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Economic Feasibility, General Economic Impact and Implications of a Free Trade Agreement Between the European Union and Armenia

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Contents

List of tables, figures and boxes

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Maryla Maliszewska has been working with the CASE Foundation since 1996. Her research interests cover modeling of international trade flows, implications of regional integration using CGE models, determinants of real exchange rate, location of production and agglomeration externalities in transition. Her CGE study on the impact of Poland's accession to the EU was rewarded with the second prize at the annual GDN's Research Medals Competition for "Outstanding Research in Development" in January 2004. In 1997-98 and in 1999, she worked as a CASE representative in the ProDemocratia advisory mission in Romania. She also worked as a consultant at the World Bank in projects on the CIS countries, Albania and Iraq. Recently she led and co-edited a feasibility study on the Economic Implications of a Free Trade Agreement (FTA) between the EU and Russia and two feasibility studies on the Economic Implications of a FTA between the EU and Georgia and the EU and Armenia. She is also a deputy project co-coordinator of the ENEPO project. Maryla Maliszewska graduated from the University of Sussex (1996) and Warsaw University's Department of Economics (1997). She successfully defended her DPhil thesis at the University of Sussex in 2004.

Abbreviations

ASYCUDA – Automated System of Customs Data
ENP – European Neighbourhood Policy
ENP AP - European Neighbourhood Policy Action Plan
FTA – Free Trade Agreement
GOST – ex-Soviet product standard
GSP -- Generalized System of Preferences
HACCP -- Hazard Analysis and Critical Control Points system
IFRS -- International Financial Reporting Standards
IIT – Intra-Industry Trade
IPR - Intellectual Property Rights
ISO – International Standards Organization
NTB – Non-Tariff Barriers
PCA – Partnership and Co-operation Agreement
RCA – Revealed Comparative Advantage
SNIPs - ex-Soviet construction norms and rules
SPS – Sanitary and phytosanitary measures
TBT – Technical Barriers to Trade
TRIPS – Trade-Related Aspects of Intellectual Property Rights
WIPO – World Intellectual Property Organization
WTO – World Trade Organization

Preface

This study of the feasibility, costs and benefits of a free trade agreement between the EU and Armenia was conducted from July 2007 to April 2008 under contract with the European Commission. The first meeting in Brussels in September 2007 with staff members of Directorates-General for Trade, External Relations, Economic and Financial Affairs, Internal Market and Services, Competition, Enterprise and Industry proved indispensable in our work on this report. During mission to Yerevan in October 2007 the consultations were held with a number of ministries, research institutes and business organizations. We greatly benefited from consultations with the representatives of the Ministry of Energy, Customs State Committee, Ministry of Trade and Economic Development, Chamber of Commerce and Industry, Union of Manufacturers and Businessmen (Employers) of Armenia, National Institute of Standards, Wine Producers Union, Ministry of Finance and Economy AEPLAC Ministry of Foreign Affairs, Armenian Development Agency UNDP, IMF and the World Bank. The European Commission Delegation to Armenia provided us with extensive information, consultation on key policy issues and organizational support, for which we are very grateful.

Several authors contributed to this study. David Dyker is the author of the introductory section (chapter 2) and the analysis of services sectors (chapter 7). Michael Emerson is the author of section on regional integration scenarios (chapter 3) and he also provided very valuable comments on all chapters in this study. Sveta Taran, Peter Holmes and Michael Gasiorek are the authors of chapter 4 employing the Sussex Framework to study the impact of FTA. Michael Gasiorek and Peter Holmes also provided valuable comments on the CGE modelling section. Evgeny Polyakov, Andrei Roudoi as well as Gevorg Torosyan contributed to the chapter on the institutional and regulatory harmonization (chapter 5). The team from the Global Insight including Andre Jungmittag, Vicki Korchagin, Evgeny Polyakov and Andrei Roudoi supervised the implementation of the survey and completed the analysis of the survey results (chapter 6). Also the same team from Global Insight contributed chapter 10 on sensitive sectors. The implementation of the survey of NTBs was conducted by AVAG Solutions under the supervision of Vardan Baghdasaryan and Melik Gasparyan. The analysis of

FDI flows and their likely trends following an FTA was prepared by Malgorzata Jakubiak, while the estimation of the potential FDI flows was completed by Alina Kudina (section 8.4). The CGE analysis (chapter 9) was prepared by Maryla Maliszewska, who also acted as the project manager and the editor of the study. Finally, conclusions are a collective work of all the authors. Sierz Naurodski and Elena Kozarzewska provided an excellent administrative support. I would like to take this opportunity to thank them all for their cooperation, valuable contributions and comments.

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Executive Summary

Our mandate was to consider the economic feasibility and possible impact of a free trade agreement between the European Union and Armenia. The study has been conducted by a group of researchers from Poland, Ukraine, UK, US and Armenia. All have worked on this project in an independent capacity. The European Commission has also commissioned a similar study for Georgia. Even though the methodology of the two reports is the same, the two studies are independent and the economic feasibility and impact of a free trade agreement with each country is assessed on its own merits.

Defining the FTA scenarios

Throughout the report we look at different degrees of integration between Armenia and the EU. We start with two variants of a simple free trade agreement (FTA) assuming the elimination of tariffs and quantitative restrictions in the bilateral trade between Armenia and the EU. The first **Simple FTA** scenario assumes full liberalization of trade in industrial products and halving of tariffs and elimination of all quantitative restrictions on agricultural and food products on Armenian exports to the EU and vice versa. The second **Simple FTA BIS** scenario assumes full elimination of tariffs and quantitative restrictions on all products in the bilateral trade between Armenia and the EU. Furthering the level of integration via a **Deep FTA** would involve a significant elimination of barriers to trade and investment throughout various sectors of the economy. This would also result in a more extensive commitment to the reform of domestic policies in the direction of EU standards in Armenia. Finally, the comprehensive set of reforms resulting from the Deep FTA along with more wide-ranging flanking measures e.g. on competition and corruption could lead to a re-branding of Armenia as a favourable investment location. This is our scenario **Deep FTA+** where we assume that Armenia would achieve a notable reduction in the perceived risk premium on investment, reflecting a sustained re-branding of Armenia as a favorable and safe place to invest.

Economic context

Armenia is a small, land-locked country with a level of GDP per head comparable to that of Bulgaria. It is currently enjoying very rapid GDP growth and this rapid growth is expected to continue with only a slight deceleration over the next two-three years. One of the dominant features of the Armenian economy is the deficit on balance of trade, equivalent to 18.6% of GDP in 2006. In the past the trade deficit (and the services deficit) has been largely covered by remittances from Armenians working abroad and diaspora Armenians. However there appears now to be a change of pattern, with the current account deficit widening and foreign direct investment coming in as an increasingly important factor of balance in the overall balance of payments. This is an import-oriented country. The treatment of foreign investors in selected sectors and general business environment raises serious doubts about the potential benefits of a Simple FTA.

Regional FTAs

Armenia has free trade agreements with the CIS countries and is currently negotiating an FTA with Iran and Lebanon. Armenia's FTAs with Russia, Ukraine, Kazakhstan and Kyrgyzstan seem to be functioning normally. The frontier with Azerbaijan is closed. Azerbaijan refuses goods of Armenian origin, but Armenia is open to Azeri goods at MFN rates of tariff, which may be imported via Georgia. The land frontier is closed on the Turkish side since 1993. However goods can pass between the two countries either by air, or by road transiting through either Georgia or Iran.

Impact of the EU-Armenia FTA – Sussex Framework

Since the overall level of pre-FTA tariff protection in Armenia is low, the future reduction of tariff barriers under the EU-Armenia FTA is expected to have a limited scope for either trade creation or trade diversion in the Armenian economy. Physical, regulatory and political (first of all, the closure of borders with Azerbaijan and Turkey) barriers to trade considerably increase the costs of trade in Armenia and have a huge detrimental impact on the overall volumes of trade (both exports and imports), as well as impose trade distortions on the Armenia's trade structure. Any significant welfare gains therefore could come from political and economic stability of the region and from deeper integration with the EU.

Survey of non-tariff barriers (NTBs)

The majority of Armenian firms consider the burden of EU technical regulations and product standards as not important, with the exception of testing and certification.

This fact is underpinned with the structure of Armenian exports dominated by minerals, precious stones, and raw materials which meet the product standards and safety requirements almost by default. Moreover, many export products are manufactured under some sort of the outward processing scheme, when Armenian firms provide their production services and all the matters of logistics and marketing are carried out by their European partner. Therefore the Armenian counterparts are not even familiar with full costs involved in exporting to the EU. The companies that fall short of satisfying European market requirement and are unable to change their technology accordingly are excluded from the list of exporters – and this is the absolute majority of Armenian companies.

Institutional and regulatory harmonization

Armenia has achieved a certain degree of regulatory harmonization with the EU in many trade-related areas, in particular as regards approximation of the legislation. Nevertheless, incongruities still remain high, especially in the areas of IPR, SPS and state procurement. The most striking differences with EU regulations in all spheres then lie in enforcement and practices. Armenian regulatory system is, one hand, rather bureaucratic and, on the other hand, ineffectual. Shady and corrupt practices further undermine the system of enforcement. In the areas of standards and SPS, the impulse towards harmonization depends not only on the Government efforts but on the private sector as well. A Deep FTA should certainly go beyond eliminating the vestiges of legal differences targeting enforcement and practices.

Implications of an FTA for FDI flows

FDI inflows into Armenia averaged around USD200 million annually in recent years. The role of foreign capital has gradually decreased along with the development of the economy, although still remained substantial. In 2005, FDI accounted for 16% of Armenian investment. At the moment, foreign direct investors into Armenia seem to be primarily market-driven and go to highly protected service and food-producing sectors. Mineral resources (precious stones, metal ores) also attract smaller part of the FDI. Investors are not yet willing to use the relatively cheap Armenian labour and outsource part of production there. This, however, might be changed by implementing a Deep FTA+. A further precondition for this would be to lower the costs of trading across borders, in particular by achieving an opening of border crossing points with Turkey and Azerbaijan.

The estimates of potential foreign investment suggest that if economic, institutional and political reforms are entrenched and enhanced, the country could enjoy a sizeable increase in FDI inflows. For example, if Armenia is to achieve the current level of

transition of Bulgaria, its annual FDI inflows increase from USD 220 million (in 2005) to USD 319 million. A Deep FTA+ with the EU could become one of the vehicles/triggers for these reforms; however the country's own effort in the transition reforms remains paramount.

Services sectors

Tourism: This is an area of great natural advantage for Armenia. Tourism industry is likely to attract clients from beyond the Armenian diaspora. Road transport infrastructure is a bottleneck for Armenian tourist development. There are no major programmes of new road building, and it is not clear that modernizing the existing road network would be enough to accommodate the country's tourist potential. It would not be easy or even appropriate, even within the framework of a Deep FTA+, to seek to impose on Armenia ambitious and expensive programmes to develop the national and local road network. This is no doubt one of the areas in which the government would like to develop public/private partnerships.

Information and Communication Technology

ICT is of particular importance in Armenia, as in other emerging economies, because it provides the technological basis for the economy-wide increases in organizational efficiency which lay the foundation for the catch-up process. It is a crucial input for every sector of the economy. ArmenTel's fixed telephony state monopoly is scheduled to be abolished by the end of 2008. In the case of the countries of South-Eastern Europe, the European Commission has facilitated regulatory convergence in the telecoms area through a combination of regular reports and working group meetings. The same approach could be used in the Armenian case, and full convergence could, in principle, be achieved soon after the signing of a Deep FTA.

Construction and Engineering services

This relates primarily to the import of construction services, where cross-border supply is generally unbound under the Armenian WTO agreement, with regard to both market access and national treatment. Armenia also exports some construction services. Given the scale of building activity in Armenia right now, free market access for foreign construction project management organizations is clearly crucially important. It would probably need a full-scale Deep FTA+ to ensure this. But there is only one major importer of building materials in Armenia. There must be some suspicion that there is in this sector a *de facto* monopoly situation. Trade in construction and engineering services in Armenia is substantially liberalised in formal

terms, and conclusion of a Simple FTA would have a degree of impact here only in completing the process of formal liberalisation. It would take a Deep FTA+, flanked by far-reaching measures to strengthen the implementation of competition law, to have a significant impact.

Financial Services and Banking

The Armenian financial sector is among the smallest relative to GDP in the World Bank's Europe and Central Asia region. Under the WTO accession agreements, the banking sector is largely liberalized in Armenia. But the sector remains 50% domestically-owned and predominantly Armenian-owned (when account is taken of banks owned by Diaspora Armenians). Comparison with the experience of other transition countries, where banking liberalization has generally been followed by substantial foreign penetration, suggests that key flanking measures are not in place here. Detailed analysis confirms that indeed measures to strengthen corporate governance, strengthen the supervisory role of the Central Bank of Armenia and strengthen accountancy and audit practice would be crucial in further development of financial services and banking. Thus a Deep FTA+ could greatly benefit banking and financial services sectors with comprehensive flanking measures as essential conditions for the increased foreign involvement and development of the sectors.

Energy-related services

The Armenian government has a vision of Armenia as an exporter of energy and energy services in the form of transmission, including possibly transit transmission. In relation to the procurement of energy, transition from a single buyer system to a competitive energy market was scheduled to take place in 2006-7. No precise information on the progress of this transition has come to hand, but the Armenian energy market does seem to be fairly highly liberalized at the present time and we can conclude that the regulatory foundation for Armenia's energy vision has been laid. A Deep FTA+ would help Armenia to realize the vision to the extent that it facilitated inward investment in the energy industry from EU countries. Whether the Russian interests who have such a large stake in the Armenian energy industry would accept such a prospect is doubtful. And it must be stressed that realisation of the vision is also dependent on a full normalisation of political relations with Turkey and Azerbaijan. At present the prospects for such a normalisation still seem distant. In the largely liberalised energy-related services sector, the impact of a Simple FTA would be slight. A Deep FTA+ could have a much greater impact, but only if combined with far-reaching flanking measures including political agreements at the regional level.

Sectors of importance

Agro-food sector

With regard to a Simple FTA/Simple FTA BIS, it can be expected that it would not have further large effects on the agro-food sector, since Armenia has rather low tariff rates on agricultural products. For a Deep FTA+ to have a significant impact the competition policy and general business environment would need to improve significantly. In addition the lack of compliance with SPS measures and the protection of IPRs remain serious obstacles to further expansion of trade and FDI in the agro-food sector. A Deep FTA+ could be able to tackle effectively these problems.

Mining

Since a large share of the exports of the mining industry already goes to the EU-27 countries, and because EU import tariffs for these products are mostly very low or zero we do not expect any impact of a Simple FTA. The impact of a Deep FTA would not be significant either, since standardization and technical barriers are not important for the sector. Transportation of mining products is costly and difficult, among other things, because of the closed borders with Turkey and Azerbaijan.

Processing of precious stones

With regard to the potential implications of an FTA, it has to be emphasised first of all, that Armenia enforces a liberal foreign trade regime for jewellery and diamond-cutting industries. The same can be stated for the EU, which is not levying tariffs for imports of diamonds from any country. Armenian jewellery exporters can enter the EU market on tariff-free bases under EU Generalized System of Preferences (GSP) scheme. Therefore, the sector under consideration already is subject to Simple FTA conditions. A Deep FTA+ might have a significant impact on FDI into the industry, as long as it linked with an increased confidence of investors in locating their capital in Armenia.

CGE Model and Simulations

We study a range of scenarios ranging from the liberalization in the EU-Armenia bilateral trade that took place in 2006 (baseline scenario) to a Deep FTA+. Our analysis using a CGE model indicates that the welfare gains for Armenia from tariff liberalisation on its and the EU side respectively that took place in 2006 (in particular Armenia's unilateral lowering of import tariffs and EU's granting Armenia tariff preferences under the general arrangement of its new GSP) are likely to be small (less than 0.4% of GDP). Also the additional impact of a possible future EU-Armenia Simple

FTA or Simple FTA BIS is likely to be negligible. A Deep FTA would involve a more complete elimination of barriers to trade and investment implying reductions in, or elimination of regulatory and behind-the-border impediments to trade, which may relate to customs procedures, product standards and certifications procedures and market access for foreign providers of services. The potential additional welfare gains are estimated to amount to about 3.38% of GDP. If comprehensive reforms brought about by deeper integration along with additional flanking measures related to competition policy and corruption led to a re-branding of Armenia as a favourable investment location, a reduction of the risk premium on investment could work as an additional mechanism for boosting both investment and GDP growth - Deep FTA+ scenario. If this was to occur, from our model simulations, we envisage the possibility of additional economic gains from a Deep FTA+ reaching as much as 7.95% of GDP.

Policy recommendations

Given that Armenia is already a member of the WTO and its tariffs are quite low, a Simple FTA is feasible, but is not likely to have any noticeable impact. The real gains could materialize over the medium to long term with a completion of a Deep FTA+. Given the slow progress with the actual implementation of the ENP Action Plan, serious questions remain as to the institutional capacity of Armenia to undertake steps towards harmonization with EU *aquis* beyond those indicated in the ENP Action Plan. However, this situation can be eased with technical assistance. For Armenia to benefit from a Deep FTA+, the agreement would need to be backed by a strong political commitment to tackle the prevalent import monopolies, to truly liberalise the markets, implement the EU regulations in practise, strengthen the rule of law and open its markets to foreign companies in all sectors. Certainly, the economic arguments suggest that the welfare gains to be reaped are likely to be very high

1. Introduction

The aim of this study is to evaluate the economic feasibility and implications of free trade agreement between the EU and Armenia as well as of greater regional integration between Georgia, Armenia and the Black Sea countries. The study uses a mix of qualitative and quantitative analysis along with surveys, sectoral studies and local expert knowledge. This approach will allow the policy maker not to rely on any single methodology while providing an interrelated analysis of various aspects of free trade agreements (FTAs).

The study begins with an account of the status quo reporting on key features of the Armenian economy and most recent trade and economic developments, including a brief overview of EU-Armenia trade and economic relations (chapter 2). Both chapter 3 and chapter 4 include the analysis of trade relations with the EU and the other Armenian trade partners in greater detail. In chapter 3 we study the options for future FTAs between Armenia and its neighbours. This is followed by the diagnostic analysis based on various trade and economic indicators (Sussex Framework) used to provide an insight into the trade and welfare implications of greater integration with the EU and within the region.

Throughout the report we look at different degrees of integration between Armenia and the EU. We start with two variants of a simple free trade agreement (FTA) assuming the elimination of tariffs and quantitative restrictions in the bilateral trade between Armenia and the EU. The first **Simple FTA** scenario assumes full liberalization of trade in industrial products and halving of tariffs and elimination of all quantitative restrictions on agricultural and food products on Armenian exports to the EU and vice versa. The second **Simple FTA BIS** scenario assumes full elimination of tariffs and quantitative restrictions on all products in the bilateral trade between Armenia and the EU. Furthering the level of integration via a **Deep FTA** would involve a significant

elimination of barriers to trade and investment throughout various sectors of the economy. This would also result in a more extensive commitment to the reform of domestic policies in the direction of EU standards in Armenia. Finally, the comprehensive set of reforms resulting from the **Deep FTA** along with more wide-ranging flanking measures e.g. on competition and corruption could lead to a re-branding of Armenia as a favourable investment location. This is our scenario **Deep FTA+** where we assume that Armenia would achieve a notable reduction in the perceived risk premium on investment, reflecting a sustained re-branding of Armenia as a favorable and safe place to invest.

As is becoming increasingly recognized there are potentially substantial gains to be realized in regional trading arrangements to the extent that these include elements of deep integration, as opposed to allowing only for shallow integration. The extent to which successful deep integration can be achieved will depend on the nature of existing non-tariff barriers which may be in place, and on the scope for institutional and regulatory harmonization between the partner countries. Chapter 5 provides a detailed discussion of the institutional and regulatory harmonization issues between the EU and Armenia. Changes in laws however do not immediately translate into lowering of NTBs. The next chapter provides some more empirical evidence of the status of the NTBs based on the survey conducted for the purpose of this study in the late 2007.

One of the key factors in further economic expansion of Armenia is the development of competitive economy with strong service sectors. This cannot be achieved without foreign direct investment. It is also expected that harmonization of legislation, improved access to the EU market and reforms leading to improved business environment following a conclusion of an FTA will act as strong incentives for further flows of FDI. Here again, as in the case of NTBs, we apply both qualitative and quantitative analysis. In chapter 7 we discuss the regulatory barriers and practice with respect to establishment and cross-border issues affecting trade and investment in a number of key service sectors. Then we turn our focus to FDI and the likely benefits resulting from further integration with the EU and the neighbouring countries. We employ a gravity model to evaluate the likely impact of an FTA.

Finally, the CGE analysis brings together the elements discussed in previous sections. We study the economic impact of elimination of tariffs, non-tariff barriers in trade between the EU and Armenia and an improved access to the Armenian market by foreign providers of services. We also study the impact of a potential lowering of the risk to invest in Armenia believing that signing a Deep FTA+ with the EU could serve as a positive signal to investors that Armenia's economic reforms are irreversible and that further improvements in business environment are to follow.

Last chapter is devoted to diagnostic analysis of the implications of FTA for further expansion of trade and investment in sectors key to the Armenian economy. We focus on agro-food sector, mining and processing of precious stones. Finally, the last section provides some policy recommendations regarding an EU-Armenia FTA.

The translation of the final report into Armenian is foreseen and will be completed within a month after the acceptance of the final text by the Commission.

Along with this report, the Commission ordered a similar report for Georgia. Although the structure of the two reports is very similar and methodology applied in various chapters in the case of both countries is the same, this is where the similarities end. Both reports are independent and the impact of an FTA for each country is being judged on its own merits.

2. The most recent trade and economic developments in Armenia

Armenia is a small, land-locked country with a level of GDP per head that is low by European standards, and comparable to that of Bulgaria. It is currently enjoying very rapid GDP growth, after the collapse in GDP experienced in the early years of transition, and this rapid growth is expected to continue, though with some deceleration over the next two-three years. Inflation is under control, though the inflation outturn for 2007 was significantly above the forecast figure, mainly on account of a surge in the prices of imported foodstuffs towards the end of the year. The budget deficit has averaged a little under 2% of GDP in recent years, and is expected to be above 2% of GDP in 2008. Forecasts of deficits in subsequent years vary, but even on the worst scenario no serious problems in covering deficits are expected.

Table 2.1. Key macro indicators

	2005	2006	2007
GDP (US$bn)	4.9	6.4	9.2
Real GDP growth (%)	13.9	13.3	13.7
Inflation (ave.; %)	0.6	2.9	4.4
Population (m)	3.0	3.0	3.0
GDP per head (US$)	1,634	2,134	3,067
Consolidated fiscal deficit (% of GDP)	-1.9	-1.5	-2.3*

The pattern of economic growth in Armenia

Table 2.2 below shows the broad pattern of economic development in Armenia over the past decade or so. Growth rates of GNP have accelerated steadily as Armenia has emerged from the deep depression of the early transition years, and have been sustained at levels above 13% per annum over the past three years. But GDP growth has not been driven by industrial recovery. Indeed industrial rates of growth have remained uniformly low, from a low base. They are expected to increase slightly over the period 2009-10, but not enough to prevent GDP growth from easing to around 6%.

Table 2.2 Annual growth rates of GDP and main production sectors, actual and forecast

	2000	2001	2002	2003	2004	2005	2006	2007	2008*	2009*	2010*
GDP	5.9	9.6	13.2	14.0	10.5	13.9	13.3	13.7	10.0	6.0	6.0
Industrial output	-	-	-	-	2.2	7.4	-1.1	2.7	2.0	3.0	3.0
Construction	-	-	-	-	15.3	35.1	37.2	20.7	19.5	8.6	7.1

Source: Ministry for the Economy and Finance of Armenia
*Forecast

The reason for the projecting fall in the growth rate of GDP is plain to see from the third row of Table 2.2. Armenia's double-digit GDP growth has been largely sustained, in sectoral terms, by an extraordinary boom in construction, with annual growth rates sometimes exceeding 30%. This boom is forecast to ease off in 2009-10, and this coincides exactly with the projected fall in GDP growth rates.

Table 2.3 shows how the main elements within GDP have moved as the Armenian economy has grown in recent years. Very large balance of trade deficits have been a feature throughout, while investment grew steadily in percentage terms up to 2006. But the most striking element in the table is consumption. In the first two years of the century consumption was substantially higher than GDP, with capital inflow being used to a substantial extent to bolster consumption, rather than to finance real investment. By 2006 the situation had normalised, with consumption accounting for a still high 83% of GDP and investment for a very high 34%, with some 40% of the latter being covered by foreign inflow. The Ministry for the Economy and Finance of Armenia, in its *2008-2010 Medium-Term Public Expenditure Framework*, forecasts that these proportions will remain similar through the period up to 2010, with investment coming down a little as the trade deficit falls. Clearly much of the investment that has taken place over the past few years has been in construction. Equally clearly, much of that investment, indeed of investment as a whole in Armenia, has been financed by foreign capital. The challenge for Armenia at present is to maintain those flows of investment while diversifying the economy away from the heavy dependence on construction. Any kind of opening of the economy associated with an FTA could facilitate that process of diversification.

Table 2.3. Main macroeconomic elements as a %age of GDP

	2000	2001	2002	2003	2004	2005	2006	2007+	2008*	2009*	2010*
Consumption	108.9	104.8	99.1	93.5	92.6	86.0	83.1	85.2	84.2	84.0	84.4
Investment	18.6	19.8	21.7	24.3	24.9	30.5	33.6	28.1	28.2	28.2	28.1
Net exports	-27.2	-20.7	-17.2	-17.9	-14.7	-13.2	-14.4	-13.3	-12.4	-12.2	-12.5

Source: Ministry for the Economy and Finance of Armenia
+Planned
*Forecast

Prospects for domestic macroeconomic balance

As Table 2.4 shows, there is no serious dispute about the likely pattern of macroeconomic evolution over the medium term in Armenia. The International Monetary Fund is slightly less sanguine than the Ministry for the Economy and Finance on the prospects for the budget deficit, and correspondingly slightly less optimistic about the future of the inflation rate. The EIU goes along with the higher estimate for budget deficit, but derives a lower inflation trend from that. What is clear is that on any set of credible forecasts Armenia's prospects for continued macroeconomic stability are good. Against the background of a low level of GDP per head and a high rate of growth of GDP, this must be rated a considerable achievement.

Table 2.4. Alternative forecasts of key macroeconomic variables

	2008			2009			2010		
	MEFA	IMF	EIU	MEFA	IMF	EIU	MEFA	IMF	EIU
Inflation (ave.;%)	3.0	4.0	2.5	3.0	4.0	2.3	3.0	4.0	NA
Consolidated fiscal deficit (% of GDP)	-2.2	-2.6	-2.5	-1.2	-2.4	-3.1	-0.6	-2.3	NA

Source: Ministry for the Economy and Finance of Armenia, 2008-2010 Medium-Term Public Expenditure Framework; IMF, Republic of Armenia: Fifth Review under the Three-Year Arrangement Under the Poverty Reduction and Growth Facility, December 2007, EIU, Armenia Country Reports.

Structure of employment

As Table 2.5 shows, employment in Armenia is still heavily concentrated in agriculture, for the most part on low-productivity, traditional farms. Highly dynamic sectors like construction account for a relatively small proportion of total employment, this reflecting relatively high productivity. Unemployment has fallen steadily – from 10.1% in 2003 to

Table 2.5. Structure of employment in 2006 (total = 100)

Agriculture	46.2
Mining and quarrying	0.7
Manufacturing	10.1
Electricity, gas and water	2.1
Construction	2.7
Distribution	9.7
Hotels and restaurants	0.7
Transport and communications	4.4
Financial services	0.6
Real estate	2.1
Public administration	3.2
Education	9.2
Health	4.5
Local and personal services	3.7

Source: Statistical Yearbook of Armenia 2007

9.6% in the following year and 8.1% and 7.2% in 2005 and 2006 respectively. But between open unemployment and concealed unemployment in agriculture, there is still enormous scope for productivity enhancement through redeployment of labour. Any shifts of employment between sectors might impose transitional adjustment costs due lack of skills or inadequate social protection of some individuals. However, in the long run expansion of the economy associated with any FTA could clearly facilitate the processes of redeployment of labour and increasing aggregate productivity.

Armenia's external balance

One of the dominant features of the Armenian economy is the deficit on balance of trade, equivalent to 18.6% of GDP in 2006. In the past the trade deficit (and the services deficit) has been largely covered by remittances from Armenians working abroad and diaspora Armenians. As Table 2.6 shows, there appears now to be a change of pattern, with the current account deficit widening and foreign direct investment coming in as an increasingly important factor of balance in the overall balance of payments. FDI inflow for the first half of 2007 alone totalled US$148 m, 33% more than in the same period of 2006. For the time being, it is quite clear that the trade deficit is being driven by remittance and investment inflows, rather than the other way round. But FDI inflow is currently 60% in the telecoms sector, with the two main mobile phone operators, both Russian-owned, building up wireless networks. This kind of investment is inherently lumpy, and it cannot be assumed that FDI inflows into the telecoms sector will be maintained indefinitely at these levels. By the same token, FDI in sectors like tourism and energy could multiply many times in the next few years. In a word, FDI is volatile in a way that remittances are not. The downside risk is that FDI collapses, or simply has a poor year, sometime over the medium-term future, leaving a large structural trade deficit predicated on FDI inflows to be covered by short-term foreign borrowing, with the attendant risk of a collapse in the value of the dram. For the time being, however, this risk appears remote, and Armenia shows up as a classic example of an emerging economy with a big trade deficit and an appreciating currency (see Table 2.7).

Table 2.6. The balance of payments, current account (US$ m)

	Jan-June 2006	Jan-June 2007
Exports	455.1	487.2
Imports	-833.3	-1174.5
Trade balance	**-378.2**	**-687.2**
Services balance	-52.0	-79.4
Income balance	88.5	133.3
Current transfers (remittances) balance	286.3	377.6
Current account balance	**-55.4**	**-255.8**

Source: EIU

Table 2.7. Dram:US$ exchange rates (end-period)

	Jan 2005	Jan 2006	Jan 2007	Feb 2007	Mar 2007	April 2007	May 2007	June 2007	July 2007	Aug 2007
Exchange rate	478.5	449.2	359.4	353.6	362.1	357.0	347.9	341.0	337.2	336.5
Year-on-year % change	18.3	6.5	25.0	27.5	24.5	25.0	22.9	22.8	23.2	17.9

Source: EIU

The pattern of foreign trade

Table 2.8 shows how the pattern of economic development in Armenia is reflected in visible trade. Among exports, base and precious metals and precious stones together account for more than half the total, with prepared foodstuffs, mainly in the form of Armenian brandy, playing an important subsidiary role. On the import side, mineral products – mainly in the form of oil – is the biggest single category, with machinery and vehicles, major items of both investment and consumption, also strongly featured. Precious stones and metals are prominent on the import side as well, this reflecting the fact that Armenia is a centre of diamond processing rather than diamond mining. Overall, the pattern of Armenian exporting is strikingly undiversified.

Table 2.8. Foreign trade by main type of commodity (US$ m)

	2000	2001	2002	2003	2004	2005	2006	2007*
Total exports	300.5	342.8	505.2	685.6	722.9	973.9	1,004.0	733.5
Base metals	44.2	43.4	44.8	90.4	137.6	322.0	280.8	253.4
Precious stones and metals	121.5	122.9	258.3	350.7	299.3	336.3	320.4	133.2
Mineral products	37.2	38.4	42.1	50.3	99.9	93.5	136.4	109.0
Prepared foodstuffs	27.3	48.0	54.4	72.2	69.2	96.9	95.3	104.5
Total imports	884.7	874.3	987.2	1,279.5	1,350.7	1,801.7	2,194.4	1,925.7
Mineral products	178.0	184.8	171.4	179.5	209.4	297.4	365.8	333.1
Machinery and equipment	117.4	88.4	103.4	133.8	135.5	232.5	305.1	252.5
Transport equipment	-	-	40.2	78.5	92.5	151.8	197.3	235.8
Precious stones and metals	113.3	106.8	213.5	333.1	291.5	347.6	312.5	183.5

Source: National statistics, AEPLAC
*First six months

Armenia's trade and economic relations with the EU

Armenia has been a WTO member since 2003. The EU-Armenia bilateral trade relations are provided for by the EU-Armenia Partnership and Cooperation Agreement

(PCA) in force since July 1999. The PCA confirms most-favoured nation (MFN) treatment with respect to tariffs and quantitative restrictions are prohibited in the bilateral trade. The PCA envisages progressive regulatory approximation of Armenia's legislation and practises to the most important EU trade related *acquis*, which should lead to a better access of Armenian products to the EU markets. The above regulatory aspect is further emphasized and developed in the European Neighbourhood Policy (ENP) Action Plan for Armenia adopted in November 2006 (together with similar Action Plans for the two other South Caucasus countries Georgia and Azerbaijan). Armenia benefits from the general arrangement of the EU Generalised System of Preferences (GSP) under the current EU GSP Regulation in force from January 2006 to December 2008, and has repeatedly expressed a wish to qualify for the special incentive arrangement for good governance and sustainable development, the so-called GSP+, under the new regulation in force as from 2009. Armenia requested to be granted by the EU market economy status (MES) in the context of anti-dumping investigations in 2005, and the evaluation of its request is ongoing.

As Table 2.9 shows, the bulk of Armenian exports goes to the EU (almost 70%), while about one-half of Armenian imports originate from the EU. In relation to FDI the situation is rather different. Over the period 1988-2006 the EU accounted for some 35% of total FDI inflow into Armenia. The biggest investing countries within the EU over that period were Germany, with 10.9% of the total, and France with 7.9%. The leading investor in Armenia 1988-2006 was Russia, with 32.6% of the total. However the trend is for Russia's share in total FDI to fall, and for that of particular EU countries to rise. Thus in 2006 taken by itself France accounted for around one-third of total FDI inflow. The next two chapters analyse Armenia trade and investment patterns with the EU and its neighbours in greater detail.

Table 2.9. Armenia's trade with the EU in 2006 (US$ m)

	Export	Import	Balance
EU27	470.9	688.6	-217.7
Total	686.6	1394.3	-707.7

Source: World Integrated Trade Solutions

Key features of the political economy of Armenia

These peculiar structural characteristics of the Armenian economy help us to understand how politics and economics interact in the country. This is an import-oriented rather than an export-oriented country. And just as in export-oriented countries like Japan and Korea it is the export interests that are most powerful, in Armenia it is the import interests that dominate. These interests are organised into

powerful cartels. It is this that explains why, for instance, the domestic prices of key imported commodities like wheat and fuel do not go down as the dram appreciates. And because the cartels generally have good political connections, it is difficult to challenge them through orthodox competition policy.

A related theme here is that of the Russian presence in the Armenian economy. In key sectors like energy and telecoms Russian companies now own dominant shares of total capital stock. There is clearly a two-way pattern of causation here. Because the Russia economy is also cartelised, Russian companies find the Armenian business environment congenial. But the Russian element is in itself one of the major contributing factors to the cartelised pattern within Armenia. So the more Russian investment there is in Armenia, the more cartelised is the system, and the more cartelised is the system, the more attractive it is to Russian investment. The official line of the Armenian government, as expounded to us by the policy-makers we met, is that FDI is FDI, and it really doesn't matter whether it is US, EU, Russian, or whatever. This line of reasoning is dubious, for a range of reasons. Only US, EU or Japanese investment brings the latest technologies. Only US, EU or Japanese investment brings state-of-the-art management systems. More specifically in the present context, however, it may be argued that only US, EU or Japanese investment will help to liberalise the Armenian economy. Thus a free trade agreement which facilitates FDI, but in practice facilitates mainly Russian FDI, may arguably tend to defeat its own purposes. The implication is clear – a Simple FTA might actually do Armenia more harm than good. It is the flanking measures that would move the country away from the cartelised pattern that really matter, and that means a Deep FTA+. It is against this background that the priority within the EU/Armenia Action Plan on strengthening the rule of law and respect for human rights, combating fraud and corruption and reinforcing the *executive* powers of the competition agency should be understood.

What this means for SMEs

How do SMEs fit in to all of this? The answer we received from the SMEs we talked to during our field trip is that they are very vulnerable to corruption; they have to pay bribes to get certificates, they have to bribe the tax authorities etc. That there are serious problems of corruption in the tax service is disputed by no one. President Kocharian himself recently attacked both the State Tax Service and the State Customs Committee, alleging widespread corruption and favouritism, and a special government commission has been set up to investigate these issues. Again, SME managers tell us that anti-fraud campaigns in practice turn into offensives by the tax authorities against the SMEs. Clearly, these managers are telling us only one side of the story. For the

present study, however, the key issue is less the apportionment of blame and more the potential impact of new international agreements on this kind of problem. By getting rid of tariffs, a Simple FTA would reduce the scope for corruption (cf. experience of Georgia with unilateral free trade). But only a Deep FTA+ could hope to address the underlying political economy factors which make it possible.

What it means for foreign companies

The OTE story, as discussed in detail in the services chapter of this report, demonstrates the difficulties that foreign companies can have in trying to operate within this cartelised structure. The implications for the present study are clear. A Simple FTA would do nothing to change the patterns of interaction between foreign capital and the domestic political economy. A Deep FTA+ might. It is important to emphasise, however, that some multinationals active in Armenia are confident that they are big enough and powerful enough in their own right to operate in Armenia according to their own, corporate rules. There may be a sectoral dimension here. There appear to be no strong domestic cartel interests in the financial services sector, in contrast to the telecoms sector.

The dangers of a construction-led boom

As we saw above, the volume of construction in Armenia has regularly grown annually by over 20% in recent years, and construction currently accounts for one-third to one-half of GDP growth. Much of this construction is financed by remittances, and much of it presumably takes the form of second homes for diaspora Armenians. Residential construction booms are a normal feature of the pattern of development of emerging economies, and similar booms can be seen in most of the other CIS countries. But residential housing booms by definition do not go on for ever, and when they stop, there is little by way of technology transfer or other linkage to compensate for falling demand for construction services. The experience of Spain in recent years has demonstrated that the tailing-off of a construction boom can have a serious effect on economies much bigger and more advanced than the Armenian. The annual rate of growth of construction output in Armenia is already projected by the Ministry for the Economy and Finance to fall to a still robust 7-8% in 2009-10. That could represent a welcome stabilisation. But a continued downward trend in the rate of growth of construction would mean a serious weakening of Armenia's growth dynamic. None of this has any direct implications for FTAs. But it does mean that Armenia could face a significant recession at some point in the medium-to-long-term future. That could in

turn strengthen the protectionist elements within the political economy of Armenia, and put great strain on the implementation of any FTA that might in the meantime have been signed.

Conclusions

There is substantial scope in the Armenian economy for redeployment of underutilised labour and diversification of the export structure. But it would be difficult to exploit this scope without a series of flanking measures designed to strengthen the rule of law, reduce corruption and reinforce the implementation of competition law, as laid out in the ENP EU/Armenia Action Plan. For this reason, a Simple FTA could be expected to have only a very limited effect. It would take a Deep FTA+ to unlock the potential for EU-Armenia trade to act as a locomotive for productivity enhancement and the development of new sectors in Armenia.

3. Armenia and regional integration scenarios

The EU, as a matter of general policy, encourages its free trade partners to think also in terms of their own regional economic integration, favouring in principle 'south-south' arrangements. This is advocated on both economic and political grounds. The European Commission has in fact been encouraging the three South Caucasus states to work out together with a view to better regional cooperation. This does at least see the three foreign ministers meeting together with the EU periodically at times, but given the unresolved Nagorno-Karabakh conflict more ambitious hopes cannot materialise.

Armenia-Georgia free trade. Armenia's FTA with Georgia dates from 1995 with the initial set of CIS agreements. It appears to function normally from the policy standpoint. However the trade flows between Armenia and Georgia, in spite of their functioning FTA and improvements to the road infrastructure connections are extremely limited. The traveller crossing the main road frontier between the two countries observes a virtually total absence of commercial traffic by truck. The shares of their bilateral trade average for imports and exports represent only 4% of Georgia's total trade, and 3% of Armenia's total trade on 2006. These shares have moreover even been decreasing over the last ten years (see Table 31and Table 32 below).

Armenia-Azerbaijan. This land border is closed and there is no direct trade. Azerbaijan refuses goods of Armenian origin, but Armenia is open to Azerbaijani goods at MFN rates of tariff, which may be imported via Georgia.

The land border has been now for some 14 years a militarised cease-fire line, after a war which was accompanied by violent ethnic cleansing on both sides. The cease-fire line still sees recurrent hostile exchanges of fire and occasional fatal casualties. Thus, only a resolution of the Nagorno-Karabakh conflict would change the outlook concerning trade relations between Armenia and Azerbaijan. Peace talks between the two parties are ongoing since several years assisted by mediation efforts of the so-called Minsk Group (co-chaired by France, Russia and US) under OSCE auspices.

Both Armenia and Azerbaijan would definitely benefit from a re-opening of the natural trade routes along the Aras river valley along the southern border of Azerbaijan (including its exclave province of Nakichevan) and Armenia, which have been interrupted since 1993. The future construction of a railway bypass line from Kars in Turkey to the Alkalkalaki region of Georgia, with links to the rail lines to Tbilisi and on to Baku could further aggravate Armenia's difficult situation in the region and the balance of disadvantage of the Armenian-Azeri frontier closure could become much more pronounced for Armenia than for Azerbaijan.

South Caucasus free trade. If the conflict with Azerbaijan could be resolved it would be natural to consider the case for a trilateral Armenia-Azerbaijan-Georgia agreement, or a 'South Caucasus Free Trade Area'. One might think of the Benelux regional model, as an example of three small economies which integrated faster than its wider region. However this would also require that Azerbaijan becomes a WTO member. Like Russia as an oil/gas exporter, the priority interests of the Azerbaijan leadership revolve around the distribution of economic rents, rather than WTO accession. Moreover the very limited scale of Georgian trade with both Armenia and Azerbaijan suggest that a South Caucasus FTA would be of limited economic potential.

FTAs with CIS states. Armenia's FTAs with Russia, Ukraine, Kazakhstan and Kyrgyzstan seem to be functioning normally.

Eurasec (Eurasian Economic Community) – there is an ongoing initiative between Russia, Belarus and Kazakhstan in the framework of Eurasec aiming at going further than the existing FTAs to a customs union. Armenia, which holds an observer status in Eurasec, is not part of this initiative, since it wishes to retain freedom to have its own trade policy, including the possibility to make a FTA with the EU. Moreover Armenia is already in the WTO since 2002, whereas the three above mentioned countries are not.

Armenia-Iran. Armenia currently negotiates a FTA with Iran, with whom it has a short land border connection. In addition to the road connection there is also now a direct gas pipeline connection.

Armenia-Turkey. The land frontier has been closed by Turkish side since 1993 because of the Nagorno Karabakh conflict, in which Turkey supports the Azeri side. However goods can pass between the two countries either by air, or by road transiting through either Georgia or Iran. This trade is done at MFN tariff rates.

The European Parliament has recently commissioned a report on *"The Case for Opening the Turkish-Armenian Border"*[1]. This study offers a detailed account of the costs

[2] Study for the Foreign Affairs Committee of the European Parliament, "The case for Opening the Turkish-Armenian Border", by Nathalie Tocci, Burcu Gultekin-Punsmann, Licinia Simao and Nicolas Tavitian, July 2007, Trans European Policy Studies Association.

of the status quo to both Armenia and Turkey and of the benefits of opening this frontier. The normalisation of Armenian-Turkish relations, and the opening of the presently blockaded frontier, would be of the highest importance for the Armenian economy, both for trade in goods and tourism.

Armenian sectors that could gain from opening the borders with Turkey include, according to the study done for the European Parliament, electricity, metal products, textiles and heavy goods industries as well as tourism. Estimates by AEPLAC quoted in this study suggest an opening of the Turkish frontier could generate a gain for Armenian GDP of 2.7% over five years.

For Turkey the gains would also be useful. Although the macroeconomic magnitudes would be proportionately much smaller, the gains for the Kars region of eastern Turkey would be significant, especially since this is Turkey's most obstinately backward region economically. Kars is significant regional centre only 75 kilometres from the frontier, which in the early 1990s began to develop a lively commercial traffic with Armenia. Turkish business interests keenly support the opening of their frontier with Armenia.

Black Sea free trade area. This idea has long been on the agenda of the BSEC, but never really advanced, first of all because both Greece and Turkey were part of the EU's customs union, thus requiring free trade between the EU and all the Black Sea states. However the Commission has recently launched its 'Black Sea Synergy' concept and free trade for this region becomes now a more serious candidate for consideration. Indeed with Bulgaria, Romania and Turkey half of the Black Sea coast is already in the EU customs union. Of course a Black Sea FTA would still require first of all agreements on EU-Russia, EU-Ukraine, EU-Moldova and EU-Azerbaijan free trade, as well as with Armenia and Georgia. The Russian and Ukrainian cases have both been subject to

Table 3.1. Trade flows between Armenia and major partners, 2006

	Armenia imports		Armenia exports	
	million $	%	million $	%
EU-27	688.9	31.4%	470.9	46.9%
Russia	299.9	13.7%	116.5	11.6%
Ukraine	164.7	7.5%	22.4	2.2%
Iran	113.0	5.1%	29.1	2.9%
Turkmenistan	169.0	7.7%	1.7	0.2%
United States	98.1	4.5%	64.3	6.4%
China	115.8	5.3%	2.7	1.2%
Turkey	93.8	4.3%	0.2	0.0%
Georgia	34.7	1.6%	47.5	4.7%
Un. Arab Emirates	18.9	0.9%	5.4	0.5%
Canada	10.6	0.5%	11.1	1.1%
Moldova	2.7	0.1%	0.8	0.1%
Rest of world	384.30	17.5%	231.40	23.0%
Total	**2 194.4**	**100.0%**	**1 004.0**	**100.0%**

Source: WITS

Table 3.2. Trade flows between Armenia and major partners, 1997

	Armenia imports		Armenia exports	
	million $	**%**	**million $**	**%**
EU-27	195.5	26.4%	195.5	26.4%
Russia	188.1	25.4%	188.1	25.4%
Ukraine	10.3	1.4%	10.3	1.4%
Iran	69.4	9.4%	69.4	9.4%
Turkmenistan	27.0	3.7%	27.0	3.7%
United States	114.7	15.5%	114.7	15.5%
China	2.7	0.4%	2.7	0.4%
Turkey	11.0	1.5%	11.0	1.5%
Georgia	32.4	4.4%	32.4	4.4%
Un. Arab Emirates	38.0	5.1%	38.0	5.1%
Canada	6.5	0.9%	6.5	0.9%
Moldova	0.04	0.0%	0.04	0.0%
Rest of world	44.9	6.1%	44.9	6.1%
Total	**740.5**	**100.0%**	**740.5**	**100.0%**

Source: WITS

Table 3.3. Armenia's Free Trade Agreements with CIS countries

Partner country	Date of agreement
Georgia	1995
Azerbaijan	no
Kyrgyzstan	1994
Kazakhstan	1994
Moldova	yes
Russia	1992
Tajikistan	yes
Turkmenistan	Yes?*
Ukraine	1994
Uzbekistan	No?*

Source: Kort and Dragneva, except for *, with information of Armenian mission to the EU.

detailed feasibility studies made for the European Commission (Ukraine in 2006, Russia in 2007), and so these have become at least more than purely academic hypotheses. Negotiations of a deep and comprehensive FTA between the EU and Ukraine have been launched on 18 February 2008 following the conclusions of Ukraine's WTO accession process on 5 February 2008. But for Russia there is no presumption that an FTA with the EU will be negotiated following Russian WTO accession. Until and unless Russia was seriously interested in free trade this scenario cannot materialise.

EU-ENP East free trade area. In the case that Russia was the only country of the Black Sea region which did not want to pursue free trade with the EU, there would remain the option of the EU+Turkey customs union making a multilateral free trade area with Georgia, Armenia, Azerbaijan, Moldova and Ukraine, i.e. with all the ENP-East countries that have Action Plans. This could also be extended with the 'deep free trade' agenda, since the EU intends to generalise this concept with all its ENP partner states.

4. Assessing the potential welfare effects of an EU-Armenia FTA using the Sussex Framework

4.1. Introduction

In order to evaluate the trade and welfare implications of a potential EU-Armenia FTA we apply a set of diagnostic indicators developed by the University of Sussex (referred to as the "Sussex Framework"). The Sussex Framework helps to identify possible gains and losses from a bilateral preferential trade agreement between countries, as outlined conceptually in Box 1.

The majority of the Sussex Framework indicators concentrate on the welfare consequences from shallow integration. Indicators for deep integration are much harder to identify, though looking at patterns of intra-industry trade is useful in this regard. The evaluation of the relative importance of trade creation and trade diversion effects from shallow integration is carried out in accordance with theoretically grounded rules of thumb:

1. The higher are the initial tariffs, the greater is the likelihood of both trade creation and trade diversion.
2. The greater the number of PTA partners the more likely it is that there will be overlaps with cost differences, and therefore the greater the likelihood of trade creation.
3. The wider the difference in comparative advantage between countries and the higher the initial share of trade between them, the more likely the trade agreement will be welfare improving.

Box 1. Welfare gains from shallow and deep integration: the main concepts

Shallow integration is defined as the removal of border barriers to trade, such as tariffs and quotas; which normally comprises the first policies to be implemented under any preferential trade agreement (PTA). Shallow integration is typically accompanied by both trade creation and trade diversion which have opposing welfare effects. Trade creation is welfare increasing since countries shift from consumption of less efficiently produced (higher cost) domestic goods in favour to more efficiently produced (lower cost) goods of the partner country. This results in cost savings and more efficient resource allocation within the participating countries. Trade creation could occur either on the production side when trade displays domestic production of goods, which are similar with those produced by partner country; and on the consumption side when demand and consumption of imports increases due to lower partner country prices.

Trade diversion is welfare decreasing since it is characterised by the sourcing of imports switching away from more efficient non-partner countries to less efficient partner countries. Partner countries enjoy preferences within the trade agreement and thus are able to undercut their more efficient and lower cost non-partner competitors. The net welfare impact of a preferential trade agreement depends on the relative size of these two trade effects. At the same time, welfare increasing trade reorientation from less efficient to more efficient sources of imports may take place should partner countries participate in other trade preferential agreements with third countries.

Deep integration implies reductions in, or elimination of regulatory and behind-the-border impediments to trade, which may relate to customs procedures, product standards and certifications procedures, competition policy, government procurement, market access for foreign providers of services, FDI regulations, etc. As such, partner countries develop closer and more stable trade relations allowing for more specialization in niche goods, participation in a fine division of labour, creation of stable value chains. Deep integration has welfare increasing impacts for partner countries due to greater exploitation of economies of scale in production, technology transfer and diffusion both through trade and FDI, positive externalities from institutional and policy approximation leading to wide productivity increases. The welfare gains from deep integration, though being not immediate, and if appropriately implemented, are generally likely to exceed substantially the possible losses from shallow integration.

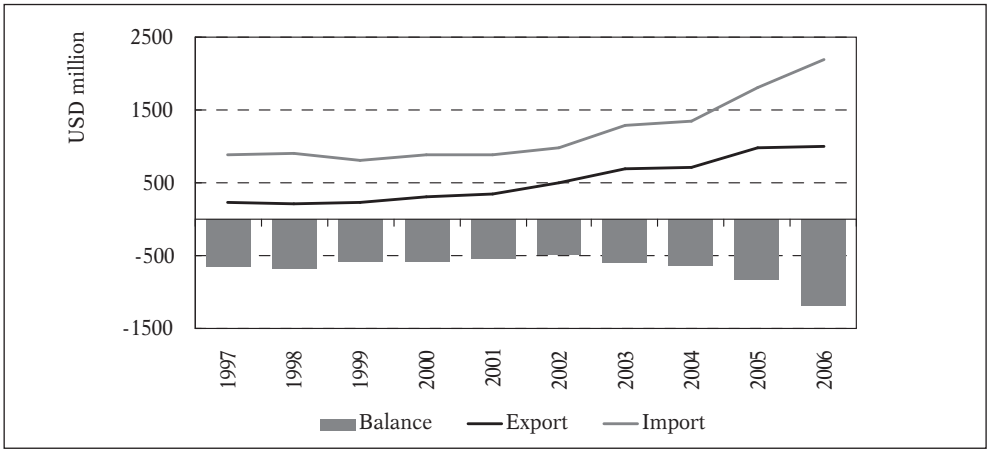
4. The more similar is the product mix in the partner countries, the more likely it is that there will be trade creation because there is more scope for specialization.
5. The higher the percentage of trade with potential partners, the greater the possibility that the PTA will be welfare increasing.

4.2. Armenia's foreign trade dynamics

According to the officially reported trade statistics (WITS), Armenia's merchandise trade turnover expanded by more than 3 times over 1997-2006, from USD 949.7 million in 1997 (57.8% of GDP) up to USD 3.1 billion (about 48.0% of GDP) in 2006. Imports of goods have accounted for the major part of total merchandise trade in Armenia; still the importance of exports in total trade has been substantially rising during the period (from 22.0% in 1997 to 32.0% in 2006). In terms of GDP, merchandise imports constituted about 32.6% of GDP in 2006 vs. 45.2% in 1997, while exports strengthened their role up to 15.3% of GDP in 2006 from 12.8% in 1997. Armenia's merchandise trade deficit has been high and has widen by about 2 times over 1997-2006, from USD 531.3 million in 1997 to USD 1.1 billion in 2006. However, since Armenia has been experiencing high economic growth during these years, the trade deficit has shrunk in terms of GDP, from 32.4% of GDP in 1997 to 17.3% of GDP in 2006.

The Armenian economy is characterised by a structural trade deficit of large proportions, financed in large measure by remittances from the diasporas in the US and Russia. From a very low base in the late 1990s exports of goods have been growing faster than imports (see Figure 4.1), which has narrowed the ratio of exports to imports to about 50%, whereas earlier the ration was only 25%. The main contribution of such a substantial export expansion has been made by a diamond processing sector. A good export performance has backed, in turn, Armenia's strong economic growth in recent years. However, during the last two years the imports performance has improved compared to exports one. In 2006, the growth of exports substantially decelerated and lagged far behind of imports growth (3.1% y/y vs. 21.8% y/y). The slowdown in exports

Figure 4.1. Armenia's merchandise trade dynamics



Source: Key indicators of Developing Asia and Pacific Countries, 2007; IBM report, 2004.

growth in 2006 occurred mainly because of a fall in base-metal exports, a drop in the diamond-processing trade (due to supply disruptions and stiffer competition from other countries), and stagnation of foodstuff exports. Import growth consisted mainly of capital goods and mineral products, which reflected the expansion of investment and construction activities in Armenia, as well as higher world prices on major imports. As a result, there has been a substantial widening of merchandise trade deficit in 2006 (by -43.8% y/y compared to 2005).

4.3. Armenia's trade policies and market access

Tariffs

According to the first rule of thumb, the higher are the initial trade border barriers, the greater is the likelihood of both trade creation and trade diversion after those barriers are removed under the preferential regime. The higher initial tariffs imply higher initial distortions to trade, whose removal will trigger i) higher price reduction on goods resulting in a greater demand for them (trade creation on the consumption side), ii) greater possibility for the new partner to supply the good more efficiently than the domestic economy (trade creation on the production side). At the same time, if the initial tariffs are high there is also greater possibility for the new partner who has a preferential access to the market to supply the goods cheaper than the non-PTA partners. As such, there is greater likelihood that trade diversion will occur as a result of the PTA (Gasiorek et al., 2006).

