta_4 \ln_debt_j + \beta_5 \ln_TO_j + \beta_6 \ln_BEI_j + \beta_7 \ln_gdp_capita_j + \beta_8 WTO_j$$

where:

$\ln FDI_{ij}$ - a natural logarithm of FDI flows from country i to country j,

\ln_dist - a natural logarithm of the distance between the capitals of country i and country j,

\ln_gdp_i - a natural logarithm of the GDP of countries i and j respectively,

\ln_debt_j - a natural logarithm of the external debt of country j as a percentage of GNI of country j,

\ln_TO_j - a natural logarithm of the ratio of sum of exports and imports of country j to GNI of country j,

\ln_BEI_j - a natural logarithm of the EIU business environment index of country j,

$\ln_gdp_capita_j$ - a natural logarithm of GDP per capita in country j,

WTO_j - dummy, equals 1 if a country j (a recipient country) is a member of WTO.

As a measure of market size, and consequently economic attractiveness of the location, we use GDP of home and recipient countries. We also employ GDP per capita as another measure of market attractiveness, i.e. purchasing power in the host country.

The EIU business environment index is employed to assess the level of the friendliness of business environment in the host countries. The Economist Intelligence Unit (EIU) business environment rating is one of the 'perceptual' indices that aims to reflect risk perception of investors. In particular, the rating is constructed on the basis of a business rankings model that assesses the quality or attractiveness of the business environment in 60 countries using an analytical framework. The model includes both quantitative and qualitative indicators. The quantitative data are drawn from national and international statistical sources for the period, while qualitative scores are based on business surveys and other data sources adjusted by the EIU. The model is designed to reflect main criteria used by companies to formulate their global business strategies, and is based not only on historical conditions but also on expectations about prevailing conditions in the next five years. EIU business environment rating is a weighted average of the EIU assessment of market opportunities in a country, macroeconomic environment, political environment, infrastructure, policy towards private enterprise, labour market, tax regime, financing, foreign trade and exchange regime, and policy environment for foreign investment. The data are available for the years 1995-2008 (determining a starting year for our sample). The index is measured on 0 to 10 scale with 1 being assigned to the most stable countries; accordingly, a positive sign for the coefficient is expected.

We also control for the level of indebtedness of the host economy, measured as a ratio of the country's external debt to GNI, which is another explanatory/control variable employed in this study. Furthermore, we are analysing an impact of WTO accession on FDI inflows through the inclusion of a dummy variable. We were not able to gather data on unit labour costs for a number of countries in the sample, so unfortunately, we did not include a labour cost measure in our model.

The sample under consideration includes 31 OECD countries as source countries and 12 developing/transition countries as FDI destinations (Brazil, Russia, India, China, Turkey, Kazakhstan, Bulgaria, Ukraine, Czech Republic, Slovakia, Hungary, and Poland). The sample covers years 1995-2003 that yields 1294 observations in a panel under examination.

We use random effects model to estimate our model. The Hausman specification test does not reject random effects specification at the 5% significance level. Furthermore, the use of fixed effects is problematic, since one of the most important variables in the gravity model (distance between countries) does not change across time, so its impact can't be estimated using the fixed effects methods (because of collinearity problem).

Table A1 reports the model's estimates. In line with the previous research we report significant effects of distance, GDP, GDP per capita, business environment, trade openness and indebtedness of the host economy. The distance has a significantly negative effect on FDI flows and, hence, supports the basic logic of the gravity model. Other traditional gravity model factors – GDP and GDP per capita – have significant positive effects on FDI inflows that confirms a hypothesis of the importance of host country's market size for FDI.

In the earlier versions of the model, we have also considered the common language and common border variables, however they have appeared to be highly insignificant. Hence, we decided to exclude them as this model is also to be used for forecasting purposes (in this case it is better to have a model which consists of statistically significant variables mostly).

The EIU business environment index has also been found to have a significantly positive effect in our sample. It indicates that countries with more stable business environment are significantly more attractive for foreign investors than less stable countries. The WTO dummy came out insignificant in our analysis – probably WTO membership itself does not affect FDI flows strongly.

The impact of the trade openness and level of indebtedness is significant and is in line with the conventional economic logic. The more open an economy is to foreign trade, the higher perception of the level of market freedom investors have, and, hence, the investment is more likely to happen. On the other hand, the level of the external debt has a negative impact on FDI flows.