Armenia has been a member of the WTO since 2003 and its relevant legislation has been brought in conformity with international standards. Armenia has developed a liberal trade regime in goods and services in regard to tariff and formal non-tariff barriers (such as quantitative restrictions) over the transition period.

Armenia applies MFN tariffs to imports from its trade partners, except duty-free treatment under the current FTAs with CIS countries. In line with the WTO tariff commitments Armenia has bound its simple average MFN tariff at an average of 8.5% level, including 14.7% for agricultural products and 7.5% for non-agricultural products (see Table 4.1 and Appendix 2 Table 1 for more details). At the same time, Armenia has been long applying tariffs being much lower than the WTO bound rates (according to the WTO estimates, the simple average MFN tariff equals 3% as of 2006). The tariff regime is comprised of only two tariffs, 0% (applied to over 70% of tariff lines) and 10%[2].

[2] See the detail data on MFN applied tariffs in Armenia (as of July 2006) at http://www.wto.org/english/thewto_e/countries_e/armenia_e.htm.

Table 4.1. The WTO tariff profile for Armenia, 2006

	Total	Agricultural	Non-Agricultural
Simple average final bound*	8.5	14.7	7.5
Simple average MFN applied**	3.0	7.9	2.3

Source: WTO. http://www.wto.org/english/thewto_e/countries_e/armenia_e.htm.

The highest tariff rate (10%) is applied mainly to agricultural imports such as meat and meat products, fish products, dairy products, vegetables and fruits, sugar and sugar products, and prepared foodstuffs[3]. Imports of alcoholic beverages and tobacco products are subject to specific tariffs. Zero tariffs are imposed on the majority of non-agricultural imports, excluding those, which are sensitive and produced in Armenia (see Box 2). In 2006, about 25% of total imports were subject to non-zero tariffs.

Box 2. A 10% tariff is imposed on the following non-agricultural commodities:

marble and travertine, granite, sandstone, dolomite;
cement;
certain household articles and toilet articles of plastics;
re-treaded pneumatic tyres;
certain articles of rubber;
articles of leather;
certain articles of fur skin;
manufactures of straw or other plaiting materials;
certain articles of paper;
carpets and other textile floor coverings; linoleum;
textile articles (HS 61, 62, 63);
footwear (exc. parts of footwear);
headgear;
umbrellas;
prepared feathers and down;
articles of stone, plaster, cement;
ceramic products;
certain glass and glassware;
natural and cultured pearls, articles of jewellery;
iron or steel wool, table, kitchen or other household articles;
household refrigerators; air conditioning machines;
washing machines;
Certain electrical equipment (batteries, electro-mechanical household appliances, line telephone sets; videophones, record players, radio-broadcast receivers, video monitors; lamps, etc.);
certain vehicles (motor cars, motor-bicycles, parts and accessories of the motor vehicles; trailers and semi-trailers);
cameras;
photocopying apparatus;
clocks and watches; watch straps and watch bracelets;
seats;
electric lamps;
video games;
furniture, nec;
sports requisites;
works of art.

[3] 0% tariff rate is applied only to certain agricultural products such as live animals; live fish; dried egg yolks; cereals; seed potatoes; malt and starches, inulin, wheat gluten; oils seeds (excluding sunflower seeds), straw and fodder, vegetable planting materials; cane and beet molasses; castor oil; cocoa beans; food preparations for infant use; tapioca; crispbread; toasted products; yeasts; residues and waste from the food industries, prepared animal fodder; tobacco raw materials, etc.

Table 4.2 presents calculations of simple average and import-weighted average tariffs applied in Armenia to imports from major trade partners in 2006 (based on UNCTAD TRAINS -Trade Analysis and Information System database). Effectively applied tariffs for imports from EU27, Turkey and Iran are the MFN tariffs, since no tariff preferences exist for these countries. Nevertheless, their import-weighed average tariffs are low and range from 2.1% for the EU27 to 2.6%[4] for Turkey (3.3 % and 3.5% respectively if the simple average tariff of traded tariff lines is considered). The lowest import-weighed average MFN tariff is applied to imports from the EU reflecting the prevalence of industrial goods in its import structure to Armenia. Under the preferential duty-free trade regime with Armenia, CIS partners receive preference margins measured as a difference between effectively applied tariffs and MFN tariffs, which would have been imposed if no preference had existed. Effectively applied tariffs to preferential trade with CIS countries are zero, and the weighted preference margins in 2006 were in the range between 2.4% for Ukraine to 4.8% for Georgia.

Table 4.2. Applied tariffs and tariff preference margins* in Armenia, by country, 2006

Partner	Imports, million US$	Effectively applied simple average of traded TL**	Effectively applied weighted average of traded TL	MFN simple average of traded TL	MFN weighted average of traded TL	Preference margin weighted
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)-(4)
Georgia	34.7	0.0	0.0	4.2	4.8	4.8
Ukraine	164.7	0.0	0.0	3.2	2.4	2.4
Russia	299.5	0.0	0.0	2.8	2.7	2.7
Turkey	93.7	3.5	2.6	3.5	2.6	-
Iran	113.0	3.1	2.5	3.1	2.5	-
EU27	688.6	3.3	2.1	3.3	2.1	-
World	2094.3	2.6	1.8	3.1	2.4	0.6

Source: UNCTAD - TRAINS (Trade Analysis and Information System)
Note: *Excluding specific tariffs on alcoholic beverages and tobacco products.
** TL – tariff lines.

According to the first rule of thumb, the low overall tariff protection in Armenia indicates a low level of current tariff-driven trade distortions. Since the overall level of pre-FTA tariff protection in Armenia is low, the future elimination of tariff barriers under the EU-Armenia FTA is expected to have a limited scope for either trade creation or trade diversion in the Armenian economy, especially in regard to non-agricultural trade. Particularly, provided no change in the composition of the EU exports to Armenia the future EU-Armenia FTA may provide a 2.1% average tariff preference margin for the EU imports (7.4% for agricultural products and 1.7% for non-agricultural goods in case of a full coverage of the FTA).

[4] Calculations do not include specific tariffs on alcoholic beverages and tobacco products.

Besides, the low MFN tariff protection implies that the preference margins received by CIS trade partners under the existing FTAs are not significant as well. As a result, there are limited possibilities for welfare-increasing trade reorientation occurring among other FTA partners and the new partner. That is, there is some likelihood, though not significant, of switching sources of imports from CIS countries to the EU, provided the EU receives preferential access to the Armenian markets under the future EU-Armenia FTA. Overall, due to the relatively low pre-FTA tariff protection in Armenia, the welfare effects induced from the removal of tariff barriers under the future EU-Armenia FTA will not be significant and other factors (such as non-tariff barriers including transport costs, regulatory barriers, corruption, etc.) will play a more important role in determination of those effects.

At the same time, there will be some scope for shallow integration effects with regard to those agricultural and industrial products that are subject to a 10% tariff protection, assuming these sectors will be included into the FTA and relevant tariffs will be abolished. Since 10% duties are applied to the EU major imports to Armenia, like vehicles and domestic appliances, etc. (see chapter on the EU import composition below), both trade creation and trade diversion are likely to occur in regard to those products under the future EU-Armenia. Noteworthy, the magnitude of these effects will also depend on the degree of underlying elasticities of supply, and the extent to which this tariff (10%) affects differences in competitiveness across countries (Gasiorek et al., 2006). The overall net welfare effect in regard to these products needs to be considered in the light of other rules of thumb.

Concerning market access for exporters, Armenia enjoys MFN treatment from the other WTO members (except Turkey), as well as free trade regimes with CIS countries. Besides, Armenian products benefit from the new EU Generalised System of Preferences (GSP general agreement) in force since January 2006. Neither the EU nor other WTO partners currently maintain any trade protection measures against imports from Armenia. At the same time, technical barriers to trade for the Armenian exports to the developed country markets are rather restrictive. European certifying institutions used by Armenian exporters are located in Europe, which adds considerable expense and creates extra uncertainty (IBM report, 2004). Compliance with quality standards in the EU is considered to be the one of the main constraints by Armenian food processors. A low competitiveness of Armenian products also restricts the penetration of Armenian goods into the European and world markets.

Since the EU tariffs are already low for Armenian goods, trade creation and trade diversion effects from the future EU-Armenia FTA are not expected to be significant for the EU as well.

Other barriers to trade in Armenia

Armenia's official non-tariff barriers are minimal; import and export restrictions are only applied for health, security, and environmental reasons. Armenia does not use safeguards or antidumping measures for temporary protection against imports. There are no export taxes or subsidies. In line with its WTO commitments, Armenia offers very liberal market access in the services sector[5], and a very open investment regime for foreign investors (except ownership of land in the territory of Armenia, which is prohibited). In addition as chapter 2 notes there are certain restrictive businesses practices that may affect trade and limit the scope for the effect of the reduction of formal barriers passed on to consumers and producers.

Despite such a limited use of formal NTBs, trade regime in Armenia, like in other CIS countries, is characterized by a wide prevalence of trade-restrictive informal NTBs resulting from poor law enforcement, corruption, institutional weaknesses, and underdeveloped infrastructure. As a result, although most imports and exports are free of any prohibitions, quotas or licensing, businesses face costly and cumbersome procedures and discretionary practices that impose undesirable costs on trade and foreign investment. In this regard, the most important Armenia's NTBs are associated with the persisting weaknesses in customs and tax administration, Armenian customs bureaucracy and high informal customs payments. Though the existing Customs Code adopted in 2001 is formally in full compliance with the WTO rules, customs valuation of imports has been largely based on discretionary practices (through the use of market value method) thus promoting unfair competition and creating an unpredictable and intimidating environment for international traders, since the same or similar goods have been reported to be valued at substantially differing costs (IBM report, 2004). At the same time, customs officials complain that importers systematically underestimate the transaction value of goods to avoid import tariffs, VAT, and excise taxes. The VAT refunds have been the most problematic tax administration issue facing exporters and investors.

To reduce the existing barriers to trade, it is essential to further strengthen the regulatory and legal environment in Armenia, including strict implementation of customs and tax legislation, sustained efforts to curtail corruption, and strengthening of the judicial system and rule of law. The future FTA with the EU may serve a lock-in mechanism for Armenia to implement the needed economic reforms.

The high transportation costs constitute another serious barrier to both Armenian exports and imports. Transport costs on goods traded to and from Armenia were estimated at 20-25% of their nominal value, which are among the highest in the world (Jrbashyan et al., 2007). The high transportation costs are explained by a set of factors including the landlocked geographical position and relatively long distance from main

[5] Some restrictions have been stipulated only for the insurance sector.

export and import markets; absence of direct ways to reach the main export and import markets due to the unsettled regional conflict with Azerbaijan over Nagorno-Karabakh, which led to the border closure and trade limitations with its neighbouring countries (Azerbaijan, Turkey)[6]; usage of combined transportation modes[7]; limited amount of cargo turnover between South Caucasus countries and the rest of the world[8]; substantial amount of unnecessary documents requested by different national authorities and paid by cargo owners; high level of official and unofficial payments, needed for transportation, especially in Georgia, which is the main liaison between Armenia and external world; poor regional transport infrastructure (IBM report, 2004). Furthermore, during the last years transport through Georgia is frequently disrupted by that country's disputes with Russia leading to the closure of land routes between Georgia and Russia and thus blocking Armenia's most important land communication with the rest of the world (Tocci et al., 2007).

High transportation costs, on the one hand, increase the cost of imports including critical imports and imports of raw materials and intermediate goods used for domestic production, on the other hand, create "natural" protection for domestic industries and favourable conditions for import substitution. In regard to exports, high transportation costs have forced Armenia to develop high-value added or low transportation cost industries to use the competitive advantage of an educated and low-cost labour force (IBM report, 2004). This has resulted in significant structural changes in the Armenian economy, since Armenia has been forced to reorient its trade from heavier industrial sectors[9] and to develop niche markets of lightweight products with low transportation costs, such as processed diamonds, precious stones, jewellery, and computer software (which can be easily airlifted). At the same time, the narrow export structure has made Armenian exports more vulnerable to demand and price changes in the main markets. Overall, physical, regulatory and political (first of all, the closure of borders with neighbouring countries) barriers to trade considerably increase the costs of trade in Armenia and have a huge detrimental impact on the overall volumes of trade (both exports and imports), as well as impose trade distortions on the Armenia's trade structure.

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[6] Currently, Armenia has rail and road connections only with Georgia to the Poti and Batumi ports on the Black Sea. The road connection in the south to the Iranian ports is much longer and costly, as the route passes through difficult mountainous terrain.

[7] For example, when trading with the EU countries, the transportation is conducted by rail to Georgian ports, the by sea to Mediterranean ports, and then by road or rail to the final destination, or road transportation via Iran or to Russia which substantially increases the transportation costs.

[8] This does not allow to maritime companies, operating in Georgian ports to employ larger vessels, which negatively affects the maritime transportation cost, making it much higher than in the countries with bigger volumes of cargo.

[9] Until the early 1990s, Armenia was heavily industrialized, and the major part of exports comprised capital and intermediate goods, particularly machinery, rubber, chemicals, and electronics. These sectors have been gradually contracting since that time (ADB, 2006).

The current Government's strategy relates to improving regional cooperation in transport and trade facilitation initiatives, which is crucial for improving Armenia's access to the external markets. The rehabilitation of road and rail infrastructure would reduce transport costs and enable Armenia to expand trade in traditional heavier items. Transport sector developments and trade facilitation will allow for a significant increase in the level of competitiveness of traditional Armenian exports, such as the textiles and shoes industry, food processing, furniture, etc., will support agriculture as well as the industrial, mining, and construction sectors which demonstrate high export potential (ADB, 2006).

4.4. Existing FTAs

Armenia's top export and import partners have traditionally been presented by the CIS countries; however their cumulative importance has reduced over last years. Particularly, trade with CIS countries accounted for 28.9% of Armenia's trade turnover in 2006 vs. 35.6% in 1997. Armenia has signed bilateral free trade agreements (FTAs) with almost all CIS partners, with the exceptions of Azerbaijan and Uzbekistan: with Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation, Tajikistan, Turkmenistan and Ukraine.[10] All the agreements are almost identical and have the following major features: i) can be described as minimal and quite basic; they do not cover trade in services, investment or government procurement; ii) provide for duty-free trade in goods (both industrial and agricultural), though with potential exemptions[11]. Exemptions from free trade are introduced in the protocols to the FTAs and can be changed annually[12]; iii) contain provisions on contingent protection measures, including quotas, export taxes, safeguards and anti-dumping measures, which countries can apply unilaterally.

Armenia has also signed the plurilateral Agreement on the Creation of an Economic Union (1993) and the Agreement on Creation of Free Trade Area within the CIS (1994), but has not ratified any of them. The agreement on Economic Union is a framework document envisaging that parties move towards the establishment of a customs union and common market among CIS countries, however, each party might exercise its own

[10] Among them, the following bilateral free trade agreements had been ratified and became legally binding: with the Russian Federation (1993), Kyrgyz Republic (1995), Turkmenistan (1995), Georgia (1996), Ukraine (1996), Kazakhstan (1999) and Belarus (2000) (see the Report of the Working Party on the Accession of the Republic of Armenia, 2002, www.wto.org).
[11] Exemptions can be applied in the form of import (common tariffs) or export (export taxes) restrictions.
[12] Exemptions from free trade regimes with Armenia were applied mostly by Russia, Kazakhstan, and Belarus. Armenia has not applied any exemptions in imports and exports of goods to CIS countries.

discretion on the pace and timing of integration into economic structures of the CIS. The CIS FTA Agreement aims at creating a free trade area, coordinating economic policy, promoting inter- and intra-sectoral cooperation and harmonizing legislation and regulations. It has been ratified by only Azerbaijan, Kazakhstan, the Kyrgyz Republic, Moldova, Uzbekistan, and Tajikistan, and remains ineffective so far. As a result, preferential trading relations among CIS countries have been established and determined on the bilateral level.

CIS countries have also signed a set of other plurilateral agreements concerning the application of product standards, rules of origin, customs procedures, transit rules and other issues. In particular, they include:

- Agreement on Mutual Policies in the Area of Standards, Metrology and Certifications (1992), amended in 2000, which provides for the creation of the Interstate Council on Standards, the system of harmonised standards and mutual recognition of certificates of conformity[13]. Products standards are mainly former Soviet Union standards; however countries are carrying out harmonization of their national standards with the international ones. The mutual recognition applies only to standards approved at the interstate level, rather than national standards, which are often not notified to trade partners (Freinkman, Polyakov and Revenco, 2004), thus undermining the integrity and efficiency of the whole system.
- Rules of origin within bilateral CIS FTAs are governed by the Rules adopted on 30 November 2000 by all CIS countries, except Uzbekistan and Turkmenistan. The Rules stipulate that exports subject to the free trade treatment must be conducted by tax residents in the free trade area[14]. Identical rules of origin applied by all the CIS countries having bilateral FTAs *de facto* imply the free trade area among those countries.
- The CIS FTAs and plurilateral agreements provide for the national treatment in transit, however, these provisions have been largely dysfunctional. Transit

[13] Still, in practice certificates issued by the partner country can be questioned (Freinkman, Polyakov and Revenco, 2004).

[14] According to the general rule of origin (tariff heading criterion), a product is considered to be of CIS origin if it is fully produced in the CIS country or, when imports are used in its production, if the designation of the product is different from the designation of the inputs according the 4-digit CIS trade nomenclature. However, there is a list of goods, which are exempted from the general rule of origin and are subject to two other rules – ad valorem rule (specified shares (normally 50 percent) of imported materials or value added in the price of final production should be met) and technological requirements (specified technological operations should be performed in the free trade area). The products traditionally considered sensitive, such as footwear, textiles, and clothing, are subject to the tariff heading criterion rather than more restraining technological requirements (Freinkman, Polyakov and Revenco, 2004).

countries usually maintain transit permits and quotas system for road transport and tend to create extra hurdles such as mandatory high-cost customs convoying, insurance, and other high fees in customs clearance, which are often in violation of such agreements (IBM report, 2004).

Overall, the CIS free trade bloc is characterised by i) weak administration, lack of strict procedures for the application of non-tariff measures and temporary protection measures under FTAs, dispute settlement mechanism, and underdeveloped plurilateral and bilateral institutions that do not have enough power to influence policies of the national trade bodies; ii) lack of transparency and efficiency due to parallel existence of bilateral and plurilateral agreements that overlap and sometimes contradict each other; iii) as well as a lack of permanency due to frequent changes in the list of exemptions[15] and of applied contingent measures (Freinkman, Polyakov and Revenco, 2004).

Exporting to other CIS countries is more advantageous compared to other destinations because of close historical ties and geographical proximity, the proximity of product standards and the mutual recognition of the mandatory trade and standardization documentation. On the other hand, the efficiency of CIS FTAs has been undermined due to such factors as:

- being competitors in many sectors CIS countries have little interests to grant preferential access to imports from other CIS countries, especially in sensitive sectors, leading to trade wars and arbitrary unilateral application of trade protection measures (pronounced in trade with large CIS countries);
- political and ethnic tensions between CIS countries, such as between Georgia and Russian Federation, have also negatively influenced trade relations of the CIS countries.
- the CIS trade agreements have been inefficient in reducing excessively high border and transport costs within the CIS (including customs delays, problems with mutual recognition of customs documentation and application of rules of origin) negatively impacting on bilateral trade and preventing countries from fully benefiting from scale and competition effects on CIS huge markets.

The CIS FTA countries actively develop the economic relations with non-CIS partners (71.1% of Armenia's total trade in 2006). CIS countries usually consider economic integration with non-CIS countries potentially more welfare increasing due to the effects of deep integration (e.g., technology transfer, institutional and policy

[15] Countries have agreed schedules for mutual abolishing of exemptions.

harmonization, productivity convergence, etc.) and "lock-in" mechanisms for political and economic reforms. Taking into account the lack of strong economic incentives and political will of CIS countries to integrate, the prospects of the full implementation of the plurilateral CIS FTA seem rather weak. At the same time, to become fully functional and more efficient bilateral CIS FTAs require strengthening their administration, brining their legal and institutional framework in line with the WTO rules concerning substantial coverage of the agreement, transit rules, application of SPS and TBT measures, application of safeguards and antidumping measures, as well as dispute settlement mechanisms.

Armenia is also a member of the Black Sea Economic Cooperation (BSEC) Organization. Ten other BSEC members include Albania, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Turkey and Ukraine. This agreement does not stipulate preferential trade among parties although it envisaged the possibility of free trade zones in the future. It covers a number of fields, including economic cooperation and trade, investment, scientific and technical cooperation, the establishment of a BSEC Bank, and cooperation on transport and communications. Still, the BSEC have not advanced much in achieving the declared goals due to lack of political support, unresolved border and territorial disputes and ethnic conflicts among the member countries (Maliszewska, 2005). Besides, the creation of the BSEC FTA requires all members to have FTAs with the EU (since some counties, Greece, Turkey, Bulgaria and Romania, are already members of the EU customs union), which is not a short-run perspective for some of them (e.g. Russia).

Presently, Armenia is involved in FTA negotiations with Iran and Lebanon. The major difficulties in the FTA negotiations with Iran relate to non-compliance of Iran's legislation and trade regime with the WTO rules and requirements (Iran's trade regime is much more restrictive compared to Armenia's). Negotiations with Lebanon largely concern customs tariffs issues.

4.5. Trade Openness

The openness indicator is measured as the share of exports and imports in GDP. A higher openness index tends to indicate a more outwardly-oriented economy. Although Armenia has developed very liberal trade regime and its trade turnover has been steadily increasing, Armenia's openness indicator has fallen during the past years since the growth of nominal GDP exceeded that of the trade (see Table 4.3). Particularly, the share of total trade of goods and services in nominal Armenia's GDP has declined (by -24.2%) over 2001-2006 from 73.9% of GDP in 2000 to 56.0% of GDP in 2006. The

decline in openness was more pronounced in regard to imports of goods and services than for exports (reflecting the faster growth of exports compared to imports during the period).

Table 4.3. Armenia's openness (GDP decomposition, current prices)

	2000	2003	2006	% change 2000-2006
Exports of goods and services as % of GDP	23.4	32.2	21.6	-7.7
Imports of goods and services as % of GDP	50.5	50.0	34.4	-31.9
Total Trade as % of GDP	73.9	82.2	56.0	-24.2

Source: Key indicators of Developing Asia and Pacific Countries, 2007

4.6. The geographical composition of trade

The fifth rule of thumb focuses on the extent to which countries trade with each other prior to the FTA. Where there is initially little trade with a potential trade partner, this signifies that the third countries are more efficient suppliers and thus that the future FTA is more likely to result in trade diversion. Also, there may be limited scope for trade expansion from forming a FTA between countries that do little trade with each other. On the contrary, if in the initial situation the countries trade significantly then it is more likely that they importing from the more efficient suppliers and the chances for trade diversion are lower.

The World Integrated Trade Solutions (WITS) database is used in all calculations in this chapter. However, it is important to note that CIS trade statistics are known to be often deficient and the exercise with comparing mirror trade flows confirms this[16] (see Table 4.4). The persistent problems of the CIS countries in the recording of international transactions are explained by weak border control, a lack of control over parts of territories (in the case of Moldova and Georgia), poor customs procedures and evaluation techniques (Freinkman, Polyakov and Revenco, 2004). CIS countries anti-corruption and customs reform initiatives influence the dynamics of their trade figures, thus the consistency of trade data over time is also a matter of concern.

[16] Imports are recorded in CIF prices while exports are recorded in FOB prices, thus imports should exceed exports by transportation and insurance costs.

Table 4.4. Armenia's mirror statistics for main partners, 2006 (USD million)

	Armenia trade statistics			Mirror trade statistics of trade partners		
	Export	**Import**	**Balance**	**Export**	**Import**	**Balance**
Georgia	47.5	34.7	12.8	73.6	40.2	33.4
Ukraine	22.4	164.7	-142.3	136.3	21.1	115.2
Russian Federation	116.5	299.5	-183.0	249.3	95.3	154.0
Iran	29.1	113.0	-83.9	165.9	30.9	135.0
Turkey	0.2	93.8	-93.5	-	-	-
EU27	470.9	688.6	-217.7	588.6	437.6	151.0
Total	686.6	1394.3	-707.7	1213.7	625.1	588.6

Source: WITS.

As can be seen from Table 4.4, major discrepancies appear in mirror data on Armenia's trade with Georgia (on Armenia's import side), the EU (import side), Turkey (import side). One of the possible explanations of such discrepancies is the misspecification of the country of origin after the transit trough the territory of a transit country (first of all, Georgia) regardless of the share of its content that actually comes from this country. Data discrepancies with Georgia are most evident for HS 87 and HS 10 commodity groups. In 2006, Georgia reported the USD 8.2 million exports of HS 87 group ("Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof") to Armenia (or 11.1% of total Georgia's exports to Armenia), while no such imports from Georgia were reported by Armenia (see Appendix2 Table 2) for commodity composition of trade with Armenia's main trade partners). This can be possibly explained by the fact that Georgia imports the used cars from the Western Europe and then re-exports them to its neighbouring countries, Armenia and Azerbaijan (ADB, 2007). A similar situation arises when looking at the data on exports of cereals (HS 10) from Georgia to Armenia (Georgia reported USD 11.8 million exports of cereals to Armenia in 2006 while no such imports from Georgia were reported by Armenia)[17].

Discrepancies in mirror trade between Armenia and Turkey arise due to border and trade limitations between countries. Turkey reports no trade with Armenia, while according to the Armenian data trade with Turkey (mainly imports) accounted for 3.1% of Armenia's total trade. In 1993, Turkey made a political decision to close off its borders with Armenia. Still, de facto the countries trade with each other, though export destinations are usually registered as lying in Georgia or Russia (Tocci et al., 2007).

[17] Georgia was a net importer of cereals in 2006 (USD 109.6 million imports vs. USD 11.8 million exports.

A discrepancy in the EU-Armenia trade data is largely caused by the mineral fuels, HS 27 group. Armenia reported USD 97.4 million imports of mineral fuels from the EU in 2006 vs. USD 1.5 million reported in the EU data.

We use Armenia's trade data for further analysis in order to provide a consistent set of measures for the remainder of this report (still bearing the above considerations and caveats in mind).

Table 4.5 presents the Armenia's ten largest trade partners in 2006. The list is topped by the EU capturing 37.7% of Armenia's total trade in 2006. Armenia's trade turnover with the EU has grown by 4.5 times since 1997; as a result the share of the EU in Armenia's total trade has risen by over 10 percentage points over the last decade (from 27.1% in 1997). On the contrary, the role of trade with Russia has declined substantially during the past years (from 25% in 1997 to 13.5% in 2006); still Russia has preserved its second largest partner position. Trade with Israel and Ukraine, the third and fourth trade partners in 2006, was subject to pronounced increases over 1997-2006, contrary to the considerable negative trade dynamics with Iran and the US. Also, China and Turkey have strengthened their weight in Armenian trade over the last decade. The five largest partners attributed for 69.1% of Armenia's trade turnover in 2006 vs. 89.5% in 1997 thus Armenia has reduced the geographical concentration of its trade to some extent.

Table 4.5. 10 Armenia's largest trade partners in 2006

Trade partner	Trade turnover	Balance	Balance as a share of bilateral trade	Share in total trade, 2006	Share in total trade, 1996
	million USD	*million USD*	*%*	*%*	*%*
EU27	1159.6	-217.7	18.8%	37.7%	27.1%
Russian Federation	416.0	-183.0	15.8%	13.5%	25.0%
Israel	194.3	18.8	1.6%	6.3%	0.01%
Ukraine	187.1	-142.4	12.3%	6.1%	1.4%
Turkmenistan	170.7	-167.4	14.4%	5.5%	4.3%
United States	162.4	-33.8	2.9%	5.3%	12.8%
Iran, Islamic Rep.	142.1	-83.9	7.2%	4.6%	11.8%
China	110.0	-109.1	9.4%	3.6%	0.3%
Turkey	94.0	-93.5	8.1%	3.1%	1.9%
Switzerland	91.7	52.4	4.5%	3.0%	2.7%
RoW	351.2	-150.1	-42.7%	11.4%	12.8%
World	**3079.0**	**-1109.6**	**36.0%**	**100**	**100**

Source: WITS. *Total exports plus imports

4.6.1. Export Structures by Major Trading Partners

The EU is Armenia's most important market. Almost half of all Armenia's export in 2006 (47.8%) was captured by the EU (see Table 4.6 and Figure 4.2). Five Armenia's largest export partners made up about 85% of total Armenia's exports in 2006 signifying about a very high level of geographical concentration of Armenian exports (which is explained by Armenia's landlocked geographical position and trade and border limitations with Turkey and Azerbaijan). Armenian exports to the EU have been reporting a consistent growth over the last decade (overall, exports have grown by 7.6 times from 1997). As a result, the share of Armenia's exports to the EU in total exports has expanded by over 18 percentage points (from 29.4% to 47.8% in 1997).

The geographical structure of Armenia's exports has undergone significant changes over the last decade. Armenia has been developing its trade with the EU and other non-CIS countries while reorienting it from its traditional CIS partners. The weight of the CIS bloc has decreased from 36.6% in 1997 to 25% in 2001, and to 20.1% in 2006. The share of exports to Russia has also significantly dropped compared to 1997 – by about 2 times. Russia is the key destination market for Armenia's traditional exports, first of all, beverages and spirits (HS 22 group captured 52.2% of total Armenia's exports to Russia in 2006, see Appendix2 Table 2 for more details) and other foodstuffs, as well as precious metals including processed diamonds and gold, articles of jewellery (9%), rubber (6.7%) and electrical machinery (4.5%). At the same time, the weights of Georgia and Ukraine have been almost stable over time. Armenia exports largely cement (34.4%), foodstuffs, electricity (about 15%) and plastics to Georgia, whilst beverages and spirits (33.2% of total exports to Ukraine), ferro-molybdenum (about 30%) and foodstuffs - to Ukraine.

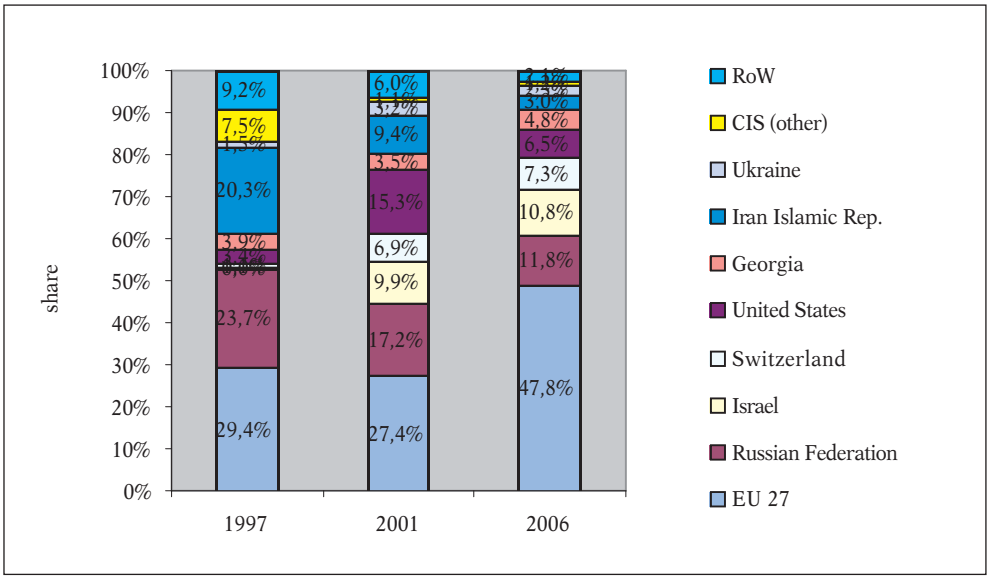
The shares of exports to Israel and Switzerland were subject to the most drastic changes (over 1997-2001). The reorientation of Armenia's trade to Israel was intensified by strong inflows of FDI since 2001 largely directed to diamond-processing sector (worked diamonds accounted for about 98% of total exports to Israel in 2006). The major exports to Switzerland included ores, slag and ash, HS 26 (38%), precious metals (gold in semi manufactured form), HS 71 (36%), and cases and dials for watches, HS 91 (23%). At the same time, exports to Iran have been declining over the last decade (by about 30% since 1997). As a result, the share of exports to Iran in total exports has fallen by almost 7 times over the period - from 20.3% in 1997 to only 3% in 2006. The major items of Armenia's exports to Iran included electricity (35%), Portland cement (22%) and aluminium (16.2%), vegetable oils (6.2%).

Table 4.6. Geographical distribution of Armenia's exports

Country name	1997		2001		2006	
	million USD	%	million USD	%	million USD	%
EU27	61.6	29.4%	92.0	27.4%	470.9	47.8%
Russian Federation	49.5	23.7%	57.70	17.2%	116.5	11.8%
Israel	0.03	0.01%	33.39	9.9%	106.6	10.8%
Switzerland	2.3	1.1%	23.01	6.9%	72.1	7.3%
United States	7.0	3.4%	51.49	15.3%	64.3	6.5%
Georgia	8.2	3.9%	11.89	3.5%	47.5	4.8%
Iran, Islamic Rep.	42.4	20.3%	31.45	9.4%	29.1	3.0%
Ukraine	3.1	1.5%	10.90	3.2%	22.4	2.3%
Belize	0.0	0.0%	0.0	0.0%	12.1	1.2%
Canada	0.1	0.03%	0.90	0.3%	11.1	1.1%
CIS (other)	15.8	7.5%	3.7	1.1%	11.7	1.2%
RoW	19.3	9.2%	19.4	5.8%	20.5	2.1%
Total	**209.2**	**100%**	**335.8**	**100%**	**984.7**	**100%**

Source: WITS.

Figure 4.2. Geographical distribution of Armenia's exports, selected years



Source: WITS.

4.6.2. Export Structures by Commodities

The Sussex Framework suggests considering the sectoral pattern of trade that will help to identify (1) the sectoral distribution of likely trade creation and trade diversion and (2) those sectors which are of particular importance to the economies concerned. This is important from the perspective of economic significance, but also important from a political economy perspective.

Table 4.7 presents the 10 largest commodity groups of exports in 2006 aggregated at HS-2 level, as well as changes in their exports over time. The ten largest export groups are comprised of precious and non-precious stones, base metals, mineral products, beverages and spirits, cements, and textiles, and rubber. "Precious and semi-precious stones and metals" HS group, mainly diamonds, which are processed in Armenia, gold in semi-manufactured forms and articles of jewellery, represent the major part of Armenia's exports (32.5% of all exports in 2006 vs. 26.4 % in 1997 and 36.6% in 2001). The slowdown of the growth of exports of precious stones in recent years has occurred due to disruptions in the external supply of raw diamonds for processing and stiffer competition from other countries. The key destinations for these exports from Armenia are the EU (mainly Belgium) – 48% of total exports from Armenia in 2006, Israel – 33%, the US – 16%, and Switzerland – 8%. Armenia imports raw diamonds from other countries, mainly Belgium and Israel, then processes them and re-exports back to these countries.

Increased FDI into the metallurgy sector has intensified the sectors' development and accelerated their exports in recent years. The rise in world prices of base metals has also increased the nominal value of exports of base metals from Armenia. Exports of iron and steel products was the second largest commodity category in 2006, have increased by about 7 times compared to 1997 and by 17.5 times as compared to 2001. In 2006, the key markets for iron and steel (mainly ferro-molybdenum) were the EU, Ukraine and Switzerland and Iran. The share of ores, slag and ash group, mainly copper ores and concentrates, has grown by almost 3 times since 1997 (from 3.3% in 1997 to 9.5% in 2006) and have been directed mostly to the EU (55% of all group exports in 2006), Switzerland and Belize. The fourth most important export category in 2006 was "Beverages and spirits" (mainly spirits obtained by distilling grape wine) with 8% share of total exports, which slightly decreased overt the last time (from 11.6% in 2001). The key markets for this group have traditionally been CIS countries, first of all Russia (77% of all exports to in 2006). Articles of apparel and accessories exports, HS 62 commodity group (mainly brassieres) have maintained its share over the time. In 2006, 97% of these exports have been destined to the EU (Italy).

Overall, in 2006 as compared with 1997 the Armenian exports revealed higher level of commodity concentration. The five largest export categories accounted for about 75% in 2006 vs. 62% in 1997. Furthermore, the importance of exports of machinery and electrical equipment (HS 84, 85) has declined substantially (together they accounted for 13% of total exports in 1997 vs. only 2% in 2006) reflecting the declining role of these sectors in the economy.

Table 4.7. 10 largest commodity groups of Armenia's total exports, by HS 2 digit

HS code	Product description	1997		2001		2006	
		million USD	%	million USD	%	million USD	%
71	Precious or semi-precious stones and precious metals	55.1	26.4%	122.82	36.58%	319.8	32.47%
72	Iron and steel	24.2	11.5%	9.57	2.85%	167.5	17.01%
26	Ores, slag and ash	6.8	3.3%	20.49	6.10%	93.5	9.49%
22	Beverages, spirits and vinegar	19.1	9.1%	39.08	11.64%	79.1	8.04%
74	Copper and articles thereof	14.6	7.0%	12.88	3.83%	77.2	7.84%
81	Other base metals; cermets	0.6	0.3%	1.90	0.56%	25.7	2.61%
40	Rubber and articles thereof	8.1	3.9%	12.40	3.69%	24.5	2.48%
25	Salt; sulphur; earths and stone; plastering materials; lime and cement	3.3	1.6%	0.22	0.07%	23.4	2.37%
62	Articles of apparel and clothing accessories, not knitted or crocheted	7.0	3.3%	15.54	4.63%	20.9	2.12%
27	Mineral fuels, mineral oils and products of their distillation	1.6	0.8%	17.16	5.11%	19.5	1.98%
	Total	**140.4**	**67.20%**	**252.06**	**75.06%**	**851.1**	**86.41%**

Source: WITS.

Bilateral trade with the EU is even more concentrated compared to Armenia's total trade, though Armenia has diversified to some extent its exports to the EU over the last decade. The five largest commodity groups represented by precious or semi-precious stones, base metals and mineral products comprised 88% of all exports to the EU in 2006 (see Table 4.8). The exports of precious or semi-precious stones to the EU have grown by over two times during the last decade, however their share has been experiencing a huge decline since 1997 (from 77% of all exports to the EU in 1997 to about 66% in 2001 and 23% in 2006), explained by disruptions in the external supply of raw diamonds for processing and stiffer competition from other countries. At the same time, the importance of exports of base metals to the EU has considerably strengthened. Also, Armenia has expanded exports of articles of apparel and rubber to the EU capturing 4.3% and 2.6% of total exports to the EU in 2006.

Table 4.8. 10 largest commodity groups of Armenia's exports to the EU, by HS 2-digit

HS code	Product description	1997		2001		2006	
		million USD	%	million USD	%	million USD	%
72	Iron and steel	8.22	13.3%	7.58	8.2%	156.3	33.2%
71	Precious or semi-precious stones and precious metals	47.54	77.2%	60.94	66.2%	109.4	23.2%
74	Copper and articles thereof	1.32	2.1%	1.17	1.3%	74.6	15.8%
26	Ores, slag and ash	0.00	0.0%	3.51	3.8%	50.9	10.8%
81	Other base metals; cermets; articles thereof	0.52	0.8%	1.79	1.9%	25.7	5.4%
62	Articles of apparel and clothing accessories, not knitted or crocheted	0.00	0.0%	4.37	4.8%	20.3	4.3%
40	Rubber and articles thereof	0.03	0.0%	0.73	0.8%	12.5	2.6%
61	Articles of apparel and clothing accessories, knitted or crocheted	0.00	0.0%	1.11	1.2%	3.9	0.8%
3	Fish and crustaceans, molluscs	0.01	0.0%	0.003	0.004%	3.2	0.7%
76	Aluminium and articles thereof	0.17	0.3%	0.88	1.0%	2.4	0.5%
	Total	**57.81**	**93.70%**	**82.09**	**89.22%**	**459.2**	**97.30%**

Source: WITS.

According to the Sussex Framework, the pre-FTA substantial and consistently growing share of Armenian exports to the EU market signifies that Armenian producers have been successfully exploring their comparative advantages on the EU market in regard to Armenian major export items (see below). As such, after getting a preferential access to this market under the future FTA there will be more opportunities for Armenian exporters to expand their exports (trade creation effect). Still, taking into the account the low level of EU tariff barriers applied to most Armenian products (GSP general agreement), the tariff reductions and shallow integration, overall, are not likely to induce considerable expansion of Armenian exports to the EU. In particular, the EU already imposes zero tariffs on such major Armenia's exports as precious stones and metals, ores and concentrates, copper and articles thereof, ferroalloys, rubber and articles thereof, spirits obtained by distilling grape wine (see TRAINS database for effectively applied tariffs in 2006). At the same time, non-zero taxes are applied to most agricultural and food products (max ad-valorem tariff – 40.3% for cigarettes); textiles and clothing (max - 9.6%); other base metals, cermets, and articles thereof (max – 5%); aluminium and articles thereof (max – 2.5%) – therefore, shallow integration-induced trade creation is likely to occur in regard to these Armenian exports. Overall, the average effectively applied tariff in 2006 weighed by Armenia's imports to the EU in 2005 equalled 0.2%, including 5% - for agricultural products, and 0.16% - for non-agricultural goods[18]

(including 6.1% - for textiles and clothing (HS 50-63); 2.5% - for aluminium and articles thereof (HS 76); and 0.9% - for other base metals, cermets, and articles thereof (HS 81)).

As was mentioned, high trade and transportation costs, NTBs and regulatory impediments, low competitiveness of Armenian products are the major market access restrictions for Armenia in regard to the EU, so their reduction during deep integration between countries creates much more potential for Armenian producers to increase their penetration in the EU market. The expected development of new industrial structures in Armenia under the future EU-Armenia FTA will also enhance the Armenia's export potential.

4.6.3. Import Structures by Major Trading Partners

The EU is the most important trade partner of Armenia on the imports side accounting for about one third of Armenia's imports (32.9% in 2006) (see Table 4.9). The EU imports to Armenia has expanded by 3.5 times since 1997, while the EU share in total imports has risen from 26.4% in 1997 to 32.9% in 2006 (though it has remained almost stable compared to 2001). Armenia is a net importer of the European products with the registered USD 217.7 million negative trade balance in 2006 (or about 18.8% of bilateral trade).

The CIS countries also remain important origin of Armenia's imports with a stable share of about 33% in 2006 (35.3% in 1997). However, there has been a reorientation of sourcing of supply from Russia to other CIS countries. In particular, the share of Russia has been dropping from 25.4% from 1997 to 19.8% in 2001 and to 14.3% in 2006. Russia largely exports to Armenia cereals (16.3% of Russian exports to the Armenia in 2006), vehicles (15.3%), machinery and mechanical appliances (8.6%), precious stones (8%).

The role of Ukraine as source of Armenian imports has increases significantly over the period. It was the third largest importer in 2006 capturing about 8% of Armenia's total imports vs. 1.4% in 1997. Ukraine exports mainly iron and steel products (23.6% in 2006), mineral fuels (19.6%), tobacco products (11.2%), and vegetable oils (4.7%). The weight of other CIS countries has also risen, mostly due to the growth of imports of natural gas from Turkmenistan.

The registered imports from neighbouring countries Georgia and Turkey in Armenia's import structure capture relatively small shares (1.7% and 4.5% respectively). Turkey's share has shown a gradual increase over the last decade (from

[18] Excluding specific tariffs on alcohols (HS 220421, 220600) and tobacco (HS 240110, 240120).

1.5% in 1997). According to Armenian data, it imports from Georgia sugars (34%), fertilizers (27.4%), wood and articles of wood (15%), and beverages and spirits (almost 5%). Turkey's major imports to Armenia consist of plastics (15.3%), iron and steel and articles thereof (16.4%), wood and articles of wood (7.3%), machinery (5.8%). At the same time, the weight of Iran has been consistently contracting (from 9.4% in 1997 to 5.4% in 2006). Iran's exports to Armenia are mineral fuels, steel or iron products, plastics, and chemicals.

There has also been a shift in Armenia's import structure from traditional sources of supply to new partners such as China and India with 5.2% and 1.1% shares respectively in 2006. China exports to Armenia mostly machinery and electrical equipments, footwear and ceramic products, while India – meat, vehicles and machinery, and precious stones. The US was the third largest supplier to Armenia in 1997 with a 15.5% share and then has shifted to the sixth position in 2006 (4.7%). The US exports are largely precious stones (25%), pharmaceuticals (21.7%), instruments and apparatus (12.5%), and machinery (8.6%).

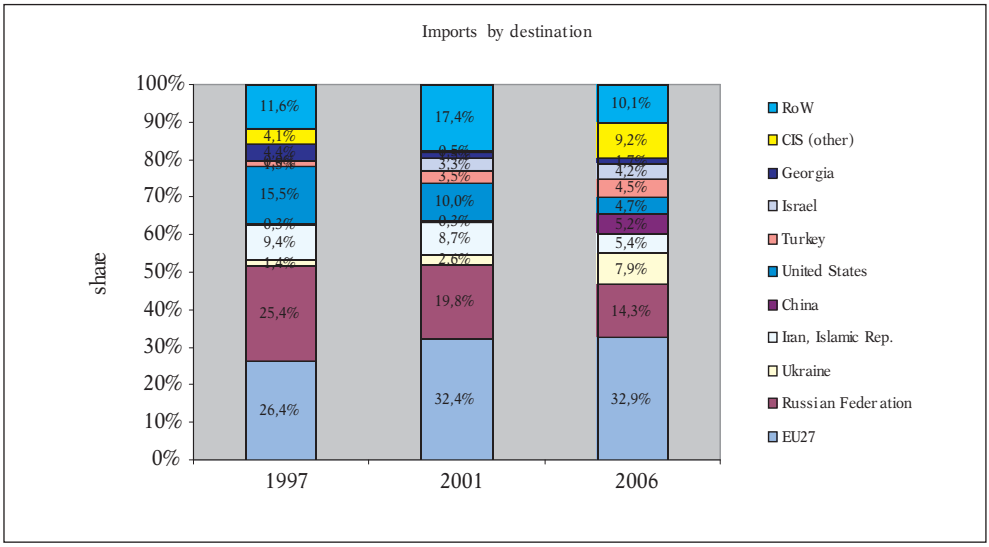
Table 4.9. Geographical distribution of Armenia's imports

Country name	1997		2001		2006	
	milion USD	%	million USD	%	million USD	%
EU27	195.5	26.4%	271.4	32.4%	688.6	32.9%
Russian Federation	188.1	25.4%	166.1	19.8%	299.5	14.3%
Ukraine	10.3	1.4%	22.0	2.6%	164.7	7.9%
Iran, Islamic Rep.	69.4	9.4%	72.8	8.7%	113.0	5.4%
China	2.4	0.3%	2.1	0.3%	109.5	5.2%
United States	114.7	15.5%	83.4	10.0%	98.1	4.7%
Turkey	11.0	1.5%	29.0	3.5%	93.8	4.5%
Israel	0.1	0.01%	27.6	3.3%	87.8	4.2%
Georgia	32.4	4.4%	12.9	1.5%	34.7	1.7%
India	0.7	0.1%	5.1	0.6%	22.7	1.1%
CIS (other)	30.4	4.1%	3.9	0.5%	193.1	9.2%
RoW	85.5	11.5%	140.9	16.8%	188.7	9.0%
Total	**740.5**	**100%**	**837.2**	**100.0%**	**2094.3**	**100%**

Source: WITS.

Taking into account the relatively high share of imports from the EU in Armenia's total imports, we can conclude that the future EU-Armenia FTA has some potential for trade creation. At the same time, about 67% of Armenia's imports are supplied by non-EU countries, which suggest the likelihood for shifting of sources of imports from these countries to the EU. Here, two opposite impacts may take place: i) if supply switching occurs from CIS countries with whom Armenia already has an FTA accounting by about 33% of total imports to Armenia, than there is likely to be welfare increasing

Figure 4.3. Geographical distribution of Armenia's imports, selected years



Source: WITS.

trade reorientation; ii) where there is shift away from non-FTA partner countries, then this would entail welfare decreasing trade diversion. The magnitude of these effects will also depend on how far the differences in competitiveness across CIS and non-CIS countries are actually affected by tariff changes. Consequently, the net welfare effect from this FTA for Armenia will be ambiguous. Nevertheless, the shallow integration-induced welfare effects are not expected to be significant due to the low level of pre-FTA tariffs in Armenia for all its partners.

4.6.4. Import Structure by Commodities

Armenia is heavily dependent on imported energy resources and has limited access to international fuel markets due to its geographical location. Natural gas and oil products (HS 27) are the largest commodity group of Armenia's imports, though its registered weight has been declining over the last decade (from 27.8% in 1997 to 16.7% in 2006) (see Table 4.10). Turkmenistan is the main supplier of these products to Armenia (48%), followed by the EU (28%) and Iran (21%).

Armenia also intensively imports precious stones and metals to service the significant processing industry. Imports of precious stones and metals have risen by 6.5 times over the period thus driving their share up to by more than two times (from 6.4% in 1997 to 15% in 2006). The key suppliers are the EU (almost 50%), Israel (27.5%) the US (7.9%) and Russia (7.7%).

Growing imports of machinery and equipment serve to replace the fading domestic industry and underpin infrastructure investment (ADB, 2006). Machinery and mechanical appliances is the third largest import group with a gradually increasing share over the period (8% in 2006). These imports are largely sourced from the EU (47.5%), Russia (15.4%), China (12.5%) and the US (5%). Electrical equipments (6.5% of all imports in 2006) are imported from the EU (65%), China (7%), and Russia (7%), the US (3.5%) and Ukraine (3.2%). The weight of vehicles has expanded by 4 times over the period; they are reported to be originated from Russia (43%), the EU (23%), Japan (9.8%), Belarus (8.8%)[19], and India (3.4%)[20]. Metallurgical products, cereals, pharmaceuticals and plastics captured almost the same shares in the Armenia's imports in 2006 (about 3%). The role of cereals and pharmaceuticals in total imports has been falling during the last decade, while the shares of iron and steel and plastics have been on the rise. The key importers of pharmaceuticals to Armenia are the EU

Table 4.10. 10 largest commodity groups of Armenia's total imports, by HS 2-digit

HS code	Product description	1997		2001		2006	
		milion USD	%	milion USD	%	million USD	%
27	Mineral fuels, mineral oils and products of their distillation	206.1	27.8%	186.31	22.25%	350.6	16.74%
71	Precious or semi-precious stones and metals	47.5	6.4%	106.76	12.75%	312.5	14.92%
84	Nuclear reactors, boilers, machinery and mechanical appliances	36.9	5.0%	47.82	5.71%	168.0	8.02%
85	Electrical machinery and equipment	33.5	4.5%	38.93	4.65%	135.7	6.48%
87	Vehicles other than railway or tramway rolling-stock	9.8	1.3%	13.09	1.56%	107.1	5.11%
72	Iron and steel	3.0	0.4%	9.29	1.11%	63.0	3.01%
10	Cereals	50.4	6.8%	47.92	5.72%	60.7	2.90%
30	Pharmaceutical products	43.7	5.9%	28.94	3.46%	60.1	2.87%
39	Plastics and articles thereof	8.2	1.1%	16.15	1.93%	55.4	2.65%
73	Articles of iron or steel	9.8	1.3%	5.53	0.66%	54.9	2.62%
	Total	**448.9**	**60.5%**	**500.74**	**59.8%**	**1368**	**65.3%**

Source: WITS.

[19] Mainly motor vehicles for the transport of goods.
[20] Mainly road tractors for semi-trailers.

(43.2%), the US (35.3%) and Switzerland (4.9%); of plastics and articles thereof – Turkey (26%), the EU (22.6%), Iran (14.1%) and China (9%). Overall, the level of import concentration is significant, but not so high as compared to Armenia's exports.

Armenia's imports from the EU are dominated by precious stones and metals (22.5% in 2006), electrical equipments (12.7%), machinery and mechanical appliances (11.6%), pharmaceuticals (3.8%) and vehicles (3.6%) (See Table 4.11). As previously mentioned, Armenia reported mineral fuels taking about 14% of its imports from the EU (originated mainly from Romania and Bulgaria) or USD 97.4 million; whilst the same figure provided by the EU data is only USD 1.5 million. The strongest growth over 1997-2006 have been revealed by mineral fuels, machinery and mechanical appliances, vehicles, articles of iron or steel, and essential oils and cosmetics.

Imports of agricultural products from the EU have revealed a huge decline since 1997: from 37.2% of total imports from the EU in 1997 to 8.7% in 2006. The two major commodity groups of agricultural imports from the EU in 2006 included tobacco products, HS 24 (1.8% of total imports from the EU) and preparations of vegetables, HS 20 (0.8%), while in 1997 – products of the milling industry, HS 11 (10.1%) and cereals, HS 10 (8.5%). Since the majority of agricultural products are subject to 10% tariff protection in Armenia, there exist some scope for trade creation and trade diversion effects in regard if these products are included into the FTA.

According to the Sussex framework, trade creation and trade diversion are likely to appear mainly in regard to those goods, in which the pre-FTA trade between partners has been concentrated as reflected in Table 4.11. Furthermore, the EU will compete with those partners, who export a similar set of goods to Armenia; hence the future FTA may cause Armenia's trade to divert from those partners. On the contrary, less trade diversion is expected in regard to partners with dissimilar structures of exports to Armenia. As previously described, the EU competes with Russia, China, the US and Ukraine in regard to electrical equipment; with Russia, China, and the US in regard to machinery and mechanical appliances; with the US and Switzerland in regard to pharmaceuticals; with Russia, Japan, and India in regard to vehicles. The low overall level of pre-FTA tariffs on the EU major imports in Armenia suggest that the shallow integration effects from the tariff elimination are not expected to be significant in regard to these products (first of all, those imports subject to 0% tariff rates such as unworked precious stones; mineral fuels; pharmaceuticals; essential oils, perfumery, cosmetic or toilet preparations; most articles of iron and steel, machinery and mechanical appliances). At the same time, shallow integration effects are possible to arise for the EU imports subject to 10% tariff rate (such as electrical machinery and equipment, motor cars, motor-cycles, cameras; photocopying apparatus; certain plastics, etc.). If the 10% tariff were scrapped this could be a useful improvement of

Table 4.11. 10 largest commodity groups of Armenia's imports from the EU, by HS 2-digit

HS code	Product description	1997		2001		2006	
		million USD	%	million USD	%	million USD	%
71	Precious or semi-precious stones and metals	45.8	23.4%	44.93	16.55%	154.9	22.5%
27	Mineral fuels, mineral oils and products of their distillation	2.2	1.1%	65.40	24.09%	97.4	14.1%
85	Electrical machinery and equipment	22.5	11.5%	18.13	6.68%	87.2	12.7%
84	Nuclear reactors, boilers, machinery and mechanical appliances	15.6	8.0%	19.13	7.05%	79.8	11.6%
30	Pharmaceutical products	6.1	3.1%	5.51	2.03%	26.0	3.8%
87	Vehicles other than railway or tramway rolling-stock	2.5	1.3%	2.62	0.97%	24.6	3.6%
73	Articles of iron or steel	1.4	0.7%	1.82	0.67%	20.6	3.0%
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations	1.0	0.5%	4.36	1.61%	14.6	2.1%
90	Optical, photographic, cinematographic, measuring and other instruments	4.1	2.1%	3.64	1.34%	13.8	2.0%
39	Plastics and articles thereof	3.0	1.6%	5.44	2.00%	12.5	1.8%
	Total	**104.2**	**53.30%**	**170.98**	**62.99%**	**531.4**	**77.20%**

Source: WITS.

competitiveness of the EU products in relation to Japan, China, the US and India, and thus trade diversion is likely to occur. Furthermore, as previously mentioned, free trade regime with the EU is likely to trigger some reorientation of the trade in these products from CIS countries to the EU.

4.7. Finger-Kreinin Indices

According to the third and forth rules of thumb, the extent to which the trade creation on the production side will occur depends on the degree of overlap in production and trade structures across the economies of future partners, and on the differences in relative costs of production between them. The more similar the

production bundles of the economies and the higher the elasticities of supply, the greater the possibility of trade creation from the PTA, since countries are able to source the good to the more efficient partner supplier (Gasiorek et al., 2006). Otherwise, trade diversion is likely to occur. The only possibility for trade creation of the future FTA will be on the demand side.

The degree of similarity between two partners with regard to their trade or production structures is measured by the Finger-Kreinin (FK) index. The FK index is equal to 1 (or 100 if expressed as percent) when the structure of trade across the two countries is identical, and is equal to 0 when the structure of trade is completely different. Ideally, it is computed on the basis of production data, but since it is not readily available, highly disaggregated trade data is used instead. We calculated FK indices to measure similarities of export structures between Armenia and its main trade partners - the EU27, Georgia, Ukraine, Russia, Iran[21], Turkey, as well as across these partners at the HS 6-digit and 4-digit level. Also, we did the same exercise for imports (see Table 4.12 through Table 4.15).

As can be seen from Table 4.12 and Table 4.13, the FK indices capturing export similarities between Armenia and its main trade partners are relatively low. The highest FK index is between Armenian and Georgian exports: it equals 19.11 at HS 6 digit level and 31.33 at HS 4 digit level. The FK index for Armenia and the EU exports is about 2.5 times less than that for Armenia and Georgia and equals 7.58 at HS 6 digit level and 10.72 at HS 4 digit level suggesting a low level of export similarity between them. Therefore, according to the fourth rule of thumb there is not much evidence for trade creation on the production side under the future Armenia and the EU FTA. Armenia's export structure does not overlap much with export structures of other partners either. The common need across the CIS countries for imports of intermediates and final goods which are not produced domestically leads the significantly higher degree of overlap with regard to imports (see Table 4.14, Table 4.15).

4.8. Revealed Comparative Advantage

It is important to analyse the relative competitiveness of producers of the partners of future FTA. Great differences in comparative advantage between partners producing a similar mix of goods suggest welfare improving FTA (on the production side). When

[21] Trade data for Iran is of 2005.

Table 4.12. FK indices, 6 digit, export, 2006

	Armenia	Georgia	Azerbaijan	Ukraine	Russia	Iran	Turkey
Georgia	19.11	1					
Azerbaijan	1.80	5.89	1				
Ukraine	5.00	10.03	9.26	1			
Russia	3.22	5.96	53.94	21.14	1		
Iran	1.56	4.26	62.63	4.94	38.90	1	
Turkey	7.58	7.95	3.47	16.38	5.51	4.49	1
EU27	7.41	16.13	8.18	27.01	18.12	6.91	23.01

Source: WITS.

Table 4.13. FK indices, 4 digit, export, 2006

	Armenia	Georgia	Azerbaijan	Ukraine	Russia	Iran	Turkey
Georgia	31.33	-					
Azerbaijan	2.49	7.35	-				
Ukraine	9.18	18.42	11.70	-			
Russia	5.23	11.60	55.83	25.50	-		
Iran	2.93	6.98	64.86	7.48	42.01	-	
Turkey	10.72	12.47	4.74	21.26	7.18	7.65	-
EU27	10.08	23.29	10.42	34.49	20.77	9.76	27.89

Source: WITS.

Table 4.14. FK indices, 6 digit, import, 2006

	Armenia	Georgia	Azerbaijan	Ukraine	Russia	Iran	Turkey
Georgia	53.31	-					
Azerbaijan	32.23	39.76	-				
Ukraine	35.52	37.92	38.41	-			
Russia	31.94	42.19	34.50	56.27	-		
Iran	18.24	20.25	26.59	34.00	35.11	-	
Turkey	20.87	22.29	24.39	50.16	38.61	42.06	-
EU27	31.41	35.28	31.51	53.01	51.13	35.99	48.08

Source: WITS.

Table 4.15. FK indices, 4 digit, import, 2006

	Armenia	Georgia	Azerbaijan	Ukraine	Russia	Iran	Turkey
Georgia	64.11	-					
Azerbaijan	47.65	51.97	-				
Ukraine	50.59	53.57	46.40	-			
Russia	44.17	54.62	44.36	56.27	-		
Iran	37.46	39.29	36.33	42.74	43.44	-	
Turkey	42.69	39.36	33.83	51.18	46.36	51.70	-
EU27	46.43	53.26	43.05	62.96	60.33	43.84	55.75

Source: WITS.

there are differences in production efficiency and costs between partners trade creation arises since countries are able to source the goods from the most efficient and less-cost FTA partner. In other words, countries have the potential to greater specialise in those goods, in which they have a comparative advantage. The greater the differences in comparative advantage the greater are the trade creation effect and welfare gains.

Indices of revealed comparative advantage (RCA) are usually used to compute the relative competitiveness of producers. The RCA compares a country's share of exports in a given good with the world share of exports of this good. A country has a comparative advantage when its share is above the world share for that good or when RCA is greater that 1; disadvantage is expressed by an RCA less than 1. For our analysis, we i) calculated the RCAs for Armenia and for the EU, as well as for all Armenia's main partners, namely Georgia, Ukraine, Russia, Turkey, and Iran, at the HS 6-digit level for 2006; ii) calculated Armenia's RCAs for 1997 to analyse the evolution of Armenia's comparative advantage over the last decade; iii) compared Armenia's largest export items by export shares vs. exports with the highest RCAs to show if Armenia exported products in which it had a comparative advantage; iv) computed Armenia's RCAs for non-agricultural exports to better highlight Armenia's stance in this area, v) did the same exercises with respect to Armenia's exports to the EU.

The analysis of Armenia's export structure and its RCAs has resulted in the following conclusions:

- Armenia's export is highly concentrated at the HS 6-digit level (see Appendix1 Table 1). The 15 top export sectors accounted for about 81% of total exports in 2006. 5 top export sectors having made up 62% of total exports in 2006 comprised worked diamonds, ferromolybdenum, copper ores and concentrates, spirits obtained by distilling grape wine, unrefined copper and copper anodes. Other important export items include gold in semi-manufactured forms, articles of jewellery, chloroprene, brassieres of all types of textile materials, Portland cement, and electricity. In all of these goods Armenia has a comparative advantage. Furthermore, 8 among 15 largest export items simultaneously belong to the list of exports with the highest RCAs in 2006 signifying that Armenia is very successful in specializing in and exploring its comparative advantages on the world markets (see Appendix1 Table 2). At the same time, there is still a potential for Armenia to enhance its specialisation in other exports revealing the highest comparative advantage.
- The 15 largest export sectors in 2006 made up only 41% in 1997 (Appendix1 Table 2). Armenia's export structure has undergone considerable changes concerning certain items in 2006 vs. 1997. The most significant rise of export shares has been

observed for ferro-molybdenum, copper ores and concentrates, gold in semi-manufactured forms, unrefined copper and copper anodes, and brassieres. At the same time, the role of exports of worked diamonds, spirits, chloroprene remained almost unchanged. The greatest positive changes in RCAs have occurred for: cases and dials for watches, ferromolybdenum, unrefined copper and copper anodes, crustaceans, fit for human consumption, articles of molybdenum, tubes and pipes having circular cross-sections, and negative changes – for liquid dielectric transformers, gas-operated machinery for welding, artificial fur and articles thereof, men's or boys' ensembles of cotton, and wastes and scraps of base metals (steel, copper and aluminium) (see Appendix1 Table 3, Appendix1 Table 4). The RCAs have remained almost unchanged for worked diamonds, copper ores, spirits and electricity. There has been a tendency for a decline of the RCAs in textile and machine building sectors, while an increase in metallurgical sector. Also, Armenia has successfully developed new niche markets connected with processing of precious stones such as cases for watches, dials for clocks and watches, etc.

- The high concentration of Armenia's exports is also true for Armenia's non-agricultural exports (top 15 export sectors made up 84% of total non-agricultural exports in 2006). Cases for watches of precious and other than precious metals, dials for clocks and watches, ferro-molybdenum and articles and molybdenum, chloroprene, and unrefined cooper top the list of exports with highest RCAs (see Appendix1 Table 5, Appendix1 Table 6). Again, 63% of non-agricultural exports belonged to the list of items with the highest RCAs in 2006, which a sign of Armenia's specialization in those goods, in which it has a comparative advantage (see Appendix1 Table 6).
- In regard to the EU market: we can see again a higher concentration of Armenia's export to the EU: seven top export items (ferromolybdenum, worked diamonds, unrefined copper, copper ores, brassieres, molybdenum ores and concentrates, and chloroprene) accounted for about 85.5% of all exports to the EU in 2006 (see Appendix1 Table 7). The Armenia's most important export items reveal even higher RCAs on the EU market: chloroprene, ferromolybdenum, molybdenum and copper ores, unrefined copper, articles of molybdenum, crustaceans (see Appendix1 Table 7). It worth noting that top 15 Armenia's exports to the EU revealed on average a higher comparative advantage than the total exports to the world markets (see Appendix1 Table 1 and Appendix1 Table 7). On the other hand, the top 15 export items with highest RCAs made up 89% of Armenia's

exports to the EU market in 2006, and 62% on the world markets (see Appendix1 Table 2, Appendix1 Table 8) signifying that Armenia specialises its trade with the EU in sectors in which it exhibits greater comparative advantage. There have been important compositional shifts in the top 15 exports to the EU in 2006 vs. those in 1997 resulting in some increase of diversification of Armenia's exports to the EU. In particular, exports of worked diamonds accounted for 72% of all exports to the EU in 1997 while 22% - in 2006. At the same time, Armenia's exports shifted to ferromolybdenum; copper ores and concentrates; unrefined copper, copper anodes; brassieres; molybdenum ores and concentrates; chloroprene (Appendix1 Table 7).

We also compared the composition and RCAs of the top fifteen export sectors of Armenia and its major partners the EU, Georgia, Ukraine, Russia, Turkey, and Iran. We note that there is little similarity between countries highest RCAs and composition of top export sector (see Appendix1 Table 13 and Appendix 3 (Appendix3 Table 1 through Appendix3 Table 5)). In addition, the bilateral correlation coefficients of the RCA's at the 6-digit HS level across all the pairs of countries are very low (and in most cases negative) (Appendix1 Table 14) confirming very little similarity in both the export patterns, and in the revealed comparative advantage they indicate. The correlation coefficients are the most significant, though still very low, between Armenia and Georgia RCAs (0.05). There is little correlation between the Armenian and the EU RCAs (0.02).

As was mentioned, low similarity between the RCAs suggests that there is a scope for trade creation on the production side, provided that countries have similar production bundles. Since there is little overlap in the commodities mix across Armenia and the EU (FK index for Armenia and the EU exports is rather low), trade creation under the future FTA on the production side is expected to be small.

4.9. Deep integration and Grubel-Lloyd index

According to the Sussex Framework the potential for gains from deeper integration depends on the extent to which the FTA leads to convergence of regulatory and economic policies among partners. The greater the convergence of countries' regulatory policies, the greater is the potential for welfare gains as a result of the FTA. This requires both a removal of barriers to trade that operate beyond borders (such as discriminatory regulations, institutional impediments, etc.) and undertaking common policies needed to promote trade and investment and to generate positive externalities and productivity gains (Gasiorek et al., 2006).

As previously mentioned, low pre-FTA tariff barriers between Armenia and the EU will not likely induce large-scale trade effects driven by shallow integration. Therefore, it is very important to consider opportunities from the deeper (positive) integration between Armenia and the EU which is likely to produce considerably higher welfare implications for Armenia than those arising from shallow integration as a result of the development of closer and more stable trade relations between partner countries allowing for more specialization in niche goods, participation in a fine division of labour, creation of stable value chains, creation of new industrial structures. In this regard, it is very critical for Armenia to remove or reduce the existing barriers to trade (regulatory, political, institutional and infrastructure) and maintain the regulatory and institutional framework necessary to promote trade and generate positive externalities and productivity gains. Again, the greater the Armenia's achievements (prior and upon the conclusion of the FTA) in regulatory convergence with the EU, the greater are the expected welfare gains for Armenia from the future FTA. In addition, the strengthening of the regional cooperation in trade and transit facilitation is crucial for Armenia to gain better access to the EU and the world markets.

Intra-industry trade (IIT) is a key indicator of existing and possible deep integration in market terms between partner countries. IIT is the exchange of goods which takes three forms: 1) it is the exchange of similar goods of roughly similar qualities and prices; 2) it is the exchange of similar goods of different qualities and prices; 3) it is the exchange of goods within a trade classification that represents a vertically integrated supply chain (parts for finished or partly finished goods). Each of these represents a way in which economic integration can encourage the niche specialisation that generates productivity gains. These gains represent the main advantages of deep integration and compensate for any losses to trade diversion from shallow integration (Gasiorek et al., 2006). The levels of IIT are measured by the Grubel-Lloyd index ranging from 0 for no IIT between countries to 1 (or 100 in percentage form) if all trade is IIT.

We computed the IIT indices for Armenia and its main partners in 2006 at the HS 6 digit and 4 digit levels (for comparison), and in 1997 at the HS 6 digit level. In addition, for comparison we calculated the IIT indices for the EU and Georgia and the same countries at HS 6 digit level. Table 4.16 shows that the registered IIT index between Armenia and the EU in 2006 constituted 16.3% at HS 6 digit level and 30.6% at HS 4 digit level. Using the EU mirror trade data for calculations of the IIT index between Armenia and the EU, the index equals 18.5% at the HS 6 digit level. This index is rather low; however, it reveals a greater IIT trade between Armenia and the EU than between Armenia and Armenia's CIS partners – Ukraine (7.8%) or Russia (15.2%), as well as between for example the EU and Georgia (8.2% or 9.3%, excluding trade in

Table 4.16. IIT indices for Armenia in 2006 (HS 6 digit and 4 digit levels), for Armenia in 1997 (HS 6 digit level) and for EU27 and Georgia in 2006 (HS 6 digit level)

	Armenia, HS 6 digit, 2006	Armenia, HS 6 digit, 1997	Armenia, HS 4 digit, 2006	EU27, HS 6 digit, 2006	Georgia, HS 6 digit, 2006
Armenia	-	-	-	18.45	16.29
Georgia	27.18	1.56	29.07	38.89 (9.3*)	-
Ukraine	7.80	8.42	17.33	14.33	3.24
Russia	15.24	18.70	17.46	6.16	13.44
Iran	38.69	6.28	32.27	3.34	23.07
Turkey	13.73	7.16	21.42	18.68	12.28
EU27	16.27	2.20	30.59	-	8.17

Source: WITS Note: * excluding HS 27 group (Mineral fuels, mineral oils and products of their distillation

oils[22]). Moreover, if we compare the level of IIT trade between countries in 2006 and 1997, we can see that the reported IIT has substantially risen between Armenia and the EU over the past years (from only 2.2% in 1997).

Armenia has the highest levels of IIT with Iran and Georgia (see Table 4.16) – 38.7% and 27.2% at the HS 6 digit level. Since these indices are sensitive to the bilateral data used, for countries with big discrepancies in mirror trade flows the IIT indexes may differ substantially. As previously described, the considerable data discrepancies in 2006 have been detected between Armenia and Georgia, Turkey and the EU. Table 4 16 shows that if we calculated IIT index on the basis of Georgia's trade data, the appropriate index equals 16.3%.

The low level of IIT between Armenia and the EU confirms the earlier considerations about the non significant overlap between Armenia and the EU trade patterns (captured by FK index) and competitiveness (captured by RCAs). Still, increasing IIT over time suggests that there is some potential for the additional benefits that can occur in presence of deep integration between countries. The low IIT index is mainly explained by the basic realities of Armenia, namely that upon collapse of the Soviet Union most of Armenia's industrial structure collapsed, also under the impact of the Turkish/Azeri blockade.

4.10. Conclusions

In this paper we studied the potential welfare effects of an EU-Armenia FTA from simple (shallow) integration between the countries on the basis of the Sussex

[22] There are huge discrepancies in mirror data on trade flows between Georgia and the EU in regard to mineral fuels, HS 27group.

Framework methodology. Some attention has also been paid to potential gains from deep integration. The following conclusions have been made:

- since the overall level of pre-FTA tariff protection in Armenia is low (simple average MFN tariff is about 3%), the future reduction of tariff barriers under the EU-Armenia FTA is expected to have a limited scope for either trade creation or trade diversion on the import side in the Armenian economy, especially in regard to non-agricultural trade;
- the low MFN tariff protection implies that the preference margins received by CIS trade partners under the existing FTAs are not significant as well. As a result, there are limited possibilities for welfare-increasing trade reorientation occurring among other FTA partners (CIS countries) and the new partner (the EU);
- physical, regulatory and political (first of all, the closure of borders with neighbouring countries) barriers to trade considerably increase the costs of trade in Armenia and have a huge detrimental impact on the overall volumes of trade (both exports and imports), as well as impose trade distortions on the Armenia's trade structure. Therefore cooperation between Armenia and the EU on their reduction should be welfare increasing. It should be noted that Armenia and the EU already cooperate on the reduction of non-tariff barriers in the framework of the PCA and ENP Action Plan's implementation. Competition policy should be a priority in this cooperation;
- the increasing EU share in Armenia's imports (from 26% to 33% over 10 years) suggests that there is a potential for trade creation from a Simple FTA. At the same time, high importance of non-EU imports (about 67% of total imports in 2006) suggests about likely trade diversion effect. Next, the low similarity between the production and trade structures of Armenia and the EU, as well as the low correlation between the countries RCAs signify that trade diversion is on balance more likely than trade creation from a future Simple FTA (though, as stated above this effect is not expected to be significant);
- since the EU tariffs are already low for Armenian goods and Armenia accounts for a small part of the EU trade creation and trade diversion effects from the future EU-Armenia FTA are not expected to be significant for the EU as well;
- the EU's major imports to Armenia (such as precious stones, machinery and mechanical appliances, mineral fuels, pharmaceuticals, chemicals, plastics) are largely exempted from tariffs in Armenia, therefore little direct welfare effects are expected from the EU-Armenia FTA in regard to these products. At the same time, Armenia imposes 10% duties on products of central interest to the EU industries,

like vehicles, electrical machinery and equipment, certain plastics, etc. The abolition of 10% tariff could be a useful improvement of competitiveness of those EU goods in relation to other sources of supply such as Japan, China and India. So, from the EU perspective, the FTA is likely to bring some advantages and no threats of losses. Elimination of these tariffs will also be beneficial for Armenian consumers, especially given the huge trade imbalance, with transfers from the Armenian diaspora financing this on an apparently long-term basis to a substantial degree;

- the EU is the largest Armenia's destination market (about 48% of total exports in 2006) and its share has been growing over time. Due to the low levels of pre-FTA EU tariffs (GSP general agreement) and non-tariff protection measures (such as quantitative restrictions), the direct shallow-integration induced impact of the FTA on Armenia's exports to the EU is not likely to be significant;
- Armenia's exports to the EU are highly concentrated (largely in precious or semi-precious stones, base metals and mineral products) and consequently they are vulnerable to price and demand fluctuations in the EU market. Diversification of exports to the EU may diminish those risks for Armenia;
- Armenia has been successful in specializing in and exploring its comparative advantages on the EU and world markets. Over the last decade, there has been a tendency for a decline of the RCAs in textile and machine building sectors, while an increase in metallurgical sector. Also, Armenia has successfully developed new niche markets connected with processing of precious stones such as cases for watches, dials for clocks and watches, etc.;
- the low level of the intra-industry trade between Armenia and the EU suggests that there is little evidence of current deep integration between countries. The intra-industry trade linkages between them could be strengthened in the event of the development of new industrial structures under the future Deep EU-Armenia FTA;
- Development of regional cooperation with Armenia's neighbours, first of all, in transport and trade facilitation initiatives, is crucial for reducing Armenia's transport costs and improving its access to the external markets, as well as for enhancing Armenia's economic competitiveness, trade and business opportunities. Relations with Georgia are of particular importance for Armenia because Georgia offers Armenia its only land connection with Europe and access to its Black Sea ports. Any improvements of regional cooperation as a result of future EU FTAs with Armenia and Georgia are expected to be beneficial for Armenia.

- summing up, shallow integration effects from the future EU-Armenia FTA are not likely to be large-scale; major welfare implications for Armenia are expected to arise from the deeper integration between the parties. Therefore it is very critical for Armenia to reduce the existing barriers to trade and to introduce and maintain the regulatory and institutional framework aiming at promoting trade and generating positive externalities and productivity gains. Effective implementation of regulatory convergence with the EU *acquis* in the trade and investment issues are expected to increase the potential for grasping greater welfare gains for Armenia under the future Deep FTA+.

5. Institutional and regulatory harmonization issues in trade with the EU and Armenia

5.1. Product standards

The package of framework laws in the area of product standards (standardization, conformity assessment, accreditation, metrology, and market surveillance) includes the Law on Standardization; Law on Conformity Assessment; and Law on the Assurance of Uniformity of Measurements (all adopted on May 26, 2004). The overall policy making and legislative functions in the area of product standard regulations is carried out by the Department of Standardization, Metrology and Conformity Assessment of the Ministry of Trade and Economic Development (MTED).

The accreditation system, which assures the technical competence and independence of third party conformity assessment, consists of the Accreditation Board, responsible for the issuance or annulations of accreditation certificates (most accredited labs are private) and the Accreditation Agency (within the MTED) responsible for examining accreditation applications and reporting the findings to the Accreditation Board. Market surveillance is performed by the State Quality Inspection (within the MTED). The National Institute for Standards (NIS) and the National Institute for Metrology (closed joint stock companies with full Government ownership) and are key implementing institutions in the fields of standards and metrology, respectively.

Armenia inherited from the Soviet Union about 18,000 mandatory GOST standards that contain in a single standard both mandatory safety requirements and voluntary product specifications. Three hundred and twenty Armenian national standards were developed since 1993 but only 20 percent of those are harmonized with international standards (ISO standards, European norms etc.).

Upon accession to the WTO Armenia committed to follow WTO TBT Agreement requirements and after December 31, 2004 mandatory certification was replaced with a dual system of voluntary standards and mandatory technical regulations based on international standards. Since 2005, GOST standards became voluntary and a regulatory gap appeared, as fewer than 50 mandatory technical regulations were approved by that time[23]. Consequently, the Armenian Government adopted another 43 technical regulations narrowing the gap.

In the EU-Armenia PCA and the ENP Action Plan for Armenia (further referred as ENP AP) Armenia has undertaken that it will model its new product standards and technical regulations on EU directives. The same commitment has been further reflected in the National Program for implementation of the PCA for the period 2006-2009 (further referred as NP PCA).

However, many incongruities with EU practices still remain. Technical regulations are developed by the NIS. The NIS mainly uses its own staff and invites experts from the line ministries as necessary. Technical regulations are elaborated by line ministries as well (e.g., sanitary-hygienic norms, construction norms). However, the process has been slow. Experts from relevant ministries are insufficiently involved in the process.

EU technical regulations have been developed over many years and it will take considerable time for Armenia to assimilate EU practice and implement the necessary domestic legislation. In particular, the public bodies (ministries, the NIS) are lacking staff trained in the New, Old and Global Approach Directives. The key obstacles in the process of transposition of EU Directives are a necessity of translation of thousands of pages of documents into Armenian and poor language skills of civil servants.

An apparent flaw in the development of technical regulation stems from the fact that a new article introduced in the acting version of the law stipulates that standards are voluntary except when their list is attached to the technical regulation. This contradicts both the WTO TBT Agreement and EU approaches, which require a clear separation of mandatory safety requirement (stipulated by technical regulations), from voluntary standards.

The Law on standards includes the participatory principle in the development of voluntary standards. Stakeholder participation is assured by the Scientific and Technical Board, which should include the representatives of state administrative bodies, the National Academy of Sciences, and NGOs involved in consumer

[23] This number includes technical regulations approved by the Government of Armenia, as well as mandatory Norms approved by line Ministries (e.g., the Ministry of Health, Ministry of Urban Development etc.).

protection. However, only one sector-specific Scientific and Technical Board is in operation today – on energy. Hence, the process of the development and adoption of standards does not fully comply with the EU principle on stakeholder involvement.

Mandatory rules developed and approved by the line Ministries (referred to as "Norms") are not immune from being challenged in court. The Constitution and the Law on Legal Acts of Armenia stipulate that mandatory rules of behaviour for natural and legal persons can be enacted either through Laws or, if so the Law designs, through decrees of the Government. The Norms, however, are approved at the level of Ministries but still enforced on a compulsory basis.

In its Accession Protocol to the WTO, Armenia took a commitment to conclude agreements on mutual recognition of certificates and on unilateral acceptance of approvals by internationally recognized conformity assessment bodies. So far, Armenia has agreements on mutual recognition only with CIS countries and Iran. Armenia is not a signatory to any of multilateral agreements and no unilateral acceptance of approvals has been granted. Meanwhile, developed market economy countries are not prepared to agree with Armenia on the mutual recognition of certificates taking into account that Armenia has no internationally recognized conformity assessment bodies. However, Armenia's legislature provides for a possibility of unilateral recognition of the "CE" marking and the MTED is initiating steps towards such recognition.

Accreditation covers certification bodies, and testing and calibration laboratories. It is set under state authorities and is independent from commercial motivations. There is no institute of assessors as recommended by the relevant ISO/IEC standard. The laboratory accreditation process suffers from opaqueness, and the examination of applicants is insufficient. As a rule, testing laboratories are not adequately equipped and their personnel have only limited knowledge of the modern principles of conformity assessment. A modular approach to conformity assessment, as envisioned in the New Global Approach, is being applied in Armenia but not all modules are covered and full compliance with EU regulations of adopted modules is not achieved.

The NIS, as a fully Government-owned company (whose activities are supervised by the MTED) cannot be considered as an independent standardization body not dominated by public interest. In addition, the NIS operates both certification bodies and the testing laboratory, which leads to a conflict of interests.

The State Quality Inspection operating within the structure of MTED is the core body authorized for inspection of compliance for all products, except pharmaceuticals, with compulsory requirements at all stages of handling the products. Eleven other

Inspections under line ministries are also authorized for inspection activities within the scope of their responsibilities[24]. There is a vast overlap among the functions of these Inspections, as well as between functions of those Inspections and the State Quality Inspection, both during pre-market authorization procedures and market surveillance. It is common practice in Armenia that compliance to the same compulsory rule set forward by a technical regulation or mandatory norms are controlled and examined by several state inspections resulting in a duplication of effort. Business community complains about frequent harassment of businesses by the inspections.

As ENP AP indicates, there is a need in simplification of procedures of conformity assessment of industrial products, with the aim of avoiding compulsory certification of low risk products and repeat testing. ENP AP also envisages developing market surveillance capacities according to best practices of the EU Member States. These provisions of ENP AP remain to be met.

The State Quality Inspection has inadequate capacity in terms of number of staff, its training, equipment and reference samples, and overall budget. The same applies to all other inspectorates as well.

Under the present weakness of the Armenian accreditation and conformity assessment system, an FTA between the EU and Armenia *per se* would not remove barriers associated with the non-recognition of Armenian conformity certificates in the EU. This barrier is much higher than the low tariff barriers Armenia faces already under the GSP. Therefore, a Simple FTA would most probably have small to negligible effect in this respect. In order for an FTA to deliver strong results, there is a strong need to first upgrade Armenia's institutional and regulatory frameworks in the area of product standards. As ENP AP indicates, institutions in charge of standardization, accreditation, conformity assessment, metrology and market surveillance need to be strengthened by integrating them to the extent possible within European and international structures. Furthermore, an effective implementation of regulatory provisions of the PCA and ENP AP will certainly contribute to elimination of the deficiencies of Armenian quality assurance system. Once this has been achieved, a Deep FTA would be able to bring economic benefits to Armenia, including through supporting further improvements in the area of standardization.

[24] These include: Food Safety and Veterinary State Inspection; Plant Quarantine and Agrarian State Inspection; State Agricultural Technique Inspection (under the Ministry of Agriculture), State Hygienic and Anti-epidemiology Inspection; Pharmaceuticals Inspection (under the Ministry of Health), Environmental State Inspection; Atomic Energy Utilization, Nuclear and Radiation Security Inspection (under the Ministry of Environment), Industry Works Safety and Mountain Control Inspection (MTED), Metal Testing Control Inspection (the Ministry of Finance and Economy), Transport Inspection (the Ministry of Transportation and Communications), and Urban Planning State Inspection (the Ministry of Urban Planning).

The majority of Armenian firms have yet to switch from GOST standards to international standards or they will have little prospects in the EU market. Such a transition can be greatly facilitated if Armenian firms partner with European firms. A long-term operation of a Deep FTA will certainly encourage establishment of such links.

5.2. Customs

The Armenian Legislation on Customs partially compiles with EU legislation. Armenian Customs Code was largely harmonized with the European Community Customs Code as a part of the PCA, although there are still some discrepancies left. Secondary legislation and procedures, however, are clearly not harmonized and this is reflected in ENP AP. According to the Armenia Customs representative Karen Beglarian, it could take up to three years to achieve this goal. The main problems, however, lie in practices and administration of Customs.

As a general matter, the Customs Service appears to follow an approach based on the idea that its role consists primarily on collecting customs duties and indirect taxes at import and of exercising physical controls at the border. Customs should move to the concept of trade facilitation by guaranteeing the balance between ensuring the seamless flow of trade and applying necessary controls to protect the health and safety of the citizens. Case in point is the use of reference price lists for Customs valuations. Such lists are explicitly prohibited by the WTO Agreement on Customs Valuation, apart from exceptional cases, but reportedly they are widely used in Armenia. Meanwhile, the articles of the Armenian Customs Code are in full concordance with the WTO Agreement, with transaction value declared as the main valuation method followed by other methods stipulated in the WTO Agreement applied in the predetermined sequence[25].

On the trade taxation side, the value added tax (VAT) is uniformly charged at the rate of 20 per cent on sales of domestic and imported goods and services, except for a number of VAT-exempted goods.

Armenia's domestic agricultural output sold by farmers is exempted from value added tax, which appeared to constitute discriminatory treatment of imports in relation to similar domestic products. The Government enacted legislation that would eliminate, as of 31 December 2008, the existing exemption. However, it is rather

[25] Admittedly, the WTO Agreement on Customs Valuation has proven to be a challenge to developing countries, many of which have been unable to implement it properly.

uncertain whether the tax authorities are able to collect VAT from farmers, especially during the first years, considering a large number of farmers that should be brought into taxation sphere for the first time, and a widely-spread practice of direct sale of agricultural product by farmers to consumers.

On the institutional side, custom procedures are riddled with rent-seeking and corruption, which ultimately leads to regular occurrences of arbitrary tariff application. Several surveys of business environment and corruption practices in Armenia implemented by international organizations are indicating that import and export procedures are widely regarded by businessmen as one of the most corrupt area of public administration. In addition, the Custom authorities are regarded as non-cooperative when it comes to information disclosure and collaboration with the donors in an evaluation of the administrative capacities of the State Customs Committee.

Nevertheless, Customs modernization proceeds, albeit at a somewhat slow pace. The Customs applies risk-assessment and post-clearance audit procedures, self-assessment, and electronic filing via the direct trader input system. Staff deployment in some areas may be inadequate, although. For instance, only about 10 persons are employed in the Post-Clearance Audit unit. The World Bank, DFID, and other donors provide support in Customs modernization, including training in the areas of risk assessment and post-clearance audit. Nevertheless, according to World Bank surveys, there has not been a measured improvement in Customs clearance times and cost in recent years. Further, development of EU-Armenia co-operation with regard to customs control based on selectivity criteria and with regard to definition of standards for certification of importers, exporters and transporters, based on best EU practices would certainly contribute to custom modernization. These targets are defined in ENP AP but there is a long road ahead to achieve these targets.

Although no legal act indicates this, Armenia has a de facto common customs area with Nagorno-Karabakh, an Armenian-populated enclave in Azerbaijan, which broke off Azerbaijan in the early 1990's. (The secession has not been recognized by the international community.) Since no customs controls exist between Armenia and Nagorno-Karabakh, imports into Armenia can be freely traded also in Nagorno-Karabakh and products from Nagorno-Karabakh receive in practice the certificates of origin from Armenia, even though no legal act indicates this either. This issue will have to be taken into account in case of an FTA between Armenia and the EU.

Armenia has signed Protocol on Mutual Assistance in Custom Matters with a number of EU Member States (including Greece, France, Latvia, and Romania). Due to a lack of existing independent assessments of the Customs administrative capacity, it is hard to accurately assess Armenia's capacity to implement those Protocols. However, a number of international organizations regard Armenia Customs authorities

as non-cooperative when it comes to information disclosure and collaboration requests. Any future agreement will contain a protocol on mutual assistance in customs matters which will replace all existing agreements with EU Member States for all matters of Community competence.

Building appropriate administrative capacity for protocol implementation is certainly possible if the problems of integrity are resolved. As of today, an excessive level of rent-seeking among custom authorities will not allow the State Customs Committee (and in particularly the Department within SCC that is responsible for implementation of the Protocol) to obtain from border check-points and custom clearance centres accurate and correct information for exchange with foreign colleagues.

A Deep FTA may provide an extra leverage for the EU to shape the Customs reform in Armenia. Armenia may be advised to sign the Revised Kyoto Convention on Simplification and Harmonization of Customs Procedures and, more importantly, to pursue a more robust alignment of its Customs procedures and practices with those of the EU (and its own framework legislation). The PCA has already helped Armenia to harmonize to a certain extent the basic Customs legislature. The time has come to move cooperation beyond that to the harmonization of procedures and practices, as is designed by the ENP AP. Only once this has been achieved, a Deep FTA would be able to bring economic benefits to Armenia. Thus, successful reform of custom procedures based on targets specified in the PCA and ENP AP as well as standards and best practices listed in the European Community Customs Blueprints is a prerequisite for effective operation of a possible Deep FTA.

5.3. Competition policy

Regulation of economic competition in Armenia started later than in many countries of Central and East Europe, including neighbouring Georgia and Russia. Legal foundations for competition regulation are provided by the Law on Protection of Economic Competition (the Law on PEC), adopted in November 2000 and later revised (the latest revision as of March 2007). Despite a short time in the business, Armenia has made significant progress in establishing competition institutions and developing appropriate legislative framework. The Law on PEC is supplemented by the following Government decrees:

- on Definition the Product Market Boundaries and Volumes (March 4, 2002);
- on the Approval of the of Definition of the Dominant Position of Economic Entity on Product Market (July 9, 2003);

- on Definition of Sale and Purchase at (artificial) unjustified price (July 9, 2003); and
- on Definition of Anti-competitive Agreements (September 1, 2004).

Implementation of policy in the protection of economic competition is laid upon the State Commission for the Protection of Economic Competition (SCPEC). The SCPEC resembles competition authorities in Europe. It is entitled to investigate infringement of competition law and to conduct inspections in order to establish the facts behind the documents submitted; to enforce appropriate sanctions for infringement of legal and regulatory acts; to implement general sector investigations; and to carry out advocacy work. According to the Law on PEC, the SCPEC is involved in the following areas:

- Anti-competitive agreements;
- Abuse of dominant position;
- Concentrations;
- Unfair competition; and
- State aid.

Although a part of the executive branch, the SCPEC is an independent body unsubordinated to any other state agency or the cabinet of ministers. The SCPEC consists of seven members, which are appointed by the President of Armenia.

Despite recent legislative improvements, the Law on PEC is not fully harmonized with EU regulations. For instance, the declaration of concentration in Armenia is based on the value of assets of concentration participants while in the EU on sale volumes. There is also a need to ensure adequate legal powers for the competition authorities in Armenia to carry out on-the-spot checks, as ENP AP enacts. Meanwhile, the PCA directly indicates on Armenia's commitment to apply competition laws on a concerted basis in such cases where trade between the EU and Armenia is affected.

Utilities, communications, and postal services fall under the purview of the Public Services Regulatory Commission (PSRC). It is crucial to separate clearly the regulation authority of the SCPEC and PSRC. The Law on PEC does not provide an effective legal framework for the regulation of financial sector. In international practice, the laws on economic competition include separate provisions on financial sector – but not in Armenia. The SCPEC did not touch financial sector so far, not only due to this legal gap but also due to the lack of staff with qualifications in finance.

The SCPEC regulates state aids in parts that are relevant to economic competition. The provisions of the Law on PEC regarding state aids, in general, comply with EU requirements, but they are not as specific as in the EU; consequently, the present legal framework on state aid in Armenia is deemed rather insufficient (this is indicated in ENP AP).

Donor-funded investigations reveal that the SCPEC faces serious problems in personnel qualification, not only for carrying out investigations in the financial services but also in state aids; consumer protection; carrying out inspectorate functions; and in harmonization with the EU. A low level of salaries and inefficient distribution of power among SCPEC staff contribute to the Commission's malaise. Moreover, a lack of sufficient knowledge on economic competition among the Judges in Civil (economic) Courts exacerbates the problems. An effective implementation of the ENP AP, which stipulates the involvement of the EU in enhancement of the administrative capacity and the independence of SCPEC, might help to improve the situation.

The cases that the SCPEC investigated most commonly fall under unfair competition and supply of information by economic entities. Meanwhile, the SCPEC practically did not investigate anti-competitive agreements and concentrations[26]. This is caused by the lack of political will, ineffective cooperation among state bodies, and a very high share of shadow economy. Meanwhile, concentration in some sectors is very high propped up by informal monopolies controlled by politically influential oligarchs.

Favoritism, corruption and rent-seeking approach in decisions of the executive branch is another serious impediment. The most corruption-prone areas are tax collection, international trade activity, and licensing or mandatory certification of businesses. Wide-spread corrupt practices create a largely unfair competitive environment.

Since the most serious problems in competition policy in Armenia lie in the weak enforcement of regulations and feeble resolve of the authorities to go against monopolies and oligopolies, Armenia should focus on the effective implementation of the provisions on competition included in the PCA and the ENP AP. A possible future Deep FTA+ should envision flanking conditions that would go beyond the PCA and the ENP AP.

[26] Only one case on anti-competitive agreement and none on concentration was brought so far.

5.4. Property rights, corporate governance and accounting standards

Property Rights

In general, legal and regulatory frameworks in Armenia in the area of property rights are relatively well-developed, especially in comparison with other transition countries. As in other subject matters, the major impediments to business environment are weak implementation and bureaucratic corruption.

One big problem is a lack of independent judiciary. *De facto* dependence of the judiciary from the executive branch (and associated corruption) creates serious obstacles in adequate implementation of business legislation, particularly in the protection of private property rights and enforcement of contracts by the courts. Professional capabilities of judges dealing with business disputes are also insufficient. The recent reform of judiciary system which led to establishment of Civil Courts is certainly a positive step in these regards.

While Armenia has one of the best systems of registration of property and businesses among transition countries, a number of shortcomings remains (length of procedures, seal, lack of e-facilities and e-signature). Armenia has not yet taken a position as regards the establishment of a one-stop shop. Liquidation of state-owned companies is still long and burdensome.

Corporate Governance

Armenia's corporate governance framework is characterized by a poor awareness of international corporate practices, concentration of corporate control in the hands of the majority owner, and absence of corporate governance traditions. In most joint-stock companies, controlling owners are implementing direct management while small shareholders appear largely apathetic on management issues. The supervision of listed companies, brokers/dealers, underwriters, investment funds, and trust management companies is implemented by the Central Bank of Armenia (CBA).

The corporate legal framework was last revised in October 2007 with the adoption of the Securities Market Law, which went into force as of March 1, 2008. However, the legal framework is still under development. This law was modelled on EU regulatory approach. The main purpose of the Securities Market Law is to establish the procedures for public offering and public trading of securities, investment services provision in the securities market, custody, clearing and settlement of securities, as

well as activities of the Central Depository, the authorities and obligations of the Central Bank of Armenia in this area.

According to the Law, no special minimal capital requirements are set forward for reporting issuers and listed companies. Meanwhile, ArmEx (Armenian sole stock exchange recently acquired by Scandinavian OMX) is in the process of transformation and it is clear at this time whether its listing rules will provide special capital adequacy requirements. The Law provides that the CBA can set capital adequacy, liquidity and other requirements for investment companies, such as brokerages/dealerships, underwriters, investment funds, and trust management companies.

The Law on Joint-Stock Companies adopted in early 2000 is another key law regulating corporate legal framework. It enacts the minimal capital requirement for closed joint stock companies equal to AMD100,000 and for open joint stock companies equal to AMD1 million.

One of the most essential gaps in corporate governance in Armenia is the absence of a "Code of Corporate Governance". Only recently, the Ministry Trade and Economic Development announced that Armenia was going to develop one. On the sectoral level, the CBA has incorporated into laws[27] significant changes in corporate governance framework for credit institutions. However, serious problems remain. Key legal definitions of majority and minority shareholder rights, principles and jurisdiction of creating the company's management bodies, supervision mechanisms of company's financial-economic activities, and obligations on information disclosure, in most cases, are internally inconsistent and immature, and do not facilitate strong corporate governance.

Report on the observation of standards and codes prepared by the World Bank indicates that in Armenia compliance with OECD Principles of Corporate Governance is weaker that the world average. Weighted average compliance rate for each core principle[28] in Armenia is at least 20 % bellow than those of world average. The report identifies several key steps that need to be undertaken by Armenian Government to increase the compliance rate, namely:

- Development clear regulatory rules on establishment and operation of Institute of Independent directors;
- Improvement of enforcement functions of CBA in the field of disclosure and reporting;

[27] Namely, the Law on Banks and Banking, the Law on (Universal) Credit Organizations, and the Law on Central Bank of Armenia, which are the key laws that establish the corporate legal framework for credit institutions.

[28] Such as an effective corporate governance framework; rights of shareholders; equitable treatment of shareholders; role of stakeholders in corporate governance; disclosure and transparency; and responsibilities of the board of directors.

- Clearly delineation of the functions of corporate governance bodies, including the executive, directors and annual general meeting;
- Establishment of the legal basis for active institutional investor community.

Accounting Standards

The present accounting standards were adopted in 2000[29]. These standards were developed on the basis of the International Accounting Standards (IAS) and the International Accounting Reporting Standards (IFRS) elaborated by the International Accounting Standards Committee Foundation (IASCF). However, the translation of Armenian Accounting Standards was not implemented in accordance with translation procedures approved by IASCF and hence not recognized by IASCF as authentic to IAS and IFRS. As a recent study indicates, Armenian authorities intentionally or unintentionally omitted from the translation half of the text of IAS and IFRS while half of translated provisions diverge substantially from the original text. Armenian Accounting Standards do not incorporate IFRS 1 to 8, which were developed or substantially revised by IASCF after 2001.

The Armenian Government, with support from the USAID and World Bank, is in the process of signing a contract with IASCF to launch an official translation procedure of IAS and IFRS. It is anticipated that the translation of IAS and IFRS will be completed by mid-2009, and these standards will be adopted in their original formats. Discussions are now under way on the establishment of an independent regulatory body in the field of accounting.

PCA, ENP Action Plan and FTA

The PCA and particularly the ENP AP directly indicate the need of convergence with EU rules and standards in accounting and corporate governance. Provisions aiming at improvements in property right protection have been included in different clauses of both the PCA and ENP AP as well.

A Deep FTA with the EU would lead to closer relations between Armenian and European companies and hence would raise further demand for sound property rights protection, corporate governance, and accounting standards. Such an improvement would not come immediately but over a long term, as and when business interests of EU and Armenian firms became more intertwined.

[29] In 2001, the Minister of Finance and Economy approved new accounting standards. This order was later annulled, and a parallel identical text of Accounting Standards was approved by the Decree of the Government of Armenia on December 12, 2005.

5.5. Intellectual property rights

Upon accession to the WTO, Armenia took a commitment to apply provisions of the WTO Agreement on TRIPS without any recourse to transitional period. A decade ago the Government started substantial program of legislation reform, aiming to bring legal and regulatory framework into conformity with international rules on IPR protection (particularly those of WTO and WIPO) and with Armenia's commitment under PCA. This program has brought about a substantial body of new legislation.

Nowadays the list of Armenian primary legislation on IPR includes:

- Civil Code, adopted on May 5, 1998 (Section 10)
- Criminal Code, adopted in April 18,2003
- Customs Code, adopted in December 8, 2004 (Section 14)
- Law on Copyright and Related rights, adopted on June 15, 2006
- Law on Patents, adopted in December 8, 2004
- Law on Legal Protection of Topographies of Integrated Circuits, adopted on February 3, 1998
- Law on Brand Names, adopted in November 23,1999
- Law on Trademarks, Service Marks and Appellations of Origin, adopted in March 20, 2000
- Law on Protection of Selection Achievements, adopted in November 23, 1999
- Law on Protection of Economic Competition, adopted in November 6, 2000

The Civil Code enacts general provisions on IPR, while the sectoral laws regulate relations in particular areas. The Law on Protection of Economic Competition incorporates provisions on protection of undisclosed information and know-how[30] The Criminal Code enacts the remedies for infringement of IPR legislations that are causing major damage[31]. The Customs Code contains provisions on IPR control and supervision during custom procedures[32].

[30] At the same time, the Law on Protection of Economic Competition stipulates that it does not apply to the relations connected with IPR, unless these rights are used for restricting economic competition.

[31] The Criminal Code provides that illegal use of a subject matter of copyright, patent rights, trademarks shall entail a fine at the rate of from one hundred to five hundred thousand Armenian Drams, or corrective labor for a maximum term of two year, or imprisonment for a maximum term of two years. The case can be brought both by police and the victim. Foreigners enjoy the same rights as Armenian nationals.

Armenia is a signatory of the full range of international conventions on IPR. It is a member of the WIPO and Eurasian Patent Organization. It is a signatory of the Paris Convention for the Protection of Industrial Property. Armenia ratified all treaties on international registration systems and classification systems on industrial property,[33] except for the Lisbon System for the International Registration of Appellations of Origin. Armenia is a signatory of the Berne Convention on Literary and Artistic Works as well as of several other key international treaties on copyright protection[34].

Policy formulation in the field of IPR is carried out by Intellectual Property Agency, under the MTED. The Intellectual Property Agency is also responsible for approving industrial property right applications, maintaining the State Register of industrial property rights, and publishing two Official Gazettes - "Industrial Property" and "Application of Inventions". Supervision and enforcement in IPR area is implemented by the Police, particularly by the Division of Struggle against Crimes in the Sphere of the Intellectual Property of the Main Directorate for Organized Crime.

Armauthor, an NGO with 1,500 registered members, administers and protects authors' rights in Armenia. Consumer Associations are also involved in the IPR area, occasionally dealing with trademark issues within the scope of consumer rights protection.

However, Armenian legal framework is still not fully consistent with EU regulations. Thus the Criminal Code enacts the remedies for infringement of IPR legislations that are causing major damage but Code of Administrative Offences (regulating minor offences) does not contain any provision that will enact remedies for

[32] The code stipulates the relations concerning the application to the Customs Authorities on protection of IPR, registration of the IPR object with the Customs authority, the management of the register and the consideration of suspension request and suspension of release of goods infringing IPR transported through the border.

[33] These are: the Patent Cooperation Treaty for filing patent applications in multiple countries; the Madrid System for the International Registration of Marks for trade and service marks and Protocol Relating to this Agreement; the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure; the Hague Agreement concerning International Deposit for Industrial Designs and Geneva act of this Agreement (the London Act, the Hague Act, the Complementary Act of Stockholm of the Hague Agreement are not signed by Armenia); the Strasbourg Agreement Concerning the International Patent Classification; the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks; the Vienna Agreement Establishing an International Classification of the Figurative Elements of Marks; the Locarno Agreement Establishing an International Classification for Industrial Designs; and the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure.

[34] The Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite; the Geneva Convention for the Protection of Producers of Phonograms, against unauthorized Duplication of their Phonograms; the Rome convention for the Protection of Performers, Producers, of Phonograms and Broadcasting Organizations; the WIPO Copyright Treaty; and the WIPO Performances and Phonograms Treaty.

IPR infringements causing less serious damages. Other discrepancies that exist in IPR area in Armenia and the EU are the following:

- The Law on Selection Achievements is not harmonized with corresponding EU Directives.
- The Law on Patent does not specify the institution responsible for the annulment of designs.
- Armenian legislation does not provide for detailed regulation of legal relations arising in the field of agricultural products and foodstuffs, particularly appellations of origin and geographical indications of key agricultural products and foodstuffs. Moreover, Armenia is not member of the Lisbon System for the International Registration of Appellations of Origin.
- The Law on Trade and Service Marks and Appellations of Origin lacks provisions on dispute regulation issues, such as dispute over the registration of trade and service marks, rights of parties in settlement of such disputes[35].
- Armenian laws are less detailed on details of the legal protection of biotechnological inventions and legal regulation of technology transfer agreements than those of the EU.
- The Law on Brand Names does not detail the provisions of registration of names that use confusingly similar distinctive names (e.g. Armenal, Armenal Holding, Armenal International) and certain terms, such as Group, Concern, Holding, which are undefined in Armenian legislation.
- Armenian Law on Copyright and Related Rights does not include detailed and specified rules on legal protection of copyrights in satellite broadcasting, cable retransmissions, databases and software.
- There are unresolved issues related to the rights with respect to works of architecture. Legal relations between the author and the owner of the architectural object, as well as their rights and obligations are largely undefined.
- Currently, Armenian radio and TV broadcasters and concert organizers are reluctant to pay due royalties to authors of works of art. The Armenian Government plans to improve the situation through appropriate legal amendments. Strengthening the role of authors' unions would also have positive impact.

[35] In order to eliminate existing legal gap in this area, the Armenian Government plans to enact regulations aiming to establish modalities for legal control over the use of appellation of origin and geographical indications.

An important impediment in IPR area is a lack of adequately trained staff in the Intellectual Property Agency that has sufficient knowledge of EU regulations in IPR area. This can be explained by the basic fact that the Agency has few specialists that have an adequate knowledge in English to deal with EU regulations. Also, the Intellectual Property Agency does not have its own legal division and the legal division of the MTED provides legal services to the Agency instead. The Intellectual Property Agency definitely needs to have specialized lawyers to implement legal reform in the IPR area.

A solid legal framework is accompanied by a weak supervision and enforcement of IPR protection by the public authorities. In 2005-06, only 20 cases on IPR infringement were investigated by the Police and only one case by Prosecutor's office. The Supreme Court examined only 4 cases on IPR infringement so far. A lack of public awareness on IPR issues, adequately trained staff in the Police and general political will to enforce IPR rules are the main reasons of ineffective supervision and enforcement.

When enacting the PCA in 1999, the Armenian Government committed to improving the protection in IPR area and providing the level of protection similar to that existing in EU within five years. Nine years after that date, it is still only an aspiration. The need to boost resources to guarantee access to justice and proper enforcement in IPR area is indicated in ENP AP. In addition, ENP AP points to the need to consolidate relevant institutional structures responsible for regulation and supervision in this area.

A Simple FTA is unlikely to substantially improve enforcement of IPRs in Armenia. Flanking measures in a Deep FTA will have more substantial impact but only if these measures target enforcement rather than a mere harmonization of legislation.

5.6. Public Procurement

The key legal act regulating public procurement is the Law on Procurement adopted on June 12, 2004 replacing the procurement law adopted in 2000. As the World Bank and AEPLAC reports indicate, unlike other procurement laws in the region, this Law provides a good framework for public procurement. The main provisions of the Law on Procurement are compatible with UNCITRAL Model Law on Procurement of Goods, Construction and Services. Meanwhile, at accession to the WTO, Armenia took a nonbinding commitment to accede to WTO Agreement on Government Procurement by December 31, 2003. This commitment is also indicated in ENP AP. Nevertheless, Armenia did not sign this Agreement so far and even did not commence negotiations for accession.

However, the Law on Procurement and corresponding regulations are not completely harmonized with EU regulations, namely in criteria for the selection of particular method of procurement; criteria for qualification requirements that enable participation in restricted and negotiated procedures of procurement; criteria for selection of the award of the contracts; access to legal recourse; limited use of exceptions; and requirements on common advertising rules for prompts notification of procurement process participants. (This is reflected in PCA and ENP AP.)

The main regulatory and implementing agency is the State Procurement Agency (SPA). All organizations and institutions of the central government are obliged to implement procurement through the SPA, except the CBA, state non-commercial organizations and for-profit companies with 50 % or more shares in state ownership. Local government bodies are authorized to carry out procurement on their own. The overall policy formulation and supervision in the area of public procurement is implemented by the Ministry of Finance and Economy of Armenia (MFE). The MFE is responsible for the procurement process regulation and the budgeting methodology.

World Bank and EU-funded investigations of institutional capacity of Armenian in public procurement area show that both the SPA and MFE are staffed with qualified specialists, although without sufficient knowledge and understanding of EU regulatory framework. Knowledge of English of the staff of both bodies is not sufficient to understand EU regulations. ENP AP includes a provision on the improvement of the administrative capacity of the State Procurement Agency.

The major deficiency of the state procurement system is the lack of transparency and complaint system, which are the key elements of a sound EU-compliant system. While the Law on Procurement envisages that the MFE should deal with complaint review procedures, no such unit was established within the MFE. The MFE has put forward draft decree on establishment and operation of the unit reviewing claims on public procurement. This draft decree is currently circulated for review and discussion among stakeholders. Note that both EU and WTO rules on public procurement stipulate the existence of an intrastate system for dispute resolution and the same provision is incorporated in ENP AP.

In January 2006, the Armenian Government approved the strategy of introduction of e-procurement system. However, there were no major developments in the introduction of the appropriate legal and institutional framework for e-procurement so far, even though Armenia took corresponding commitment under ENP AP.

Reform of public procurement based on targets designed by the PCA and ENP AP is a prerequisite for effective operation of a possible Deep FTA. The FTA would increase the openness and attractiveness of the public procurement system to European firms.

The pressure on the Government to fully harmonize state procurement rules and procedures with the EU will probably increase as a result. Such harmonization could become a clause of the Deep FTA. The emergence of a transparent and fair public procurement system would be the main benefit of a Deep FTA and would further improve Armenia's overall business environment.

5.7. Rules of origin

Rules of origin are specified in the Customs Code. The main secondary legislation determining the rules of origin is the Government Decree No. 1246 on the Procedures for Issuance of Certificates of Origin (2001). The Degree specifies three types of the certificates, one non-preferential and two preferential. Certificates of origin are issued by the Armenian Chamber of Commerce and Industry (ACCI) based on a testing protocol provided by Armexpertiza LLC – a specially created division of the ACCI.

Three different certificates of origin are being issued for Armenian exporters:

- For all destination countries: general certificate of origin (non-preferential);
- For the CIS free trade area: form ST-1 based on the rules of origin that were defined by the Decision of Council of Governments of CIS countries, on 30 November 2000 (preferential for the CIS);
- For the EU: Form A based on the rules of origin used for the application of the preferences assigned by the EU GSP (preferential for EU GSP).

The rules of origin of the Armenian Custom Code are formulated differently in comparison to the EU rules for GSP, as defined by EC Regulation No. 2454/93.

On the import side, the certificate of origin must be presented if the goods in question are subject to quantitative limitation, imports are covered by preferential trading arrangements, imports are used in healthcare and environment protection, and when the authorities have inadequate information as to the product's origin.

Donor reports suggest the exporters are facing complicated procedures and high fees while obtaining the certificates of origin. The issuance procedures are time-consuming, non-transparent and involve informal payments. In 2002, the Government abolished the state fee for obtaining certificates in an attempt to simplify the procedure and lower cost for business. However, ArmExpertiza has since raised its fees considerably, justifying the higher cost by arguing that they use more expensive

experts. Meanwhile, the ACCI reports that the procedures for issuance of certificates of origin have been improved and shortened to just one day, on the average. However, field interviews suggest that the majority of exporters have to wait 3-5 days for the issuance of the certificate of origin.

Preferential Rules of origin are very important for using free trade preferences. In order to utilize an FTA, Armenian exporters will have to be able to obtain certificates of origin of a possible agreement that will de facto satisfy EU requirements/standards, and do it quickly and free of cost. In this respect, Armenian authorities need to significantly improve their performance. It will also be highly beneficial if the rules of origin under an FTA allow, at a second stage, for possible cumulation within Paneuromed system, on condition Armenia has the capacity to negotiate and implement these rules.

The Nagorno-Karabakh (a region that broke away from Azerbaijan) poses a specific problem in the context of a possible future EU-Armenia FTA. This very sensitive issue will have to be taken into account in case of an FTA between the EU and Armenia.

If an FTA is concluded, the preferential certificate of origin will need to be issued by the Customs, not the Chamber of Commerce, according to the EU practice which lead to have the certificates of origin only issued by "governmental authorities"; hence, an ensuing capacity problem in the Customs. In this case, a capacity building program will need to be carried out and staff familiar with the issue hired.

5.8. Sanitary and Phytosanitary Measures

Sanitary and phytosanitary capacity is important for meeting requirements in destination markets as well as facilitating effective controls on imported and domestically produced foodstuffs. Key framework laws on SPS include: the Food Safety Law, the Law on Plant Quarantine and Plant Protection (both adopted on 27 November 2006), the Law on Veterinary Medicine (adopted on 24 October 2005), and the Law on Ensuring Sanitary nd Epidemiological Safety of the Population (adopted on 18 December 1992). The Food Safety Law, the Law on Plant Quarantine and Plant Protection, and the Law on Veterinary Medicine were adopted in new editions and transposed many articles from European regulations. When compared to previous laws, these laws provide for additional human, animal and plant health protection but still do not correspond fully to the EU legislative and institutional requirements, as specified by Regulation EC 178/2002 (general Food Law), EC 852/2004 (on the hygiene of foodstuffs), EC 853/2004 (on hygiene rules for foodstuffs of animal origin), and EC 882/2004 (on official controls). The Food Safety Law does not name a single

implementing authority; it does not provide for registration of establishments, procedures based on HACCP principles, does not spell out the general food safety obligations of the producer and residue requirements.

Armenia is a member of the CODEX Alimentarius Commission, the International Office for Epizooties, European and Mediterranean Plant Protection Organization, as well as it is signatory of International Plant Protection Convention. This is in line with Armenia's obligation to apply its sanitary and phytosanitary requirements consistently with the requirements of the WTO SPS Agreement without recourse to any transition period. The WTO SPS Agreement enacts the obligation of Members to base their SPS measures on international standards, guidelines or recommendations.

SPS policy measures are implemented by a number of state agencies:

- The Ministry of Health regulates human health protection while pre-market authorization procedures and market surveillance are implemented by the Hygienic and Epidemiological Inspection. In 2006, based on new edition of Food Safety Law, the Ministry of Agriculture and its structural division Food Safety and Veterinary State Inspection[36] were also delegated responsibilities in this area.
- The Ministry of Agriculture regulates animal and plant health protection issues while pre-market authorization procedures and market surveillance are implemented respectively by the Food Safety and Veterinary State Inspection and Plant Quarantine and Farming State Inspection.
- MTED and its structural subdivision Quality Inspection are responsible for regulating quality standards in general.
- The Ministry of Nature Protection regulates harvesting, import, and export of gathered and wild products, including fish and crayfish (both wild-caught and farmed).

Ineffective regulatory framework creates foundations for regulatory overlap and control duplication, when different Ministries and Inspectorates inspecting the same businesses. At the same time, since the division of responsibilities is unclear, it is not easy to determine whom to take to account in case of a mishap.

Food control responsibilities have been largely transferred away from the Ministry of Agriculture and Ministry of Healthcare and concentrated within the MTED, after the establishment of the Quality Inspectorate. Donor-funded investigations (the FAO and

[36] Earlier, the Veterinary Inspection was primarily safeguarding the animal health.

World Bank) have suggested instead concentrating on food control responsibilities within the Ministries of Agriculture and Health.

SPS clearances and inspection services (veterinary and plant quarantine) at present are stationed at the border. Importers do not have any longer to bring imported plant and animal materials to sites in Yerevan for clearance. However, border checks are mostly confined to document checks, since the border posts are not equipped to do anything else. Another worrying sign of poor SPS import controls is a noticeable presence on the market of counterfeit European food imports lacking veterinary stamps.

Another issue is the duplication of documentary requirements. Two lists cover food products that must be approved by the Government for export or import. One list includes products that must be accompanied by a Certificate of Compliance (issued by the MTED), while the second list includes products that must be accompanied by a phytosanitary certificate issued by the Ministry of Agriculture. These lists need to be clarified and harmonized so that the same products are not duplicated on both lists.

On the ground, establishments are unregistered and, basically, unregulated. Slaughterhouses are unregulated and in a dilapidated state. The HACCP system is not a part of the food control system or manufacturing practices of any but a few largest producers. Food safety checks are mainly made in the marketplace but they are sporadic and do not have a strong impact. Consumer unions are still heavily dependent on donor- and state-provided grants rather than membership. They are seen to lack integrity and transparency, as they often tend to advocate for state and commercial interests.

Inspection services and public laboratories and testing centres are severely under funded. Testing equipment, monitoring and control capacities and technical skills of personal are out of line with modern food safety requirements. Most of public laboratories and testing centres need substantial improvements, before they could be recognized outside Armenia as a reference laboratory that are corresponding to Good Laboratory Practice Levels. Regional and border post labs are in the worst shape. ExLab (a private laboratory with some State ownership) is the only laboratory in the country with internationally-accredited ISO 9002 certification.

Inspectors often require the companies to follow the GOST standards, although the GOST standards are voluntary. This happens partly because the authorities have not enacted yet sufficient number of compulsory regulations in health protection and food safety that would replace the GOST standards. As food trade has been traditionally conducted mostly with CIS countries, which use their own standards, Armenian national standards and analytical procedures have not been substantially harmonized with international requirements, even in newly adopted compulsory regulations.

In sum, SPS system in Armenia is, on one hand, overly complex and bureaucratic, with plenty of opportunities for rent-seeking and corruption and, on the other hand, ineffectual. Armenian SPS and veterinary certificates are not honoured abroad, and in the EU for that matter. At the same time, the domestic consumer is poorly protected from food-born health risks.

Exports of animal and plant products generally can not meet EU import requirements. This means that Armenia could potentially export only very few such products into the EU: only those for which EU do not require official health certification and for which the exporting industries in Armenia could ensure that they meet EU food safety criteria (such as wine where mainly industry standards apply). The only Armenia food export to the EU is crayfish, for which a special certification procedure was developed. Crayfish are tested in a European-equipped laboratory and the certificate issued by the Hygienic and Anti-epidemiological State Inspectorate (considered a relatively strong agency by DG SANCO), although the exporters/importers of all raw materials of animal origin are supposed to obtain veterinary certificates from the Food Safety and Veterinary Inspection Inspectorate. This shortcut allowed circumventing otherwise intractable SPS system. Other food exports to the EU, if they emerge, will probably have to follow the same route.

Given the state of the SPS system in Armenia, its agro-food products could not effectively benefit of an FTA with the EU. This could only be the case once Armenia has the SPS situation under control and is able to guarantee that SPS requirements in trade are met. In order to achieve this, Armenia should focus on ensuring full compliance with WTO SPS requirements and effectively implementing SPS provisions of the PCA and ENP Action Plan.

5.9. Institutional capacity to negotiate and implement commitments under an FTA

Policy formulation and implementation in the area of foreign trade relations is the responsibility of the Ministry of Trade and Economic Development. It can be foreseen that Ministry's Department of World Trade Organization and EU affairs will become the leading actor during FTA negotiations with EU, while receiving general support from the Department of Trade and Services and the Department of Foreign Economic Policy. Other line Ministries and public administration bodies (Agencies, Committees, Inspections, etc.) such as the Ministry of Agriculture, the Ministry of Finance and Economy, the State Customs Committee, and others would play a major role in the

formulation of Armenia's position during FTA negotiations and in further implementation of corresponding commitments.

The following Ministries and Agencies would also be involved, although to a somewhat lesser extent, in the formulation of Armenia's position – the Ministry of Healthcare, the Ministry of Justice, the Ministry of Foreign Affairs, the Ministry of Environmental Protection, the Ministry of Energy, the Ministry of Transport and Communication, the Central Bank of Armenia, the State Tax Service, the National Institute of Standards, the Accreditation Agency, the State Quality Inspection, the Armenian Chamber of Commerce and Industry, the Intellectual Property Agency, the State Procurement Agency, the Hygienic and Epidemiological Inspection, the Food Safety and Veterinary State Inspection, and the Plant Quarantine and Farming State Inspection.

The institutional capacity of line Ministries and other public administration bodies to negotiate and implement commitments of Armenia under an FTA were analysed under each subject area (product standards, human, animal and plant health, rules of origin, custom procedures, etc.). Summarizing, a shortage of adequately trained staff across a number of agencies can seriously hinder Armenia's FTA negotiation and implementation capacities. Due to insufficient knowledge of English and other foreign languages, civil servants are often incapable to familiarize themselves with sector-specific international regulations and policy documents as well as to learn the best international practices. The problem is rather difficult, since these documents are rarely available in Armenian translation.

Also, the low level of salaries of civil servants leads to continuous brain drain from public administration bodies to private sector and donor-funded projects. In addition, in the majority of agencies, the access to the internet is limited, subscription to professional literature and periodicals is sporadic, training of civil servants is implemented on occasional basis, and research, testing, and diagnostic equipment and facilities are out of date.

The experience of execution of Armenia's National Program within the scope of the PCA points to a weak inter-agency collaboration, especially when there is a need of formulation of joint positions over new or unfamiliar topics. An FTA with the EU (and especially, a Deep FTA), as a theoretical and practical phenomenon, and its policy and economic implications will be a novelty for the majority of civil servants. Therefore, it will be particularly important to raise awareness of the MTED and other agencies' staff not only of legal and regulatory aspects of a possible FTA between Armenia and the EU but its economic and policy implications as well. In this regard, ENP AP envisages enhancing staff training and capacity building in international trade relations.

Policy formulation tasks are periodically delegated to implementing bodies. A weak participation of private sector stakeholders in formulation of foreign economic policy strategies and concepts is another negative factor in policy formulation. These trends were clearly observed during Armenia's accession to the WTO and post-accession negotiations.

A poor enforcement of relatively solid legislation is yet another major problem. It is manifested in a number of specific areas and has serious political and economic foundations. The European Commission should be very cognizant of the implementation problem if and when negotiating an FTA with Armenia.

Neither legislative harmonization nor institutional reforms are implemented effectively and in sustainable speed. Due to capacity restraints the Government had to heavily rely on technical assistance from AEPLAC. Consequently, the Government defined the role of AEPLAC as the main responsible body for assisting the Government in drafting the PCA NP. But AEPLAC possesses limited financial and technical resources to lead and implement a large number of activities that are required. With additional funding from EU some European consulting companies in cooperation with AEPLAC have implemented two phases of legislation harmonization and approximation activities, in 2005 and 2007. However, financial and technical constraints did not allow carrying out that work with the highest quality, while the Government stopped short in effective utilization of the obtained results.

AEPLAC is currently preparing an administrative capacity evaluation in a number of trade-related areas with an objective to support the Government in analyzing and designing administrative structures for execution of the PCA NP implementation. Ensuing administrative reform will certainly have an impact on Armenia's capacity to negotiate and implement commitments under an FTA with EU.

In sum, and as confirmed also in the first ENP Progress Report for Armenia issued by the European Commission on 3 April 2008, Armenia has so far achieved a certain degree of regulatory harmonization with the EU *acquis* in all the main trade-related areas, in particular as regards approximation of the legislation. Nevertheless, incongruities still remain high, especially in the areas of IPR, state procurement, and SPS. The most striking differences with EU regulations in all spheres then lie in enforcement of the adopted legislation and practices. Even in those areas, where regulatory harmonization is relatively high, the achievements are mostly in the harmonization of laws on the books rather than in their implementation. Armenian regulatory system is, one hand, rather bureaucratic and, on the other hand, ineffectual. Shady and corrupt practices further undermine the system of enforcement. In the areas

[37] COM (2008) 392, p.8

of standards and SPS, the impulse towards harmonization depends not only on the Government efforts but on the private sector as well. The cooperation between the EU and Armenia needs to focus on the harmonization of implementing regulations and practices and upgrading of institutional structures in Armenia, as is designed by the PCA and ENP AP. Once this is achieved, a Deep FTA/Deep FTA+ would be able to bring economic benefits to Armenia.

6. Survey of non-tariff barriers in trade between EU and Armenia and Armenia with neighbouring countries

6.1. Survey method

This section presents the results of the survey of exporters in Georgia and Armenia. By sample design, the majority of firms were exporting to the EU and the minority – to CIS countries. Some firms exported to both destinations. The survey included 61 firms: 48 firms exporting to the EU and 13 firms exporting at least to CIS countries. The survey was conducted in October-November, 2007, by AVAG Solutions, Yerevan. Detailed description of the sample is presented in Appendix 4.

The questionnaire was modelled on CASE (2006) study of non-tariff barriers in Ukraine, which, in turn, was based on a survey of recent surveys on NTBs carried out in developing and transition countries. Respondents answered questions on export destinations and sectors, certificates of origin, customs procedures, standards and technical regulations, conformity assessments, sanitary and phytosanitary measures, and antidumping and countervailing measures. They also provided background information about their companies covering ownership, staff, and time in business, etc. The questionnaire is included in the Appendix 4 Description of the sample and questionnaire.

6.2. Certifying origin of goods

Armenia's exporters to the EU countries can benefit from the General System of Preferences, which allows them to apply reduced, preferential or zero tariffs to specific goods, which were actually produced in Armenia. In this context, the interviews aim at finding out whether exporting firms from Armenia have experienced any difficulties when using the GSP, or whether these regulations are very costly with regard to time and expenses.

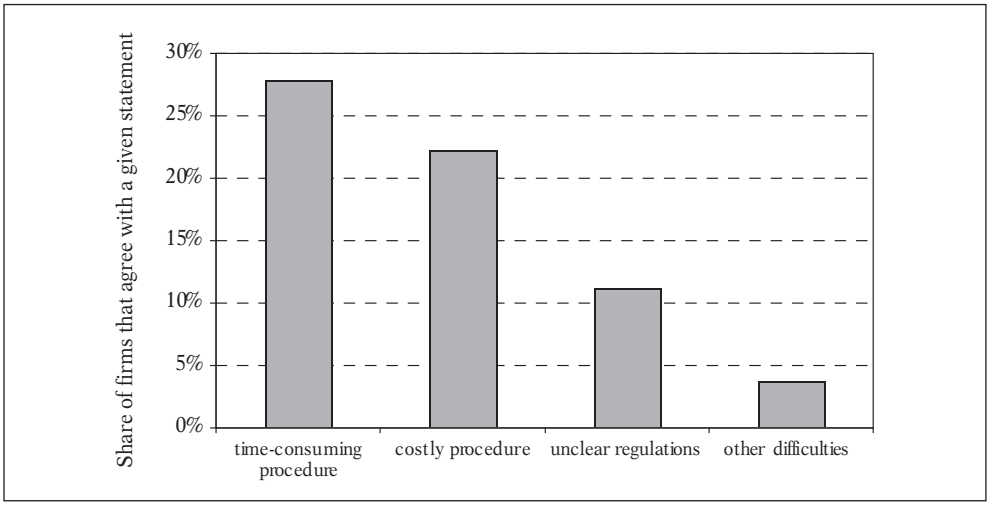
Altogether, 88 % of firms obtained certificates of origin during the last year, although only 79 % of them exported to the EU. The tendency to obtain a certificate of origin seems to vary a little bit with the firm size. Actually, all firms with less than 51 employees obtained such a certificate, but only 75 % of the firms with 51 to 100 employees and 85 % of the firms with more than 100 employees.

Within the group of firms which obtained a certificate of origin, each firm obtained on average 17 times per year such a certificate, but the dispersion was rather high and ranged from 1 to 95 times per year. However, the median was just ten, implying that 50 % of the firms received between one and ten certificates per year. Furthermore, only five firms obtained more than 40 certificates per year. The larger numbers of certificates are highly concentrated in the group with more than 100 employees and to a clearly lower extent in the group with 51 to 100 employees. For the first mentioned group, the mean is 25 and the median is 20. Thus, larger firms tend to make more frequent deliveries to the EU.

With regard to the average costs of one certificate of origin, firms report costs between AMD 9,000 and 100,000 with a mean of AMD 38,981 and a median of AMD 35,000. Furthermore, again there seems to be no relationship between the size of a firm and the costs of a certificate.

Firms were also asked to assess the importance of the costs of obtaining the certificates of origin. Firms here have rather different perceptions. Twenty-eight percent of the relevant 54 firms considered them as not at all important, 26 % as somewhat important, 24 % as important and 22 % as very important. Thus, here we have almost a rectangular distribution.

Figure 6.1. Obstacles while obtaining certificates of origin



Source: Survey results.

Asked about difficulties related to obtaining certificates of origin, 28 % of the relevant 54 firms complained about the time consuming procedure and 22 % assessed the procedure as costly. Anyhow 11 % of these firms complained about unclear or uncertain regulations and 4 % faced other difficulties.

Summing up, it seems that although Armenian exporters used extensively the EU trade preferences, they faced some difficulties obtaining certificates of origin.

6.3. Customs procedures

Export customs concerning exports to the EU seem to differ widely for Armenian firms. The firms exporting to the EU reported that they spent between 0 % and 9.0 % of their export values for export customs, with the mean of 0.686 %. Thus export customs concerning EU countries were rather low for the majority of firms. In terms of sectoral differentiation, the costs in three sectors were more than twice the average – textiles (1.86 %), food and beverages (1.57 %), and metallic mineral products (1.25 %). On the lower side, firms in aquaculture, manufacture of instruments, and basic metals paid less than 0.1 % of their export value to pass through the Armenian Customs.

However, the carriers of the firms should spend at the Armenian border while exporting products to the EU. Twelve firms reported that their carrier spent less than one day, namely between one at five hours at the border, further 20 firms indicated that their carrier spent exactly one day at the border. Thirteen firms claimed that this time lasted longer than one day, namely between 2 and 14 days, whereby 2 clearly is the most often mentioned value.

Export customs costs to CIS countries are in nearly all cases very low. They ranged from 0 % to 16 %. The mean is 1 % and the median just 0.2 %. Actually, besides one firm's with very high customs costs of 16 %, only three firms reported export customs to CIS countries between 2 % and 3 %. With regard to time spent at the border the picture is rather similar to that for the EU exports. Eight firms' carriers spent less than one day at the Armenian border, namely between three and eight hours, 15 exactly one day and nine more than one day, namely between two and five days, again with a dominance of two days.

With regard to exports to the EU, for 47 of the 48 firms exporting to the EU the ordering party based in the EU country is carrying all costs related to import customs procedures. Things look a little bit different for the costs of passing CIS country import customs procedures when exporting to one of those countries. Here, six firms reported that they or their representative in CIS countries is carrying all the cost related to

import customs procedures, while 48 firms indicate that the ordering party is carrying these costs. Unfortunately, the six firms carrying import customs did not report their costs.

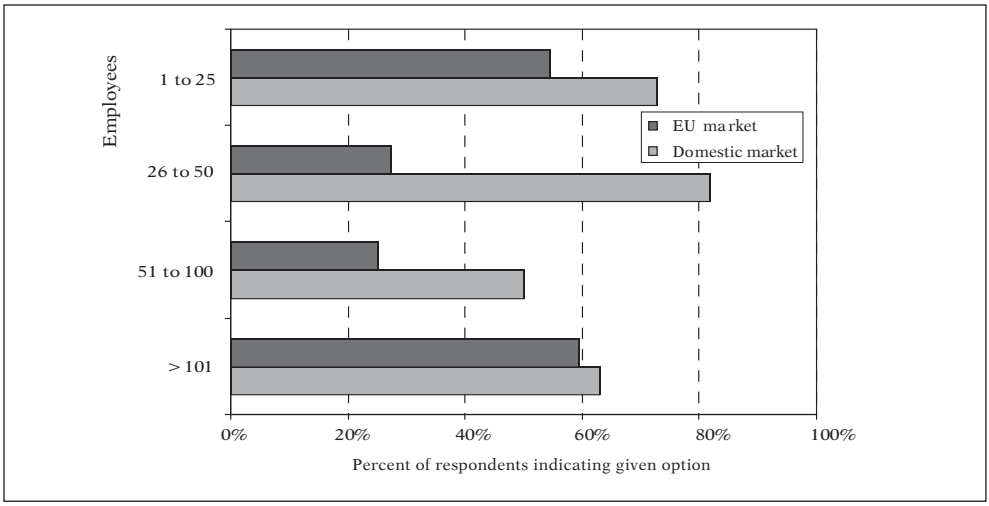
In sum, Customs costs and times appear to be quite modest.

6.4. Technical Regulations

Observance of technical standards in the domestic and the EU market

Forty firms reported that they have to meet domestic technical regulations in order to sell in domestic markets. Further six firms have not to take such regulations into account and the remaining 14 firms do not sell in domestic markets. With regard to the EU market, 28 firms have to meet technical regulations in order to sell to the EU market; another 18 firms are not confronted with such regulations, while only two firms indicated that they did not know.

Figure 6.2. Shares of firms by size that has to comply with technical regulations in order to sell at the market



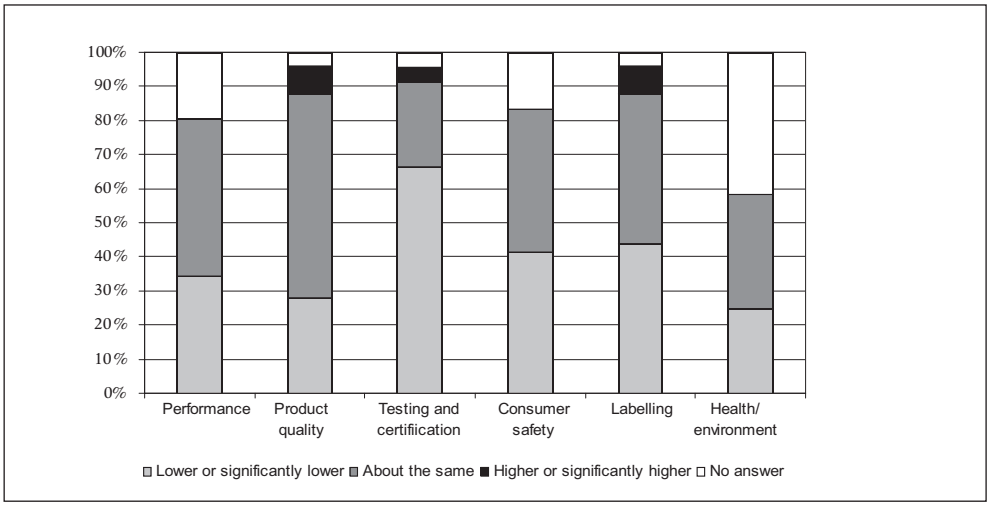
Source: Survey results.

It seems that particularly small and medium size firms have to deal with regulations concerning the sales in domestic markets, while small and rather large firms are concerned when it comes to regulations concerning sales at the EU markets.

Costs of ensuring compliance with the EU technical standards and ease of access to information

The costs of domestic technical regulations seem to be for most firms lower or at least the same than the costs of the respective foreign regulations (Figure 6 3). Only a small minority of firms consider domestic regulation in the areas of product quality, testing and certification and labelling as more expensive than the same type of foreign regulations. Furthermore, there is a certain reluctance to assess the relative costs of regulations in the area of health and environmental issues.

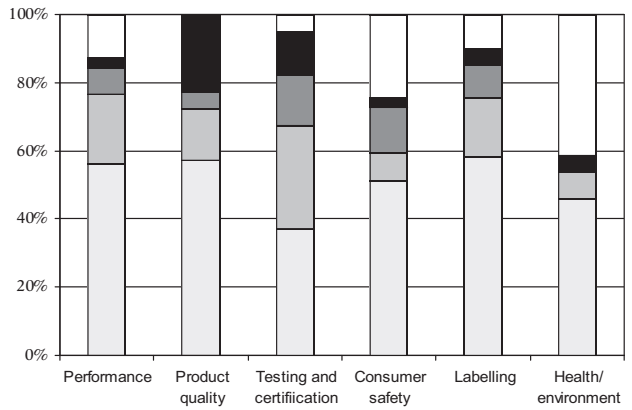
Figure 6.3. Costs of compliance with domestic technical regulations compared to foreign technical regulations for exports



Source: Survey results.

Firms were also asked what types of EU technical standards were most burdensome and expensive. Here, firms which consider the burden of any of these regulations as important are a clear minority (Figure 6 4). The highest rate of consideration as important yields the area of product quality. The majority of firms consider the burden of EU technical regulations as not important. The only exception is – at least to some extent – testing and certification. Furthermore, firms are rather reluctant to provide information in the area of health/environment and consumer safety issues, probably because they mix up these requirements with product quality requirements.

Figure 6.4. Burden and expensiveness of EU technical standards



Source: Survey results.

The actual relative costs of meeting the EU requirements were also quite low, if the numbers of the 7 to 15 reporting firms are used as a basis. For product characteristics requirements these firms reported costs between 0.03 % and 5 % of their sales, with a mean of 1.48 %. The highest costs were reported in the equipment manufacturing sector (4.35 %) while the lowest in the metal products (0.10 %). With regard to marking, labelling and packaging requirements costs amount to 0.002 % to 2.65 % with a mean of 0.54 %. Other technical requirements caused relative costs between 0.10 % and 10.00 % with a mean of 3.74 %. However, it should be borne in mind that firms in only three sectors recorded positive costs in the last three areas.

Finally in this context, firms were asked how they would evaluate the ease of access to the necessary information. Here, 21 out of 40 firms reported that the access was easy, 13 that it was not very easy and only six found it difficult.

Testing for conformity with technical regulations

The 48 Armenian exporters to the EU were also asked whether their products had been tested for conformity with foreign technical regulations before they were shipped to the EU. Actually 65 % of them took such tests, but their assessments of the costs of these tests differ to a large extent. On the one side, nine firms considered the costs as not at all important and five firms indicated that they are only somewhat important. On the other hand, eight firms assessed them as important and further eight firms as very important. These assessments are dispersed rather randomly over the different size classes of firms.

The acceptance of test results and conformity certificates issued domestically by the customs authorities of the EU countries was not a problem for 25 out of the 31 firms, while six firms reported that their domestic test results and conformity certificates were not accepted within the EU.

Furthermore, Armenian firms were willing to answer the question whether their products actually were tested for conformity with the EU technical regulations in the destination country over the last year. Twenty-one firms affirmed this question, while 18 firms abnegate it and seven firms answered that they did not know. With regard to the costs of these tests in the destination countries, the answers are widely dispersed. Six firms considered them as not at all important, two as somewhat important, eight as important and one firm as very important. Three firms answered that they could not say it.

Moreover, twelve firms reported that they need to have several product tests if they export to more than one EU country, while seven firms answers that this is not necessary. Altogether, the relative costs of product testing (% of last year's sales) were rather low. Eight firms numbered them between 0.01 % and 6.32 % with a mean of 1.02 %. Most answers were around 0.08 %. The lowest costs were incurred by metal product producers and the highest by the food industry.

The problem of duplication of testing to meet both domestic and foreign technical standards is assessed rather differently by the 14 answering firms. Six firms did not need duplications and three firms only minor duplications. However, another four firms indicated significant duplications and one firm needed complete duplication. Finally, the majority of the firms reported that technical regulations conformity inspections lasted on average two to four days upon arrival in an EU country.

Sanitary and phytosanitary measures

Armenian firms did not seem to care much about SPS measures. One out of eleven firms answering this question reported that it implemented the HACCP system. Furthermore two of them encountered SPS regulations related to their exports to the EU which were burdensome for their company: one firm of these two considered regulations concerning certification and quarantine as impediment to its exports. Five firms also reported their expenditures in 2006 to ensure compliance with the respective sanitary and phytosanitary regulations. In four cases they were clearly below 1 % of sales and in one case they amounted to 8.4 % of the firm's sales. However, the subjective assessments of the firms were a little bit different: one firm considered the costs of meeting the sanitary and phytosanitary regulations of the EU as not at all important, three firms as important and one firm as very important.

Relative perceived unimportance of SPS measures recorded in the survey stems from the fact that Armenia does not export agricultural and food products to the EU except for wine and brandy, and crawfish. In both cases, special systems were put in place to assure SPS conformity. The rest of the largely agricultural Armenian economy cannot provide any products for export to the EU, in part due to inability to satisfy SPS and product quality requirements.

6.5. Other NTBs

The questionnaire for Armenia also asked briefly about other impediments to trade, namely:

- antidumping duties,
- countervailing duties, and
- other measures affecting prices (e.g. minimum import prices, voluntary export price restraints).

All 47 answering firms denied the existence of antidumping and countervailing duties. Two firms indicated that they are affected by other measures (mentioned under bullet three), while the other 45 firms again denied such an impact. Nevertheless, one of the two firms affected by NTBs reported that both antidumping and countervailing duties are very restrictive, while another firm reported that other measures affecting prices are somewhat restrictive. On the balance, the survey results do not indicate a significant impact of these NTBs on exports.

6.6. Conclusions

Armenian exporters to the EU tend to sell in the domestic market as well. Only 14 firms out of 62 in the sample do not sell in domestic markets. The majority of the firms exporting to the EU have been in that market from three to five years, which means that they have established a firm foothold there.

Although Armenian exporters used extensively the EU trade preferences, they faced some difficulties obtaining certificates of origin. Customs costs and clearing times appear to be quite modest.

The majority of firms consider the burden of EU technical regulations and product standards as not important, with the exception of testing and certification. This fact is underpinned with the structure of Armenian exports dominated by minerals, precious stones, and raw materials which meet the product standards and safety requirements almost by default.

Moreover, many export products are manufactured under some sort of the outward processing scheme, when Armenian firms provide their production services and all the matters of logistics and marketing are carried out by their European partner. In this case, Armenian firms are not even aware of the full extent of trade costs. Conformity with technical regulations and product quality are ensured at contract signing and in some cases, European partners even provide missing equipment.

Cases in point are textile industry and diamond processing. Typically, the Armenian textile companies export their production services rather than products. The European partner imports all the necessary materials and semi-finished products under the regime of "temporary imports" and local textile companies produce the final product. In some cases, even the expenses of the certificate of origin are being taken on by the European partner.

Diamond cutters work in a similar fashion, as outward processing companies. The cost of imported raw diamonds is not included in their turnover, which only accounts for diamond cutting services. As to additional expenses associated with EU technical regulations, the companies can satisfy most quality levels required and charge different prices for different quality levels. Nevertheless, some Armenian companies (aquaculture, food industry, sapphire) have to incur additional expenses to satisfy quality requirements of their European partners.

Unimportance of SPS measures stems from export composition with no agricultural and food products to the EU except for wine and brandy, and crawfish. In both cases, SPS conformity is assured by special arrangements.

The companies that fall short of satisfying European market requirement and unable to change their technology accordingly simply are excluded from the list of exporters and this is the absolute majority of Armenian companies.

7. Services in Armenia

Introduction

This section discusses current developments in the services sectors in Armenia and the likely implications of free trade agreements with the EU or regional trading agreements. We also analyze current laws, regulations, and practices with respect to the establishment of business and, where relevant, cross-border issues affecting services and investment. We identify the areas where increased convergence of regulatory oversight may assist in promoting services and investment flows. Armenia made substantial commitments to liberalise trade in services in acceding to the WTO. At the general level, therefore, the study focuses mainly on the Deep FTA scenario, and on the flanking measures that will be necessary to make liberalization a reality. In this section we are working with the Simple FTA and the Deep FTA+ scenarios as defined in the Introduction. In the area of services a Simple FTA means no formal barriers to trade and reinforcement of the principles of market access and national treatment. A Deep FTA+ scenario describes significant degree of regulatory convergence and introduction of flanking measures leading to a considerable improvement of the business climate in Armenia.

Services account for around 40% of Armenian GDP, a relatively low figure by the standards of transition economies, and Armenia has a significant deficit on the balance of services within the balance of payments current account. So the service sector has no special direct importance on either the domestic or international dimensions of the Armenian economy at the present time. But some services sectors will emerge as key focal points of economic development in the future, because they reflect the country's special natural endowments, and/or because they support the enhancement of efficiency in the general infrastructure of business and administration. In particular the development of the domestic (ICT-based) business services sector will be of great

importance for key industrial sectors like mining, metallurgy and machine-building which are expected to develop as major export industries in the years to come. So any agreement between the EU and Armenia which is seeking to accelerate the process of economic development in that country must focus strongly on the services sector.

The discussion focuses on a number of sectors deemed to be of particular importance for the Armenian economy, viz.-

7.1. Tourism

7.2. Information and Communications Technologies (ITC)

7.3. Construction and engineering services

7.4 Financial services and banking

7.5. Energy-related services[38]

7.1. Tourism

7.1.1. Introduction

This is an area of great natural advantage for Armenia. Its potential is that much the greater in that the extensive Armenian diasporas in the United States, Europe and Russia retain deep attachment to their home country, and love to visit the many historic sites and architectural legacies scattered around the country. There are some market access and national treatment restrictions on foreign nationals and companies in the hotels and restaurants and tourist guide services sectors in the WTO accession agreement in relation to cross-border supply and presence of natural persons, but they do not appear to be onerous. Some 20-22 hotels are 100% foreign-owned. The main issue here is the development of the related services and infrastructure needed to exploit the full tourist potential of the country. In 2005 318,000 foreign tourists came to Armenia, rising to 381,000 in 2006 and some 450,000 in 2007. The government is looking to double the number of tourists coming to Armenia each year in the medium term, and is currently putting the stress on road development, and on developing public/private partnerships, perhaps with some of the big hotel chains. A specific strategy is to develop winter tourism. A Tourism Concept Paper was approved by the government in February 2008. The Paper foresees an increase in the annual number of

[38] The European Commission did not ask us to look at energy services issues in relation to Armenia. Interviews with Armenian policy makers indicated, however, that there are some important regional issues here, so we have included a short section.

tourists to 1.5 m in 2020 and 3 m in 2030. It lays particular stress on tourism as a vehicle of regional development, and on the application of ICT to the management of the tourist industry.

7.1.2. Tourist infrastructure

Armenia is a land-locked and partly blockaded country, and the full development of its tourist potential will obviously be dependent on further development of air transport facilities. A Deep FTA+ would involve Armenia signing up for the 'common aviation area'. The EU is currently negotiating on this with the countries of the Western Balkans, and aims to get all the countries covered by the Neighbourhood Policy into the common aviation area by 2010. But Armenia has still not signed up for the original OSCE Open Skies Agreement. This is related to the unresolved Nagorno-Karabakh conflict. Air power played a crucial role in the Nagorno-Karabakh war of the early-mid 1990s, and the Armenian government may be reluctant to sign any civil aviation agreement which weakens its capacity for surveillance of the Azeri airforce. The government in Yerevan is hopeful of resolving the issue soon, but until it does, prospects for the development of budget tourist flights to and from Armenia will remain limited. There is nothing a free trade agreement per se can do to relax those limits.

Road transport infrastructure is a bottleneck for Armenian tourist development. The country is well endowed with trunk roads, with 3361 km of national and international roads. Denmark, a country of similar area and population, has just 1,618 km of trunk roads. But Armenia has only 4,342 km of local roads, compared to 80,900 in Denmark. Government proposals to improve the network are crucial for tourist development. Under the Poverty Reduction Strategic Programme for the period to 2015, the main stress is on improving the existing international road network, with particular emphasis on the reconstruction of bridges considered to be unsafe in relation to present levels of traffic – an obvious priority in a mountainous country. There is also of programme to improve road signs. In addition, there are programmes to repair and upgrade national and local roads, some with international (principally US) financial support. But there are no major programmes of new road building, and it is not clear that modernizing the existing road network will be enough to accommodate the country's tourist potential. It would not be easy or even appropriate, even within the framework of a Deep FTA, to seek to impose on Armenia ambitious and expensive programmes to develop the national and local road network. Projects like TRACECA may help with the development of the international road system, but can hardly be expected to support the kind of in-depth development of local road links that the tourist industry needs. This is no doubt one of the areas in which the government would like

to develop public/private partnerships. A Deep FTA would at least make it easier for foreign firms to become involved in such partnerships.

Even major road-building programmes will not by themselves solve all the problems of road transport in Armenia. An important cultural dimension which intensifies the problem is the way that Armenians drive - generally too fast, and with scant regard for the safety of pedestrians. The Armenian police do not appear, as a rule, to enforce traffic laws. The problem is a familiar one throughout the CIS. Some governments, notably the Kazakh, have taken systematic measures to combat it. International cooperation for harmonization of traffic laws and enforcement measures would help here, and there is clearly a role for international financial support in all this. Road safety is an explicit priority of Armenian government transport policy, and it would surely not be difficult to nest foreign technical assistance within this policy framework. Such programmes would have no bearing on a Simple FTA. But they could feature as flanking measures for a Deep FTA+, with a significant potential effect on the development of tourism.

There are 842 km of railways in Armenia. The Ayrum-Vanadzor railway line is still the main transport link between Armenia and Georgia, and is therefore a major factor of regional economic development in the Caucasus. It suffers from the same kinds of problems as the road network, in particular old bridges in urgent need of repair. The World Bank has lent Armenia some US$15 m for a range of railway upgrading projects, and a number of similar projects are being financed directly from the Armenian budget. At the present time these developments are marginal to tourism, because the Armenian railway is largely a goods carrier. But in the absence of direct flights from Yerevan to Tbilisi and vice versa a good passenger train service from Georgia to Armenia would surely facilitate development of the tourist industry, and on a regional scale. A Deep FTA+ could help here, because it would make it easier for foreign investors to commit themselves to long-term, infrastructural projects.

Sea transport is obviously not of direct importance for Armenia, but it has acquired substantial indirect importance since the closing of the main land border crossing between Georgia and Russia in June 2006. A new rail-ferry service has now been introduced which runs from Poti in Georgia to Port Kavkaz, on the Russian Black Sea coast. This is a very important cargo link for Armenian exporters, and the Armenian government is pressing the Russian government to allow it to expand. It could conceivably in the future, with appropriate backup in terms of rail services upgrading, develop as a link for Russian tourists bound for Armenia. But this issue will turn on the evolution of Armenian-Russian relations, and, more important, Georgian-Russian relations, and an FTA would have little impact on it.

With infrastructural investment the crucial variable in relation to the development of tourism, a Simple FTA could not be expected to have much impact. It would take a Deep FTA+ to stimulate the kind of international investment initiatives needed to finance large-scale infrastructural programmes.

7.2. Information and Communications Technology (ICT)

7.2.1. Introduction

ICT is of particular importance in Armenia, as in other emerging economies, because it provides the technological basis for the economy-wide increases in organizational efficiency which lay the foundation for the catch-up process. It is a crucial input for every sector of the economy.

7.2.2. The sector in outline

The computer services sector is already highly liberalized in Armenia. But as Table 71 shows, Armenia is comparatively poorly endowed with computers and has a low rate of internet usage – partly, perhaps, because internet services are comparatively expensive. There are ten main internet providers in Armenia. The leader in the market is Arminco. The second-largest internet provider is CallNet/Cornet, bought by the Russian Comstar in 2006.

In telecoms, ArmenTel's fixed telephony state monopoly was originally scheduled to survive in Armenia until the end of 2013.[39] That has now been brought forward to 2008. In that context, regulatory convergence with the EU is a short-to-medium-term rather than short-term issue for Armenia. In the light of that, the best way forward would be to seek to assimilate the parts of the *acquis communautaire* relating to telecoms, using the 1998 set of telecom regulations. The EU itself has now moved on to a new set of regulations promulgated in 2002. But these are designed for advanced countries with substantial capacity for self-regulation. The 1998 package is a more detailed and specific set of documents, and is more relevant to the needs of emerging countries. In the case of the countries of South-Eastern Europe, the European Commission has facilitated regulatory convergence in the telecoms area through a combination of regular reports, working group meetings and technical assistance (CEPS, 2006, p.93).

[39] According to WTO accession documents. Local sources say 2017.

The same approach could be used in the Armenian case, and full convergence could, in principle, be achieved soon after the signing of a Deep FTA+.

As Table 7.1 shows, Armenia is comparatively well endowed with telephone landlines, but poorly endowed with mobile phones. ArmenTel has about 40% of the mobile market. K-Telecom, recently bought by the Russian MTS, which entered the market when ArmenTel's monopoly over mobile telephony was ended in 2005, has most of the rest.

Convergence in technical standards for telecoms equipment may be an issue for Armenia to the extent that the old Soviet GOST standards are still being used within the country. But this is an area where the more liberal EU New Approach to conformity assessment is dominant. And Armenia does not actually make much telecoms equipment itself. So convergence should be mainly a technical issue, albeit a complicated one. It will take the form primarily of continuing negotiations between the EU authorities and the Armenian government, with EU-supported user-groups also playing a role. Full convergence might require several years of operation of a Deep FTA+.

About 10% of total Armenian exports are accounted for by IT goods and services. Armenian service providers have difficulty registering abroad. This presumably relates to issues like data retention. Thus non-EU providers who have connectivity into the EU have to agree to comply with the data collection regulations operating within the EU.

Table 7.1. Telephone and computer endowment: some regional comparisons

	Azerbaijan	Armenia	Georgia	Lower Middle average	Average for the ECA region	High Income Average	World Average
Communications							
Telephone Mainlines per 1000 peoples (2003)	114	148	133	175	228	560	183
Mobile Phones per 1000 peoples (2003)	128	100 (2005)	107	207	301	708	223
Computers and Internet							
Personal Computers per 1000 peoples (2003)	n/a	15.8	31.6	35.6	73.4	466.5	100.8
Internet users per 1000 peoples (2003)	37	37	31	75	161	377	150
Monthly price for 20 hours of use of Internet UD $ (2004)	108	45	26	30	26	23	37

Source: IBM Business Consulting Services (2007), p.79

In the context of Armenian ambitions to develop a knowledge-based economy, access to foreign markets for Armenian IT companies would obviously be crucial. It is not clear how an FTA would affect these registration issues.

7.2.3. The ArmenTel case

In 1997 a majority share in ArmenTel was sold to the Greek OTE. The deal involved maintenance of ArmenTel's monopoly over fixed telephony, wireless telephone networks and internet connections with the outside world. In 2006 OTE sold out to the Russian Vimpelcom, after the government announced in late 2004 that the mobile telephony monopoly would be brought an end in 2005 and the fixed telephony monopoly at the beginning of 2008. Interpretations of these events vary. The Armenian government charged that OTE had fallen down on their investment commitments, especially in relation to development of the wireless network, and were using their Armenian operation as a means of money-laundering. The unofficial version is that OTE were punished for refusing to work with local politicians, contractors and providers. There are probably elements of truth in both versions. Mobile telephony is certainly underdeveloped in Armenia, as we saw above. On the other hand, our general understanding of the Armenian political economy may incline us to give some credence to the unofficial version. Whatever the balance of truth, the case raises important issues relating to free trade issues. The Armenian government has now moved from an interventionist to a liberal policy stance on terrestrial telephony. But they have done so in an arbitrary way, and without much concern for contractual commitments. They have supported ArmenTel's attempts to stop independent providers offering cheap internet-based telephone services using their connections, while assuring the public that ArmenTel's monopoly power in this area will be removed in 2008 along with all its other monopoly powers. Having moved to a more liberal position, the government might, with equal arbitrariness, subsequently move back to a more interventionist position. It should in any case be stressed that the abolition of the state monopoly may change little in terms of short-term business realities, since the incumbent retains control of all the telephone infrastructure, without, as far as can be ascertained, any commitments to open up that infrastructure to third-parties. A Simple FTA would not affect any of this. A Deep FTA+ would have to posit a movement to a much more stable, less politicized system, where potential investors could gauge the prospects for investment on the basis of a clear understanding of the prospective evolution of the regulatory framework. It would also have to involve a thoroughgoing reform and upgrading of the Armenian competition and monopoly authority.

Against the background of a fairly liberal sectoral regulatory framework, a Simple FTA would have only a slight impact on the ICT sector in Armenia. A Deep FTA+ could have a much greater effect, but only if flanked by far-reaching measures of an essentially political nature as detailed under Priorities 1 and 2 of the EU/Armenia Action Plan (in particular strengthening of democratic structures and rule of law and fight against corruption and fraud).

7.3. Construction and Engineering services

This relates primarily to the import of construction services, where cross-border supply is generally unbound under the Armenian WTO agreement, with regard to both market access and national treatment. Armenia also exports some construction services. So there are some minor Simple FTA issues here.

Provision of management services for building projects: there is only one specialist construction project management company in Armenia. Given the scale of building activity in Armenia right now, free market access for foreign construction project management organizations is clearly important. While a Simple FTA would establish this on paper, it would probably take a Deep FTA+ to guarantee it. Armenian organizations do not appear to be currently involved in the export of management services for building projects. However, Armenian companies are expected to supply construction services (probably mainly management services for building projects) as well as building materials for the Winter Olympics to be held in Sochi, Russia, in 2014.

Organisation of distribution of imported building materials: there are no limitations in the sphere of wholesale trade services in Armenia's agreement on accession to the WTO, except in relation to presence of natural persons. But there is only one major importer of building materials in Armenia. There must be some suspicion that there is in this sector, as in other key import sectors in Armenia, a *de facto* monopoly situation, supported by local political elites. A Simple FTA would in do little to break such a monopoly. Rather it would require a Deep FTA+, flanked by a thoroughly revamped and upgraded Armenian monopoly and competition agency.

Provision of design and architectural services: there are a number of Armenian companies active in this area, so that there is probably a fair degree of competition on the domestic market, and possibly also some export activity. Even a Simple FTA and the more a Deep FTA+ would reinforce both competition and competitiveness, though the impact would likely be fairly marginal.

Much of the construction currently going on in Armenia is financed by remittances from abroad. This must make the issue of free import of building materials that much more important.

Trade in construction and engineering services in Armenia is substantially liberalised in formal terms, and conclusion of a Simple FTA would have a degree of impact here only in completing the process of formal liberalisation. It would take a Deep FTA+, flanked by far-reaching measures to strengthen the implementation of competition law, to have a significant impact.

7.4. Financial services and banking

7.4.1. Introduction

The Armenian financial sector is among the smallest relative to GDP in the World Bank's Europe and Central Asia region.

Under the WTO accession agreements, the banking sector is largely liberalized in Armenia. But the sector remains 50% domestically-owned and predominantly Armenian-owned (when account is taken of banks owned by Diaspora Armenians). Comparison with the experience of other transition countries, where banking liberalization has generally been followed by substantial foreign penetration, suggests that key flanking measures are not in place here. Under the WTO agreements the insurance sector remained subject to considerably restrictions in Armenia. These have now been removed. There is a degree of foreign penetration in the Armenian insurance market.

The Armenian government would like to develop Armenia as an international centre for financial services. This may be over-ambitious, but it provides scope for positive interaction between government policy and the process of deliberation with the EU over norms for regulatory policies.

7.4.2. The banking sector in Armenia

The banking system accounts for some 90% of the assets of the Armenian financial sector, and is 100% privately owned. There are at present 21 banks in Armenia. The biggest of them is HSBC Armenia, which holds 15% of the total assets and accounts for 20% of the total lending in the sector. In 2006, the French Crédit Agricole took a 28%

share in ACBA (Agricultural Cooperative Bank of Armenia), the largest bank by capitalization in the country. In 2004 the Post Office Savings Bank was taken over by the Russian Vneshtorgbank (VTB) and renamed Vneshtorgbank Armenia. In 2007 the German Procredit established a microfinance bank (PCB Armenia) with the support of the EBRD. The Dutch International Post Service Group plans to establish a postal bank in Armenia. There are also Kazakh and Ukrainian (and other Russian) interests in the Armenian banking system. Around 50% of the total capital stock of the Armenian banking sector is foreign-owned. Some of that 50% is owned by diaspora Armenians.

Banks differ greatly in size, outreach effort, and customer base. Around half of all Armenian banks are very small with negligible market shares in deposits and loans, which contribute to the sector's overall low banking productivity. A number of these banks concentrate their activities in trade financing, money transfers, and private banking, rather than in deposit-taking and loan-making. Anecdotal evidence suggests that several small banks serve as 'pocket banks' of enterprise groups or wealthy individuals, which use them for treasury operations, or as sources of cheap liquidity, and equity investment [8-10 banks come into this category]. Other banks serve a large number of small scale depositors and borrowers. While they may have comparatively large shares of the overall deposit and credit markets, the size of financial service per customer can be extremely small, with some banks having average loans and deposits as low as US$200 per customer. (Dabla-Norris and Floerkemeier, 2007, p.10)

A large proportion of bank assets in Armenia are held in the form of low-yielding assets like cash, inter-bank accounts and treasury bills. Because interest rates on deposits are relatively high, the banks have to charge high rates of interest on loans, in order to maintain profitability. Partly as a result of this, the bulk of bank liabilities in Armenia are short-term, with companies tending to baulk at the cost of longer-term borrowing. Dollarisation tends to push up interest rates even further, since banks have to pay very high rates of interest to attract dollars, and because they have to make provision for the risk of currency mismatch between assets and liabilities. That in turn means that they have to charge rates of between 20 and 35% per annum on dollar loans, which tends to produce adverse selection problems (Mu et al., 2004, pp.5-7).

There is no evidence that foreign banks in Armenia charge lower interest rate spreads than domestically-owned, and in this respect Armenia is an exception to the usual pattern of transition countries (Dabla-Norris and Floerkemeier, 2007, pp.13-14). This may be a reflection of the fact that there is only one first-tier international bank in Armenia, namely HSBC – most of the other foreign-owned banks in the country are owned by diaspora Armenians who are not professional bankers (Norris and Floerkemeier, 2007, p.6). So HSBC may feel little competitive pressure to lower its spreads. Spreads have, nevertheless, come down a bit over the last few years, from an

Table 7.2. Average interest rates of commercial banks

	2000	2001	2002	2003	2004	2005	2006
Lending rate, %	31.6	26.7	21.1	20.8	18.6	18.0	16.5
Deposit rate, %	18.1	14.9	9.6	6.9	4.9	5.8	5.8
Spread, %	13.5	11.8	11.5	13.9	13.7	12.2	10.8

Source: AEPLAC, 2007, p.46

average of around 14% to a still high 11% (See Table 7.2). *Crédit Agricole*/ACBA is now extending its operations outside the agricultural area. If it emerges as an effective competitor for HSBC, we can expect spreads to go down even more.

The ownership pattern in Armenian banking gives rise to a number of related problems. It is, indeed, often difficult to know exactly who owns particular banks, and there is little transparency. Partly as a result, corporate governance is weak and connected lending is widespread. In the context of all of this, it would clearly do the Armenian banking system (and in particular its customers) an immense amount of good if new first-tier international banks could be tempted to enter the market. Detailed analysis confirms that flanking measures, specifically measures to strengthen corporate governance, strengthen the supervisory role of the Central Bank of Armenia and strengthen accountancy and audit practice would be crucial. Thus banking in Armenia is clearly a Deep FTA+ issue, with comprehensive flanking measures such as supervision and corporate governance as essential conditions for the increased foreign involvement in the sector. As far as audit is concerned, the current situation is that the international banks use the audit services of international audit firms like PWC. Domestically owned banks do not, and there seems to be no pressure on them to raise their standards in this respect. This, does, indeed, seem to be a general pattern in the Armenian business sector. Local reports confirm that Armenian-owned companies have a poor understanding of the importance of accountants, lawyers etc. This has serious implications for the economy as a whole, particularly on the dimension of foreign trade. It also means that there is little scope for the development of local accountancy firms and the like – what might be called ancillary financial services. Against this background, government plans to develop Armenia as an international financial centre seems far-fetched. It should be noted, however, that Basle-2 principles of risk assessment have been introduced in Armenia last year (2007).

7.4.3. The insurance sector in Armenia

The insurance sector in Armenia is very small. In 1999 it had the second lowest gross premium volume in the CIS, with only Kyrgyzstan below it (Mu et al., 2004,

p.14). The insurance sector as a whole is under-capitalised and overstaffed. There are a number of regulatory issues affecting the sector. The regulation on reserve allocation is not in accordance with the principles of liquidity diversification. The sector is largely non-compliant with IAIS core principles. There is an Insurance Inspectorate, but it is understaffed, under-funded and under-qualified. The Inspectorate was developing a strategy paper a few years ago which the World Bank considered to be over-ambitious (Mu et al., 2004, pp.5-7). No further information on this has come to hand. The Armenian insurance sector suffers from all the same corporate governance problems as the banking system. Against this background, the EU/Armenia Action Plan singles out the insurance sector as a key development priority.

The residual restrictions relating to insurance in Armenia's accession agreement with the WTO, notably the restrictions on foreign companies selling life insurance, have already been removed. At present, Armenia has four foreign insurance providers, including HSBC Insurance and the Russian-owned Gosstrakh-Armenia. Whether a Simple FTA would have a big impact on their business strategies is doubtful. Here, perhaps even more than with banking, it is the flanking measures that would come with a Deep FTA+ that would really make a difference. General issues of corporate governance and supervision apart, there are key training issues. At present there are no actuaries in Armenia. As a result, it is simply not possible to sell life insurance on a large scale on the Armenian market. It should be noted, however, that USAID, in collaboration with the Central Bank of Armenia and the UK Society of Actuaries, is running a programme of basic actuarial training in Yerevan March/April - December 2008. A new law on insurance and insurance activity was passed on 30 September 2007, covering matters such as licensing, registration and the organisation of information. The question of compulsory third-party insurance for drivers is currently being considered by government departments.

Given how limited the insurance sector is in Armenia, the impact of a Deep FTA+ here could be very significant, though only to the extent that continued economic growth allows the development of a solvent market for insurance services.

7.4.4. The Armenian stock exchange

The Swedish OMX Nordic Exchange took over the Armenian stock exchange in 2007. At present 29 companies are listed on the Armenian stock exchange.

7.4.5. The financial regulatory framework

Armenia's ambitions to develop finance as an area of national specialization will require harmonization with the financial regulatory framework of the EU. It is, in fact, probably not appropriate for Armenia simply to copy all the sections of the *acquis communautaire* relating to the financial sector. As has been argued in relation to Ukraine (Emerson et al, 2006, p.9), those sections are drafted to take account of the needs of countries with highly sophisticated financial markets. Armenia is not in that category, and will not join it for some time to come. The important thing for Armenia is that legislation should be *acquis*-compatible, reflecting passive compliance with the EU system. Even so, on the more substantive issues of financial regulation, progress will be slow, and the conclusion of an FTA would not, in itself, do much to accelerate it. A Deep FTA+ would have a significant medium-term impact.

Among key corporate governance/audit/accounting flanking measures, Armenia has already made the EU International Financial Reporting Standards (IFRS) compulsory for listed companies. As noted above, however, many areas of corporate governance remain opaque in Armenia (NB the great majority of companies are not listed), and it would likely take several years of a Deep FTA+ to make a significant impact on this situation.

The Armenian financial services sector is largely liberalised, and conclusion of a Simple FTA would, accordingly, not have a big impact. A Deep FTA+ could have a much greater impact, but it would have to be flanked by wide-ranging measures on supervision, corporate governance and training. The last of these in particular could only be expected to show its full impact after a considerable time-lag.

7.5. Energy-related services

This covers a wide range of transit issues, and also issues relating to domestic distribution of energy. There is no mention of energy-related services in Armenia's WTO accession agreement, so, presumably, there are no restrictions in this area. So, once again, it is the Deep FTA issues that are paramount here. One investment project currently under consideration is the construction of an oil refinery to process crude oil from Iran and then reexport it, in the form of refined oil products, to Iran. A new rail link would have to be built to handle these reexports. The project would be financed by Russian interests. Its implementation would probably depend on the successful completion of the negotiations for an FTA between Armenia and Iran, expected in 2008. Another similar project would involve the construction of a hydro-electric station

near the border with Iran. There is also a project to build a gas pipeline from Iran to Armenia. The first stage of the pipeline was completed in March 2007, and the whole project is due to be completed by the end of 2008. Ownership of this project has just passed to ArmRosGazprom, the Armenian national gas distribution company (58% owned by Gazprom) on condition that it spends US$150 m plus on completing the project on time.

In all of this the regional dimension looms large. There is a 'natural' seasonal pattern of trade in electricity between Armenia and Iran, with Armenia exporting in summer and importing in winter. And there is a natural market in energy-deficient Turkey for Armenian energy, if the political problems can be solved, and if Armenia can develop the infrastructural means to deliver that energy. It is not surprising, then that the Armenian government is keen to organize a regional energy market, with Armenian trade in electricity with Iran expanding, and exports of electricity to Georgia as well as Turkey. A high-voltage transmission line to Georgia is currently being built with German money. A high-voltage transmission line to Turkey already exists. It only needs a normalization of relations with Turkey to start to create a regional energy market. Completion of the edifice would, of course, also require a normalization of relations with Azerbaijan. It should be stressed that, with all the countries involved apart from Iran being signatories of the Energy Charter Treaty, the framework for cooperation on transit investment already exists. It only needs political normalisation to set it in motion.

Realisation of Armenia's regional energy ambitions would also require a normalization of Armenia's nuclear generating capacity. At present 40% of the country's electricity is generated by the Metsamor nuclear power plant, an old Soviet plant which is considered to be unsafe. The plant is operated by a Russian company, Inter RAO UES, a subsidiary of the Russian electricity company RAO UES and the Russian nuclear energy organisation Rosenergoatom. The EU/Armenia Action Plan contains a commitment to an early decommissioning of the plant. There are plans to develop alternative sources of power, notably hydro-power and renewables, but Armenia's future as an electricity-producing and elecricity-exporting country will depend crucially on the fate of the proposal to build a new, 1,000-MW nuclear plant, at a cost of some $1.5 bn. Both Russia and the United States have backed the project

The Armenian government has a vision of Armenia as an exporter of energy and energy services in the form of transmission, including possibly transit transmission. In relation to the procurement of energy, transition from a single buyer system to a competitive energy market was scheduled to take place in 2006-7. No precise information on the progress of this transition has come to hand, but the Armenian energy market does seem to be fairly highly liberalized at the present time. So we can

conclude that the regulatory foundation for Armenia's energy vision has been laid. A Deep FTA+ with the EU would help Armenia to realize the vision to the extent that it facilitated inward investment in the energy industry from EU countries. Whether the Russian interests who have such a large stake in the Armenian energy industry would be happy with such a prospect is doubtful. And it must be stressed that realisation of the vision is also dependent on a full normalisation of political relations with Turkey and Azerbaijan. At present the prospects for such a normalisation still seem distant. If the project for a new nuclear power plant does not materialise, Armenia's energy ambitions may in any case have to be limited to transit, rather than export.

In the largely liberalised energy-related services sector, the impact of a Simple FTA would be slight. A Deep FTA+ could have a much greater impact, but only if combined with far-reaching flanking measures including political agreements at the regional level.

7.6. Likely changes to investment climate due to FTA

Consideration of international experience shows that there is no clear pattern of response to FDI flows to trade agreements. The FDI boom in China predated the accession of that country to the WTO by a number of years, and accession did not produce any clear-cut upward shift in the FDI trend. In the Central-East European countries, the FDI boom started as soon as transition began (Poland was something of an exception), and accession to the EU did not result in any sharp break in the FDI trend. (There was a leap in FDI inflow in Poland in 2004, but it was not maintained.) Likewise in Russia, we have seen a very sharp upward trend in FDI over the past few years, culminating in a jump to a total of over $30 bn and a per capita level comparable to that of the CEECs in 2006, during a period in which Russia's relations with the rest of the world have come under strain, and in which concerns over the special difficulties of doing business in that country have increased rather than decreased.

How do we make sense of these patterns? In Central-East Europe companies may, with some justification, have anticipated ultimate EU accession on the part of the countries of that region. The same thing can be said of FDI in China and Chinese accession to the WTO. It may equally plausibly be argued that multinational firms use FDI primarily in order to gain access to the specific resource endowments of particular countries, or to the markets of those countries. Cheap labour in the case of China, (relatively) cheap skilled labour in Central-East Europe, energy resources in Central Asia, access to CEEC markets, have clearly all been important drivers of FDI in the transition countries. In the Russian case, access to energy resources, and to the large

Russian domestic market, have been of central importance. Cheap labour has been less important in Russia because of uncertainties about Russian productivity and anxieties about how easy it would be to develop modern management systems in Russian conditions. Reference to patterns of factor availability hardly explains, however, the huge leap in foreign investment in Russia over the last year or so. High oil prices, leading to high economic growth and rapidly increasing domestic consumption, may lie at the heart of the process, but it is, again, difficult to adduce conclusive evidence.

CEEC accession to the EU put FDI in the new Member States under the legal protection of the *acquis communautaire* as well as admitting them to the single market. Still, there was no dramatic leap in FDI. Remaining legal uncertainties and widespread corruption in China have not stopped FDI continuing to grow in that country. Improvements in the business environment must surely ultimately have positive effects on investment flows. But they may have relatively minor effects on the strategies of oil companies used to fishing in troubled waters and retailers working on relatively short planning horizons. Where the business environment may be much more important is in relation to the scope for building whole complexes of companies in the form of supply chains and design/production matrices.

One of the major impacts of FDI in CEEC has come in the form of a build-up of supply networks centering on major investments, especially in the automotive and consumer electronics sectors. Leading these new supply hierarchies have been the *first-tier suppliers*, making complex components and cooperating actively with lead companies in relation to technological development and design. Examples from the car industry include engines and gear boxes. Below that level, *second- and third-tier suppliers* have been engaged to make individual components (ranging from technologically advanced down to simple) for the finished products. Patterns of development of supply hierarchies in CEEC have not been wholly satisfactory from a development point of view. The great majority of first-tier suppliers are themselves wholly or partly foreign-owned, and Slovenia is the only new Member State of the EU to boast of a significant number of domestically-owned first-tier suppliers. In China FDI has given a tremendous boost to the development of supply hierarchies. But here, there is a significant number of Chinese-owned first-tier suppliers, some of them exporting all over the world (Dyker, 2006).

How do these various factors affect Armenia? It has no significant hydrocarbon reserves, but as we saw earlier, the government has a vision of Armenia as a transit country for electricity. Armenia does not offer a big domestic market, mobile telephony apart. Supply network-building in Armenia is undeveloped, though there may be some hint of a start here in relation to metals and metal-processing. A Simple FTA would help to facilitate this kind of development, and a Deep FTA would help even more. The

experiences of Central-East Europe and China have shown, however, that productivity and relative labour costs count for more here than free trade agreements.

7.6.1. MFN pre-establishment

Armenia's WTO membership should in principle guarantee MFN for the great majority of sectors. One major exception was fixed telephony, which under the WTO accession agreement could be kept under a state monopoly until 2013. As we saw earlier, however, this restriction is to be removed from 2008. There are problems of MFN in Armenia, but they relate not to laws and regulations, but to the oligopolistic/oligarchic structure of key importing sectors. As we saw in an earlier section, it is very difficult for any outsider companies, domestic or foreign, to challenge incumbents in these sectors. By the same token it is impossible to guarantee that the oligopolists/oligarchs are not discriminating in favour of particular suppliers and/or countries in their procurement operations, and any joint ventures they might undertake on the investment side. It would require changes in legal institutions and patterns of political behaviour going beyond even what is normally included even under the rubric of Deep FTA+ to make a significant impact on these *de facto* MFN restrictions.

7.6.2. National treatment

Again, Armenia's WTO membership should in principle guarantee this, and a Simple FTA would merely reinforce this guarantee. In practice, the oligopoly/oligarchy problem impinges here as well. In addition, there is the problem of the sheer complexity and difficulty of doing business in Armenia (see Table 7.3), which tends to impinge unequally on foreign companies. More directly discriminatory is the incompetence and dishonesty still widespread in the courts. And, of course, tax evasion it is easier for local firms than for foreign firms. On all these counts, only a comprehensive Deep FTA+ would make a significant impact.

7.6.3. Market access restrictions

Again, these largely disappeared in formal terms with WTO accession, apart from in fixed telephony, as discussed above. A Simple FTA would in principle clear up any remaining formal obstacles. But the oligopoly/oligarchy issue once more rears its head here. For a foreign company to force entry into, for example, the wheat or oil importing

Table 7.3. Selected indicators of doing business in Armenia, with regional comparisons

	Armenia	Georgia	Azerbaijan	Baltic countries
Starting a business				
Procedures (no)	10.0	8.0	14.0	6.3
Duration (days)	25.0	21.0	115.0	25.7
Dealing with licenses				
Procedures (no)	20.0	29.0	28.0	15.7
Duration (days)	176.0	282.0	212.0	142.3
Registering property				
Procedures (no)	4.0	6.0	7.0	5.3
Duration (days)	6.0	9.0	61.0	40.7
Enforcing contracts				
Procedures (no)	24.0	18.0	25.0	20.7
Duration (days)	185.0	375.0	267.0	163.3
Cost (% o debt)	17.8	31.7	19.8	10.0

Source: World Bank Doing Business database

business would be extremely difficult. Guaranteeing market access in these sensitive sectors would probably demand an even more far-reaching Deep FTA+ measures than those calculated to guarantee MFN, with root-and-branch reform of the legal system and courts being the top priority.

7.7. Conclusions

Against the background of a high degree of liberalisation at the level of regulations, the services sectors in Armenia would be affected only marginally by the conclusion of a Simple FTA. A Deep FTA+ holds out much more promise of substantial impact, but to be effective it would have to be heavily flanked, not just by further regulatory reform, strengthening of the competition authority etc, but also by measures to strengthen democratic structures, the rule of law and respect for human rights, and to combat corruption and fraud, as laid out under Priorities 1 and 2 of the ENP EU/Armenia Action Plan. These latter measures should be seen as essential conditions for the effective implementation of a Deep free trade agreement.

8. Likely changes in FDI flow due to an FTA

FDI inflows into Armenia averaged around USD200 million annually in recent years (see Table 8.1). Inflows of this magnitude have been observed in the CIS for Belarus and Moldova, and in the Balkans for Albania and Bosnia and Herzegovina. Among the Southern Caucasus states, inflows of FDI to Armenia are roughly half of these to Georgia, although they have been comparable in the past. Inflows to Azerbaijan are much higher, due to investment in the extraction of energy resources. The stock of foreign investment in per capita terms in Armenia was close to USD500 in 2006, which is lower than for the average of CIS states or Central European transition economies. For more statistics on FDI see Appendix 5 (Appendix 5 Table 1 through Appendix 5 Table 3).

Table 8.1. FDI statistics, Armenia, 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
FDI inflows in million of USD	232	135	125	88	144	157	217	220	251
FDI stocks in million of USD	372	507	632	719	869	1024	1005	1225	1476*
FDI stock in USD per capita	119	164	205	235	285	337	332	406	489*
FDI inflows in % of total investment	75.7	44.6	35.4	23.4	28.8	24.4	26.9	16.2	

Source: UNCTAD and www.armstat.am
Note: * - own estimate

After the Russian financial crisis of 1998, foreign investment was momentarily much increased, accounting in that year for ¾ of all Armenian investment, and such high share reflected the scarcity of domestic resources at that time. However the role of foreign capital soon decreased along with the development of the economy, although

still remaining substantial. In 2005, FDI accounted for 16% of all Armenian investment.

FDI in recent years went primarily into telecommunication (investors from Greece, Lebanon and Russia in 2005-2006), mining (mainly from France), air transport (Argentina), production and distribution of energy (France and much smaller part by Russian investors), extraction of metal ores (Canada), construction (Canada and Russia), production of food and beverages (France, Luxemburg, Lebanon), hotels and restaurants (Canada and the US) and other business services (the US and the Netherlands).

Table 8.2. FDI inflows to Armenia, by sectors, 2004-2006

NACE	Name	2004		2005		2006		
		foreign investment	of which: FDI	foreign investment	of which: FDI	foreign investment	of which: FDI	FDI in % of total
64	communication	75.1	43.2	132.1	56.1	15.1	61.9	25%
14	other mining and quarrying	39.6	39.6	97.5	97.5	48.1	48.1	19%
62	air transport	30.4	24.4	14.9	14.9	55.6	26.6	11%
40	production and distribution of energy	32.3	32.3	0.1	0.1	18.1	18.1	7%
13	extraction of metal ore	3.4	3.4	0.9	0.9	17.9	17.9	7%
45	construction	3.3	1.0	16.4	4.4	17.2	14.4	6%
15	food and beverages	38.7	34.7	26.4	26.4	16.9	11.4	5%
51	wholesale trade	5.9	4.4	4.0	2.7	12.9	10.1	4%
55	hotels and restaurants	13.1	3.1	7.1	6.6	10.0	9.2	4%
74	other market services	2.5	2.1	3.4	2.8	10.8	8.4	3%
72	computer engineering	8.0	5.0	14.4	6.9	12.8	7.1	3%
65	financial intermediation	20.4	11.9	0.9	0.0	11.7	0.0	0%
27	Metallurgy	6.0	0.0	53.3	0.4	45.2	n/a	0%
	Other	26.9	21.6	29.0	24.8	151.8	17.5	7%
	Total	305.6	226.7	400.4	244.4	444.1	250.7	100%

Source: Ministry of Trade and Economic Development of the Republic of Armenia
Note: foreign investment here states for FDI + credit lines + some portfolio investment

On average, about one third of FDI in 1988-2006 came from Russia. However, the share of the capital of the Russian origin decreased recently. In 2006 Russian investors put capital into production and distribution of electricity, construction and provided loans to the metallurgical plants in Armenia. On the other hand, the role of French

Table 8.3. Countries of origins of foreign investors, 1988-2006

	% share in	
	foreign investment	FDI
Total	100%	100%
Russia	33.4%	32.6%
US	9.7%	9.1%
Greece	8.8%	5.0%
Germany	7.7%	10.9%
France	7.1%	7.9%
Canada	6.4%	8.5%
Lebanon	5.6%	1.2%
Argentina	4.7%	4.3%
UK	3.2%	3.8%
Cyprus	2.3%	3.2%

Source: Ministry of Economic Development of Georgia

capital increased and in 2006 around 1/3 of FDI came from France (into extraction of minerals, food processing, production and distribution of electricity, distribution of water). Other important sources of FDI were: Germany (11% in 1988-2006 on average), the US (9% in 1988-206), Canada (8% in 1988-2006), Greece (5% in 1988-2006), Argentina, UK, Cyprus (probably offshore Russian/Armenian capital; not any more in the statistics in 2006).

About 25% of FDI coming to Armenia during 1998-2004 can be attributed to diaspora-connected investments (Hergnyan, Makayan 2006). These investments are rather small and predominantly motivated by the ethnic or patriotic feelings rather than by the real business interests. Only about 40% of the diaspora-connected investors interviewed in 2006 declared that business interest was a key motivational factor affecting their investment decision. On the contrary, ethnic identity was important for nearly 90% of them (Hergnyan, Makaryan 2006). For this reason, these are not investment that would be very strong in terms of boosting productivity. However, it is claimed that their existence created possibility for big business-motivated multinationals to enter Armenian market at a later stage (Hergnyan, Makaryan 2006). Diaspora-related FDI went mainly to ICT, gems and jewellery, tourism, agribusiness/food processing, and construction. One third of diaspora-connected investors come from Russia, USA and Iran. The rest mainly from France, Syria and Lebanon (Hergnyan, Makayan 2006).

8.1. Motives driving foreign investment

The reasons driving foreign direct investors into Armenia may be of various types. One can broadly classify them into those that seek markets, resources, and/or efficiency

(Dunning, 1993). In the case of still high barriers to external trade, foreign investors are usually market-driven, aiming at overcoming high protection. However, it is possible that along with economic expansion of host economies and a fall of barriers to trade, investors may be willing to make use of existing resources (like cheap labour) or even seek efficiency outsourcing part of production there.

Market-seeking FDI

This is the motive that has been probably predominant in Armenia. Armenian tariff rates, although not extremely high[40] and levied on selected products, are nevertheless a cost for importers. Transport costs and closed borders with some of the neighbours make the costs of trading (see Appendix5 Table 4) across borders even higher. The additional burden probably originates as a result of excessive bureaucracy: an Armenian exporter or an importer needed in 2007 27 days on average to satisfy procedures connected with external trade (data from WB Costs of Doing Business 2007). The comparable indicator for the OECD countries is 10 days. A recent study by Djankov et al (2007) estimated that each additional day that deliveries are delayed to the border on average reduces aggregate trade by more than one percent.

The current structure of foreign investment confirms strongly this reasoning. The vast majority of FDI is domestically-oriented and goes into sectors like: telecommunication, air transport, distribution of energy, construction, partly production of food and beverages, hotels and restaurants and so on. These are also the sectors that are highly protected; either by home or foreign regulations or by the nature of an investment (tourism). Only Deep FTA (including implementation of some of the provisions of the EU-Armenia Action Plan, such as those related to alignment of regulations and practice on technical and sanitary and phyto-sanitary norms, functioning of customs, harmonisation of regulations concerning some service sectors, competition policy including state aid and public procurement) can alter the outlook here.[41]

For the manufacturing sector the barriers to trade are mainly due to the costs of transport and the oligarchic control of imports (see material on this elsewhere in this report). This should have created enough motivation to establish production facilities in Armenia. However, so far it has happened in few export-oriented and resource-rich industries only (drinks and beverages, gems and jewellery, metallurgy). A Simple EU-

[40] Either 0% or 10%, see earlier text on trade regime of Armenia.

[41] See also parts 9.3 and 9.4 for the description of the deep free trade scenario and how the effect that originates in harmonisation works through prices of goods and services.

Armenia FTA alone would most likely not change the outlook for market-motivated foreign investors. However, a Deep FTA+ building on the provisions of the EU-Armenia Action Plan can help in improving the general business environment in Armenia, thus impacting incentives to capture domestic market and at the same time to reduce the costs of imported goods.

Resource-seeking FDI

About a quarter of FDI in 2006 went into Armenian mineral resources (mining and extraction of metal ores). This is to say that significant part of FDI follows the natural resource endowment.

Foreign investment in Armenia at present does not seem to be significantly motivated by the cheap labour force. While labour in Armenia is indeed cheap, its productivity is relatively low (see IMF 2007a: 8). The situation is due to low skills. There are chances that skills have been improving; yet there is still a lot to be done (see UNDP 2007). Only the Deep FTA+ building on the provisions from the EU-Armenia Action Plan can create possibilities for the efficient use of Armenian labour, once its price to productivity ratio is favourable and barriers for doing business lower.

Efficiency-seeking FDI

There is very little scope for just-in-time deliveries and effectively integrated production processes with those located elsewhere. Transport costs are high and will stay high for significant part of time. Existing infrastructure cannot be considered as good, and years if not decades are needed to improve it. The unresolved Nagorno Karabakh conflict makes investors cautious about expanding businesses in Armenia. On the top of it, Armenian borders with Azerbaijan and Turkey are closed. Cargo can go either through Georgia or through Iran, but this increases transport costs further.

Therefore, it is hardly plausible that Armenia will soon transform itself into a location capable of exploiting economies of scale and scope. A precondition would be to open at least the border with Turkey (closed since 1993), and so profit from the access to the Turkish Black Sea ports and the exchange of goods with Eastern Anatolia. This would create possibilities for the expansion of foreign businesses. The opening of borders is conditioned upon sufficient political will on both sides, and it is not linked (at least not directly) to the EU-Armenia FTA, even to the Deep FTA+.

8.2. Black Sea regional integration and future FDI flows

Armenia's limited attractiveness for FDI might be enhanced if there were greater integration within the Black Sea region, as actually happened in the early years of CEFTA. Of course there are at present serious political obstacles to such a scenario for Armenia, given the blockage of the land frontiers with Azerbaijan and Turkey. However, once these are somehow overcome, the integration might perhaps bring results in terms of FDI. We look first at the experience of CEFTA in boosting FDI.

CEFTA experience

CEFTA – the Central European Free Trade Agreement – was signed in December 1992 and was designed to re-build economic integration between Poland, Hungary and Czechoslovakia (and later the Czech Republic and Slovakia) and to revive trade between these countries after they had collapsed with the dissolution of the Council for Mutual Economic Assistance (COMECON), an economic organisation made up of several communist countries.[42] The elimination of tariffs for industrial products and reduction of tariffs for agricultural goods in the first half of the 1990s within the CEFTA had no significant immediate impact on bilateral trade flows. In general, trade flows among the early CEFTA members started to grow intensively only in the 2000s, and the multilateral trade agreement was widely viewed as disappointing in terms of an immediate boost to trade.

However, the effects of the early years of CEFTA's functioning were not limited to trade in goods. The regional trade agreement brought other indirect gains as early as the 1990s. For example, it facilitated inflows of foreign direct investment (FDI) from developed economies (Dangerfield, 2004). These FDIs have had many positive effects in terms of increasing production and modernisation of technologies in the CEECs. In the case of smaller countries, like Hungary or the Czech Republic, FDI has been primarily export-oriented with foreign investors often targeting the regional CEE markets (but the EU was at the beginning the most important market). With a free trade area in place, producers have been able to serve all CEE markets from a single location (Damijan et al., 2006,) document the importance of structural reforms and FDIs that - combined with improved market access – are a major factor explaining the remarkable export performance of CEECs. Moreover, the existence of the CEFTA allowed for the development of vertical production chains, with plants located in different CEE

[42] Later on, Balkan states joined CEFTA, and from 2007 geographical coverage of CEFTA is mainly ex-Yugoslavia (except Slovenia) plus Albania and Moldova.

countries. The development of the automotive industry in the region is a good example. These investments were behind the boost in intra-CEE trade in the 2000s.

Feasibility of boosting FDI flows in Armenia

What lessons can be drawn from the experience of CEFTA? First of all, one should not have overly optimistic expectations. It is possible that even if FDI inflows continue to increase year by year, their result on boosting export from the region can be seen with a lag. A lowering of trade barriers among relatively poor partners may result in little immediate gains (no chances for modern intra-industry trade). However, once this is coupled with the overall opening of an economy and domestic reforms building conditions for sustained economic growth, medium-term welfare gains can be substantial. There is clearly a case here for Deep EU-Armenia FTA, including or building on some of the provisions of the EU-Armenia Action Plan.

A Deep FTA is expected to lower some of the non-tariff barriers. For example those related to technical standards and sanitary and phytosanitary measures.[43] Additional gain could be achieved if the origin of goods exported either to the EU or to Turkey or to the countries covered by the European Neighbourhood Policy could be "cumulated". That is, if material from let's say Georgia used to produce an Armenian good could be treated as of Pan-European origin while exporting either to the EU or to the ENP/Black Sea countries. This is to say that inclusion of non-Paneuromed ENP countries in the Paneuromediterranean system of cumulation of origin would create additional incentive to consider Armenia (or any Southern Caucasus location) as a host country for the development of business activities.

The signing an FTA with Iran (expected soon) will also enhance the possibility to boost investment and trade in the region. Armenia-Iran FTA will be of the "simple" kind. It will phase out tariffs for the majority of goods. On the Armenian side, tariffs will remain for certain goods that are subsidised in Iran.

Investment in transport infrastructure and opening of borders with Turkey and Azerbaijan are crucial for boosting FDI flows into Armenia. In this view, the first step does not have to be large modernisation of the railway that links Azerbaijan, Armenia and Turkey (Kars-Yerevan-Baku), but rather its re-opening. Simultaneously, all productive initiatives with TRACECA should indirectly support investment flows into Armenia. On the contrary, building new Transcaucasian railway (Kars-Tbilisi-Baku) that bypasses Armenia will rather diminish possibilities to attract FDI into Armenian manufacturing.

[43] That will be also in line with the provisions on sanitary and phyto-sanitary issues of EU-Armenia Action Plan.

Another important issue is related to the fact that the original CEFTA agreement provided for only a partial liberalisation of the agricultural trade. Agricultural production had a large share of the partner countries' GDPs at the end of the 1980s and it therefore appears that CEFTA could have played a much more important role if agricultural markets had been more substantially liberalised at an early stage and not only in 2004, when the four initial signatories of the CEFTA joined the EU. Therefore, the regional integration of the Southern Caucasus countries can be more beneficial (also in terms of FDI) if agricultural markets were not protected.

8.3. Perspectives for spillovers from FDI in Armenia

It is widely known that FDI can lead to positive spillover effects on other domestic firms and/or industries. These spillovers can be of the following types:

- the cooperation with local domestically-owned firms (primarily by buying local supplies), or due to
- higher competition (thus forcing local firms to invest more and be more productive) or due to
- the flow of efficient managers from foreign to domestic firms.

There is evidence that these types of spillovers have been at work in the new EU Member States in the 1990s and influenced productivity. The most relevant examples may be those of Romania and of Lithuania (see Javorcik and Spartaneu 2006, Altomonte and Pennings 2006, Smazynska-Javorcik 2004).

Looking at the sectoral distribution of FDI, one can think of services as of almost the only sector that may generate spillovers in Armenia. This is for the reason that for the spillovers to take place, there must be established foreign presence. Also, personnel have to learn some universal on the job skills, in order to be able to use them elsewhere. On the top of it, use of ICT equipment is correlated with higher productivity, and highly productive sectors are more likely to generate technological spillovers. This is to say that we expect business activities that use intensively ICT to generate spillovers to other sectors of the economy. For these reasons, the spillovers are most likely to originate in communication, perhaps hotels and/or financial intermediation. Indeed, there are signs of improvement of skills of the workers employed in the financial intermediation. Unit labour costs in financial services have been rising over the next years (IMF 2007a: 8), which probably means improvement of human capital. There seem to be potential for outflow of those skilled to other services or to other financial firms.

There are signs that human capital in Armenia has improved over the years. Number of students in higher education institutes (both subsidised by the state and private) has been steadily increasing. For example, in the academic year 2000/01 47 thousands students enrolled at universities. This number was higher every year, to reach 74 thousands in 2005/06. Budget for vocational education is on the rise (UNDP, 2007). High degree of mismatch between the needs of the labour market is still a problem, yet the skills of the majority of young graduates that start working tend to match professional needs. If the overall progress continues and is coupled with the rise in the quality of education, it will increase capacities for absorbing technological and managerial knowledge by Armenian workers. And thus increase possibilities for spillovers.

Having listed factors creating possibilities for the absorption of skills and knowledge from foreign firms, one needs to look also at the constraints. First of all, presence of foreign firms in Armenia is still very low. Still low FDI inflows mean low overall potential for spillovers. According to experts in Armenia, the prospective industries for foreign investment in the next few years belong either to the non-tradable or to low-processed good sectors (mining, metallurgy, energy, banking and insurance, and food processing), and only the Armenian Development Agency (responsible for attracting investment) assesses higher chances of developing soon capacities in middle-tech manufacturing industries.

Secondly, spillovers at the moment are likely to be absorbed also by the non-tradable sector only, because this seems to be the main area of business activity in the country.[44] Therefore, there is little hope at the moment that currently incoming FDI will create additional boost to Armenian export through the spillover effects, of the kind that have operated in the current new EU Member States.

An FTA with the EU would help in this regard, through additional impulse to trade and through lowering of trade barriers. Even a Simple FTA can probably have a positive impact in creating conditions for the emergence of spillovers in manufacturing. However, the possibility for spillover effects increases greatly only with the Deep FTA+ and with the regional integration. For the moment, only non-tradable sector seems to develop quickly.

[44] Industry accounted for only 15% of Armenian GDP in 2006. Agriculture – for 18% of GDP, and services for over 60%.

8.4. Potential FDI in Armenia

An impact of a free trade agreement on the level of inward foreign direct investment is a relatively researched area. Still, the research has mainly been conducted in the Northern American (NAFTA) and European (EU) contexts. This research show that inward direct investment into a country increases following an FTA, as outsider MNCs (multinational companies) take advantage of the increased market size of the area (Globerman and Shapiro 1999, Buckley et al. 2001). Also, liberalization of internal tariff regimes causes upstream FDI (i.e. production facilities) to shift to locations with lower cost of production, hence, it also has a positive effect on FDI in countries with lower effective production cost in the region (Buckley et al. 2001, Dunning 1997, Eden 2002). Another reason for an increase in FDI following an FTA is related to the fact that MNCs are likely to divert production from more efficient, non-member countries to less efficient fellow regional integration agreement member countries to take advantage of the lowered trade barriers following integration (Rugman and Gestrin, 1993; Globerman and Shapiro, 1999).

The research of FDI determinants in the CIS/EEC context had rarely considered a direct impact of an FTA on the inward foreign direct investment in the area. In this analysis we are following an approach employed by the only econometric study we were able to locate (conducted by CEPS, i.e. Brenton and Manchin (2002)) which analysed an impact of the EU FTA with Russia through the use of the Economic Freedom Index. The authors argue that "an FTA will enable Russia to 'lock-in' economic reforms and achieve a higher degree of liberalisation than would otherwise be possible". They further estimate a model of FDI which provides an estimate of the impact of this enhancement of reform (measured by the Economic Freedom Index) on FDI inflows into Russia from the main European investing nations. The effect is considered to be similar to the one a Deep FTA+ would have had. We will employ a similar approach in this study to estimate a potential impact of a Deep FTA+ between the EU and Armenia on FDI flows into Armenia.

Within the EU context, the prospect of EU-Armenia Deep FTA+ might be viewed by potential investors as reducing country risk; both because it serves as an external validation of progress in the transition 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-Armenia Deep FTA+ via the impact of a transition progress index (produced by the EBRD). We choose the EBRD index as it is the only index of the kind which offers systematic coverage of Armenia and Georgia.

We expect the EU-Armenia Deep FTA+ to have a significant positive effect on FDI inflows into the country. Following a reduction in trade barriers, FDI flows are expected to take off due to the increased market size of the area (i.e. access to the EU markets). Also, liberalization of internal tariffs should open a door for FDI seeking lower cost of production. Moreover, overall improvement in the country's economic effectiveness following a Deep FTA+ should also contribute to Armenia's improved attractiveness as an FDI destination.

The forecasts are made on the basis of the gravity model (estimated for 10 Eastern European receiving countries and 31 OECD countries-donors). A detailed description of the model is presented in the Appendix 6. We model FDI inflows in the host country as a function of the countries' GDP and geographic distance, populations, labour cost, the host country's indebtedness, a degree of openness of its economy, WTO and EU memberships and host country's progress in transition. The dependent variable in our analysis is FDI inflows. Both FDI inflows and stocks have been successfully used as dependent variables in the earlier analysis of FDI determinants (Bevan and Estrin, 2002; Carstensen and Tourbal 2004, Janicki and Wunnawa 2004, and Kaditi, 2006). FDI per capita is not normally used as a dependent variable in this analysis, as there are no economic models which would explain this type of flows.

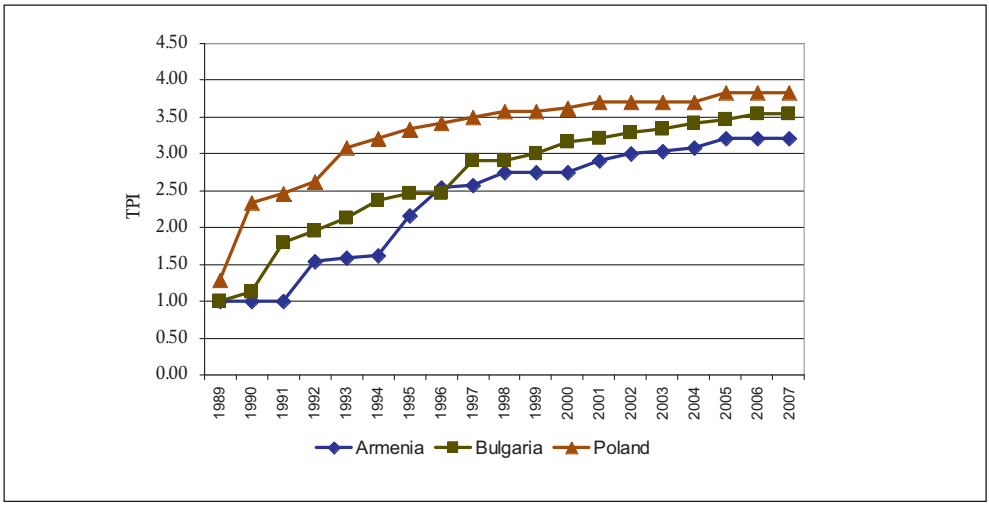
The key variable of interest in this model is the EBRD transition progress index, as this is the variable which we employ to make forecasts with respect to the FDI inflows. The index is based on the EBRD transition indicators which are available at the EBRD website.

The EBRD assesses progress in transition through a set of transition indicators. These have been used to track reform developments in all countries of its operations since the beginning of transition. Progress is measured against the standards of industrialised market economies, while recognising that there is neither a 'pure' market economy nor a unique end-point for transition.

The measurement scale for the indicators ranges from 1 to 4+ (4.33), where 1 represents little or no change from a rigid centrally planned economy and 4+ represents the standards of an industrialized market economy. The reform scores reflect the assessments of EBRD country economists, which are made in the following nine areas: large scale privatization, small scale privatization, governance and enterprise restructuring, price liberalization, trade and foreign exchange system, competition policy, banking reform and interest rate liberalization, securities markets and non-bank financial institutions, and infrastructure. For purposes of our research we use an average index of all of the above indicators apart from the infrastructure.Figure 8.1 presents the evolution of the TPI since 1989 (when it was first introduced) until 2007. At its introduction, the TPI for the majority of CEE countries

was equal to 1 with the exception of Hungary and Poland (which were assigned values of 1.33 and 1.29 in 1989 correspondingly). However, the progress in transition was different among the members of the Eastern block. Current new Member States (NMS) made a drastic leap in their transition to the market economy which was mirrored by the TPI, which surpassed the value of 3 for most of them in 1993. At the same time, ex-USSR republics were making much slower progress that was reflected by the TPI again - they started approaching values of 3 about a decade later, in 2003-2004. Currently, the majority of NMS are assigned values close to 4 on TPI, whereas Armenia (as well as other post-Soviet countries) scored only 3.21 in 2007. We also should notice that the overall pace of Armenian transition slowed down in recent decade when compared with that of the early 1990s. This is not highly surprising as more advanced reforms are typically more difficult to implement than the basic ones. Therefore we expect that it still will take a number of years for Armenia to approach the level of NMS in its transition efforts.

Figure 8.1. Transition Progress Index (TPI): Evolution



A gravity model which we describe in the **Appendix 6** offers the similar estimates to the earlier studies which analysed FDI in the context of transition/developing countries (Bevan and Estrin, 2002; Carstensen and Tourbal (2004). The gravity variables (distance, and GDP home/host countries) as well as population and the level of indebtedness were found to be statistically significant determinants of FDI into these economies, which is in line with the earlier research in the area (see for example, Bevan and Estrin, 2002; Carstensen and Tourbal 2004, Janicki and Wunnawa 2004,

and Kaditi, 2006). The key variable of interest – the transition progress index (TPI) - was also found to be statistically significant and having a positive impact on FDI inflows.

Our model shows that one percent increase in the value of TPI will result in 3.89 percent increase in the amount of FDI inflow into Armenia. The estimated coefficient is similar to the estimates in the prior studies (see for example, Brenton and Manchin's (2002) estimate of an impact of the Economic Freedom Index on FDI into the CEEC, and Bevan and Estrin's (2002) estimate of the impact of a country credit rating on FDI into the CEEC; both studies use gravity models similar to the one used in this analysis). Janicki and Wunnawa's (2004) estimate of an impact of country risk (Institutional Investor rating) and Carstensen and Tourbal's (2004) estimate of an impact of country risk on FDI in the CEEC yield somewhat higher coefficients, which is explained by a different scale on which country risk index is measured).

As we already mentioned, we estimate an impact of a Deep FTA+ with Armenia by estimating an impact a significant improvement in its transition progress will have on FDI. More specifically, we consider improvements that will bring the level of transition progress in Armenia close to the levels of advanced CEE countries. As a result, we estimate a change in FDI inflows to Armenia considering its transition progress index improves by 5%, 10% and 15%. Table 8.4 presents the values of TPI for a range of countries under consideration for the years 2000-2006. We can see that an increase by 10% in Armenia's TPI (from 3.21 to 3.54) brings the level of transition progress in Armenia to the level of Bulgaria in 2006, while the largest improvement in transition progress considered in this study (15%, TPI value 3.69) corresponds to Armenia's progress in transition almost reaching the level of Poland in 2003. Based on our earlier analysis, we deem that it will take a number of years for Armenia to achieve the level of transition progress which corresponds to the last scenario.

Table 8.4. Transition Progress Index, EBRD, 2000-2006

Country	2000	2003	2006
Armenia	2.75	3.04	3.21
Bulgaria	3.17	3.42	3.54
Czech Republic	3.67	3.75	3.87
Georgia	3	3	3.13
Hungary	3.87	3.87	4
Kazakhstan	2.87	2.96	3.04
Poland	3.62	3.71	3.83
Russia	2.67	3	3.08
Slovakia	3.5	3.67	3.83
Ukraine	2.67	2.87	3.04

Source: EBRD Transition Report

Using the estimated equation, we calculate the impact (a change) in the dependent variable (FDI flows) as a result of changes in our key independent variable – TPI index. As our model is estimated in logarithms, we then interpret the estimated coefficients as elasticities and estimate the percentage changes in the dependent variable (FDI flows). Taking the above mentioned three consecutive increases in the transition progress in Armenia we estimate that the amount of potential FDI inflows into the country will increase by 21%, 45% and 72% respectively (see Table 8.5). In absolute terms it means that annual FDI flows into Armenia will increase from USD 220 mn (2005) to USD 266mn, 319mn and 379mn corresponding to 5%, 10% and 15% improvement in its transition progress (which corresponds to different evaluations of an impact a Deep FTA+ might have). 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 8.5. Estimated changes to FDI flows to Armenia

TPI change	% increase in FDI flows to Armenia	Estimated FDI flows, USD mn
5%	21	266
10%	45	319
15%	72	379

Source: own calculations.

Furthermore, we have estimated an impact of the Deep FTA+ with the EU on FDI stock in Armenia until 2020. We are making an assumption of Armenia transition progress being gradual over the next 15 years (2005-2020) that corresponds to a gradual increase in FDI inflows starting from their current level (i.e. 2005, USD 220mn) to their estimated levels according to our 3 scenarios (Table 8.5), i.e. USD 266mn, 319mn and 379mn in the year 2020. We assume a linear annual increase in FDI flows. According to these assumptions, we estimate that FDI stock will increase from USD 1,225mn in 2005 to USD 4,917mn; 5,315mn and 5,797mn in 2020 or 401%, 434% and 473% increase of the current value according to our 3 scenarios (please see Table 8.6). This is a lower bound estimate of an increase in FDI stock due to the impact of EU-Armenia Deep FTA+ only (not considering changes in the GDP and related variables).

Table 8.6. Estimated changes to FDI stock, Armenia, 2020

TPI change	% increase in FDI stock in Armenia	Increase in FDI stock, USD mn
5%	401	4917
10%	434	5315
15%	473	5797

Source: own calculations.

8.5. Summary

FDI inflows into Armenia averaged around USD200 million annually in recent years. The role of foreign capital has gradually decreased along with the development of the economy, although still remained substantial. In 2005, FDI accounted for 16% of Armenian investment.

On average, about one third of FDI in 1998-2006 came from Russia. However, the share of the capital of the Russian origin decreased recently. On the other hand, the role of French capital increased and in 2006 around 1/3 of FDI came from France. Other important sources of FDI were: Germany, the US, Canada, Greece, Argentina, UK, and up to sometime Cyprus. About 25% of FDI coming to Armenia during 1998-2004 can be attributed to diaspora-connected investments. These investments are rather small and predominantly motivated by the ethnic or patriotic feelings rather than by the real business interests.

At the moment, foreign direct investors into Armenia seem to be primarily market-driven and go to highly protected service and food-producing sectors. Mineral resources (precious stones, metal ores) also attract smaller part of the FDI. Investors are not yet willing to use the relatively cheap Armenian labour and outsource part of production there. This, however, might be changed by implementing a Deep FTA+ . The full realization of the benefits of a Deep FTA+ would be only possible with achieving an opening of border crossing points with Turkey and Azerbaijan.

A possibility of boosting FDI into Armenia due to the regional Black Sea integration seem to be rather a longer-term prospect, and will have to follow a comprehensive set of bilateral FTAs with the EU by CIS states as well as a lifting of the present border blockages. A Simple EU-Armenia FTA would probably have no impact on FDI. The Deep FTA+ could have a positive impact. However, for maximum benefit even a Deep FTA+ would have to be accompanied by additional initiatives such as major improvement of regional infrastructure, introduction of diagonal cumulation of origins of goods, and deeper trade integration in the region (covering also agricultural goods).

There is a little chance for knowledge spillovers from FDI located in Armenia at the moment, of the type seen in the new EU member states, affecting productivity of manufacturing and construction industries. The possibility for spillover effects increases greatly only with the Deep FTA+ and with the regional integration.

The estimates of potential foreign investment suggest that a Deep free trade agreement with the EU is likely to have a substantial impact on FDI inflows into Armenia. If economic, institutional and political reforms are entrenched and enhanced (that will result in Armenia's moving in its transition towards the level of advanced

CEE countries), the country will enjoy a sizeable increase in FDI inflows. For example, if Armenia is to achieve the current level of transition of Bulgaria, its annual FDI inflows increase from USD 220 million (in 2005) to USD 319 million (additional increase can be motivated by growing Armenian GDP). A Deep FTA with the EU can become one of the vehicles/triggers for these reforms, however the country's own effort in the transition reforms remains paramount. Hence, a Deep FTA+ 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 Armenia.

9. CGE Model and Simulations

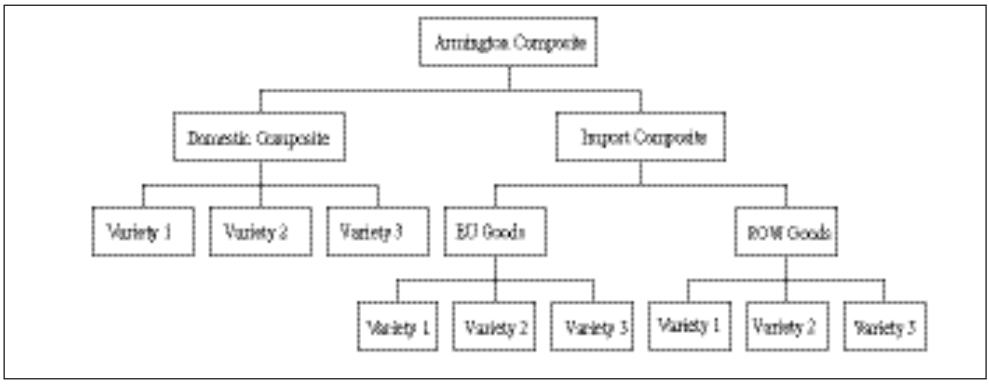
9.1. CGE Model

The model employed in this study is a standard static 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 across 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 9.1. 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.

A detailed description of the model equations, calibration and parameters employed is provided in the Appendix 7 CGE model equations. It is built on the basis of the MRT – Multiregional Trade Model – by Harrison, Rutherford and Tarr (HRT) implemented

Figure 9.1. Demand structure in the IRTS scenario – firm level product differentiation within an Armington aggregate



Source: HRT (1996a).

in their evaluation of the impact of the completion of the Single Market (HRT, 1996b), but has been modified in several ways to fit this analysis. Similar analysis has been recently applied in two feasibility studies for Russia and Ukraine prepared for the European Commission (Dabrowski, Emerson, Maliszewska Eds. (2007) and Ecorys and CASE-Ukraine (2007)) and earlier in the analysis of the Eastern EU Enlargement (Maliszewska, 2003a, 2003b) and Albanian Integration with the EU (Maliszewska and Kolesnichenko, 2004).

The data for Armenia along with the data for all other regions but Georgia is based on GTAP7 pre-release 3 data base. The GTAP database includes the national and regional input-output structures, bilateral trade flows, final demands pattern and government intervention benchmarked to 2004. A social accounting matrix (SAM) for Armenia for 2004 was based on Jasper Jensen's and David Tarr's submission to the GTAP (Global Trade Analysis Project) data base[45]. The same authors compiled also the SAM for Georgia, which has been imposed on the GTAP data using a code developed by Thomas Rutherford (www.mpsge.com/gtap6)[46]. The benchmark data includes Georgia, Armenia, Azerbaijan, Russia, Ukraine, and remaining CIS countries, EU27, Turkey and the Rest of the World (ROW). It includes 33 sectors out of which 11 are subject to increasing returns to scale (IRTS) in the imperfect competition scenarios[47].

[45] The submission by Jaspers Jensen and David Tarr was part of the ENEPO project coordinated by CASE and financed by the European Commission (FP6 STREP).

[46] The original SAM for Georgia was not introduced correctly into the pre-release GTAP data, which is still in the testing stage. The Armenian and Azeri data submitted along with the Georgian data used in the present study was introduced properly. Other adjustments have been made to the GTAP data to update tariff data to 2004 levels.

[47] These are food, beverages and tobacco; textiles and wearing apparel; leather; paper products, publishing; petroleum and coal products; chemical products, rubber, plastic; mineral products, metal and metal products; transport equipment; machinery and equipment; other manufacturing products.

We apply the CGE model to study the implications of the liberalisation in the EU-Armenia bilateral trade that took place between 2004 and 2006 (baseline scenario), Simple and Deep FTAs. Before studying the implications of various versions of an FTA we need to study the effects of trade liberalisation on the Armenian and EU's side respectively (in particular Armenia's unilateral lowering of import tariffs and EU's granting Armenia tariff preferences under the general arrangement of its new GSP) that took place over 2004-2006 period. The changes due to tariff and other trade related policies are already taking place and will need between 5-10 years to take their full impact on the Armenian economy. Without modelling of these policy changes we would be wrongly attributing their impact to the implications of FTAs. The **Simple FTA** scenario involves scrapping the tariffs in the EU27-Armenia trade with the exception of agricultural products where tariffs are only halved. Recent experience of the EU's FTAs with Mediterranean countries indicates that agriculture may not be completely liberalized. Here we take a simplifying assumption of a 50% average tariff cut on agricultural and food products. The level of aggregation of the model does not allow for a more detailed dissaggregation of agricultural and food sectors. However, we run also separate simulations with full liberalization of all tariff lines – **Simple FTA BIS**. Furthering the level of integration via a **Deep FTA** would involve a significant elimination of barriers to trade and investment throughout various sectors of the economy. This would also result in a more extensive commitment to the reform of domestic policies in the direction of EU standards in Armenia. Finally, the comprehensive set of reforms resulting from the Deep FTA along with more wide-ranging flanking measures e.g. on competition and corruption could lead to a re-branding of Armenia as a favourable investment location. This is our scenario **Deep FTA+** where we assume that Armenia would achieve a notable reduction in the perceived risk premium on investment, reflecting a sustained re-branding of Armenia as a favorable and safe place to invest.

9.2. Tariffs

Section 4.3 above describes in great detail Armenian trade policy. Here we only present the tariffs according to the model classification. As a member of the CIS free trade area Armenia enjoys duty free access to the CIS markets. Hence Table 9.1 below provides tariffs only in trade with the EU27, Turkey and the ROW. The 2004 data on tariffs originates from GTAP and is consistent with the country submission to WITS. The 2006 tariff data has been provided by the Armenian authorities. The tariffs applied in this study are trade weighted based on the 6-digit HS imports/exports data from the

Table 9.1. Armenian tariffs on imports from the EU27, Turkey and the Rest of the World (ROW) according to the CGE model classification (in %)

	EU27			Turkey		ROW	
	2004	2006	Simple FTA	2004	2006	2004	2006
Grains, fruits, vegetables, crops nec	4.8	3.1	1.5	9.5	7.3	3.9	3.0
Livestock	0.9	0.2	0.1	16.1	16.1	2.5	2.5
Forestry	2.9	2.9	1.5	10.8	10.8	0.3	0.3
Fishing	0.3	0.3	0.2	0.0	0.0	1.1	1.1
Coal	0	0.0	0.0	0.0	0.0	0	0.0
Gas	0	0.0	0.0	0.0	0.0	0	
Mining and quarrying	0	0.0	0.0	0.1	0.1	0	0.0
Food products, beverages and tobacco	9.1	7.63	3.8	8.3	5.3	9	6.5
Textiles and textile goods	8.4	7.1	0.0	6.4	6.4	5.2	5.2
Leather products	9.7	9.7	0.0	6.0	6.8	5.6	5.6
Wood products	4.9	4.3	0.0	3.1	5.2	2.7	2.7
Paper products, publishing	12.9	1.5	0.0	11.4	0.8	11.1	2.8
Petroleum, coal products	12.8	0.0	0.0	12.9	5.1	11.8	0.0
Chemical, rubber, plastic products	0.3	0.3	0.0	0.2	0.2	0.2	0.2
Mineral products nec	6.9	6.9	0.0	5.9	5.9	5.7	5.7
Metals and metal products	0.1	0.0	0.0	0.2	0.1	0.3	0.1
Transport equipment	6.6	6.6	0.0	7.1	7.1	5.1	5.1
Machinery and electronic equipment	0.8	0.8	0.0	0.9	0.9	1.8	1.8
Manufactures nec	2.7	2.7	0.0	6.5	6.5	6.3	6.3

Source: GTAP, WITS and own calculations.

UN Comtrade data base. Similarly to take into account the impact of the granting of the GSP status, EU27 import tariffs on exports from Armenia have been reduced accordingly in 2006.

9.3. Non-tariff barriers

One of the studies ordered by the European Commission before completion of the Single Market looked at the perception of European Community 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 will also likely bring major benefits to Armenia especially if it gains improved access to the Single Market thanks to the creation of a Deep FTA covering NTBs. In modelling 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 technical regulations. In addition we also study the impact of a reduction of barriers to foreign providers of services.

9.3.1. 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 Armenia exported to the EU and vice versa are stopped at the EU border for customs clearance. In the CGE exercise border costs are modelled as additional purchases of a domestic transportation good, which includes shipping, handling and warehousing for customs purchases.

As discussed in chapter 5.2 the custom procedures are riddled with rent-seeking and corruption and arbitrary tariff application is a common practise. Import and export procedures are widely regarded by businessmen as one of the most corrupt area of public administration. The survey conducted in Armenia in the late 2007 (chapter 6) also indicates that the costs of exporting are very high. In selected sectors the cost was as high as 60% of the value of exports (see Table 9.2). However the low number of positive observations by sector does not allow us to make the assumptions about border costs at the sectoral level[48]. However, we use them as guidance in formulating the assumptions about the level of border costs in 2006.

The survey results do not allow us to analyse border costs over time. Hence we refer to the "Cost of Doing Business" World Bank report (see Table 9.3). These data show an important improvement in the import and export procedures over 2004-2006 period. In 2004 the cost to export and import was about 50% higher in Armenia than in Ukraine. Ukrainian border costs are approximated by the costs of customs clearance faced by the Ukrainian exporters to the EU in 2006 (Jakubiak et al 2006). These costs

[48] Since it is not possible to distinguish zero responses from the lack of response, the above results might be biased downwards.

Table 9.2. The share of customs-related costs when exporting to the EU in total exports to the EU by NACE sectors

	Average	Minimum	Maximum	Standard Deviation	Number of non-zero responses	Zero responses
Agriculture, hunting, and related service activities	17%	0	17.20%	2.30%	1	55
Fishing, aquaculture, and service activities incidental to fishing	0%	0	0.03%	0.00%	1	54
Mining of Metal Ores	NA	0	0.00%	0.00%	0	56
Other mining and quarrying	2%	0	1.69%	0.23%	1	55
manufacture of food products and beverages	13%	0	86.42%	13.50%	13	39
manufacture of tobacco products	3%	0	3.75%	0.53%	2	53
Manufacture of textiles	19%	0	26.79%	3.84%	2	54
Manufacture of wearing apparel; dressing and dyeing of fur	21%	0	50.00%	7.54%	4	51
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0%	0	0.00%	0.00%	1	54
Manufacture of chemicals and chemical products	1%	0	1.69%	0.25%	2	48
Manufacture of rubber and plastics products	NA	0	0.00%	0.00%	0	56
metallic mineral products	60%	0	181.25%	24.22%	3	52
Manufacture of basic metals	6%	0	11.90%	1.59%	2	54
Manufacture of fabricated metal products, except machinery and equipment	1%	0	0.59%	0.08%	1	55
Manufacture of electrical machinery and apparatus n.e.c.	0%	0	0.00%	0.00%	1	55
Manufacture of radio, television and communication equipment and apparatus	NA	0	0.00%	0.00%	0	56
Manufacture of medical, precision and optical instruments, watches and clocks	0%	0	0.06%	0.01%	2	54
Manufacture of furniture; manufacturing n.e.c.	2%	0	3.08%	0.61%	5	51
Average for all sectors	10.4%	0.0%	181.3%	27.3%		

Source: see chapter 6 for more details.

amounted on average to 7% of the value of exports. This indicates that the border costs in Armenia were about 10.5% in 2006, which is consistent with an average for all sectors from the survey. In 2004 these costs were about 20% higher (see cost to import and export in Table 9.3).

The Simple FTA is assumed to reduce those costs by a further 5%. The argument behind this rather modest reduction is that a Simple FTA will not by itself imply that

Table 9.3. Border costs in Armenia and Ukraine in 2004 and 2006.

	Armenia		Armenia/Ukraine		Ukraine	
	2004	2006	2004	2004	2006	2004
Documents for export (number)	7	7	1.17	1.17	6	6
Time for export (days)	34	30	1.10	0.97	31	31
Cost to export (US$ per container)*	1600	1165	1.53	1.11	1045	1045
Documents for import (number)	6	8	0.60	0.80	10	10
Time for import (days)	37	24	0.95	0.62	39	39
Cost to import (US$ per container)*	1750	1335	1.64	1.25	1065	1065

Source: WB Costs of Doing Business report 2006 and 2008.

Note: The reports for 2006 and 2008 cover data for Jan 2005 and Jan 2007 used to represent here the status quo in 2004 and 2006.

* Cost measures the fees levied on a 20-foot container in U.S. dollars. All the fees associated with completing the procedures to export or import the goods are included, such as costs for documents, administrative fees for customs clearance and technical control, terminal handling charges and inland transport. The cost measure does not include tariffs or trade taxes.

customs procedures and operations will be reformed and improved. However, the elimination of some tariff lines will leave less scope for corrupt activities at the border. In a Deep FTA these costs are assumed to be reduced by 50%, which is assumed to reflect a long-term improvement in customs and transit procedures.

9.3.2. Standards costs

The European Community 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.

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 modeled 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.

In the survey mentioned above, CASE and CASE-UA investigated 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 regulations and the duplication of efforts related to compliance with both national and the EU standards (existing for the majority of surveyed firms).

As discussed in chapter 5.1, progress with the adoption of EU legislation regarding technical barriers has been very slow. In the survey conducted as part of this study we were able to obtain very little information regarding the costs of meeting the EU product characteristics requirements, the costs of packaging, labelling and marketing requirements, product testing and meeting any other technical requirements. The reasons were twofold: the companies were either producing much unsophisticated products not covered by technical regulations or in the majority of cases the importing EU company made sure that all necessary tests have been concluded and the technical requirements have been met. This suggests that the costs of compliance with technical requirements are very high if the vast majority of domestic firms do not even get involved in this process. This is supported by the information gathered during our visit to Armenia as discussed in chapter 5.1. There are no conformity assessment centres established in Armenia that could issue certificates of compliance recognized by the EU. This imposes significant costs on firms willing to export to the EU, which must pay for the services of accreditation centres based in the EU or in other countries.

Given that we were not able to obtain standards costs for Armenia we are relying on Ukrainian estimates. However, due to reasons discussed above we assume that in 2004 these costs were 50% higher in Armenia than they were in Ukraine. Costs of meeting EU standards for Armenian producers are given in Table 9.4. In many of those sectors Armenia does not have any exports to the EU. There might be several reasons for this e.g. Armenia may not be producing particular products, the quality of domestic production is insufficient or simply the barriers to exports are too high. However, in all those cases the assumptions on NTBs need to be established; hence the reliance on the Ukrainian data.

The reasons why we expect the costs of compliance with technical regulations to decrease following a Deep FTA is greater availability of conformity assessment centres in Armenia, which would result in lower costs of testing and compliance, better availability of information and greater cooperation between the EU and Armenian firms that comes with increased integration. Hence we make a rough assumption that the standards costs decrease by 50% in a Deep FTA. The experience of the new EU members and EU firms following the formation of the Single Market indicates that these costs have indeed gone down.

Table 9.4. Costs of compliance with the EU technical barriers in 2004 as a share of exports to the EU (in %)

	2004	2006	Simple FTA	Deep FTA
Grains, fruits, vegetables, crops nec	21.0	21.0	21.0	10.5
Livestock	21.0	21.0	21.0	10.5
Forestry	10.5	10.5	10.5	5.3
Fishing	10.5	10.5	10.5	5.3
Coal	0.0	0.0	0.0	0.0
Oil	0.0	0.0	0.0	0.0
Gas	0.0	0.0	0.0	0.0
Mining and quarrying	0.0	0.0	0.0	0.0
Food products, beverages and tobacco	15.6	15.6	15.6	7.8
Textiles and textile goods	34.4	34.4	34.4	17.2
Leather products	8.0	8.0	8.0	4.0
Wood products	31.4	31.4	31.4	15.7
Paper products, publishing	22.5	22.5	22.5	11.3
Petroleum, coal products	15.0	15.0	15.0	7.5
Chemical, rubber, plastic products	8.3	8.3	8.3	4.1
Mineral products nec	44.0	44.0	44.0	22.0
Metals and metal products	9.6	9.6	9.6	4.8
Transport equipment	18.5	18.5	18.5	9.2
Machinery and electronic equipment	15.0	15.0	15.0	7.5
Manufactures nec	23.0	23.0	23.0	11.5

Source: own calculations and assumptions based on survey described in Jakubiak et al (2006)
Note: * - simple average

Our assumptions so far applied to Armenian exports to the EU. We do not know of similar estimates for the other export destinations for the Armenian products and in any case the impact of an Armenia-EU FTA on the costs of complying with regulations of other importing partners is not clear. Hence in the simulations we assume that these costs apply only to exports to the EU. Any harmonization of legislation with the EU, wider availability of conformity assessment centres and with that lower prices of certification that would follow a Deep EU-Armenia FTA would lead to a reduction of these costs for Armenian exporters to the EU. On the other hand, for Armenian firms which have been producing only for domestic market, the introduction of EU regulations to be compulsory on the domestic market as well may impose additional investment. A certain part of this investment will be undertaken in the normal course of replacing existing equipment over the coming years. However, in some cases the costs of compliance may be significant. Nevertheless even those firms are likely to benefit from the ability to export to the enlarged EU and wider availability of the assessment centres. Overall, it seems likely that all firms will experience some reduction in standards costs.

[58] This section is based on the information gathered by Svetlana Taran.

9.3.3. Barriers to trade in services[49]

We have not conducted any survey on the barriers to trade in services for the purpose of this study. To the best of our knowledge, such estimates exist only for Russia and Ukraine within the CIS countries. Given that Ukraine is also a member of the WTO and embarking on a process of negotiations of an enhanced FTA with the EU, we decided to adjust the Ukrainian values to make assumptions for Armenia. We base our estimates on the barriers to foreign direct investment in services estimated by IERPC (2007). The authors estimate tariff equivalents of barriers that discriminate against foreign providers of telecommunication, transport and financial services and we use simple averages of the values for sub-sectors as estimated by the IERPC (2007). The authors used the assessments of the regulatory environment in Ukraine through the implementation of business surveys and other information sources and converting these into an index of restrictiveness in telecommunication, financial sector and transport sectors. Then these indexes were converted into ad valorem equivalents of the existing restrictions. It should be noted that distinctions were made between barriers faced by specifically foreign investors vs. restrictions incurred by both foreign providers along with domestic firms (through the separate calculations of foreign discriminatory restrictiveness index (applicable only to foreign suppliers) and overall foreign restrictiveness index (applicable to both foreign and domestic producers). In order to adjust Ukrainian values for Armenia we look at the Heritage Foundation indices of investment and financial freedom as presented in Table 9.5. The indices of investment and financial freedom indicate a much more investor-friendly environment in Armenia than in Ukraine. Still, it should be noted that these indices capture the wider definition of investment and financial freedom including regulatory formal restrictions, as well as corruption, contract enforcement, implementation of laws etc., than mere restrictiveness of regulatory environment affecting investment in service sectors.

Table 9.5. Index of economic freedom, 2008

	Rank	Global economic freedom	Investment freedom	Financial freedom
Ukraine	133	51.1%	30%	50%
Armenia	28	70.3%	70%	70%
Georgia	32	69.2%	70%	60%

Source: The Heritage Foundation, http://www.heritage.org/research/features/index/countries.cfm
Note: Distribution of Global Economic Freedom: 80-100 – free; 70-79.9 – mostly free; 60-69.9 – moderately free; 50-59.9 – mostly unfree; 0-49.9 – repressed.

[49] This section is based on the information gathered by Svetlana Taran.

Table 9.6. Summary of modelling assumptions

	Benchmark 2004	Initial liberalization 2006	Simple FTA	Deep FTA
Tariffs	Initial levels as described above	2006 tariffs	Zero tariffs in trade between Armenia and the EU on industrial products, 50% off tariffs on agricultural and food products	Zero tariffs in trade between Armenia and the EU on industrial products, 50% off tariffs on agricultural and food products
Order costs		20% off 2004 level	25% off 2004 level	50% off 2004 level
Standards costs		2004 level	2004 level	50% off 2004 level
Barriers to trade in services		2004 level	2004 level	50% off 2004 level

Based on our own perception of barriers to FDI in service sectors based on interviews in Yerevan and the fact that the Heritage Foundation qualitative remarks stress the corruption problem in Armenia, we assume that the barriers to foreign provision of services are 25% lower in Armenia than in Ukraine. 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 regions. Hence we assume that in order to provide financial services (banking, insurance) in Armenia foreign companies face costs higher by 18 % than local provides. The additional costs in transport sector amount to 12% and in communications to 4.5%. In simulations we assume that all foreign providers of services will face an improved access to the Armenian market following a Deep EU-Armenia FTA. Even though access to services sectors in Armenia has been liberalized, relatively low penetration of the local market by foreign providers indicates that significant barriers still remain. We assume that in a Deep FTA those barriers would be halved. The above discussion of modelling assumptions has been summarized in the **Table 9.6**.

9.4. Implications of the 2006 scenario, Simple FTAs and Deep FTAs

In each simulation we can calculate the impact of a given trade policy change assuming constant returns to scale in all sectors, increasing returns to scale in selected sectors, as well as the short run impact (no change in capital stock) and the long run impact (allowing for the adjustment of capital stock in response to a change in return to capital). The calculation of steady state growth effects 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 Armenia 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 born 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 "learning by doing" effects.

Below we display major results of the CGE simulations. Apart from welfare changes (equivalent variation as a share of GDP), we also present changes in wages of skilled

Table 9.7. Welfare, and factor returns results of the CGE simulations

	2006	Simple FTA	Simple FTA BIS	Deep FTA	DEEP FTA+
	(1)	(2)	(3)	(4)	(5)
Welfare (% change)					
Russia	0	0	-0.001	0	0.002
Ukraine	0	-0.002	-0.004	0.005	0.006
Armenia	**0.381**	**0.559**	**0.456**	**3.756**	**8.333**
Azerbaijan	-0.009	-0.009	-0.008	0.008	0.018
Georgia	0.031	0.027	0.013	0.171	0.217
Turkey	0	0	0	-0.003	-0.004
EU27	0	0.001	0.001	0.001	0
CIS	-0.001	0	-0.001	0.001	0.001
ROW	0	0	0	-0.001	-0.002
GDP (% change)					
Russia	0.058	0.058	0.058	0.059	0.060
Ukraine	0.174	0.172	0.171	0.179	0.180
Armenia	**0.403**	**0.580**	**0.479**	**3.755**	**8.342**
Azerbaijan	0.015	0.015	0.015	0.037	0.045
Georgia	0.115	0.115	0.092	0.252	0.298
Turkey	0.093	0.093	0.092	0.089	0.088
EU27	0.030	0.031	0.031	0.030	0.029
CIS	0.000	0.000	0.000	0.001	0.001
ROW	0.013	0.013	0.013	0.012	0.011

Source: own calculations.

Table 9.7. cd

	2006	Simple FTA	Simple FTA BIS	Deep FTA	DEEP FTA+
	(1)	(2)	(3)	(4)	(5)
Wages of unskilled workers (% change)					
Russia	0.000	-0.001	-0.001	0.000	0.000
Ukraine	0.000	-0.002	-0.004	0.005	0.006
Armenia	**0.450**	**0.897**	**0.825**	**4.405**	**8.446**
Azerbaijan	-0.011	-0.011	-0.011	0.046	0.061
Georgia	0.032	0.028	0.012	0.183	0.238
Turkey	0.000	0.000	0.000	-0.002	-0.003
EU27	0.000	0.001	0.001	0.001	0.000
CIS	0.000	0.000	0.000	0.001	0.001
ROW	0.000	0.000	0.000	-0.001	-0.001
Wages of skilled workers (% change)					
Russia	0.000	0.000	0.000	0.000	0.000
Ukraine	0.000	0.000	-0.001	0.003	0.004
Armenia	**0.357**	**0.762**	**0.743**	**2.922**	**6.483**
Azerbaijan	-0.017	-0.017	-0.016	0.064	0.078
Georgia	0.025	0.023	0.016	0.071	0.096
Turkey	0.000	0.000	0.000	-0.002	-0.003
EU27	0.000	0.001	0.001	0.000	0.000
CIS	0.000	0.000	0.000	0.000	0.001
ROW	0.000	0.000	0.000	-0.001	-0.001
Total exports (% change)					
Russia	0	-0.001	-0.002	-0.003	-0.001
Ukraine	0	-0.002	-0.006	0.004	0.007
Armenia	**2.926**	**6.13**	**7.361**	**21.807**	**30.217**
Azerbaijan	-0.099	-0.098	-0.1	0.119	0.102
Georgia	0.149	0.149	0.094	0.626	0.906
Turkey	0	-0.001	-0.001	-0.01	-0.012
EU27	0.001	0.004	0.005	0.007	0.007
CIS	-0.001	-0.001	-0.001	0.002	-0.001
ROW	0	0	-0.001	-0.003	-0.004
Total imports (% change)					
Russia	0	-0.002	-0.002	-0.003	0
Ukraine	0	-0.002	-0.005	0.006	0.008
Armenia	**1.631**	**3.187**	**3.732**	**13.824**	**18.029**
Azerbaijan	-0.04	-0.039	-0.038	0.006	0.028
Georgia	0.074	0.065	0.037	0.329	0.477
Turkey	0	-0.001	-0.001	-0.008	-0.009
EU27	0.001	0.004	0.004	0.007	0.006
CIS	-0.001	-0.001	-0.001	-0.002	-0.001
ROW	0	0	0	-0.004	-0.005
Capital stock (% change)					
Armenia	0.66	1.017	0.81	7.551	20.173

Source: own calculations.

and unskilled workers and changes in capital stock in the long run scenario. Since we believe that increasing returns to scale are prevalent in several industrial sectors, we only report results of the IRTS scenarios. However, all other estimations are available from the author on request. The results of simulations for output, price changes,

exports and imports are presented in the Appendix 8 CGE Model Results - Armenia[50]. When analysing the results of Simple or Deep FTAs it has to be borne in mind that the benchmark for all simulations is 2004 hence the Simple and Deep FTA scenarios also include the impact of the initial trade liberalisation in 2006. The effects of the 2006 liberalization will take several years to fully materialize. Therefore to look at the additional welfare gains from a Simple FTA beyond the impact of the 2006 liberalisation, one needs to subtract welfare implications in column (1) from the result in column (2) and similarly for the benefits of a Deep FTA one needs to subtract welfare impact in column (1) from welfare implications in column (4) etc. These net effects are presented in Table 1 of the Appendix 8 CGE Model Results - Armenia.

9.4.1. 2006 Liberalization

Our results indicate that in the long-run the liberalisation of 2006 is likely to add very little to the Armenian GDP – less than 0.4% (see **Table 9.7**). The impact on the remaining countries and regions is negligible. Following trade liberalisation Armenia experiences (albeit small) welfare gains, because its tariffs are being reduced by a large margin in the majority of sectors and so there are efficiency gains to be reaped. With cheaper import goods domestic prices falls in several sectors, notably in mineral products; wood products; textiles and wearing apparel (see Appendix 8 CGE Model Results - Armenia). Output in several sectors expands: mineral products; metal and metal products; fishing. Increased competition on a domestic market coupled with cheaper intermediate inputs reduces the prices of most manufacturing goods in Armenia. Lower prices raise demand for their products abroad and lead to production and exports expansion. Sectors that expand are overall more unskilled-labour intensive as wages of unskilled workers grow at a slightly faster pace than those of skilled workers (0.45% vs. 0.36% relative to the benchmark 2004 level).

When interpreting the output results one has to keep in mind that the overall employment is held constant in simulations, hence decreases in production of some sectors are compensated by increases in production in other sectors as skilled and unskilled workers shift between sectors. The changes in output are only indicative of the mechanisms at work and should not be treated as a forecast. Similarly, the trade balance is held fixed in the simulations hence an increase in total exports is accompanied by a compensating increase in total imports. The direction of changes in exports and imports by sector is however a good indication of the likely implications of trade policy changes.

[50] The appendix includes only detailed results for Armenia as the impact on other countries is zero or negligible. However, full set of results is available from the author on request.

9.4.2. Simple and Deep FTA scenarios

In the case of a **Simple FTA** involving the elimination of remaining industrial tariffs, halving of remaining agricultural tariffs and elimination of all quantitative restrictions in the bilateral trade with the EU the additional welfare gains amount to only a 0.18% GDP over the expected gains from the 2006 liberalization. This is not surprising given that in 2006 Armenian tariffs are almost all zero and Armenia enjoys GSP access to the EU market. The welfare changes for other regions are negligible. The changes in wages are slightly higher, and again unskilled workers gain relatively more.

Column 3 in Table 9.7 presents results for a **Simple FTA BIS** eliminating all tariffs and quantitative restrictions in the EU-Armenia bilateral trade. However, the results are very similar to a Simple FTA. The main reason why elimination of tariffs on trade in agricultural and food products does not have any noticeable impact is due to the fact that NTBs (i.e. standards costs as well as border costs) are higher than the actual tariffs and their assumed reduction is driving the results in both scenarios. The Simple FTA scenario assumes already a 50% reduction on tariffs on agro-food products; hence the additional benefits from the removal of the remaining low tariffs are not a significant policy change compared to changes in NTBs. As compared to Simple FTA scenario, Armenia is eliminating its tariffs mainly on food, beverages and tobacco (see Table 9 1) of 3.8% and tariffs on grains, fruits, vegetables and forestry products of 1.5%. These are low tariffs, but imports in those sectors constituted respectively 18, 20 and 14% of domestic consumption in 2004. In terms of better access to the EU market for its exports, Armenia benefits from the elimination of post-Simple FTA tariffs on fishing products of 3.2% (trade weighted average) and on food, beverages and tobacco of 1.4%. Even though initially exports of fish products are non-existent, the Simple FTA BIS leads to some imports of fish products from other regions and their exports to the EU. This however does not have any significant impact on welfare; the major impact is of food, beverages and tobacco, where production falls further than in a Simple FTA and is crowded out by imports. Since we have a single representative consumer in the model, the loss of tariff revenue and a smaller increase in factor rewards outweigh the gains from lower consumer prices and increased efficiency of production. This points out that again tariff barriers are not the major obstacle to the expansion on Armenian exports to the EU, only quality improvements and reductions of non-tariff barriers can lead to significant benefits for the agro-food sector.

There are several reasons why we should expect the elimination of NTBs to be beneficial to Armenia and the EU. The reductions in barriers to trade and transport costs decrease the prices of goods for consumers, as well as prices of intermediates and capital goods for producers. The extent of these gains depends on the amount of trade

between the trading partners and the trade creation and trade diversion effects. Apart from increased efficiency of resource allocation, as demand shifts to regions with the lowest cost suppliers, additional gains stem from increased competition. However all gains from trade also involve adjustment costs and may be associated with potentially painful restructuring in Armenia and significant redistribution effects.

Furthering the level of integration via a **Deep FTA** would involve a more complete elimination of barriers to trade and investment. This would result in a more extensive commitment to the reform of domestic policies in the direction of EU standards in Armenia. We operationalize this scenario by looking at the effects of the removal of NTBs such as border and standard costs and barriers to foreign provision of services as defined above. The estimates of the magnitude of those barriers in Armenia are not perfect, yet they provide a useful tool to gain insight into the magnitude and direction of sectoral changes in trade, prices and output. Our results indicate that the impact of a Deep FTA here narrowly defined as only the removal of NTBs would bring significant benefits to Armenia. Our model results indicate that the welfare gains could amount to 3.76% of GDP or 3.38 percentage points above the 2006 liberalization scenario. The impact of a Deep FTA on the EU27 is still lower than 0.1% of GDP, but this is to be expected given that the share of Armenia in total EU imports and in total EU exports is less than 0.5%. The implications for other regions are also negligible.

Finally, the comprehensive set of reforms resulting from the Deep FTA along with more wide-ranging flanking measures e.g. on competition and corruption could lead to a re-branding of Armenia as a favourable investment location. These effects are very difficult to quantify, but one way to analyse this kind of implications is to look at a reduction in the cost of capital. This is interpreted as a lowering of risk premium associated with locating the capital in Armenia. A similar approach has been adopted in the study on the Eastern EU Enlargement (Baldwin, Francois, Portes, 1997) and in the feasibility study for the EU-Ukraine FTA (CEPS, 2006), where a reduction of the price of capital of 10% was assumed. Clearly a deep and comprehensive FTA could result in a strong boost to the investors' confidence in Armenia and to illustrate its possible consequences we study the implications of a reduction in the cost of capital in Armenia.

Hence we look at the **Deep FTA+** scenario (column 5 of Table 9-7), which is the closest to the definition of a deep and comprehensive FTA as understood throughout the report. Along with the reduction of NTBs as in the previous scenario, we assume that the change in the business environment brought about by an enhanced FTA would lead to a boost to investors' confidence and a lowering of the risk premium on investment in Armenia by 5%. In this scenario the welfare implications increase to 8.33% of GDP or 7.95 percentage points above the gains achieved by the 2006 liberalization.

Again in the Deep FTA+ scenario output of unskilled labour intensive sectors is growing faster than output of sectors where skilled workers are used more intensively and wages of unskilled workers grow relatively faster. This is mainly explained by the expansion of unskilled labour-intensive sectors such as textiles and wearing apparel; leather products; manufactures nec (not elsewhere classified) and mineral products. Increase in real wages stems from a more efficient allocation of resources as tariff and non-tariff barriers are being eliminated. However is also related to the nature of the experiment. As we allow the capital stock to increase by 20% in response to changes in return to capital following a Deep FTA+ holding total employment fixed, the higher capital to labour ratio leads to an increase in wages. This is coupled with falling prices across the majority of sectors due to lowering of tariffs and several NTBs leading to an even sharper increase in real wages.

Prices fall across majority of sectors with the impact on selected industries now being determined by changes in standards costs, by changes in relative barriers to foreign providers of transport, financial and communication services and their trade intensity. The impact of the liberalisation of the access to services sector seems to be very small. The majority of output changes seem to be determined by changes in border and standards costs. Output of many sectors increases dramatically e.g. textiles and wearing apparel. However, an increase of the order of 230% is not that impressive given that the base production level was very small (less than 1% of the total value added was generated in each of those sectors in 2004). The biggest fall in output is recorded in wood products; transportation and storage and banking services, which are being replaced by imports.

Trade changes are highly correlated with changes in output (see Appendix 8 CGE Model Results - Armenia). A decrease in domestic production is often associated with a dramatic expansion of imports to replace domestic production. Exports increase the fastest in sectors where prices fall the most, hence the products become much more competitive on the world markets.

9.5. Conclusions

Overall, the conclusions of this analysis are consistent with those of chapter 4 where the impact of FTAs was analysed using the Sussex Framework. The welfare gains from the tariff liberalisation on the Armenian and EU's side respectively that took place in 2006 are likely to be very small i.e. less than 0.4% of GDP. The same can be concluded about a Simple FTA/Simple FTA BIS, as the tariff barriers on both sides are already very low. The additional gains of 3.38% of GDP could be reaped from a Deep FTA that

would lock in further domestic policy changes such as conformity with EU regulatory standards, improvement in customs procedures and further facilitation of foreign provision of services. If as a result of a Deep FTA accompanied by flanking measures on e.g. competition and corruption Armenia achieved also a notable reduction in the perceived risk premium on investment, reflecting a sustained re-branding of Armenia as a favorable and safe place to invest, the total gains on the top of the ones achieved out of the 2006 liberalisation might reach around 7.95% of GDP (scenario Deep FTA+). However for this scenario to materialize, the domestic policies would need to change dramatically. The boost to investors' confidence in the country can be only brought about by significant harmonization with the *acquis* and a consistent effort to break up various monopolies, eliminate corruption, strengthen the rule of law and improve general business environment in Armenia.

10. Sectors of importance

This chapter explores the prospects of selected important sectors in Armenia, highlights potential issues and discusses the likely implications of free trade agreements. The selected sectors are: agro-food, mining, and processing of precious stones. We describe the agro-food sector in much greater detail than mining and precious stone processing because an impact of an FTA on the agro-food sector may be much more substantial than an impact on the other two sectors.

10.1. Agro-food sector

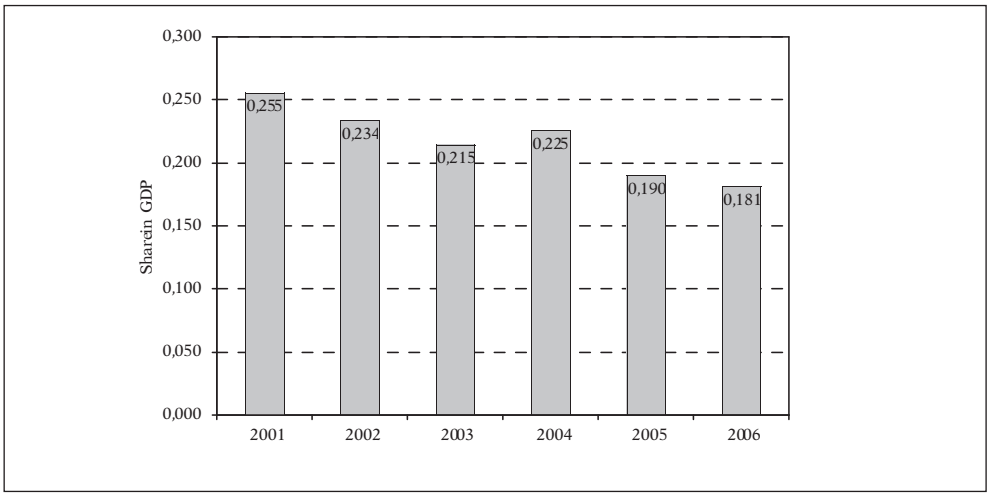
10.1.1. General Performance and Current Issues

Armenia's agriculture sector has traditionally been the foundation of its economy, and has been experiencing a great deal of reform since its privatization after the fall of the USSR. Capitalism brought land redistribution and land fragmentation resulting in over 300,000 privately owned farms (Armenian Economics Association, 2007).

Although currently 70% of land is in private hands, the agro-processing industries, as well as the development of financial market transaction mechanisms, have been lagging. This is a serious problem since agriculture continues to be a key sector, contributing approximately 30% to GDP and comprising 40% of total employment (Mitra et al 2007). While the share of agriculture in GPD has declined from 25.5% in 2001 to 18.1% in 2006, the production in agriculture and food industry increased (Figure 101 and Figure 102).[51]

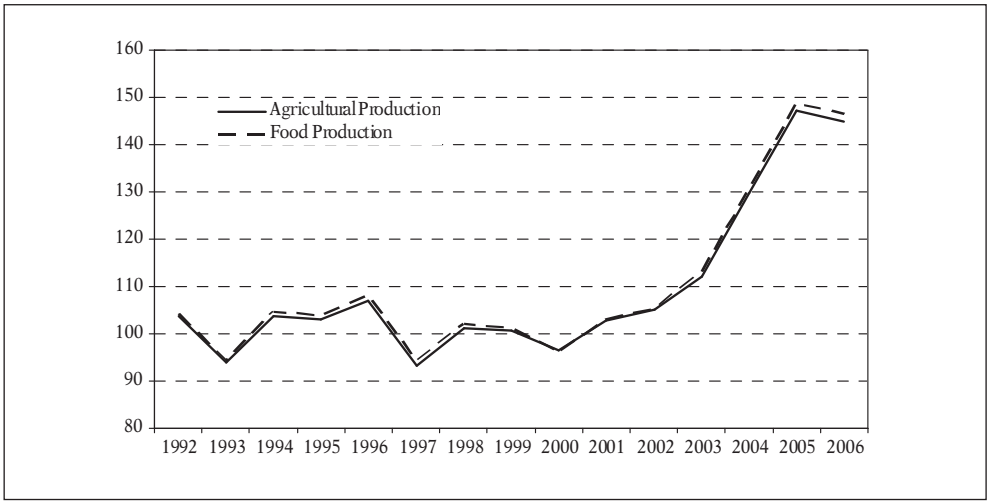
[51] The decrease of the production index from 2005 to 2006 was coupled with a sharp increase of output sales prices, where the respective index was 111.9 in 2006, which was the highest value for Armenia for at least the past 7 to 8 years (AEPLAC, 2007).

Figure 10.1. Share of Value Added Agriculture in GDP, Armenia



Source: NSS Armenia, AEPLAC (2007), GII Calculations

Figure 10.2. Agro-Food Production Indices for Armenia (Base period: 1999-2001)



Source: FAOSTAT

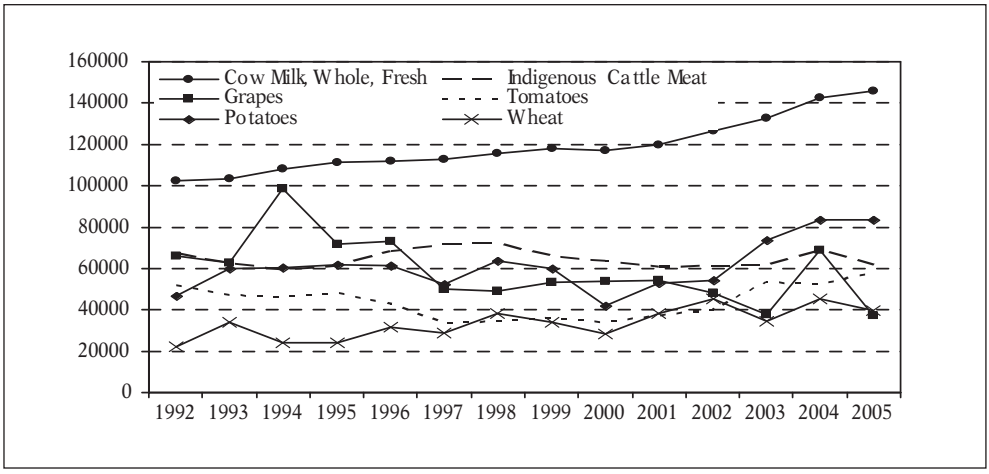
The organisation of the sector in Armenia has changed fundamentally since the collapse of the Soviet Union. Today, household's farms dominate the sector while commercial organisations are a small minority. This is due in part to the haphazard distribution process, which was conducted rapidly and chaotically and resulted in a lack of clearly defined property rights (especially with regard to water rights and farm

equipment). Shares are calculated from figures of the Statistical Yearbook Armenia (2006).

This fragmentation of land ownership is an important constraint to Armenia's agricultural sector, and therefore also to food processors. This not only makes land tilling difficult, but also precludes many types of economies of scale. Additionally, not everyone who received land wants or has the resources to farm, and many parcels lay idle. Land can be purchased and a few processors have purchased several contiguous parcels in order to further guarantee the supply of raw material. The land fragmentation problem is further exacerbated by an almost total lack of properly sized farm machinery available in rural areas. This means that agriculture remains largely a labour-intensive sector. The amount of unskilled labour involved in agriculture has caused the sector to grow slower than others (adding only .1% of a marginal increase to the GDP in 2006; Mitra et al, 2006).

The output structure of the agricultural sector in Armenia has remained, at least with regard to the large product groups, rather stable since 1992. The first six product groups only changed places moderately within this class (Figure 10.3).

Figure 10.3. Production of food and agricultural commodities with rank 1 to 6 in 1992 (1000 US$ based on 1999–2001 international prices)



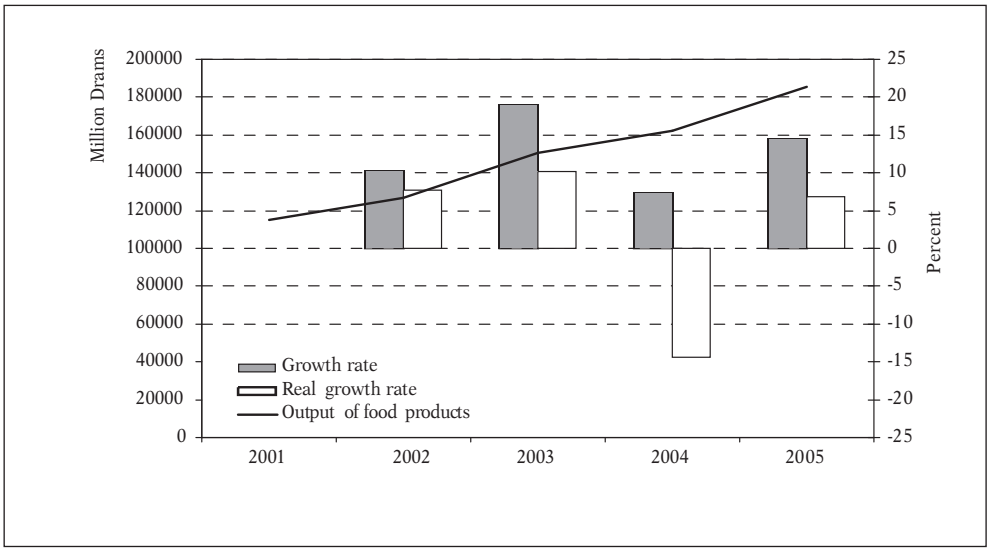
Source: FAOSTAT

In recent years, the nominal output food has been growing continuously, but with rather volatile growth rates (Figure 10.4). Moreover, the calculation of real growth rates based on changes in the wholesale-producer price index shows that real growth in 2004 was negative.

For the further growth of the food processing industry, it must be taken into account that there is little land for the expansion of agricultural production. On the other hand, Armenia has a favourable climate for horticultural production and for early-season fruits and vegetables, especially in the south. Moreover, there are also some other basic factor conditions for further growth. These include Armenia's reputation for tasteful products free from the use of chemical fertilizers, a strong reputation within the CIS for good quality, as well as inexpensive farm and factory labour.

The wine industry, a sector of focus, has some problems common to the whole food industry, and also has sector-specific problems. Generally, the bulk of production in this industry is low quality, low cost wine. According to our interview of the president of the Armenian Wine Producers Union, Avag Harutyuanyan, on 11 October 2007, 80% of the Armenian wine production is used for the distillation of brandy. Some investment in developing knowledge, promotion and presentation of finer wines took place, primarily for experienced domestic and the Armenian Diaspora in France and America market, Armenia's strongest historical investors. Initial conditions for the production of wine are positive, including a centuries' old tradition of winemaking, heirloom grape production for specialized niche markets and proper climatic conditions in most years. Remaining disadvantages for the development of the wine sector include the following:

Figure 10.4. Food processing growth in Armenia



Source: NSS Armenia, Global Insight Report: Armenia, GII Calculations

- Small land size precludes the use of machinery in most cases, but some consolidation of land is possible.
- Traditional technologies for grape breeding and fermenting result in unpredictable quality.
- Root stocks are susceptible to phylloxera (a common grapevine pest).
- There is no production of wine bottles and the imported are costly (USAID, 2004).
- Armenia is exposed to strong competition from other low quality producers.

Another important problem of the agricultural sector is rural finance. As in other developing countries, banking is not easily available to rural dwellers.

Armenia's total exports of agricultural goods increased from $50.195 million in 2001 to $109.745 million in 2005, while its total imports of agricultural goods increased from 208.208 million in 2000 to 299.543 million in 2005. Similarly, food exports grew from 6.674 million in 2001 to 13.948 million in 2005, while food imports grew from 140.216 million to 198.019 million during the same period. The RCA for agricultural goods moved from a slightly negative specialisation in 2001 (-14.4) to a slightly positive specialisation in 2005 (+8.3), while the RCA for food stood between 90 and 95, indicating a very strong positive specialisation.

The main agricultural export goods of Armenia are distilled alcoholic beverages, with a share of 73% in total agricultural exports in 2005. Roasted coffee and green coffee are in second and third place with shares of 3.7% and 3.1%. According to our interview of the president of the Armenian Wine Producers Union, 93% of brandy exports and 83% of wine exports goes the CIS (Armenian brandy has a market share of 47% in Russia). Small amounts of wine and brandy also go to France, to be bought by the large Armenian Diaspora residing there.

Firms that would like to certify their export production need three certificates, which he considers a hindrance to exports. First, they need to certify their whole company and production. Beside this first certificate they additionally need a second certificate of origin for the shipped quantity. Finally, the third certificate is the quality certificate, for brandy accompanied by a certificate of the region of origin. Asked about problems with the customs authorities, Mr. Hrutyuanyan pointed out that production of wine is a highly politicized sector where Armenian Customs is used as a means to monitor production and export volumes as well as export destination. This information is often supplied to competitors. Usually, however, customs problems only exist with regard to the Russian market, but not with exports to the EU.

10.1.2. Relations with the EU

The share of agricultural products of EU-25 total imports from Armenia has been rather small and has not increased over time. In 2002 it was 2.6% (4 million euro) and only 1.9% (6 million euro) in 2006 (DG Trade 2007).[52] The share of agricultural products in the total exports of the EU-25 to Armenia was 10.3% (or 27 million euro) in 2002 and 9.4% (or 43 million euro) in 2006. Thus, Armenia has a persistent trade deficit with the EU in the area of agricultural products. However, it can be expected that the share of agro-food products in Armenia's imports from the EU will further decline with parallel increases in Armenian agro-food exports. Actually, Armenian producers have been able to meet the domestic demand for these products increasingly better. Thus, domestic demand and enlarged production capacities are the major drivers of the described trend. Dairy, poultry and meat sectors were already able to meet the domestic demand for fresher and "with-no-preservatives" products and to move to import substitution (World Bank, 2005).

European FDI in the Armenian agro-food sector is concentrated on brandy distillation and other beverage production. Yerevan Brandy Company (YBC) became part of Pernod-Ricard Group in 1998 producing a range of different brandies and pursuing a very strict quality control policy. YBC clearly dominates the Armenian brandy industry, producing more than the half of the brandy exported.[53] However, access to high quality grapes is the greatest limiting factor to expansion of the firm. Land in the Ararat valley that is appropriate for grapes is becoming scarce. Fine brandy requires a limited number of grape varieties. In order to overcome this problem, the firm started to plant grapes outside the Ararat valley or encourage farmers to do so, and has begun contract farming with selected growers. The firm has between 2,500 and 3,000 farmers contracted for five to ten years to produce particular varieties.

Furthermore, Castel, a French company, established two joint ventures in 1997 to produce mineral water "Bjni" and beer "Kotayk". Today, Castel owns 71% of the shares of the Abovian Brewery, the producer of Kotayk. The Coca-Cola Company was also among the first to enter the Armenian market and opened a bottling plant near Yerevan in 1996. The Coca Cola Company is also an exporter of local water, bottled under the brand name Bonaqua. Furthermore, there is also some FDI in the tobacco and cigarettes industry. Out of seven major tobacco wholesalers, five are importers.

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[52] Based on raw data from Eurostat, DG Trade processed these figures for its publications concerning EU-Armenian trade relations only for the EU-25 countries.

[53] The main competitor of YBC is Great Valley, but there is also some competition from imitators and label falsifiers (USAID, 2004).

Relations with the EU are not limited to purely market transactions via foreign trade and FDI, but include also funding from various EU programmes. The Armenian medium term expenditure framework indeed is aimed with regard to the agricultural sector at (1) the maintenance and improvement in soil fertility, (2) the improvement in agricultural yields through better pest management, (3) food safety and security, (4) prevention of diseases, and (5) improvement in seed and sapling. Accordingly, the Government's agricultural spending is to be aimed at improving infrastructure, broadening scientific research, introduction of new technologies, as well as expanding educational and advisory services, but the Ministry of Agriculture's budget falls short in allocating adequate funds to the mentioned key priorities (World Bank, 2005). Thus, ongoing donor programs and their respective counterpart financing have primarily financed these activities, and, in addition, the Ministry receives budgetary support from the EU Food Security Programme, aiming at, among other things, financing veterinary measures and livestock disease surveillance.

Besides its membership in the WTO and the obligations under the EU-Armenia Partnership and Cooperation Agreement (PCA), which entered into force in July 1999, the implementation of the European Neighbourhood Policy (ENP) Action Plan for Armenia, which was endorsed by the EU-Armenia Cooperation Council on 14 November 2006, is also an important instrument influencing Armenia's trade relations with the EU. The ENP Action Plan goes clearly beyond the PCA and offers the opportunities for an increasingly close relationship with the EU, involving a significant degree of economic integration as well as a deepening of political cooperation. One year after the adoption, the food security programme (100 million Euros over 10 years) is considered by the EU as very successful. This programme aims at supporting the Armenian government's poverty reduction efforts by providing budgetary support as well as technical assistance for key land and agricultural reforms, but also public finance management and social sector reforms. Key objectives of the Action Plan affecting international trade and also foreign direct investment are:

- improvements of the business climate as well as public sector modernisation,
- further efforts to tackle corruption and fraud,
- reforms of tax and customs administrations and legislation,
- gradual regulatory approximation of the Armenian legislation and practises to the main EU trade-related *acquis*. This is particularly important, because – as it can be concluded e.g. from our survey – the great majority of Armenia's production cannot be currently effectively exported to the EU due to the incapacity of domestic firms to comply with the EU regulatory requirements.

Moreover, access to many export markets (including the EU market) depends on technical quality certification of food products to international standards (such as Codex Alimentarius, EU directives, Sanitary and Phytosanitary Standards of the WTO - ?). Quality certification is also required for trade of agro-food products and of processing facilities under ISO and HACCP. As a WTO member, Armenia is now introducing the development of a national standards reference laboratory supported by various donors. Also, under the EU-Armenia PCA and in particular the ENP Action Plan, Armenia has undertaken to a gradual regulatory approximation with the EU and international standards in the area of quality certification.

At the moment, Armenia's agro-food producers are at very different points on the way to ISO and HACCP accreditations. Generally, companies do not have the volume of fresh produce exports to the EU to warrant investment in the comprehensive and stringent private sector EUREP-GAP or British Retailer's Code of practice (World Bank, 2005). Many Armenian fresh and processed food producing companies have not the infrastructure and organisation needed to meet the basic requirements for Good Manufacturing Practices (GMP) as recognized in the EU, which, on the other hand, is the reference standard chosen by the Armenian government for harmonisation purposes. Most firms use an incremental approach, improving their facilities, equipment, and practices as their business volumes grow.

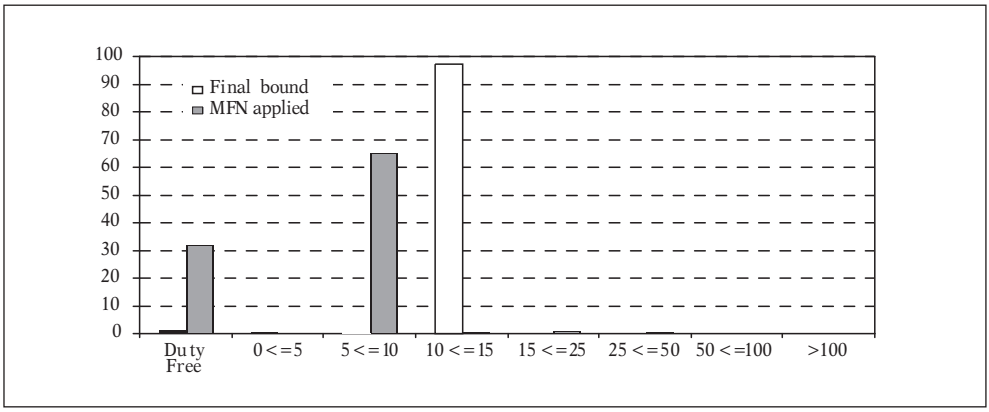
This whole process, however, can be a double-edged sword. On the one hand, some Armenian firms have shown the capability to meet importer quality standards once the public regulatory system has been strengthened for a specific product. A good example is the export of live crayfish (World Bank, 2005). With EU funding, technical assistance was used to bring an entire value chain, including the identification of a competent authority for inspection and certification that would pass muster with the European Commission. Solving the regulatory problems has caused an immense increase in live crayfish exports. On the other hand, it should be avoided that the currently very positive development of small and medium-size enterprises is hampered by too rigid and too costly food safety criteria. Additionally, criteria need to be adjusted, with the exception of public health standards, to the markets for which the products are intended and not all business should be subject to highly elaborated licensing and tracking mechanisms if their market does not require this (World Bank, 2005).

10.1.3. Potential Impact of an FTA

The agricultural sector will undergo considerable changes in the upcoming years in relation to Armenia's commitments to the WTO. Armenia has committed to start

taxation of agricultural product beginning on January 1, 2009. This will not only bring about significant changes in the development of this sector, but can also affect the whole economy (AEPLAC, 2007).

Figure 10.5. Tariff lines and import values for Armenian agricultural products, %



Source: WTO

With regard to a Simple FTA, it can be expected that it will not have further large effects on the agro-food sector, since Armenia has rather low tariff rates on agricultural products (Figure 10.5) due to its commitment to the WTO. The binding coverage for agricultural products is 100 % and the final bound duties are 15 % for most of these products at the six-digit Harmonized System (HS).[54] Table 10.1 shows that there are a few lower final bound duties for some animal products as well as for some products in the group of coffee and tea, so that the final bound duties are here 14.9 % and 14.2 %. Furthermore, within the product groups "oilseeds, fats and oils" some products (9.2 % of the imports of this product group) and other agricultural products (0.7 % of the imports of this product group) are duty free.

Most favoured nation (MFN) applied duties are in most cases even lower. Here, the maximum is in most agricultural product groups 10 %. Exceptions are, on the one hand, beverages and tobacco with a maximum of more than 1000 % and average duties of 26 %, and, on the other hand, cotton, where 100 % of all products are duty free (see also Table 10.1). In the former case, the average duties are according to the WTO above the maximum of the final bound duties of 15 %. However, although tariff rates are low both by CIS as well as international standards, in the view of AEPLAC, the administrative handling of customs is a larger problem, since many of decisions are dependent on the goodwill of poorly paid civil servants.

[54] According to the WTO the binding coverage is defined as the share of HS six-digit subheadings containing at least one bound tariff line.

Furthermore, Armenia is also not allowed to use special safeguards against increased imports of agricultural products. With regard to domestic support measures, Armenia undertakes towards the WTO to keep its "amber box" subsidies to the "de minimis" minimal support level, which is 10 % of agricultural production (the limit for developing countries) until 31 December 2008, and 5 % (the limit for developed countries) from 1 January 2009.[55]

Table 10.1. Tariffs by product groups

Product groups	Final bound duties				MFN applied duties		
	Average	Duty free in %	Max.	Binding in %	Average	Duty free in %	Max.
Animal products	14.9	0	15	100	7.5	24.7	10
Diary products	15.0	0	15	100	10.0	0	10
Fruit, vegetables, plants	15.0	0	15	100	9.1	9.0	10
Coffee, tea	14.2	0	15	100	9.6	4.2	10
Cereals & preparations	15.0	0	15	100	5.3	46.8	10
Oilseeds, fats & oils	13.6	9.2	15	100	5.6	44.2	10
Sugars & confectionery	14.7	0	15	100	8.8	12.5	10
Beverages & tobacco	15.0	0	15	100	26.0	13.0	>1000
Cotton	15.0	0	15	100	0.0	100.0	0
Other agricultural Products	14.6	0.7	15	100	3.2	67.6	10
Fish & fish products	15.0	0	15	100	9.5	5.3	100

Source: WTO.

With regard to other non-tariff arrangements, the Armenian Government generally follows WTO rules from a formal point of view since early 2003. It committed to the WTO Sanitary and Phytosanitary Agreement without any transition period. Nevertheless is the Armenian SPS system is still incompatible with EU regulations. The way out this predicament is to create separate certification arrangements for individual export products rather than wait for full SPS reform in Armenia, which can be a long time off. Moreover, Armenia took similar commitment in respect of domestic rules on custom valuation, import licensing and origin certification of products.

Finally, the system of Intellectual Property Right (IPR) protection is another significant component of trade policy formulation in agricultural field. Particularly, the rules on registration of trade marks, geographical indications and appellations of origin, rules on protection of selection achievements and biotechnological inventions are of interest of entities involved in trade of agricultural products. In this area, again,

[55] According to the WTO terminology, subsidies in general are identified by "boxes" which are given the colours of traffic lights: green (permitted), amber (slow down — i.e. be reduced), red (forbidden). In agriculture, things are a little bit more complicated. The Agriculture Agreement has no red box, although domestic support exceeding the reduction commitment levels in the amber box is prohibited; and there is a blue box for subsidies that are tied to programmes that limit production.

Armenian legislation was formally brought into conformity with WTO rules, without any transition period upon Armenia's accession to WTO. But, similarly to the previous paragraph concerning other trade regulations, there are still a lot of problems in the real world. One problem e.g. is the black market of agricultural products like brandy and vodka. Companies violate granted trademarks that threaten FDI in this sector. Here, as well as in the above mentioned areas, the level of ambition of the relationship between Armenia and the EU will clearly depend on the degree of Armenia's commitment to common values as well as its capacity to implement jointly agreed priorities, in compliance with international and European norms and principles. One ambitious project would be a Deep FTA+, and from the viewpoint of Armenia, adopting EU regulations and quality standards actually may also allow some products to capture larger market shares within the EU as well as enhance the confidence of EU exporters and foreign direct investors into the Armenian market. In this context the discussion presented in the previous section with regard to food security and quality standards is here also directly relevant.

Coming against this background to the potential implications of an EU-Armenian FTA, it can be expected that the parties will aim at ensuring a reciprocal liberal trade regime in the field of agriculture and tackling effectively border and behind-the-border trade barriers in the bilateral agricultural trade. Any Deep FTA with the EU would be therefore likely to affect Armenia's trade policy approach for this sector. The Government would certainly need to improve a number of trade policy instruments and practices, which are inconsistent with international obligations of Armenia and with the best international practice (particularly those of the EU).

Referring to those instruments that already have been applied in EU FTAs signed with developing nations, the following issues arise:

1. All implemented EU FTAs include provisions on tariff reductions (on agricultural products). While reviewing Armenia's tariff scheme the following inconsistency with the EU customs legislation and practises becomes obvious. As mentioned already, Armenia's applied import tariff rate is 10 % for around 65 % of product lines of agribusiness commodities, while for the rest of product lines 0 % import tariff rate is applied. Thus, the majority of product lines is subject to ad valorem tariff duties. Meanwhile, the Custom Code of Armenia also enacts specific tariff duties for limited type of products. Particularly, brandy, wine, beer and other alcoholic drinks are subject to specific tariffs – depending of the type of alcoholic drink approximately at the rate 0.10-2.5 Euro per litre of the imported product. As a result, it is not

certain whether for comparatively less expensive imported alcoholic drinks these rates do not exceed the bound ad valorem equivalent rate of 15 %.

2. Another major inconsistency in tariff arrangements is a wide-spread practice of using reference pricing during custom valuation of imported goods. Thus, although the Custom Code of Armenia is sound with WTO rules enacting the possibility of utilization of reference pricing only in exceptional cases, importers and donor funded investigations report that reference pricing is an ordinary practice rather than an exceptional one.
3. As an option for flexible adjustments to a partner's market access, EU FTAs reaffirm the WTO requirement of national treatment for imported products. As we noted above, nowadays, Armenia's domestic agricultural output sold by farmers is exempted from value added tax. This practice constitutes discriminatory treatment of imports in relation to similar domestic products. Meanwhile, according to Armenia's WTO commitments, VAT exemption should be eliminated no later than December 31, 2008. However, it is uncertain whether authorities will be capable of promptly enforcing this measure, especially during the first years, considering wide spread practice of direct sale of agricultural products by farmers to consumers and a huge number of businesses (farmers) that should be brought into the tax area.
4. In implemented EU FTAs, specific rules of origin for agricultural product ensure the exclusive application of preferences only to goods originating in the FTA parties. At the regulatory side AEPLAC investigations suggest that the rules of origin of the Armenian Custom Code are not in full alignment with the EU rules of origin. At present, within the scope of effective utilization of EU GSP schemes the Government targets to follow AEPLAC's proposal to make appropriate amendments that would ensure that rules concerning the origin criterion comply with EU rules as it is provided in Articles 66-79 of the EC Regulation No. 2454/93.
5. Investigations implemented by donor funded projects in Armenia indicate that Armenian exporters, particularly those exporting modest quantities of goods, are strongly discouraged by issuance procedures of Certificates of Origin, which are described as time-consuming, non- transparent and requiring non-formal payments.
6. In the SPS area definitions of norms and standards are predetermined by the WTO rules. Therefore, EU FTAs mainly emphasised facilitating the application of the WTO SPS provisions. Thus, in conformity with Armenia's

commitments under the WTO as of December 31, 2004, enforcement of GOST standards is discretionary. However, so far public authorities have not enacted a sufficient number of compulsory regulations in the food safety control area that would replace GOST standards. As agro-food trade has been traditionally with CIS neighbouring countries, national standards and analytical procedures have not been as substantially harmonized with international requirements even in newly adopted compulsory regulations.

7. A serious overlap and duplication in control and examination authorities of state agencies involved in food safety control in Armenia can be observed. World Bank and FAO financed analyses consider the recent trend of transferring food control responsibilities to the Quality Inspectorate of the Ministry of Trade and Economic Development, along side with keeping similar responsibilities at the Ministry of Agriculture and Ministry of Healthcare, as not effective.
8. Implemented EU FTAs also emphasise the specification of technical assistance in SPS issues. In this respect, it is important to point out that inspection services, public laboratories and testing centres in Armenia are under-funded, which does not allow for testing equipment, monitoring and control capacities and technical skills of personal to be in line with modern food safety. Also it is worth to be mentioned that the HACCP system is not part of the food control system or manufacturing practices of any but the few largest producers.
9. With regard to IPR protection in the agricultural sector, a few provisions on protecting certain geographic indications can be found in some FTAs. AEPLAC surveys concluded that – compared to EU legislation – the Armenian legislation does not provide detailed regulations of legal relations arising in the field of agricultural products, particularly appellations of origin and geographical indications of key agricultural products. Armenia is also not a member of the Lisbon System for the International Registration of Appellations of Origin.
10. Other regulatory gaps in the IPR protection area that the Armenian Government might fix before signing a Deep FTA are (reported by AEPLAC) the divergence between legal protection mechanisms of selection achievements and biotechnological inventions set forward by Armenian legislation and the corresponding EU directives.

Beside foreign trade, FDI may also be affected by different forms of FTAs. Generally, the policy of the Armenian Government in FDI attraction area is considered as liberal as the one in foreign trade area. Particularly, in agro-food sector foreign investors have the same right to establish and run businesses as Armenian entities. The Law on Foreign Investments[56] of Armenia establishes that foreign investors enjoy the National Treatment regime in Armenia.[57] No additional fiscal and regulatory burdens (e.g. in the form of licensing or in the form of minimum capital requirements) are envisaged for foreign investors in agricultural sector, except that foreign natural persons may not own land but are permitted to lease it. There are no restrictions or controls on the holding of foreign exchange accounts, current transfers and repatriation of profits. The Law on Foreign Investments provides guarantees to foreign investors and protects investors from changes in the business related laws for 5 years. It also includes clauses on proper compensations of loses of foreign investors in case of expropriation and nationalization of properties.

Furthermore, Armenian tax legislation is an important incentive for investors, particularly those entities that invest into shares of Joint-Stock Companies, since profits in the form of dividends exempted from tax in Armenia. Generally, all companies with foreign participation and the share of the foreign partner exceeding 500 million Drams are benefiting from 100 % forgiveness of the profit tax for two years. However, this tax exemption will end in 2010. Meanwhile, agribusinesses also enjoy full exemption from land tax for newly planted and young vineyards and fruit gardens until their complete fruitfulness.

At the institutional side the Ministry of Agriculture and the Ministry of Trade and Economic Development are responsible for designing the state policy for attracting investments into the agricultural sector. In the policy formation area the government receives additions support from the FAO, World Bank, AEPLAC and other donors. The Armenian Development Agency acts as a "one-stop shop" agency for foreign investors in general, assisting them in setting up their business in Armenia, helping in project implementation, performing a liaison role with the Government, etc. The Centre for Agribusiness and Rural Development, supported by US Department of Agriculture, and some other donor funded initiatives provide a set of integrated technical and marketing services with the aim to develop existing agribusinesses and to facilitate the establishment of new ones.

[56] HO-115, adopted in July 31, 1994

[57] According to the Law on Foreign Investments a "foreign investor" is any foreign company or citizen, a person without citizenship, an Armenian citizen permanently residing outside of Armenia, or an international organization that invests in Armenia.

With regard to the potential implications of an FTA, the above described regulatory framework certainly shows that, at least from formal point of view, the Armenian Government adheres to a liberal approach in FDI attraction policy area in general and particularly in the agro-food sector. But formal commitments are not necessarily reflected in actual steps executed by the Government for bolstering a business-friendly investment climate in Armenia. However, although nothing indicates that the regulatory and institutional framework particularly and deliberately creates impediments for foreign investors, a number of surveys of donor funded projects and international think tanks indicate investment climate in Armenia is far from being sound and secure, both for local and foreign investors.

Weak implementation of legislation and corruption in the bureaucracy are the major obstacles that investors face in Armenia. The wide-spread practice of judicial dependence from the executive branch and corruption create serious obstacles in the sound protection of private property rights and enforcement of contracts by the courts[58]. The most quoted types of informal payments collection among public authorities appear during tax collection, in exports and imports and during licensing or mandatory certification of businesses. A rent-seeking stance within the control and examination authorities of state agencies involved in food safety control in Armenia is a particular impediment for agribusinesses. The government also is not able to effectively protect competition in a number of domestic markets, including a few markets of primary agricultural goods, such as sugar, eggs, butter, some cereals.

Research by the European Centre for Development Policy Management (ECDPM) indicates that in recent EU FTAs with developing countries investment-related provisions are not as comprehensive as those of traditional bilateral investment treaties (BIT). In general, BITs are inferior to WTO agreements in their deepness of regulations of rights and responsibilities of contracting parties in the formulation and implementation of particular policies (investment policies in case of BITs and trade policies in case of WTO agreements). In other words, BITs do not create comprehensive mechanisms for the sound and secure protection of investors rights, compared to WTO agreements that are mostly covering trade relations. In EU FTA investment regulations are implemented even "lighter" than in BITs.

Consequently, only a Deep FTA+ with a robust dispute settlement mechanism and strong investment provisions could significantly increase the attractiveness of Armenia as a safe place to invest. As indicated above, investors are facing non-competitive

[58] Note that property rights (including land ownership) registration issues and business registration issues in Armenia are at the opposite edge. As surveys of the World Bank, Heritage Foundation and other think-tank indicate compare with other transition countries Armenia has one of most effectively operating institutional frameworks in these areas.

practices in a few markets of primary agricultural goods. The agricultural sector, in particular, could gain from the inclusion of the provisions on competition policy in case of a Deep FTA+. A Deep FTA+ with a comprehensive chapter on competition would certainly require from the Armenian government to bring their competition regulation instruments into accordance with the best international standards.

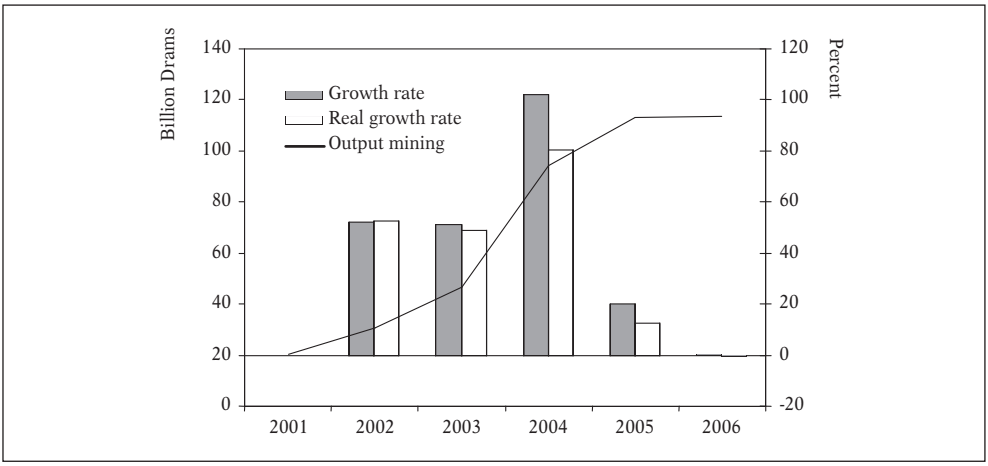
10.2. Mining

10.2.1. General Performance and Current Issues

Armenia possesses important reserves of copper, molybdenum, lead, zinc, iron, and gold. It is also rich in construction stones (tuff, marble, granite, basalt, and limestone), semiprecious stones (obsidian, agate, jasper,) and other materials such as bentonite, perlite, zeolit, and diatomite. The mining industry is now the second largest producer of industrial output after food and is still expanding. It increased its share in industrial output from 6.5% in 2001, 9% in 2002 and 11% in 2003 to a little over 17% in the years leading up to 2006. In absolute numbers, we observe a strong increase of nominal output from 20.23 billion drams in 2001 to 94.2 billion drams in 2004, while the increase in the next year was moderate up to 113.2 billion drams, followed by stagnation in 2006 (Figure 10.6). The calculation of real growth rates base on changes in the whole-producer price index yields a rather similar picture. The industrial sector's growth has been attributed to, in part, a strong growth in the mining industry. Productivity in this sector has increased significantly from 2005-2006, growing from a base productivity index of 95.6 to 106.2, year-on-year (Asian Development Bank, 2006).

As of 2005, all mining resources have been privatized, and most Armenian mining companies now have commitments with (mostly foreign) investors to upgrade facilities and expand production capabilities. Many of the privatized facilities have been taken over by Western investors, resulting in an influx of euro- and dollar-based funding, and more usage of Western standards and technology. The largest of these is the Kajaran copper-molybdenum mine in southern Armenia (containing reserves of up to 450 million tons), sold to international investors for $120 million (Baghdasaryan, 2007). This facility was privatized in late 2004. There are several other recent examples of foreign purchases. US-based firm Comsup Commodities purchased the Agarak copper-molybdenum plant in 2003 and invested $3.5 million into the facility in 2005, and joint US-Canadian firm Metal Prince owns mining and exploration rights for five mines in the industry-heavy northern Lori region.

Figure 10.6. Mining industry output in Armenia



Source: AEPLAC (2007)

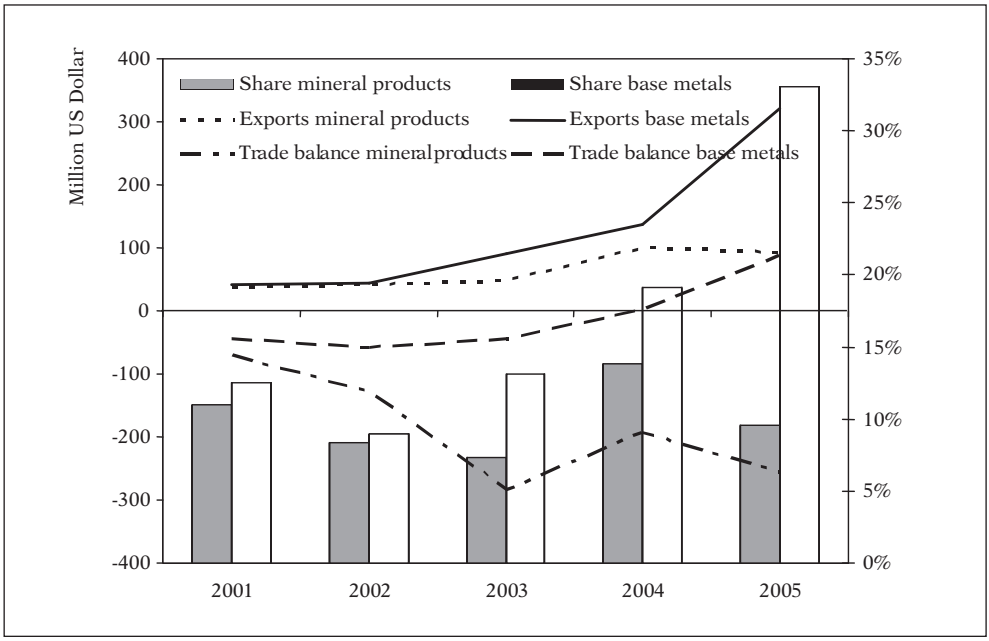
Due to increases in international market pricing for copper and molybdenum, foreign acquisitions have been growing in Armenia. The mining sector is clearly a popular target sector for foreign direct investment. According to the latest available country profile of the UNCTAD, FDI stocks in the sector "mining of metal ores" increased from $29 million in 1998 to $37.9 million in 2002, while the FDI stocks in the other sector "other mining and quarrying" grows from zero in 1998 to $9.1 million in 2002, whereby the main foreign investment of $8.5 million was in 1999.

Despite the growth in the mining sector, several issues are important to note. One is the recent conflict between the government and foreign investors. For example, in August of 2007, a preliminary contract was signed regarding the forced sale of the Ararat Gold Recovery Company, by the then-owner Indian national Anil Agarwal, to the Georgian company Madneuli. Accusations of concealing gold reserves and initiation of legal action forced Agarwal to sell the company. In another situation, Global Gold began an international arbitration process against the Armenian government in March 2007, where the Ministry for Environmental Protection was accused of refusing to extend exploratory permits on certain mines. Both cases have not yet been resolved (Baghdasaryan, 2007).

Another issue is the degree to which mining processes in Armenia are environmentally unsound, creating concerns for both those who live near the mines and global environmentalists alike. In one instance, the creation of a mine at Tehgut (Tekhut), a copper-molybdenum site in the Lori region, will lead to the destruction of 127,000 trees and 670 hectares of land. Additionally, 55 mammal species and 191 plant species will be destroyed. The Lori region is already considered to be an environmental

and health disaster zone by many Armenian and international environmental activists (Grigoryan, 2007).

Figure 10.7. Armenian exports of mining products



Source: Statistical Yearbook of Armenia (2006).

The large players in this market are Zangezur Copper Molybdenum Plant, CJSC, with a market share of 39.1%, Pure Iron Plant (19.9%), Armenian Molybdenum Production (12.3%), Agarak Copper Molybdenum Plant (7.3%), Dino Gold Mining (2.3%) and Armenian Copper Programme (1.43%).[59]

It is a nontrivial task to assess the exports of the mining sector because product coverage of industry and foreign trade statistics vary greatly across sources.[60] Assuming that the product groups "base (non-precious) metals and products of them" and "mineral products" has a high congruence with the kind of output of the mining sector, following development can be observed. Absolute exports of base metals increased from $43 million in 2001 to $322 million in 2005. This implies an increase of the share in the total exports from 12.5% to 33.1%. At the same time the initial trade deficit of $45 million for these products in 2001 changed into a trade surplus of $89 million in 2005. For "mineral products", the situation looks a little bit different. Exports grew more moderately, from $38 million in 2001 to $93 million in 2005, while their

[59] Market shares according to our interview with AEPLAC on 12 October 2007.
[60] The Report "Armenia Trade Diagnostic Study" of the World Bank in 2002 mentions the same problem (p. 141).

share in total exports hovers around 10% to 11%. Moreover, the trade deficit for mineral products increased from $69 million in 2001 to $255 million in 2005.

10.2.2. Relations with the EU

In 2006, the EU-25 countries imported base metals and articles of base metals from Armenia with a value of 198 million euro, which constituted 61.9% of their total imports from Armenia. On the other hand, the EU-25 exports to Armenia in this product group were only 14 million euro (or 2.9% of the total EU-25 exports to Armenia) (DG Trade 2007)[61]. Thus Armenia has a clear trade surplus with EU in this area (184 million euro), while Armenia's total trade deficit is 139 million euro. The only other product group with a trade surplus was mineral products, which amounted to 3 million euro.

10.2.3. Potential Impact of an FTA

Since a large share of the exports of the mining industry already goes to the EU-25 countries, and because EU import tariffs for these products are mostly very low or zero we do not expect any impact of a Simple FTA. The impact of a deeper FTA will not be significant either, since standardization and similar issues are not important for the sector. If dispute settlement mechanisms are included in an FTA, this may lead to better protection of foreign investments in Armenia, which will reduce the risk of investing in Armenia.

Transportation of mining products is costly and difficult, among other things, because of the closed borders with Turkey and Azerbaijan. While the precise effect is difficult to quantify, removal of these trade barriers might increase trade and FDI significantly. This highlights the importance of resolving outstanding conflicts and disagreements with Azerbaijan and Turkey (World Bank/IDA, 2007).

[61] Based on raw data from Eurostat, DG Trade processed these figures for its publications concerning EU-Armenian trade relations only for the EU-25 countries.

10.3. Processing of precious stones

10.3.1. General Performance and Current Issues

The processing of precious stones has traditionally been a key industry in Armenia due to the availability of skilful diamond cutters with competitive wage rates, modern equipment and tax privileges (no taxes on the import of raw materials and on the export of finished products). During the 1960s, the Soviet Union designated Armenia as its diamond capital, importing raw stones to be refined, and then exporting the finished product to the rest of the world. In recent years, the sector employed approximately 4,000-5,000 workers.

However, this sector has quickly been losing traction as a top sector over the past several years. The decrease in diamond refining and overall jewellery exports has been due to falling global demand for precious stones, as well as the inability of Armenian craftsmen to compete with Western methods of production and certification. In the first months of 2007, Armenia's processing of diamonds fell by 34.5% from the previous year. This sector now generates less than 1% of gross industrial output after experiencing a significant contraction in 2004. This has been attributed to the fall in demand from developed countries. The American credit crisis has not helped the situation, leading to considerable losses in the industry. Other reasons include the lack of preparation of Armenian companies for Western competition and the interruption of diamond raw materials supply from Russia beginning in 2006. In response, the country's largest diamond-cutting company, Shoghakn (owned by Lev Leviev Diamonds of Israel,) cut over 1,000 jobs in 2007 before suspending its manufacturing operations in June of that year. Its share of the industry was 35% (Armenian economy: Diamond sector loses lustre, 2007).

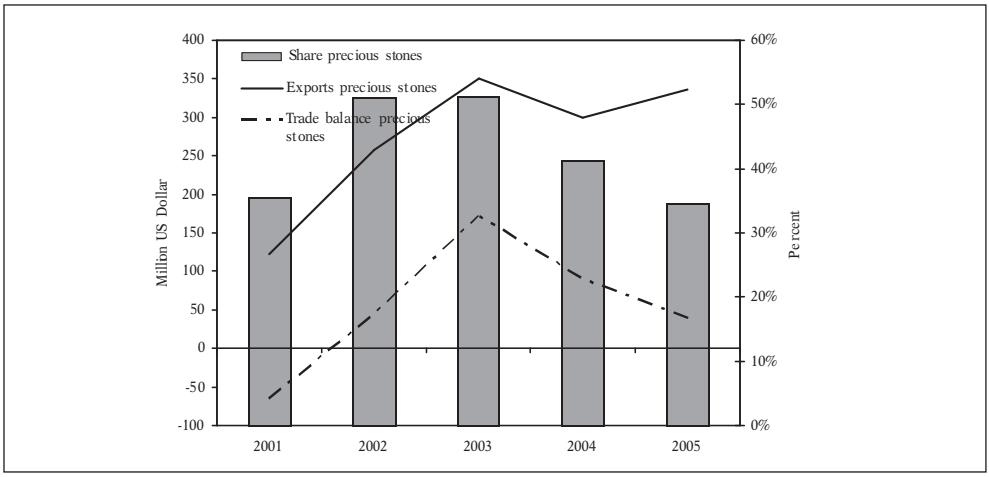
The industry relies heavily on imports, coming primarily from Belgium, Israel, and Russia, which are coincidentally Armenia's top three trade partners. Armenia imports raw diamonds and other precious stones, processes them in mainly by foreign-owned firms and re-export them. This operation adds about 15% of value. The two subsectors, diamond cutting and jewellery making, operate in many respects in largely different spheres, receive their raw materials from different sources, use different technologies, and sell to different market. With regard to diamond cutting, Armenia has specialized in larger diamonds, leaving smaller stones to cutters in India[62]. Firms have invested in sophisticated, modern equipment and produce international good quality at a low cost. Thereby, a few large factories dominate the industry, which is in contrast to the

[62] The further description of the two subsectors -- diamond cutting and jewellery making -- follows largely USAID (2004).

industrial organization of the jewellery industry, where many small and medium firms are also involved. Furthermore, at the moment the jewellery industry still caters to a low to medium-end market of traditional designs.

However, it has recognized the need to improve quality and to move to a higher value, design, and service led basis. In this process, it is necessary to upgrade skills and provide certifications. Here, capabilities for formal training to supply the industry as well as local design capabilities have to be built up. Summing up, the jewellers, as well as the gem cutters, face the challenges of product differentiation, market identification, and quality control. Here, a stronger cooperation of firms and the better layout of supporting organisations would be helpful. Although three associations for the jewellery industry exist, collaboration among them is insufficient. This concerns also the establishment and promotion of quality and skill standards.

Figure 10.8. Armenian exports of precious stones and metals



Source: Statistical Yearbook of Armenia (2006).

While, as already mentioned, the jewellery industry relies on its strong history with remaining skills and reputation, the diamond cutting industry has moved forward to in-house training and apprenticeships. Armenia has very good, skilled cutters and the quality of cutting is good. However, formal training availability is insufficient. Furthermore, there are only few direct linkages with retailers or customers, which lead to little knowledge about the value factors for the customers (e.g., security and image). The diamond cutting industry is to a large extent based on contract cutting, with little backward and forward contacts or awareness. The management of diamond processing firms is production oriented rather than market oriented. This goes hand in hand with a thin product differentiation and poor customer awareness. In addition, there is no

salutary collaboration with technical or training institutions - solutions are searched at the company level instead. On the other hand, there is a demonstrated ability to share information and to undertake joint initiative. Furthermore, there are some linkages between diamond processors and the precision engineering and jewellery industries. Finally, there is also some local production of cutting equipment.

Armenia's exports of "precious stones and metals" increased from $123 million in 2001 to $336 million in 2005, while the imports increased in the same time from $188 million to $297 million. As a consequence, the trade balance changed its sign in 2002, and reached a positive peak with $172 million in 2003, thereafter returning to a surplus of $39 million in 2005. In the year 2003 there was also the peak of the share of this product in total exports, which reached 51.2% and returned to 34.5% in 2005 – a similar figure to 2001. The share of "precious stones and metals," in imports falls after 2002 from previously approximately 22% to a level around 15% (16.4% in 2005). For 2006, AEPLAC (2007) reports a share of "precious stones and metals, things of them" in exports of 31.9% and in imports of 14.2%. Furthermore, they point out that that the reduction of both shares until 2006 is caused by the shrinkage of the diamond processing volume. Thereby, it is noteworthy that Armenia did not import raw diamonds from Russia in 2006 because of high prices and imported only from Israel and Belgium. Before 2002, Armenia could import an unlimited amount from Russia. In 1999, this reached a high of 30,000 carats for jewellery cutting and 1,000,000 carats for industrial purposes. However for the period from 2002 to 2007, Armenia and Russia, by mutual agreement, entered into an annual quota system that limits the number of carats that can be imported from Russia to 400,000 with an increase to 450,000 by 2007. As a result, Russian diamonds have become more expensive and Armenia has been increasing its diamond purchases from Israel and Belgium. Diaspora investors have in some cases established a connection with DeBeers. In December 2007, talks began between Armenia and Russia. These are designed to help the lagging diamond industry along. Following an agreement, four Armenian diamond-cutting firms have received a total of $1 million worth of uncut diamonds and ALROSA, the Russian diamond monopoly, plans to deliver $28 million more over the course of the next year (Shoghikian, 2007).

10.3.2. Relations with the EU

The character of Armenia as a processing location for precious stones is also reflected in the foreign trade in this area with EU-25. The EU-25 countries exported in 2006 precious or semi-precious stones with a value of 127 Mio Euro to Armenia (27.6% of their total exports to Armenia) and imported goods from the same product group

with a value of 82 Mio Euro (25.6% of EU-25's total imports from Armenia) (DG Trade 2007).[63] However, trade is concentrated on a few large players in the European market, because the jewellery industry is highly concentrated, both with regard to the number of firms as well as to the number of geographical locations. Thereby, clear geographical patterns are observable. Besides diamonds, which are imported from Belgium, Armenia imports raw gold from Germany, Luxemburg and Poland. With regard to exports, cut diamonds go to Belgium, jewellery and precious metal scrap to Germany and gold to Great Britain.

10.3.3. Potential Impact of an FTA

The Armenian government's policy of export-oriented growth and FDI attraction for diamond processing have already played significant role for the advancement of this industry. Together with a tariff free regime, the diamond-cutting industry benefited from the minimisation of possible transactions costs associated with import and export procedures. Thus, the time for customs clearance is reduced to one day and in-house clearance is conducted, instead of the wide-spread use of reference pricing during custom valuation the invoice value is accepted for the import of diamonds. Furthermore, for diamonds no VAT is levied at the border, while most other imports are subject to VAT taxation at the border. Consequently, diamond processors do not face the risk with delays of VAT drawback upon exportation (such delays are common practice that Armenian exporters face).

The jewellery industry also enjoys a tariff free regime for import of precious metals and stones, while any processed output from those metals and stones is subject to an import tariff of 10 %. However, export oriented jewellery industry is not entitled to the described exempts from the VAT refund scheme and effective custom clearance procedures like the diamond-cutting industry.

Concerning FDI attraction issues, it has been already mentioned in the section on the agro-food sector that the government of Armenia, in general, has undertaken not to create any significant formal obstacle to the attraction of FDI. This policy has been

[63] Based on raw data from Eurostat, DG Trade processed these figures for its publications concerning EU-Armenian trade relations only for the EU-25 countries.

[64] The importance that Armenian Government attaches to the development of jewelry and diamond-cutting industries can be assessed also by the following facts. At institutional side, in 2007 the Government established specialized Jewelry and Goldsmith's Craft Development Agency within the structure of the Ministry of Trade and Economic Development. In 2003 the Government has also enacted and approved a program of Government's actions aiming in development of these industries until the beginning of 2008. This kind of mid-term programming is implemented for those sectors, which are considered to have strategic role for economic development in Armenia.

applied for the jewellery and diamond-cutting industries as well[64]. These industries are also less challenged by informal barriers to FDI in Armenia that were also discussed in the chapter on agro-food sector. Particularly, unfair competition practices cannot be observed in the jewellery and diamond-cutting industries. Thus, a few large factories (mainly under foreign ownership) dominate the export oriented diamond industry, while in jewellery industry many small and medium size companies are involved.

With regard to the potential implications of an EU-Armenia FTA, it has to be emphasised first of all, that Armenia enforces a liberal foreign trade regime for jewellery and diamond-cutting industries. The same can be stated for the EU, which is not levying tariffs for imports of diamonds from any country. Armenian jewellery exporters can enter the EU market on tariff-free bases under EU Generalized System of Preferences (GSP) scheme. Therefore, the sector under consideration already is subject to Simple FTA conditions and an anticipated FTA should not create significant economic impact for jewellery and processed diamond trade between Armenia and the EU.

Thus, at a first glance, one would assume that a Simple FTA will have no impact on the diamond processing industry. However, due to the small number of large suppliers, the European market for final products (processed diamonds) is at the moment closed for Armenian firms, and several members and officials of the Armenian government interviewed by the project team mentioned, that there is some hope in Armenia that this could change with a Deep FTA+. A Deep FTA+ could lead to increase investment in the sector in Armenia and hence facilitate Armenian access to the European market for final products. Moreover, with regard to the impact of a Deep FTA and Deep FTA+, it might be relevant, that in the gems and jewellery industry, buyer confidence is directly correlated to profit margins, as stones and jewellery containing mounted stones or precious metals do not sell at full retail value if the consumer is not sure of their authenticity, no matter how good the design. Certification of the quality of stones, mounted and un-mounted, and of the purity of precious metals (platinum, gold, silver) would improve buyer confidence and add value. Likewise, Armenian firms are likely to secure more production contracts from high-end branded jewellery makers if Armenian firms had certified professionals cutting and grading stones and making jewellery. Certification bodies are probably most important for gem quality, and at the very least Armenian industry should strive to attract an internationally recognized body to undertake certification in Armenia prior to export, and to train more certifiers in Armenia. However, first steps have already been done in this direction, e.g. Armenia participates together with 46 other countries in the "Kimberly Process", which is a complex system that should stop trading of blood diamonds.

In summary, it can be concluded that moving up the value chain requires that firms in gems and jewellery have access to retail channels of distribution, as customer

learning and profitability are both impacted by selling through wholesaler. Given the closely-knit, cartel-like structure of international industry, particularly in the diamond business, this will not be easy, but there are examples of successful entry strategies into the jewellery retail business from other countries that could be examined for feasibility. Diamond processors and jewellers who produce high quality products need to have access to retail market outlets or boutique retailer. The high-end, well educated consumer does buy unset stones when shopping for significant purchases, so diamond processors should not neglect retail marketing as the stones themselves could contribute significantly to the image of Armenian industry by bringing the brand to the attention of the world's most demanding consumers. However, the overall economic effects of diamond processing and similar sectors will always be limited, since they employ relatively few people compared to the value of their exports, while profits accrue to a small number of people who may or may not invest in other productive enterprises.

11. Conclusions

1. The preceding chapters of this report have examined in some detail key aspects of the Armenian economy and its regulatory environment and possibilities of its integration with the EU. Below we summarize our major conclusions and policy recommendations with regard to a range of scenarios, ranging from simple free trade to very deep and comprehensive free trade between the EU and Armenia. We start with two variants of a simple free trade agreement (FTA) assuming the elimination of tariffs and quantitative restrictions in the bilateral trade between Armenia and the EU. The first Simple FTA scenario assumes full liberalization of trade in industrial products and halving of tariffs and elimination of all quantitative restrictions on agricultural and food products on Armenian exports to the EU and vice versa. The second Simple FTA BIS scenario assumes full elimination of tariffs and quantitative restrictions on all products in the bilateral trade between Armenia and the EU. Furthering the level of integration via a Deep FTA would involve a significant elimination of barriers to trade and investment throughout various sectors of the economy. This would also result in a more extensive commitment to the reform of domestic policies in the direction of EU standards in Armenia. Finally, the comprehensive set of reforms resulting from the Deep FTA along with more wide-ranging flanking measures e.g. on competition and corruption could lead to a re-branding of Armenia as a favourable investment location. This is our scenario Deep FTA+ where we assume that Armenia would achieve a notable reduction in the perceived risk premium on investment, reflecting a sustained re-branding of Armenia as a favorable and safe place to invest.

2. The analysis of recent trends in the Armenian economy indicates that there is substantial scope for redeployment of underutilised labour and diversification

of the export structure. But it would be difficult to exploit this scope without a series of flanking measures designed to strengthen the rule of law, reduce corruption and reinforce the implementation of competition law, as laid out in the ENP EU/Armenia Action Plan. For this reason, a Simple FTA could be expected to have only a limited effect. It would take a Deep FTA+ to unlock the potential for EU-Armenia trade to act as a locomotive for productivity enhancement and the development of new sectors in Armenia. A Deep FTA+ would imply extensive commitments not simply to remove non-tariff barriers (NTBs) affecting traded goods and services but to improve the broadly defined domestic regulatory system. The potential gains for Armenia of an effectively implemented Deep FTA+ with the EU include:

- Better market access to the EU if quality of exported products and their compliance with the EU regulatory requirements were credibly upgraded
- More competition within Armenia
- Upgrading of domestic output
- A more attractive climate for FDI and domestic investment

Such gains are only realizable, however, if Armenia was able to effectively implement deep integration.

3. According to our findings of the Sussex Framework based analysis, shallow (simple) integration effects from the future EU-Armenia FTA (both trade creation and trade diversion) are not likely to be large-scale due to low pre-FTA tariff protection in both countries. Some shallow integration effects are expected for goods of central interest to the EU industries, subject to a 10% pre-FTA tariff rate (such as motor cars, machinery and electrical equipment). The analysis of the parties' trade patterns and export structures suggests that trade diversion is on balance more likely than trade creation from a future EU-Armenia FTA, though it is expected to be not very significant. Major welfare implications for Armenia could arise from the deeper integration with the EU, but for those gains to be realized it would be necessary for Armenia to reduce the existing barriers which affect domestic business as well as trade (regulatory, institutional, infrastructural, and political) and to introduce the regulatory and institutional framework aiming at promoting trade and generating positive externalities and productivity gains. Effective implementation of regulatory convergence with the EU acquis in the area of trade and investment would increase the potential for grasping greater welfare gains for Armenia under the Deep FTA+.

4. The majority of Armenian firms consider the burden of EU technical regulations and product standards as not important, with the exception of testing and certification. This fact is underpinned with the structure of Armenian exports dominated by minerals, precious stones, and raw materials which meet the product standards and safety requirements almost by default. Moreover, many export products are manufactured under some sort of the outward processing scheme, when Armenian firms provide their production services and all the matters of logistics and marketing are carried out by their European partner. Therefore the Armenian counterparts are not even familiar with full costs involved in exporting to the EU. The companies that fall short of satisfying European market requirement and are unable to change their technology accordingly are excluded from the list of exporters – and this is the absolute majority of Armenian companies.

5. Armenia has so far achieved a certain degree of regulatory harmonization with the EU acquis in all the main trade-related areas, in particular as regards approximation of the legislation. Nevertheless, incongruities still remain high, especially in the areas of IPR, state procurement, and SPS. The most striking differences with EU regulations in all spheres then lie in enforcement of the adopted legislation and practices. Even in those areas, where regulatory harmonization is relatively high, the achievements are mostly in the harmonization of laws on the books rather than in their implementation. Armenian regulatory system is, one hand, rather bureaucratic and, on the other hand, ineffectual. Shady and corrupt practices further undermine the system of enforcement. In the areas of standards and SPS, the impulse towards harmonization depends not only on the Government efforts but on the private sector as well. The cooperation between the EU and Armenia needs to focus on the harmonization of implementing regulations and practices and upgrading of institutional structures in Armenia, as is designed by the PCA and ENP AP. Once this is achieved, a Deep FTA+ would be able to bring economic benefits to Armenia.

6. In terms of the likely impact of an FTA on foreign direct investment flows we notice that the role of foreign capital has gradually decreased along with the development of the economy, although it still remains substantial. At the moment, foreign direct investors into Armenia seem to be primarily market-driven and go to highly protected service and food-producing sectors. Mineral resources (precious stones, metal ores) also attract smaller part of the FDI. Investors are not yet willing to use

the relatively cheap Armenian labour and outsource part of production there. This, however, might be changed by implementing a Deep FTA+ A further precondition for this would be to lower the costs of trading across borders, in particular by achieving an opening of border crossing points with Turkey and Azerbaijan. A Simple FTA would probably have a negligible impact on FDI. A Deep FTA+ eliminating all NTBs and approximating domestic laws and their implementation to EU norms, would have a more positive impact.

7. The estimates of potential foreign investment suggest that Deep FTA+ with significant improvement of the business environment is likely to have a substantial impact on FDI inflows into Armenia. If economic, institutional and political reforms are entrenched and enhanced along with the implementation of the Deep FTA+, the country could enjoy a sizeable increase in FDI inflows. Some simulations suggest that the FDI stock in Armenia could increase up to five-fold until 2020, but this has to be considered a rather optimistic figure, since it assumes that Armenia succeeds in its transition reforms to the extent of approaching the current level proxied by the case of Bulgaria, which, it must be acknowledged, has been boosted by the incentives of EU accession which are not available for Armenia.

8. Analyzing the possible impact of FTA on services sectors, we note that a Simple FTA could have only a very marginal impact on the services sector. Deep FTA+ could have a very substantial impact, and could transform some sub-sectors. An effective Deep FTA+ would need to embrace significant areas of domestic rules including competition law in particular as it affects trade and would also require far-reaching flanking measures. Many of these flanking measures such as strengthening the rule of law, improving the general business climate, combating corruption and reinforcing the authority of the competition policy are listed under the priorities of the EU/Armenia Action Plan. A Deep FTA+ could therefore be seen as essentially complementary to continued implementation of the ENP Action Plan.

9. We also studied the impact on sensitive sectors such as agro-food, mining and processing of precious stones. For none of those sectors it could be expected that a Simple FTA would have a large impact. With regard to the agro-food, Armenia is not in compliance with so many regulations (including SPS measures and the protection of intellectual property rights but also general competition policy and business environment) that an effective Deep FTA+ could have a lot of scope to improve trade and investment into the agri-food sector. With regard to the mining sector, the impact of a Deep FTA would be negligible, since typical measures of a Deep FTA like

e.g. standardization are not relevant for that sector. However, with regard to the processing of precious stones, a Deep FTA+ might stimulate FDI, if it is related to increased confidence of investors to bring their capital to Armenia.

10. However, a major problem in the implementation of an FTA is the lack of the level playing field and perceived monopolies in import sectors. A Simple FTA would do nothing to change the patterns of interaction between small domestic companies, foreign capital and the domestic political economy. Only a Deep FTA+ containing effective provisions equivalent to articles 81 and 82 of the EC Treaty regarding anti-competitive practices that affect trade between the partners could create the level playing field. As long as there is no level playing field in the majority of sectors even a Deep FTA would not lead to increased competition and the domestic consumers would not benefit. It remains to be seen to what extent a Deep FTA+ could provide a strong enough incentive to truly liberalise the markets, implement the EU regulations in practise and open the market to foreign companies in all sectors.

11. Another significant obstacle to realisation of gains from a Deep FTA and Deep FTA+ is due to high transport and transit costs. The closed borders with Azerbaijan, but especially Turkey, and poor infrastructure hamper Armenia's competitiveness and its attractiveness to foreign investors. In this respect a good cooperation with Georgia is of particular importance to Armenia. If the EU was to sign free trade agreements with both Armenia and Georgia, the incentives to cooperation would be much stronger as the stakes would be higher.

12. We study a range of scenarios ranging from the liberalization in the EU-Armenia bilateral trade that took place in 2006 (baseline scenario) to a Deep FTA+ using a CGE model. We find that the welfare gains for Armenia from tariff liberalisation on its and the EU side respectively that took place in 2006 (in particular Armenia's unilateral lowering of import tariffs and EU's granting Armenia tariff preferences under the general arrangement of its new GSP) are likely to be small (less than 0.4% of GDP). Also the additional impact of a possible future EU-Armenia Simple FTA or Simple FTA BIS is likely to be negligible. A Deep FTA would involve a more complete elimination of barriers to trade and investment implying reductions in, or elimination of regulatory and behind-the-border impediments to trade, which may relate to customs procedures, product standards and certifications procedures and market access for foreign providers of services. The potential additional welfare gains are estimated to amount to about 3.38% of GDP. If comprehensive reforms

brought about by deeper integration along with additional flanking measures related to competition policy and corruption led to a re-branding of Armenia as a favourable investment location, a reduction of the risk premium on investment could work as an additional mechanism for boosting both investment and GDP growth (Deep FTA+). If this was to occur, from our model simulations, we envisage the possibility of additional economic gains from a Deep FTA+ reaching as much as 7.95% of GDP.

13. Overall, we conclude that a free trade agreement between Armenia and the EU is feasible, but a Simple FTA would not bring significant economic benefits to Armenia. The real gains could materialize over the medium to long term with a completion of a Deep FTA+. Given the slow progress with the implementation of the ENP Action Plan, serious questions remain as to the institutional capacity of Armenia to undertake steps towards harmonization with EU aquis beyond those indicated in the ENP Action Plan. However, these problems might be eased with technical assistance. A Deep FTA+ would almost certainly need to go beyond the implementation of the ENP Action Plan and would require not only domestic regulatory harmonisation obligations but also a number of flanking measures such as strengthening the rule of law, improving the general business climate, combating corruption and reinforcing the internal authority of the competition policy regime. Creating a level playing field and market economy conditions are prerequisites to the realization of the benefits that might stem from deeper integration with the EU. While Armenia has made some progress towards meeting many of the legislative requirements of a Deep FTA, it is clear that implementation of statutory laws and obligations remains a problem and therefore the impact of a Deep FTA and Deep FTA+ on the Armenian economy would to a large extent depend not only on the content but on the actual implementation of the provisions of the free trade agreement and the general business environment.

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Appendix 1

Sussex Framework – Additional Tables

Appendix 1 Table 1. Top 15 export sectors by export share in 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	21.76%	53.40	24.07%	65.80
720270	Ferromolybdenum	1.12%	177.91	16.02%	502.08
260300	Copper ores and concentrates	3.11%	28.23	7.39%	28.71
220820	Spirits obtained by distilling grape wine	8.88%	177.13	7.30%	232.69
740200	Unrefined copper; copper anodes	0.43%	13.22	7.24%	127.03
710813	Gold, incl. gold plated with platinum, other semi manufactured forms	0.00%	0.00	3.72%	25.16
711319	Articles of jewellery and parts thereof, of precious metal other than silver	2.19%	6.94	3.44%	12.77
400249	Chloroprene "chlorobutadiene rubber, CR"	2.30%	317.61	2.45%	468.46
271600	Electrical energy	0.75%	4.96	1.77%	6.30
621210	Brassieres of all types of textile materials	0.00%	0.00	1.75%	26.60
252329	Portland cement	0.85%	14.64	1.71%	37.43
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	1.63%	62.07
710231	Non-industrial diamonds unworked or simply sawn	0.01%	0.04	1.23%	3.51
911180	Cases for wrist-watches, pocket-watches and other watches of materials other than precious metal	0.00%	0.00	0.67%	1338.65
810299	Molybdenum and articles thereof nes	0.08%	32.19	0.58%	144.27
	Total	**41.48%**		**80.97%**	
	Average		**55.08**		**205.44**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1996 –HS 1996 6-digit.

Appendix 1 Table 2. Top 15 export sectors by RCA in 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
911180	Cases for wrist-watches, pocket-watches and other watches of materials other than precious metal	0.00%	0.00	0.67%	1338.65
911110	Cases for wrist-watches, pocket-watches and other watches of precious metal	0.00%	0.00	0.56%	508.30
720270	Ferromolybdenum	1.12%	177.91	16.02%	502.08
400249	Chloroprene "chlorobutadiene rubber, CR"	2.30%	317.61	2.45%	468.46
284450	Spent (irradiated) fuel elements	0.00%	0.00	0.002%	245.03
220820	Spirits obtained by distilling grape wine	8.88%	177.13	7.30%	232.69
911430	Dials for clocks or watches	0.00%	0.00	0.31%	229.32
030629	Crustaceans, fit for human consumption	0.01%	2.28	0.39%	197.33
810299	Molybdenum and articles thereof nes	0.08%	32.19	0.58%	144.27
740200	Unrefined copper; copper anodes	0.43%	13.22	7.24%	127.03
730590	Tubes and pipes having circular cross-sections	0.03%	11.46	0.11%	105.07
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	21.76%	53.40	24.07%	65.80
570190	Carpets and other textile floor coverings, of textile materials	0.00%	0.00	0.09%	63.17
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	1.63%	62.07
720291	Ferro-titanium and ferro-silico-titanium	0.03%	16.30	0.32%	57.33
	Total	**34.63%**		**61.7%**	
	Average		**53.43**		**289.77**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix1 Table 3. Top 15 export sectors by export share in 1997, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	21.76%	53.40	24.07%	65.80
220820	Spirits from distilled grape wine	8.88%	177.13	7.30%	232.69
740400	Waste and scrap, copper	6.33%	76.02	0.55%	3.84
720449	Ferrous waste and scrap, iron or steel	5.80%	67.12	0.0%	0.00
760200	Waste and scrap, aluminium	5.76%	93.48	0.49%	5.35
260300	Copper ores and concentrates	3.11%	28.23	7.39%	28.71
400249	Chloroprene "chlorobutadiene rubber, CR"	2.30%	317.61	2.45%	468.46
711319	Articles of jewellery and parts thereof, of precious metal other than silver	2.19%	6.94	3.44%	12.77
854459	Electric conductors, for a voltage	1.42%	14.82	0.01%	0.08
620213	Woman's or girls' overcoats	1.39%	79.30	0.01%	0.72
900590	Parts and accessories	1.21%	376.70	0.0%	0.00
720270	Ferro-molybdenum	1.12%	177.91	16.02%	502.08
940600	Prefabricated buildings	1.11%	19.17	0.001%	0.01
850421	Liquid dielectric transformers	1.08%	86.64	0.01%	0.79
720421	Waste and scrap, stainless steel	0.98%	32.97	0.14%	1.83
	Total	**64.44%**		**61.87%**	
	Average		**107.16**		**88.21**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 4. Top 15 export sectors by RCA in 1997, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
710229	Diamonds industrial nes	0.86%	653.8	0.00%	0.00
400241	Latex of chloroprene	0.32%	533.0	0.00%	0.00
900590	Parts and accessories	1.21%	376.7	0.00%	0.00
400249	Chloroprene "chlorobutadiene rubber, CR"	2.30%	317.6	2.45%	468.46
720450	Remelting scrap ingots, of iron	0.11%	251.1	0.00%	0.00
846820	Gas-operated machinery for welding	0.51%	185.0	0.05%	30.87
720270	Ferro-molybdenum	1.12%	177.9	16.02%	502.08
220820	Spirits from distilled grape wine	8.88%	177.1	7.30%	232.69
430400	Artificial fur and articles thereof	0.17%	146.7	0.0003%	0.39
400239	Halo-isobutene-isoprene rubber	0.59%	123.3	0.00%	0.00
620322	Men's or boys' ensembles of cotton	0.50%	97.6	0.0003%	0.13
720430	Waste and scrap, of tinned iron	0.23%	96.8	0.00%	0.00
760200	Waste and scrap, aluminium	5.76%	93.5	0.49%	5.35
850421	Liquid dielectric transformers	1.08%	86.6	0.01%	0.79
720429	Waste and scrap, of alloy steel	0.88%	81.0	0.001%	0.03
Total		**24.52%**		**26.32%**	
Average			**226.5**		**82.72**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 5. Top 15 export sectors by export share in 2006, non-agricultural exports, HS 6 digit

HS code	Description	% share in non-agri exports	RCA	% share in non-agri exports	RCA
		1997		2006	
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	24.48%	54.49	27.39%	69.96
720270	Ferro-molybdenum	1.26%	181.53	18.24%	533.82
260300	Copper ores and concentrates	3.50%	28.80	8.41%	30.53
740200	Copper unrefined, copper anodes for	0.48%	13.48	8.25%	135.06
710813	Gold in oth semi-manufactured forms	0.00%	0.00	4.24%	26.75
711319	Articles of jewellery and parts thereof, of precious metal other than silver	2.47%	7.08	3.92%	13.58
400249	Chloroprene "chlorobutadiene rubber, CR"	2.59%	324.08	2.79%	498.08
271600	Electrical energy	0.85%	5.06	2.01%	6.69
621210	Brassieres of all types of textile materials	0.00%	0.00	2.00%	28.28
252329	Portland cement (excl. white)	0.96%	14.94	1.95%	39.79
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	1.85%	65.99
710231	Non-industrial diamonds unworked or simply sawn	0.01%	0.04	0.99%	3.74
911180	Cases for wrist-watches, pocket-watches and other watches of materials other than precious metal	0.00%	0.00	0.77%	1423.27
810299	Molybdenum and articles thereof nes	0.09%	32.85	0.66%	153.39
701090	Carboys/bottles/flasks etc	0.13%	1.94	0.64%	11.29
		36.82%		**84.10%**	
Average			**44.29**		**202.68**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit

Appendix 1 Table 6. Top 15 export sectors by RCA in 2006, non-agricultural exports, HS 6 digit

HS code	Description	% share in non-agri exports	RCA	% share in non-agri exports	RCA
		1997		2006	
911180	Cases for wrist-watches, pocket-watches and other watches of materials other than precious metal	0.00%	0.00	0.77%	1423.27
911110	Cases for wrist-watches, pocket-watches and other watches of precious metal	0.00%	0.00	0.63%	540.43
720270	Ferro-molybdenum	1.26%	181.53	18.24%	533.82
400249	Chloroprene "chlorobutadiene rubber, CR"	2.59%	324.08	2.79%	498.08
284450	Spent (irradiated) fuel elements	0.00%	0.00	0.00%	260.52
911430	Clock or watch dials	0.00%	0.00	0.36%	243.82
810299	Molybdenum and articles thereof nes	0.09%	32.85	0.66%	153.39
740200	Copper unrefined, copper anodes	0.48%	13.48	8.25%	135.06
730590	Tubes & pipe, i or s, riveted	0.03%	11.69	0.12%	111.71
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	24.48%	54.49	27.39%	69.96
570190	Carpets and other textile floor	0.00%	0.00	0.11%	67.16
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	1.85%	65.99
720291	Ferro-titanium and ferro-silico-titanium	0.04%	16.64	0.37%	60.96
252329	Portland cement (excl. white)	0.96%	14.94	1.95%	39.79
580211	Unbleached terry towelling	0.00%	0.00	0.01%	36.26
		29.93%		**63.49%**	
Average			**43.31**		**282.68**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 7. Top 15 export sectors to the EU27 by export share in 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
720270	Ferromolybdenum	3.57%	714.44	31.50%	740.67
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	72.18%	259.79	21.77%	123.81
740200	Unrefined copper; copper anodes	0.00%	0.00	15.15%	317.74
260300	Copper ores and concentrates	0.00%	0.00	7.97%	401.37
621210	Brassieres of all types of textile materials	0.00%	0.00	3.67%	86.10
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	2.84%	667.08
400249	Chloroprene "chlorobutadiene rubber, CR"	0.05%	11.32	2.64%	1080.40
810299	Molybdenum and articles thereof nes	0.27%	50.96	1.21%	287.49
710231	Non-industrial diamonds unworked or simply sawn	0.04%	0.09	1.12%	2.9
740400	Copper waste and scrap.	2.01%	25.48	0.70%	4.1
030629	Crustaceans, fit for human consumption	0.01%	2.49	0.69%	168.05
720291	Ferro-titanium and ferro-silico-titanium	0.11%	34.23	0.67%	86.45
610822	Of manmade fibres	0.00%	0.00	0.61%	34.6
720449	Ferrous waste and scrap, iron or steel	5.18%	47.69	0.48%	2.9
621290	Corsets, braces, garters, suspenders	0.00%	0.00	0.40%	57.05
	Total	**83.42%**		**91.42%**	
	Average		**76.43**		**270.72**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit

Appendix 1 Table 8. Top 15 export sectors to the EU27 by RCA in 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
400249	Chloroprene "chlorobutadiene rubber, CR"	0.05%	11.32	2.64%	1080.40
720270	Ferromolybdenum	3.57%	714.44	31.50%	740.67
261390	Molybdenum ores and concentrates (excl. roasted)	0	0.00	2.84%	667.08
260300	Copper ores and concentrates.	0.00%	0.00	7.97%	401.37
740200	Unrefined copper; copper anodes for	0.00%	0.00	15.15%	317.74
810299	Molybdenum and articles thereof nes	0.27%	50.96	1.21%	287.49
030629	Crustaceans, fit for human consumption	0.01%	2.49	0.69%	168.05
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	72.18%	259.79	21.77%	123.81
720291	Ferro-titanium and ferro-silico-titanium	0.11%	34.23	0.67%	86.45
621210	Brassieres of all types of textile materials	0.00%	0.00	3.67%	86.10
570190	Of other textile materials	0.00%	0.00	0.05%	83.20
551339	Other woven fabrics	0.00%	0.00	0.01%	81.96
551332	Coloured 3 or 4-thread twill, <85%	0.00%	0.00	0.003%	64.11
621290	Corsets, braces, garters, suspenders	0.00%	0.00	0.40%	57.05
720280	Ferrotungsten and ferrosilicotungsten	0.00%	0.00	0.03%	47.76
	Total	**76.19%**		**88.60%**	
	Average		**71.55**		**286.22**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 9. Top 15 export sectors to the EU27 by export share in 1997, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	
		1997		2006	
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	72.18%	259.79	21.77%	123.81
720449	Ferrous waste and scrap, iron or steel	5.18%	47.69	0.48%	2.87
720270	Ferro-molybdenum	3.57%	714.44	31.50%	740.67
711210	Waste&scrap of gold,incl mtl clad	2.85%	498.68	0.00%	0.00
740400	Waste and scrap, copper	2.01%	25.48	0.70%	4.11
720421	Waste and scrap, stainless steel	1.78%	50.69	0.29%	2.48
200970	Apple juice, unfermented	1.68%	55.94	0.00%	0.00
720441	Ferrous waste and scrap	1.20%	56.35	0.00%	0.00
710229	Diamonds industrial nes	1.14%	2753.70	0.00%	0.00
720429	Waste and scrap, of alloy steel	1.09%	121.64	0.00%	0.00
220820	Spirits from distilled grape wine	0.64%	7.12	0.34%	5.76
710811	Gold powder non-monetary	0.54%	3405.51	0.00%	0.00
252310	Cement clinkers	0.45%	31.98	0.00%	0.00
720450	Remelting scrap ingots	0.36%	560.52	0.00%	0.00
410110	Whole hides and skins of bovine animals	0.34%	26.14	0.00%	0.00
	Total	**95.10%**		**55.09%**	
	Average		**574.4**		**58.64**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit

Appendix 1 Table 10. Top 15 export sectors to the EU27 by RCA in 1996, HS 6 digit

HS code	Description	% share in total exports	RCA	% share in total exports	RCA
		1997		2006	
710811	Gold powder non-monetary	0.54%	3405.51	0.00%	0.00
710229	Diamonds industrial nes	1.14%	2753.70	0.00%	0.00
720270	Ferro-molybdenum	3.57%	714.44	31.50%	740.67
720450	Remelting scrap ingots	0.36%	560.52	0.00%	0.00
711210	Waste&scrap of gold,incl mtl clad	2.85%	498.68	0.00%	0.00
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	72.18%	259.79	21.77%	123.81
570210	Kelem, Schumacks, Karamanie and other	0.16%	148.53	0.00%	0.00
720429	Waste and scrap, of alloy steel	1.09%	121.64	0.00%	0.00
253040	Natural micaceous iron oxides	0.04%	79.25	0.00%	0.00
711029	Palladium in other semi-manufacture	0.24%	67.91	0.00%	0.00
846810	Torches, hand-held, for soldering,	0.07%	59.04	0.00%	0.00
720441	Ferrous waste and scrap,i or s,from	1.20%	56.35	0.00%	0.00
200970	Apple juice, unfermented	1.68%	55.94	0.00%	0.00
810810	Titanium unwrought; waste and scrap	0.22%	52.46	0.00%	0.00
810299	Molybdenum and articles thereof nes	0.27%	50.96	1.21%	287.49
	Total	**85.62%**		**54.49%**	
	Average		**592.31**		**76.80**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 11. Top 15 export sectors to the EU27 by export share in 2006, non-agricultural exports, HS 6 digit

HS code	Description	% share in non-agri ARM-EU exports	RCA	% share in non-agri ARM-EU exports	RCA
		1997		2006	
720270	Ferro-molybdenum	3.66%	658.91	31.89%	689.86
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	74.05%	239.59	22.04%	115.32
740200	Copper unrefined, copper anodes	0.00%	0.00	15.33%	295.94
260300	Copper ores and concentrates	0.00%	0.00	8.07%	373.84
621210	Brassieres of all types of textile materials	0.00%	0.00	3.71%	80.20
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	2.87%	621.32
400249	Chloroprene "chlorobutadiene rubber, CR"	0.05%	10.44	2.68%	1006.29
810299	Molybdenum and articles thereof nes	0.28%	46.99	1.23%	267.77
710231	Non-industrial diamonds unworked or simply sawn	0.04%	0.08	1.13%	2.73
740400	Waste and scrap, copper or copper	2.06%	23.50	0.71%	3.83
720291	Ferro-titanium and ferro-silico-titanium	0.11%	31.57	0.68%	80.52
610822	Women's or girls' briefs, etc	0.00%	0.00	0.62%	32.23
720449	Ferrous waste and scrap, iron or st	5.32%	43.99	0.49%	2.67
621290	Corsets, braces, garters, suspenders	0.00%	0.00	0.41%	53.14
852990	Parts suitable for use	0.002%	0.00	0.30%	0.69
Total		**85.57%**		**92.14%**	
Average			**70.34**		**241.76**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit

Appendix 1 Table 12. Top 15 export sectors to the EU27 by RCA in 2006, non-agricultural exports, HS 6 digit

HS code	Description	% share in non-agri ARM -EU exports	RCA	% share in non-agri ARM -EU exports	RCA
		1997		2006	
400249	Chloroprene "chlorobutadiene rubber, CR"	0.05%	10.44	2.68%	1006.29
720270	Ferro-molybdenum	3.66%	658.91	31.89%	689.86
261390	Molybdenum ores and concentrates (excl. roasted)	0.00%	0.00	2.87%	621.32
260300	Copper ores and concentrates	0.00%	0.00	8.07%	373.84
740200	Copper unrefined, copper anodes	0.00%	0.00	15.33%	295.94
810299	Molybdenum and articles thereof nes	0.28%	46.99	1.23%	267.77
710239	Diamonds, worked, but not mounted or set (excl. industrial diamonds)	74.05%	239.59	22.04%	115.32
720291	Ferro-titanium and ferro-silico-titanium	0.11%	31.57	0.68%	80.52
621210	Brassieres of all types of textile materials	0.00%	0.00	3.71%	80.20
570190	Carpets and other textile floor cov	0.00%	0.00	0.05%	77.50
551339	Coloured woven fabrics, <85% synthetic	0.00%	0.00	0.01%	76.33
551332	Coloured 3 or 4-thread twill, <85%	0.00%	0.00	0.003%	59.71
621290	Corsets, braces, garters, suspenders	0.00%	0.00	0.41%	53.14
720280	Ferro-tungsten and ferro-silico-tun	0.00%	0.00	0.03%	44.49
551644	Printed woven fabrics, <85% artificial staple fibres by weight	0.00%	0.00	0.003%	42.64
Total		**78.15%**		**88.99%**	
Average			**65.83**		**258.99**

Source: WITS. Note: data for 2006 – HS 2002 6-digit, for 1997 –HS 1996 6-digit.

Appendix 1 Table 13. Top 15 export sectors of the EU27, 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports	RCA
	by export share				by RCA		
271000	Petroleum oils, etc, (excl. crude)	3.45%	0.92	070521	Witloof chicory, fresh or chilled	0.00%	2.47
300490	Other medicaments of mixed or unmixed	3.25%	1.86	040640	Blue-veined cheese	0.01%	2.47
870323	Motor cars principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 1.500 cm³ but <= 3.000 cm³	2.23%	1.19	310490	Mineral or chemical fertilizers	0.03%	2.46
852520	Transmission apparatus	2.11%	1.21	120911	Sugar beet seed	0.01%	2.45
870332	Motor cars principally designed for the transport of persons with compression-ignition internal combustion piston engine "diesel or semi-diesel" of a cylinder capacity > 1.500 cm³ but <= 2.500 cm³	1.92%	2.11	020731	Fresh or chilled fatty livers	0.00%	2.45
847330	Parts and accessories of automatic data processing machines or for other machines of heading 8471, n.e.s.	1.13%	0.59	290260	Ethyl benzene	0.00%	2.43
870899	Motor vehicle parts nes	1.10%	1.24	253020	Kieserite and epsomite "natural magnesium sulphates"	0.00%	2.42
870324	Motor cars principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 3.000 cm³	1.01%	0.86	151000	Other oils and their fractions	0.01%	2.41
880240	Aircraft nes of an unladen weight	0.91%	1.14	220510	Vermouth and other wine of fresh grape	0.01%	2.40
854211	Monolithic integrated circuits	0.79%	0.42	550490	Artificial staple fibres	0.02%	2.40
270900	Petroleum oils and oils obtained from bituminous minerals, crude	0.72%	0.15	220850	Gin and Geneva	0.01%	2.39
870322	Motor cars principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 1.000 cm³ but <= 1.500 cm³	0.68%	1.45	870331	Motor cars principally designed for the transport of persons with compression-ignition internal combustion piston engine "diesel or semi-diesel" of a cylinder capacity <= 1.500 cm³	0.41%	2.38
852810	Television receivers	0.63%	0.90	250870	Chamotte or dinas earths	0.00%	2.38
271121	Natural gas in gaseous state	0.63%	0.56	530121	Flax, broken or scotched	0.01%	2.37
847191	Digital process units	0.57%	1.31	292141	Aniline and its salts	0.02%	2.37
	Total	**21.13%**				**0.54%**	
	Average		**1.06**				**2.42**

Source: WITS

Appendix1 Table 14. RCA correlation coefficients, HS 6 digit, export, 2006

	Armenia	Georgia	Azerbaijan	Ukraine	Russia	Iran	Turkey
Georgia	0.052	1					
Azerbaijan	-0.004	0.094	1				
Ukraine	0.016	0.031	0.001	1			
Russia	-0.005	0.044	0.014	0.061	1		
Iran	-0.001	-0.003	-0.001	-0.007	-0.009	1	
Turkey	-0.007	0.195	0.069	-0.019	-0.043	0.018	1
EU27	-0.022	-0.021	-0.024	-0.131	-0.091	0.009	-0.059

Source: WITS

Appendix 2

Sussex Framework – Additional Tables

Appendix 2 Table 1. Armenia's tariffs by product group under the WTO commitments

Product groups	Final bound duties				MFN applied duties		
	Simple average	Duty free in %	Max	Binding in %	AVG	Duty free in %	Max
Animal products	14.9	0	15	100	7.5	24.7	10
Dairy products	15.0	0	15	100	10.0	0	10
Fruit, vegetables, plants	15.0	0	15	100	9.1	9.0	10
Coffee, tea	14.2	0	15	100	9.6	4.2	10
Cereals& preparations	15.0	0	15	100	5.3	46.8	10
Oilseeds, fats & oils	13.6	9.2	15	100	5.6	44.2	10
Sugar and confectionery	14.7	0	15	100	8.8	12.5	10
Beverages & tobacco	15.0	0	15	100	26.0	13.0	>1000
Cotton	15.0	0	15	100	0.0	100.0	0
Other agricultural products	14.6	0.7	15	100	3.2	67.6	10
Fish & fish products	15.0	0	15	100	9.5	5.3	10
Mineral & metals	7.0	46.9	15	100	1.5	84.8	10
Petroleum	5.0	0	5	100	0.0	100.0	0
Chemicals	0.3	96.7	10	100	0.2	97.6	10
Wood, paper, etc.	3.4	75.7	15	100	1.4	86.4	10
Textiles	9.1	4.2	15	100	1.6	83.6	10
Clothing	15.0	0	15	100	10.0	0	10
Leather, footwear, etc.	14.0	5.9	15	100	3.1	69.1	10
Non-electrical machinery	9.3	30.3	15	100	0.3	96.7	10
Electrical machinery	9.9	33.2	15	100	3.6	64.0	10
Transport equipment	9.6	9.8	15	100	3.1	68.7	10
Manufactures, nes	10.6	28.6	15	100	4.2	58.0	10

Source: WTO (http://www.wto.org/english/thewto_e/countries_e/armenia_e.htm).

Appendix 2 Table 2. Top 10 Armenia's imports and exports sectors by major trade partners

Armenia top imports		Armenia top exports	
HS code	**%**	**HS code**	**%**
Georgia			
17 - Sugars and sugar confectionery	**34.1%**	25 - Salt; sulphur; earths and stone; plastering materials; lime and cement	**34.4%**
31 - Fertilizers	**27.4%**	9 - Coffee, tea, mate and spices	**16.7%**
44 - Wood and articles of wood	**15.0%**	27 - Mineral fuels, mineral oils and products of their distillation	**15.4%**
22 - Beverages, spirits and vinegar	**4.7%**	39 - Plastics and articles thereof	**4.7%**
8 - Edible fruit and nuts; peel of citrus fruits or melons and watermelons	**3.6%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	**4.2%**
28 - Inorganic chemicals	**3.4%**	70 - Glass and glassware	**3.8%**
23 - Residues and waste from the food industries; prepared animal fodder	**2.1%**	16 - Preparations of meat, of fish or of crustaceans	**2.4%**
39 - Plastics and articles thereof	**1.9%**	2 - Meat and edible meat offal	**1.9%**
12 - Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit	**1.4%**	22 - Beverages, spirits and vinegar	**1.4%**
70 - Glass and glassware	**1.0%**	30 - Pharmaceutical products	**1.4%**
Turkey			
39 - Plastics and articles thereof	**15.3%**	24 - Tobacco and manufactured tobacco substitutes	**32.8%**
72 - Iron and steel	**9.9%**	72 - Iron and steel	**29.5%**
44 - Wood and articles of wood	**7.3%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances	**17.3%**
73 - Articles of iron or steel	**6.5%**	62 - Articles of apparel and clothing accessories, not knitted or crocheted	**12.6%**
84 - Nuclear reactors, boilers, machinery and mechanical appliances	**5.8%**	82 - Tools, implements, cutlery, spoons and forks, of base metals	**4.3%**
76 - Aluminium and articles thereof	**5.7%**	55 - Man-made staple fibres	**2.8%**
48 - Paper and paperboard; articles of paper pulp, of paper or of paperboard	**5.1%**	29 - Organic chemicals	**0.8%**
34 - Soap, organic surface- active agents, washing preparations	**5.0%**	48 - Paper and paperboard	**0.0%**
85 - Electrical machinery and equipment	**3.3%**		
62 - Articles of apparel and clothing accessories, not knitted or crocheted	**3.1%**		
Russia			
10 - Cereals	**16.3%**	22 - Beverages, spirits and vinegar	**52.2%**
87 - Vehicles other than railway or tramway rolling-stock	**15.3%**	71 - Precious metals	**9.0%**
84 - Nuclear reactors, boilers, machinery and mechanical appliances	**8.6%**	40 - Rubber and articles thereof	**6.7%**
71 - Precious metals	**8.0%**	85 - Electrical machinery and equipment	**4.5%**
76 - Aluminium and articles thereof	**6.6%**	20 - Preparations of vegetables, fruit, nuts or other parts of plants	**4.1%**
27 - Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	**5.3%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances	**2.9%**
24 - Tobacco and manufactured tobacco substitutes	**4.2%**	70 - Glass and glassware	**2.7%**
40 - Rubber and articles thereof	**4.1%**	90 - Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	**2.6%**
18 - Cocoa and cocoa preparations	**3.2%**	91 - Clocks and watches and parts thereof	**1.9%**
85 - Electrical machinery and equipment	**3.1%**	9 - Coffee, tea, mate and spices	**1.6%**

Appendix 2 Table 2 cd. Top 10 Armenia's imports and exports sectors by major trade partners

Armenia top imports		Armenia top exports	
HS code	**%**	**HS code**	**%**
Iran			
27 - Mineral fuels, mineral oils and products of their distillation	**31.2%**	27 - Mineral fuels, mineral oils and products of their distillation	**35.0%**
73 - Articles of iron or steel	**7.4%**	25 - Salt; sulphur; earths and stone; plastering materials; lime and cement	**21.9%**
72 - Iron and steel	**7.2%**	76 - Aluminium and articles thereof	**16.2%**
39 - Plastics and articles thereof	**6.9%**	15 - Animal or vegetable fats and oils and their cleavage products	**6.2%**
15 - Animal or vegetable fats and oils and their cleavage products	**5.5%**	73 - Articles of iron or steel	**4.2%**
70 - Glass and glassware	**4.4%**	72 - Iron and steel	**3.6%**
8 - Edible fruit and nuts; peel of citrus fruits or melons and watermelons	**4.4%**	26 - Ores, slag and ash	**2.5%**
26 - Ores, slag and ash	**4.1%**	85 - Electrical machinery and equipment	**2.0%**
34 - Soap, organic surface- active agents, washing preparations	**3.0%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances	**1.7%**
28 - Inorganic chemicals	**2.9%**	44 - Wood and articles of wood	**1.2%**
Ukraine			
72 - Iron and steel	**23.6%**	22 - Beverages, spirits and vinegar	**33.2%**
27 - Mineral fuels, mineral oils and products of their distillation	**19.6%**	72 - Iron and steel	**32.4%**
24 - Tobacco and manufactured tobacco substitutes	**11.2%**	20 - Preparations of vegetables, fruit, nuts or other parts of plants	**11.8%**
15 - Animal or vegetable fats and oils and their cleavage products	**4.7%**	26 - Ores, slag and ash	**7.9%**
22 - Beverages, spirits and vinegar	**4.1%**	40 - Rubber and articles thereof	**2.9%**
11 - Products of the milling industry; malt; starches; inulin; wheat gluten	**3.2%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances	**1.7%**
4 - Dairy produce; birds' eggs; natural honey	**3.1%**	3 - Fish and crustaceans, molluscs and other aquatic invertebrates	**1.6%**
73 - Articles of iron or steel	**3.0%**	70 - Glass and glassware	**1.6%**
85 - Electrical machinery and equipment	**2.7%**	85 - Electrical machinery and equipment	**0.9%**
26 - Ores, slag and ash	**2.4%**	68 - Articles of stone, plaster, cement, concrete, asbestos, mica	**0.6%**
The US			
71 - Precious metals	**25.3%**	71 - Precious metals	**79.1%**
30 - Pharmaceutical products	**21.7%**	22 - Beverages, spirits and vinegar	**3.9%**
90 - Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus	**12.5%**	40 - Rubber and articles thereof	**2.7%**
84 - Nuclear reactors, boilers, machinery and mechanical appliances	**8.6%**	20 - Preparations of vegetables, fruit, nuts	**2.4%**
63 - Other made-up textile articles; sets; worn clothing and worn textile articles; rags	**5.6%**	57 - Carpets and other textile floor coverings	**2.2%**
85 - Electrical machinery and equipment	**4.9%**	68 - Articles of stone, plaster, cement, concrete, asbestos, mica or similar materials	**1.7%**
2 - Meat and edible meat offal	**2.7%**	85 - Electrical machinery and equipment	**1.3%**
87 - Vehicles other than railway or tramway rolling-stock	**2.6%**	24 - Tobacco and manufactured tobacco substitutes	**1.2%**
97 - Works of art, collectors' pieces and antiques	**2.2%**	76 - Aluminium and articles thereof	**0.8%**
49 - Printed books, newspapers, pictures	**1.9%**	4 - Dairy produce; birds' eggs; natural honey	**0.7%**

Appendix 2 Table 2 cd. Top 10 Armenia's imports and exports sectors by major trade partners

Armenia top imports		Armenia top exports	
HS code	**%**	**HS code**	**%**
United Arab Emirates			
39 - Plastics and articles thereof	**19.2%**	74 - Copper and articles thereof	**38.9%**
94 - Furniture	**12.5%**	71 - Precious metals	**30.1%**
32 - Tanning or dyeing extracts; tannins and their derivatives; textile dyes, pigments	**11.1%**	84 - Nuclear reactors, boilers, machinery and mechanical appliances	**17.6%**
69 - Ceramic products	**7.7%**	72 - Iron and steel	**2.5%**
73 - Articles of iron or steel	**7.3%**	76 - Aluminium and articles thereof	**2.4%**
71 - Precious metals	**7.1%**	40 - Rubber and articles thereof	**1.9%**
84 - Nuclear reactors, boilers, machinery and mechanical appliances	**4.5%**	78 - Lead and articles thereof	**1.7%**
85 - Electrical machinery and equipment	**3.6%**	44 - Wood and articles of wood	**0.9%**
70 - Glass and glassware	**2.3%**	16 - Preparations of meat, of fish or of crustaceans, molluscs	**0.5%**
64 - Footwear, gaiters and the like, parts of such articles	**2.0%**	22 - Beverages, spirits and vinegar	**0.4%**
Turkmenistan			
27- Mineral fuels, mineral oils and products of their distillation	**99.6%**	71 - Precious metals	**45.9%**
52 - Cotton	**0.3%**	24 - Tobacco and manufactured tobacco substitutes	**20.5%**
58 - Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery	**0.1%**	30 - Pharmaceutical products	**13.7%**
39 - Plastics and articles thereof	**0.0%**	91 - Clocks and watches and parts thereof	**7.7%**
56 - Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables	**0.0%**	20 - Preparations of vegetables, fruit, nuts or other parts of plants	**7.1%**
87 - Vehicles other than railway or tramway rolling-stock	**0.0%**	70 - Glass and glassware	**3.5%**
		84 - Nuclear reactors, boilers, machinery and mechanical appliances	**0.8%**
		61 - Articles of apparel and clothing accessories, knitted or crocheted	**0.3%**
		21 - Miscellaneous edible preparations	**0.2%**
		55 - Man-made staple fibres	**0.2%**

Source: WITS.

Appendix 3

Top 15 export sectors of Armenia's main partners: by export share and RCA, 2006

Appendix 3 Table 1. Top 15 export sectors of Georgia, 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports	RCA
	by export share				by RCA		
720230	Ferrosilicomanganese	8.46%	525.36	**720230**	Ferrosilicomanganese	8.46%	525.36
260300	Copper ores and concentrates	8.02%	31.16	**080222**	Hazelnuts without shells	5.45%	520.25
720449	Ferrous waste and scrap, iron or steel, other	5.53%	39.90	**284590**	Other isotopes	0.47%	418.52
080222	Hazelnuts without shells	5.45%	520.25	**080221**	Hazelnuts in shell, fresh or dried	0.23%	351.44
710813	Gold in other semi-manufactured forms	4.88%	32.95	**310230**	Ammonium nitrate	4.70%	342.01
310230	Ammonium nitrate	4.70%	342.01	**252321**	White Portland cement	0.92%	263.93
870323	Automobiles Of a cylinder capacity exceeding 1	4.23%	2.25	**091040**	Thyme; bay leaves	0.13%	245.33
220421	Sparkling wine In containers holding 2 l or less	3.99%	26.70	**252390**	Other hydraulic cements	0.88%	214.65
740400	Copper waste and scrap	3.04%	21.20	**283711**	Cyanides and cyanide oxides of sodium	0.38%	147.36
220820	Spirits obtained by distilling grape wine	2.57%	81.93	**440792**	Beech (Fagus spp.) wood	0.94%	140.59
270900	Petroleum oils and oils obtained from bituminous minerals, crude	2.57%	0.52	**880400**	Parachutes	0.18%	129.39
220110	Mineral waters and aerated waters	2.42%	123.95	**220110**	Mineral waters and aerated waters	2.42%	123.95
220210	Waters, including mineral waters	2.32%	45.90	**880211**	Helicopters Of an unladen weight	1.71%	116.06
880230	Aeroplanes and other aircraft	1.90%	13.27	**731300**	Barbed wire of iron or steel; twist	0.14%	106.30
170199	Cane or beet sugar, in solid form	1.90%	20.91	**870490**	Trucks nes	0.32%	104.33
	Total	**61.98%**				**27.33%**	
	Average		**121.88**				**249.96**

Source: WITS

Appendix 3 Table 2. Top 15 export sectors of Russia, 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports	RCA
	by export share				by RCA		
270900	Petroleum oils and oils obtained from bituminous minerals, crude	35.06%	7.1	**251020**	"Ground natural calcium phosphates, "	0.06%	25.7
271000	"Petroleum oils, etc, (excl. crude)	16.04%	4.3	**400231**	Isobutene-isoprene (butyl) rubber	0.11%	23.1
271121	Natural gas in gaseous state	15.53%	13.6	**400260**	Isoprene rubber	0.10%	21.6
750210	"Nickel unwrought, not alloyed"	1.98%	13.8	**310540**	Ammonium dihydrogenorthophosphate	0.15%	19.9
760110	"Aluminium unwrought, not alloyed"	1.61%	7.7	**252400**	Asbestos	0.05%	16.9
270112	"Bituminous coal, not agglomerated"	1.42%	3.5	**440320**	Untreated coniferous wood	0.91%	16.6
720712	"Semi-fin prod, iron or n-al steel"	1.16%	10.4	**750220**	"Nickel unwrought, alloyed"	0.16%	16.1
440320	Untreated coniferous wood	0.91%	16.6	**283030**	Cadmium sulphide	0.00%	15.9
740811	Wire of refined copper	0.83%	5.6	**310551**	Mineral or chemical fertilizers con	0.02%	15.8
440710	Coniferous wood sawn or chipped	0.81%	3.7	**720249**	"Ferro-chromium, nes"	0.08%	15.1
760120	Aluminium unwrought, alloyed	0.72%	3.6	**470411**	Unbleached coniferous chemical wood	0.00%	14.9
710231	Diamonds non-industrial unworked	0.62%	2.5	**284130**	Sodium dichromate	0.02%	14.5
740311	Copper cathodes and sections of cat	0.59%	1.5	**722820**	Bars and rods of silico-manganese	0.04%	14.0
720449	"Ferrous waste and scrap, iron or steel"	0.57%	4.1	**750210**	"Nickel unwrought, not alloyed"	1.98%	13.8
720824	"Flat rlld prod, i/nas, in coil, hr,"	0.53%	4.0	**271121**	Natural gas in gaseous state	15.53%	13.6
	Total	**78.39%**				**19.22%**	
	Average		**6.8**				**17.2**

Source: WITS

Appendix 3 Table 3. Top 15 export sectors of Turkey, 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports	RCA
	by export share				by RCA		
721420	Bars&rods,i/nas,hr, hd or he,cntg in	7.11%	68.9	**080222**	Hazelnuts without shells	2.05%	195.43
610910	T-shirts, singlets and other vests	5.45%	31.9	**081310**	Dried apricots	0.42%	192.11
852810	Television receivers including vide	3.70%	5.3	**080420**	Figs, fresh or dried	0.29%	141.80
620462	Women's or girls' trousers, breeches	2.67%	18.3	**520291**	Garnetted stock of cotton	0.04%	139.08
711319	Art. of jewellery and pts thereof o	2.52%	9.3	**091040**	Thyme, bay leaves	0.06%	102.59
080222	Hazelnuts without shells	2.05%	195.4	**252910**	Felspar	0.19%	101.66
620342	Men's or boys' trousers, breeches	1.81%	13.2	**121230**	Apricot, peach or plum stones	0.02%	90.13
611020	Jerseys, pullovers, etc, of cotton,	1.81%	14.4	**080620**	Dried grapes	0.66%	89.08
680291	Worked monumental/buildi ng stone nes	1.40%	79.4	**551110**	Yarn, with >=85% synthetic staple	0.10%	80.68
611592	Hosiery and footwear, of cotton	1.34%	43.6	**620891**	Women's or girls' dressing gowns	0.33%	80.06
630260	Toilet linen and kitchen linen, of	1.29%	35.1	**680291**	Worked monumental/building stone nes	1.40%	79.40
610990	T-shirts, singlets, etc, of other t	1.17%	18.1	**251511**	Marble and travertine crude or rough	0.37%	74.03
240110	Tobacco, not stemmed/stripped	1.12%	64.1	**120791**	Poppy seeds	0.09%	71.67
570330	Tufted floor coverings of man-made	1.04%	44.6	**630539**	Sacks and bags, used for packing	0.54%	69.78
710812	Gold in unwrought forms non-monetary	1.01%	3.4	**721420**	Bars&rods,i/nas,hr,hd or he,cntg in	7.11%	68.89
	Total	**35.49%**				**13.68%**	
	Average		**43.0**				**105.1**

Source: WITS

Appendix3 Table 4. Top 15 export sectors of Ukraine, 2006, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports*	RCA
	by export share				by RCA		
271000	"Petroleum oils, etc, (excl. crude);"	4.39%	1.2	**392041**	Plates of polymers of vinyl chl	0.01%	281.0
720712	"Semi-fin prod,iron or n-al steel,re"	4.19%	37.3	**480522**	Multi-ply paper with only one ou	0.01%	277.8
720711	"Semi-fin prod,i/nas,rect/sq cross-s"	4.05%	65.8	**151211**	Crude sunflower-seed and safflower	2.08%	139.7
721420	"Bars&rods,i/nas,hr ,hd or he,cntg in"	3.16%	30.6	**720450**	"Remelting scrap ingots, of iron or "	0.11%	129.1
720720	"Semi-fin prod, iron or non-alloy st"	2.89%	71.3	**721020**	"Flat rlld prod, plated or coated wit"	0.04%	128.6
720842	"Flat rolled prod, i/nas, not in coi"	2.80%	23.4	**250830**	Fire-clay	0.29%	117.4
151211	Crude sunflower-seed and safflower	2.08%	139.7	**230630**	Oil-cake and other solid residues	0.32%	117.3
720824	"Flat rlld prod, i/nas, in coil, hr,"	2.04%	15.5	**860610**	"Railway tank cars, not self-propell"	0.73%	108.9
310210	Urea	1.97%	46.3	**410410**	"Whole bovine skin leather"	0.15%	92.1
721331	"Bars/rods,i/nas,hr,i n irreg wnd coi"	1.92%	26.4	**860699**	Railway cars nes	0.35%	79.8
100190	"Spelt, common wheat and meslin"	1.57%	9.7	**720230**	Ferro-silico-manganese	1.25%	77.8
730511	"Pipe,line,i or s,longitudinally sub"	1.56%	32.4	**860630**	"Railway cars, self-discharging, oth"	0.32%	75.6
100300	Barley	1.49%	47.1	**720720**	"Semi-fin prod, iron or non-alloy st"	2.89%	71.3
720843	"Flat rlld prod, i/nas, not in coil,"	1.29%	34.2	**860692**	"Railway cars, open, with non-removal"	0.25%	66.5
720230	Ferro-silico-manganese	1.25%	77.8	**720711**	Semi-fin prod,i/nas,rect/sq cross-s	4.05%	65.8
	Total	**36.64%**				**12.86%**	
	Average		**43.9**				**121.9**

Source: WITS

Appendix 3 Table 5. Top 15 export sectors of Iran, 2005, HS 6 digit

HS code	Description	% share in total exports	RCA	HS code	Description	% share in total exports	RCA
	by export share				by RCA		
270900	Petroleum oils and oils obtained from bituminous minerals, crude	83.48%	16.9	**091020**	Saffron	0.16%	497.8
080250	"Pistachio, fresh or dried"	1.25%	207.4	**720610**	Ingots, iron or non-alloy steel	0.58%	441.7
570110	Carpets and other textile floor cov	0.80%	142.8	**570292**	Non-pile floor coverings of man-made	0.17%	223.7
720610	"Ingots, iron or non-alloy steel, of"	0.58%	441.7	**080250**	"Pistachio, fresh or dried"	1.25%	207.4
271000	Petroleum oils, etc, (excl. crude);"	0.54%	0.1	**293212**	2-Furaldehyde (furfuraldehyde)	0.06%	170.2
720822	"Flat rlld prod, i/nas, in coil, hr"	0.50%	11.2	**251120**	Natural barium carbonate (whitherit	0.00%	152.0
271112	"Propane, liquefied"	0.45%	6.8	**570110**	Carpets and other textile floor cov	0.80%	142.8
270750	Aromatic hydrocarbon mixtures which	0.45%	10.2	**280200**	"Sulphur, sublimed or precipitated; "	0.07%	83.8
271111	"Natural gas, liquefied"	0.44%	1.4	**610799**	"Men's or boys' dressing gowns,	0.01%	68.6
760110	"Aluminium unwrought, not alloyed"	0.40%	1.9	**080410**	"Dates, fresh or dried"	0.12%	60.7
081090	Other fruit, fresh, nes	0.38%	18.4	**010420**	Live goats	0.04%	55.7
290511	Methanol (methyl alcohol)	0.33%	8.6	**410512**	"Sheep, lamb skin leather, non-veg. "	0.11%	50.4
271113	"Butanes, liquefied"	0.33%	7.0	**570299**	Non-pile floor coverings of textile	0.05%	46.6
290220	Benzene	0.32%	6.9	**570210**	"Kelem, Schumacks, Karamanie and other"	0.02%	28.9
290243	p-Xylene	0.26%	3.8	**080620**	Dried grapes	0.20%	26.6
	Total	**90.52%**				**3.63%**	
	Average		**59.0**				**150.4**

Source: WITS.

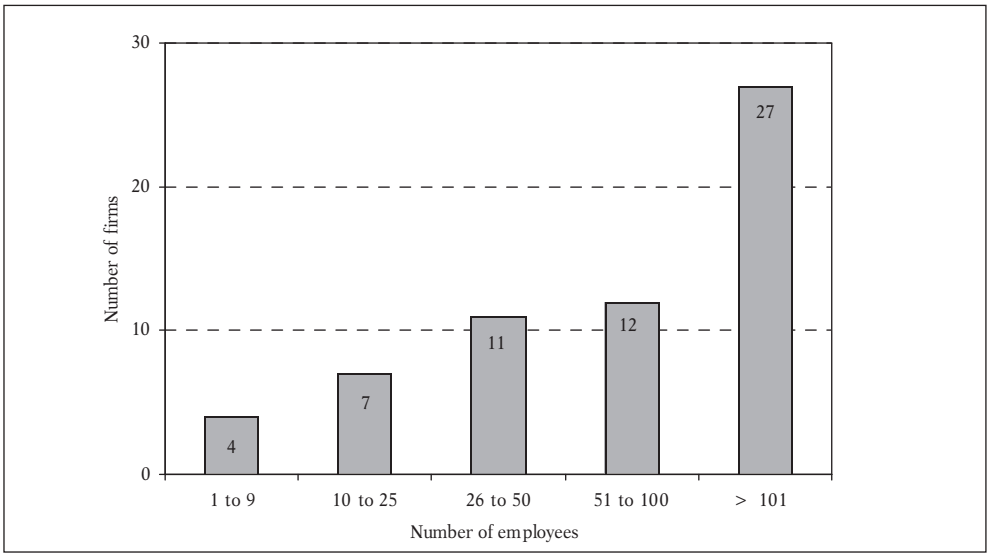
Appendix 4

Description of the sample and questionnaire

The total available sample for Armenia comprises 61 firms: 48 firms exporting to the EU and 13 firms exporting at least to CIS countries. The majority of the firms have more than 50 employees, and 44 % have more than 100 employees (Appendix4 Figure 1). Only two firms are state-owned and further two have a mixed ownership, the rest is private owned. Furthermore, 19 firms reported that there is foreign origin capital in the capital founding of their company. Thereof nine firms have EU-origin capital.

The average export share of the firms surveyed is rather high with 58 %. The median is even a little bit higher: 50 % of firms have export shares larger than 6 %. Furthermore, 36 % of the firms have export shares larger than 80 % and yet 25 % of the firms export their total production. The reported shares vary a little bit with firm size: on average, larger firms tend to have larger export shares, especially firm with 51 to 100 employees (Appendix 4 Figure 2). Export shares also seem to vary with the

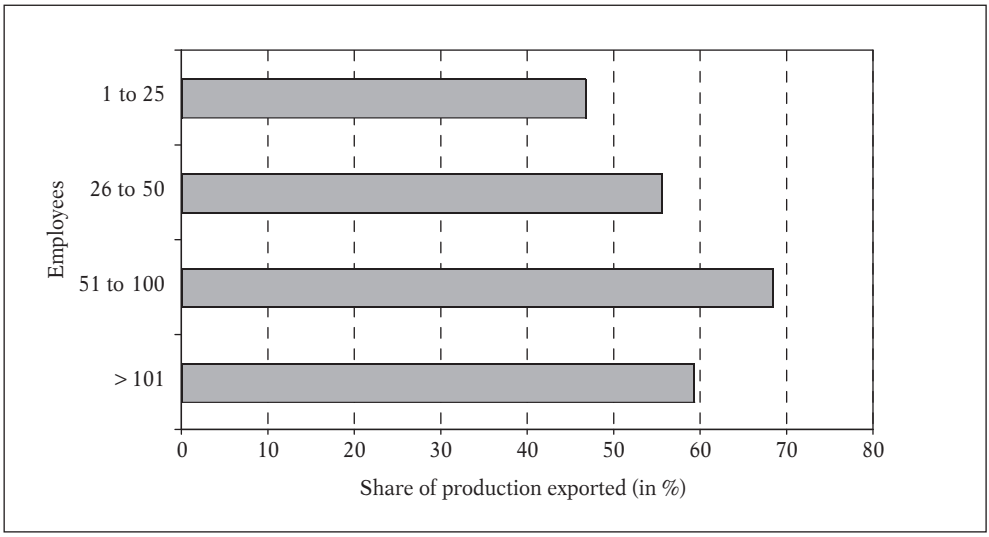
Appendix 4 Figure 1. Distribution of firms by size



Source: Survey Results

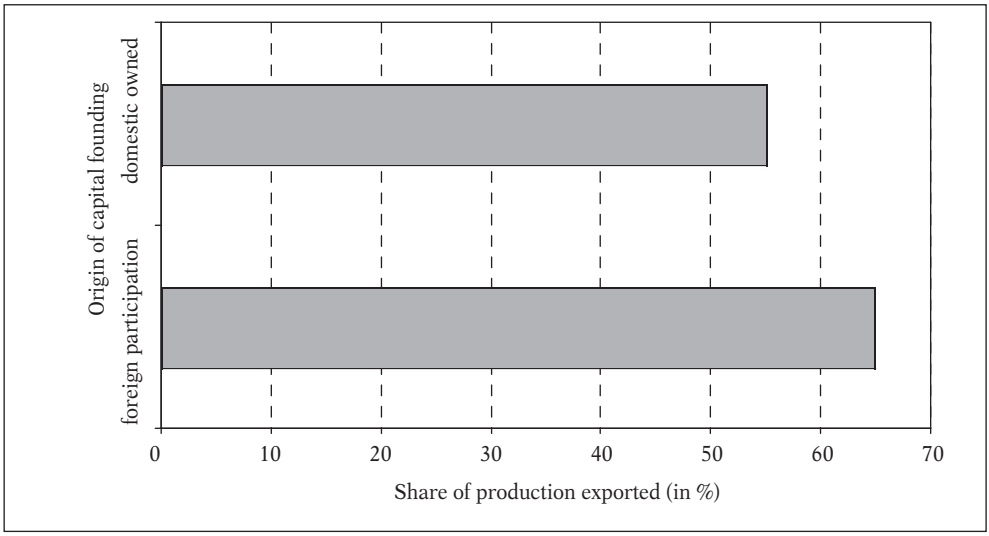
origin of capital founding. The average export share of firms with foreign participation is approximately 10 percentage points higher within the sample than that for domestically owned firms (Appendix4 Figure 3). However, this finding is not statistically significant. The null hypothesis that the population means are equal cannot be rejected at the usual levels: the error probability is about 17 %.

Appendix 4 Figure 2. Distribution of export shares by firm size and share of exports



Source: Survey Results

Appendix 4 Figure 3. Distribution of export shares by origin of capital founding

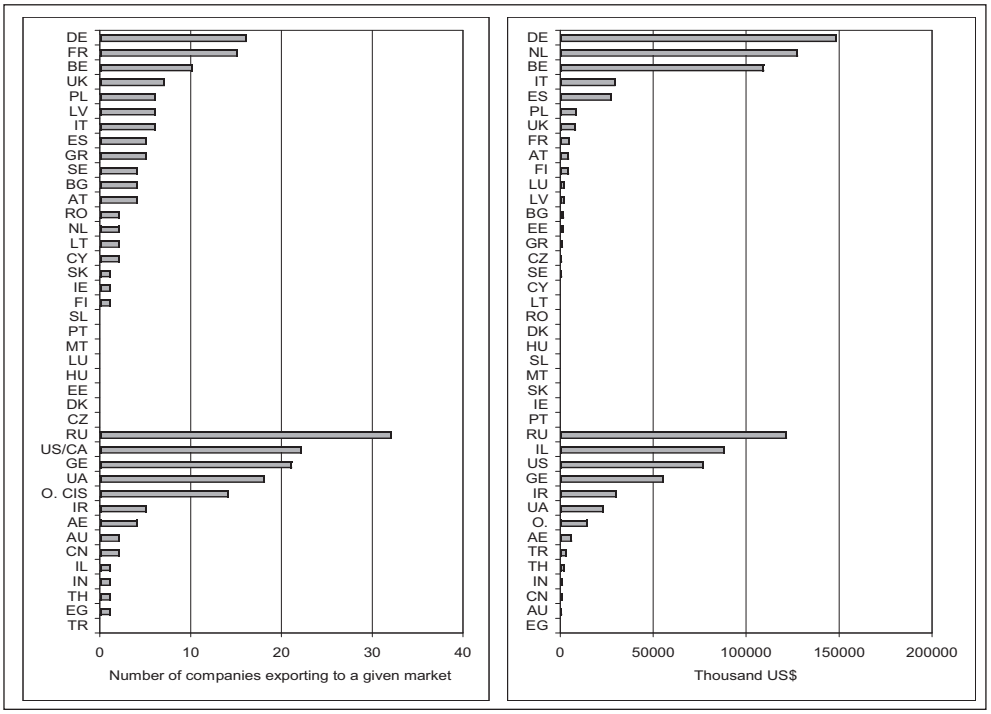


Source: Survey Results

Altogether, the 48 firms exporting to the EU reported 99 export relationships with EU countries. Thereby relationships with "old" EU15 countries clearly have a majority with 76 relationships, while only 26 relationships exist with the "new" EU12 countries. Germany is the most frequent trading partner with 16 entries, followed by France with 15 entries and Belgium with 10 entries. The most important "new" EU12 countries with six entries each are Latvia and Poland.

With regard to the distribution of export destinations within the EU, the sample looks quite representative. This reveals a view at Appendix4 Figure 4, where the left panel shows the destinations of all surveyed firms, while the right panel displays the geographical distribution of Armenian exports in 2006 according to the official trade statistics of ARMSTAT. Though the shape of the bars in both panels differ considerably, the rank correlation coefficient (between the rank of a certain EU export destination in the sample and the export volume according to ARMSTAT) is nevertheless 0.73. Thus, it can be assumed that the sample is for the EU countries to a large extent representative with regard to the geographical distribution of exports. The same optimism is also adequate for the other countries. Here the rank correlation coefficient amounts to 0.63.

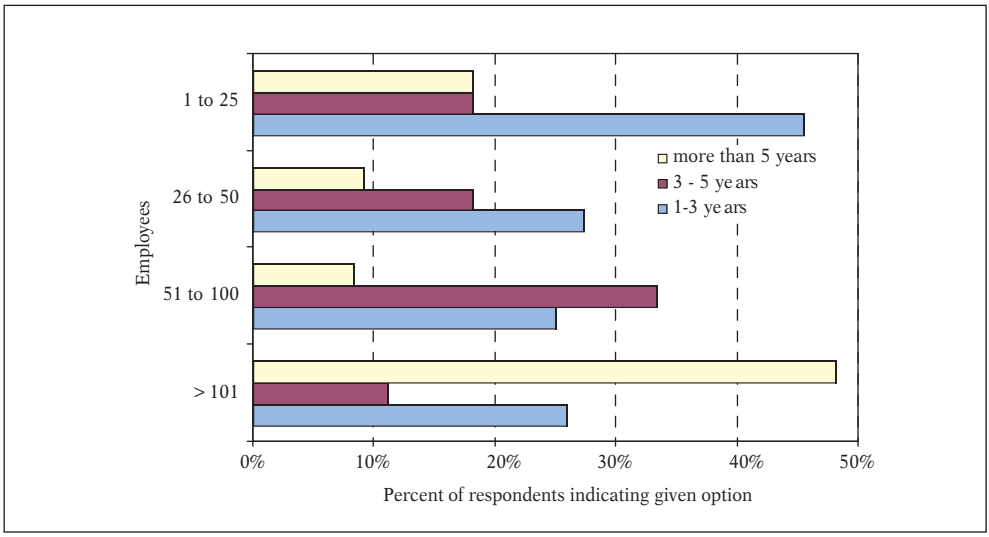
Appendix 4 Figure 4. Export destinations of surveyed firms vs. geographical distribution of Armenian exports in 2006



Source: Survey Results, Statistics

Larger firms tend to have on average longer established trade relations to EU countries. Nearly 50 % of the firms with more than 100 employees export to the EU for more than five years. The shares for all groups of smaller firms are clearly lower, and the group of firms with one to 25 employees is dominated by rather short trade relations between one and three years. For the whole sample, the majority of the firms run export businesses from three to five years.

Appendix 4 Figure 5. Duration of trade relations



Source: Survey Results

QUESTIONNAIRE

For collection of data on EU exporting companies

This research is being carried out for European Union and its goal is to evaluate the implications of a possible Free Trade Agreement between the European Uni on and Armenia. AVAG Solutions LTD conducts the interview at the request of European Union

Questionnaire code _____

Company name _____

Date _____ _____ _____
day *month* *year*

WHAT IS YOUR POSITION?

P1. Chief Manager/owner 1
P2. Deputy Chief Manager 2
P3. Head of export department 3
P4. Head of sale department 4
P5. Export manager 5
P6. Sale manager 6
P7. Other *PLEASE SPECIFY* _____ . .7

Name of the interviewed person_____

Company address _____

Company Tel. number _____

Interviewer _____

INFORMATION ON THE COMPANY

1. What is the ownership of your company? Please, mark one:

   1.1 state-owned ☐
   1.2 private ☐
   1.3 mixed ☐

2. Is there foreign origin capital in the capital founding your company?

   2.1 Yes ☐
   2.2 No (Go to Question 6) ☐
   2.3 Do not know (Go to Question 6) ☐

3. What share of the capital founding your company is the foreign origin capital?

   3.1 Please write down _____ % ☐

4. Is there EU-origin capital in the capital founding your company?

   4.1 Yes ☐
   4.2 No (Go to Question 6) ☐
   4.3 Do not know (Go to Question 6) ☐

5. What share of the capital founding your company comes from the EU?

   5.1 Please write down _____ % ☐

6. Does your company possess any of the following certificates:

	Yes	No
	1	2
6.1 ISO: 9000	☐	☐
6.2 ISO: 14000	☐	☐

7. How many employees are working full-time in your company? Please, mark one:

   7.1 1 – 9 ☐
   7.2 10 - 25 ☐
   7.3 26 - 50 ☐
   7.4 51 - 100 ☐
   7.5 101 and more ☐

8.For how long has your company been operating?

8.1 <1 year ☐
8.2 1-2 years ☐
8.3 3-5 years ☐
8.4 6-10 years ☐
8.5 11-15 years ☐
8.6 >15 years ☐
8.7 Do not know ☐

9. What was the turnover of your company in 2006?

9.1 Please, enter in local currency _____ ☐

INFORMATION ON EXPORT ACTIVITIES

10. Choose those sectors of economy that your company is in. Please, mark maximum three sectors:

	A		Agriculture, hunting and forestry
10.1.		01	Agriculture, hunting and related service activities
10.2.		02	Forestry, logging and related service activities
	B		Fishing
10.3.		05	Fishing, aquaculture and service activities incidental to fishing
	C		Mining and quarrying
10.4.		10	Mining of coal and lignite; extraction of peat
10.5.		11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding sur veying
10.6.		12	Mining of uranium and thorium ores
10.7.		13	Mining of metal ores
10.8.		14	Other mining and quarrying
	D		Manufacturing
10.9.		15	Manufacture of food products and beverages
10.10.		16	Manufacture of tobacco products
10.11.		17	Manufacture of textiles
10.12.		18	Manufacture of wearing apparel; dressing and dyeing of fur
10.13.		19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear
10.14.		20	Manufacture of wood a nd of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
10.15.		21	Manufacture of paper and paper products
10.16.		22	Publishing, printing and reproduction of recorded media
10.17.		23	Manufacture of coke, refined petroleum products and nuclear fuel
10.18.		24	Manufacture of chemicals and chemical products
10.19.		25	Manufacture of rubber and plastics products
10.20.		26	metallic mineral products
10.21.		27	Manufactur e of basic metals
10.22.		28	Manufacture of fabricated metal products, except machinery and equipment
10.23.		29	Manufacture of machinery and equipment n.e.c.
10.24.		30	Manufacture of office, accounting and computing machinery
10.25.		31	Manufacture of electrical machinery and apparatus n.e.c.
10.26.		32	Manufacture of radio, television and communication equipment and apparatus
10.27.		33	Manufacture of medical, precision and optical instruments, watches and clocks
10.28.		34	Manufacture of motor vehicles, trailers and semi trailers
10.29.		35	Manufacture of other transport equipment
10.30.		36	Manufacture of furniture; manufacturing n.e.c.
10.31.		37	Recycling
	E		Electricity, gas and water supply
10.32.		40	Electricity, gas, steam and hot water supply
10.33.		41	Collection, purification and distribution of water

Section C. INFORMATION ON EXPORT CAPACITY AND CONDITIONS OF THE COMPANY

11 Please, specify your status:

11.1 current exporter to the EU	
11.2 exported to the EU last year but do not export now	

12. For how many years have you been exporting your g oods to the EU?

12.1 1-3 years	
12.2 4-5 years	
12.3 more than 5 years	

13. Please, specify what percentage of your total sales you exported during last year

13.1 Please write down _____ %	

14. What percentage of your total export volume do you send to EU

14.1 Please write down _____ %	

15. What percentage of your total export volume do you send to CIS countries (in total)

15.1 Please write down _____ %	

16. What percentage of your total export volume do yo u send to each CIS country

Indicate Country below	Country Code (from table 17)	% of total export
16.1 Georgia	17.28	
16.2 Russia	17.30	
16.3 Ukraine	17.29	
16.4 Belarus		
16.5 Kazakhstan		
16.6 Moldova		
16.7 Other(indicate)_____ _		
16.8 Other(indicate)_____ _		

17. Please check the specific countries where you export (exported, plan to export):

	EU countries	
17.1.	☐ Austria	
17.2.	☐ Belgium	
17.3.	☐ Bulgaria	
17.4.	☐ Cyprus	
17.5.	☐ Czech Republic	
17.6.	☐ Denmark	
17.7.	☐ Estonia	
17.8.	☐ Finland	
17.9.	☐ France	
17.10.	☐ Germany	
17.11.	☐ Greece	
17.12.	☐ Hungary	
17.13.	☐ Ireland	
17.14.	☐ Italy	
17.15.	☐ Latvia	
17.16.	☐ Lithuania	
17.17.	☐ Luxembourg	
17.18.	☐ Malta	
17.19.	☐ Netherlands	
17.20.	☐ Poland	
17.21.	☐ Portugal	
17.22.	☐ Romania	
17.23.	☐ Slovakia	
17.24.	☐ Slovenia	
17.25.	☐ Spain	
17.26.	☐ Sweden	
17.27.	☐ United Kingdom	
	Non-EU countries	
17.28.	☐ Georgia (for the survey in Armenia)	
17.29.	☐ Ukraine	
17.30.	☐ Russia	
17.31.	☐ Other CIS	
17.32.	☐ Turkey	
17.33.	☐ Iran	
17.34.	☐ UAE	
17.35.	☐ USA and Canada	
17.36.	☐ Other (specify)	

18. Which group of products do you export (exported, plan to export) to the EU market:

			1	2	3	4
	A	Agriculture, hunting and forestry	EU	Ukraine	Geo-gia	Other CIS
18.1.	01	Agriculture, hunting and related service activities				
18.2.	02	Forestry, logging and related service activities				
	B	Fishing				
18.3.	05	Fishing, aquaculture and service activities incidental to fishing				
	C	Mining and quarrying				
18.4.	10	Mining of coal and lignite; extraction of peat				
18.5.	11	Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction, excluding surveying				
18.6.	12	Mining of uranium and thorium ores				
18.7.	13	Mining of metal ores				
18.8.	14	Other mining and quarrying				
	D	Manufacturing				
18.9.	15	Manufacture of food products and beverages				
18.10.	16	Manufacture of tobacco products				
18.11.	17	Manufacture of textiles				
18.12.	18	Manufacture of wearing apparel; dressing and dyeing of fur				
18.13.	19	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear				
18.14.	20	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials				
18.15.	21	Manufacture of paper and paper products				
18.16.	22	Publishing, printing and reproduction of recorded media				
18.17.	23	Manufacture of coke, refined petroleum products and nuclear fuel				
18.18.	24	Manufacture of chemicals and chemical products				
18.19.	25	Manufacture of rubber and plastics products				
18.20.	26	metallic mineral products				
18.21.	27	Manufacture of basic metals				
18.22.	28	Manufacture of fabricated metal products, except machinery and equipment				
18.23.	29	Manufacture of machinery and equipment n.e.c.				
18.24.	30	Manufacture of office, accounting and computing machinery				
18.25.	31	Manufacture of electrical machinery and apparatus n.e.c.				
18.26.	32	Manufacture of radio, television and communication equipment and apparatus				
18.27.	33	Manufacture of medical, precision and optical instruments, watches and clocks				
18.28.	34	Manufacture of motor vehicles, trailers and semi trailers				
18.29.	35	Manufacture of other transport equipment				
18.30.	36	Manufacture of furniture; manufacturing n.e.c.				
18.31.	37	Recycling				
	E	Electricity, gas and water supply				
18.32.	40	Electricity, gas, steam and hot water supply				
18.33.	41	Collection, purification and distribution of water				

RULES OF ORIGINS

19. Did you obtain a certificate of origin valid on EU/CIS market issued by the Chamber of Commerce in the last year?

19.1 Yes	
19.2 No **(Go to Question 24)**	
19.3 Do not know/Do not know about this certificate (Go to Question 24)	

20. How often do you have to obtain a certificate of origin?

20.1 Indicate the number of times per year here: _____	

21. Indicate how much on average does a certificate of origin for one delivery cost to your company

21.1 Indicate the amount in local currency: _____	

22. How important are the costs of obtaining the rules of origin certificate valid in the EU/CIS for your company?

22.1 not at all important	
22.2 somewhat important	
22.3 important	
22.4 very important	

23. Did you have any difficulties in obtaining a certificate of origin or/and technical and quality standards certification, such as:

23.1 time-consuming procedure	
23.2 costly procedure	
23.3 unclear or uncertain regulations	
23.4 other, please specify _____,	
23.5 other, please specify _____,	
23.6 no difficulties arise	

CUSTOMS PROCEDURES

24. Indicate the amount (in the local currency) spent in 2006 to pass export customs of your home country when exporting to EU? **(If answer this question, then skip Q25)**

24.1 Indicate the amount in local currency: _____	

25. Indicate the percent of export value you spent to pass export customs of your home country

25.1 Indicate the percentage _____ %	

26. How many hours/days does your carrier spend at your country's bor der while exporting products to EU?

26.1 less than one day (indicate number of hours_____)	
26.2 one day	
26.3 more than one day (indicate the number of days_____)	

26a. Indicate the amount (in the local currency) spent in 2006 to pass export customs of your home country when exporting to CIS?

26a.1 Indicate the amount in local currency: _____	

26b. How many hours/days does your carrier spend at your country's border while exporting products to CIS?

26b.1 less than one da y (indicate number of hours_____)	
26b.2 one day	
26b.3 more than one day (indicate the number of days_____)	

27. Who is responsible for the costs of passing EU country import customs procedures when exporting to EU?

27.1 Our company or its representative in EU country is carrying all the costs related to import custom procedures	
27.2 The ordering parting based in EU country is carrying all the costs related to import custom procedures **(Go to Question 32)**	
27.3 other _____ _____**(Go to Question 32)**	

28. Indicate the amount (in the local currency) spent in 2006 to pass import customs procedures in the EU destination country? (If answer to this question, then skip Q28)

28.1 Indicate the amount in local currency: _____	

29. Indicate the percent of export value you spent to pass export customs of EU destination country?

29.1 Indicate the percentage _____ %	

30. How many hours/days does your carrier spend at EU border while exporting products?

30.1 less than one day (indicate number of hours_____)	
30.2 one day	
30.3 more than one day (indicate the number of days_____)	

31. What are the main obstacles related to passing import customs procedures in the EU market:

31.1 time-consuming procedure	
31.2 costly procedure	
31.3 unclear or uncertain regulations	
31.4 other, please specify _____, _____, _____	
31.5 no problems encountered	
31.6 cannot say	

32. Who is responsible for the costs of passing CIS country import customs procedures when exporting to CIS country?

32.1 Our company or its representative in CIS country is carrying all the costs related to import custom procedures	
32.2 The ordering parting based in CIS country is carrying all the costs related to import custom procedures **(Go to Question 36)**	
32.3 other _____**(Go to Question 36)**	

33. Indicate the amount (in the local currency) spent in 2006 to pass import customs procedures in CIS countries? (**If answer this question, then skip Q34**)

33.1 Indicate the amount in local currency: _____	

34. Indicate the percentage of export value you spent to pass import customs procedures in CIS countries?

34.1 Indicate the percentage _____%	

35. How many hours/days does your carrier spend at CIS country border while exporting products?

35.1 less than one day (indicate number of hours_____)	
35.2 one day	
35.3 more than one day (indicate the number of days_____)	

TECHNICAL REGULATIONS

36. Must your company meet domestic technical regulations in order to sell in domestic market:

36.1 Yes	
36.2 No	
36.3 Do not sell in domestic market	
36.4 Do not know	

37. Must your company meet domestic technical regulations in order to sell in the EU market:

37.1 Yes	
37.2 No (Go to Question 39)	
37.3 Do not know (Go to Question 39)	

38. How expensive is the compliance with the domestic technical regulations compared to foreign technical regulations for your exports? Would you say that they are….?

Technical regulations	Much less expensive	Less expensive	About the same	More expensive	Much more expensive	Not applicable
	1	2	3	4	5	6
38.1 performance						
38.2 product quality						
38.3 testing and certification						
38.4 consumer safety						
38.5 labeling						
38.6 health/environment						

39. What types of EU technical standards are the most burdensome and expensive for your company? Standards which relate to:

Technical regulations	Not at all important	Somewhat important	Important	Very important	Not applicable
	1	2	3	4	5
39.1 performance					
39.2 product quality					
39.3 testing and certification					
39.4 consumer safety					
39.5 labeling					
39.6 health/environment					

40. What was the approximate cost of meeting the EU requirements in local currency last year? (If answer this question, skip Q41)

40.1	Product characteristics requirement	
40.2	Marking, labeling, and packaging requirements	
40.3	Other technical requirements	

41. What was the approximate cost of meeting the EU requirements as a percentage of your total sales over the last year?

41.1	Product characteristics requirement	
41.2	Marking, labeling, and packaging requirements	
41.3	Other technical requirements	

42. How would you evaluate the ease of access to the necessary information?

42.1 easy	
42.2 not very easy	
42.3 difficult	
42.4 information is not available	

Section D. TESTING FOR CONFORMITY WITH TECHNICAL REGULATIONS

43. Are your products tested for conformity with the foreign technical regulations before they are shipped to the EU?

43.1 Yes	
43.2 No **(Go to Question 46)**	
43.2 Do not know **(Go to Question 46)**	

44. How important the costs of testing the products for your company?

44.1 not at all important	
44.2 somewhat important	
44.3 important	
44.4 very important	

45. Are test results and conformity certificates issued domestically accepted by customs authorities of the EU countries?

45.1 yes	
45.2 no	

46. Were your products tested for conformity with the EU technical regulations in the destination country over the last year?

46.1 Yes	
46.2 No **(Go to Question 59)**	
46.3 Do not know **(Go to Question 59)**	

47. In your opinion, how important are the costs of testing for conformity with the EU technical regulations in the destination country for your company?

47.1 Not at all important	
47.2 Somewhat important	
47.3 Important	
47.4 Very important	
47.5 Cannot say	

48. If you export to more than one country in the EU do you need to have several product testing?

48.1 Yes	
48.2 No	

49. What is the cost of product testing (if answer, skip next question)

49.1 Indicate the amount in local currency: _____	

50. What is the cost of product testing as percentage of the last year sales

50.1 Indicate the percentage _____ %	

51. If your product meets both domestic and foreign technical requirements, what is the extent of duplication of effort involved in testing for both requirements?

51.1 no duplication	
51.2 minor duplication	
51.3 significant duplication	
51.4 complete duplication (two tests are required)	

52. How many days on average does technical regulations conformity inspection usually last upon arrival at EU country?

52.1 1 day of less	
52.2 2 to 4 days	
52.3 5 to 6 days	
52.4 6 to 14 days	
52.5 more than 14 days	

SANITARY AND PHYTOSANITARY MEASURES

For those who are not working in food sector skip this section

53. Did your company implement the HACCP system?

53.1 Yes	
53.2 No	

54. If exporting to the EU, do you encounter sanitary and phytosanitary regulations which are burdensome for the company?

54.1 Yes	
54.2 No (If choose this option, skip next question)	

55. Indicate which types of regulations you perceive as impediments to your exports

55.1 certification	
55.2 quarantine	
55.3 other, please specify _____,	
55.4 other, please specify _____,	
55.5 other, please specify _____,	

56. What amount in the local currency was spent in 2006 to ensure compliance with the respective sanitary and phytosanitary EU regulations? **(If answer, skip Q57)**

56.1 Indicate the amount in local currency: _____	

57. How much was spent in 2006 to ensure compliance with the respective sanitary and phytosanitary as percent of Export value to EU?

57.1 Indicate the percentage _____ %	

58. How important the costs of meeting the sanitary and phyto-sanitary regulations in the EU for your company?

58.1 not at all important	
58.2 somewhat important	
58.3 important	
58.4 very important	

OTHER TYPES OF NTBS

59. Are your company's exports to the EU market subject to one of the measures from the list below?

	Yes	No
	1	2
59.1 Antidumping duties		
59.2 Countervailing duties		
59.3 Other measures affecting price (i.e. minimum import prices, voluntary export price restraints)		

60. If yes, how would you evaluate the degree of restrictiveness of the above measures for your export activities?

Technical regulations	not at all restrictive	somewhat restrictive	restrictive	very restrictive	prohibitive
	1	**2**	**3**	**4**	**5**
60.1 Antidumping duties					
60.2 Countervailing duties					
60.3 Other measures affecting price					

End of Interview

Appendix 5

FDI in Armenia

Appendix 5 Table 1. FDI inflows to Armenia and other countries, in USD million, 1997-2005

Countries	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economies in transition: Asia	**3 107**	**3 013**	**2 497**	**1 895**	**3 550**	**4 501**	**6 103**	**8 818**	**4 296**
Armenia	***52***	***232***	***135***	***125***	***88***	***144***	***157***	***217***	***220***
Azerbaijan	1 115	1 023	510	130	227	1 393	3 285	3 556	1 680
Georgia	243	265	83	135	133	167	340	499	450
Kazakhstan	1 321	1 151	1 472	1 283	2 835	2 590	2 092	4 113	1 738
Kyrgyzstan	83	109	44	-2	5	5	46	175	47
Tajikistan	18	30	7	24	9	36	14	272	54
Turkmenistan	108	62	125	126	170	100	100	-15	62
Uzbekistan	167	140	121	75	83	65	70	1	45
Economies in transition: Europe	**8 994**	**7 639**	**7 974**	**7 167**	**7 978**	**8 410**	**18 089**	**30 760**	**35 383**
Albania	48	45	41	143	207	135	178	332	260
Belarus	352	203	444	119	96	247	172	164	305
Bosnia and Herzegovina	1	67	177	146	119	265	381	606	298
Bulgaria	505	537	819	1 002	813	905	2 097	3 443	2 223
Croatia	538	935	1 464	1 085	1 338	1 213	2 133	1 262	1 695
Macedonia, TFYR	30	128	33	175	442	78	95	157	100
Moldova, Republic of	79	76	38	127	102	133	78	154	225
Romania	1 215	2 031	1 041	1 037	1 157	1 144	2 213	6 517	6 388
Russian Federation	4 865	2 761	3 309	2 714	2 748	3 461	7 958	15 444	14 600
Serbia and Montenegro	740	113	112	25	165	137	1 360	966	1 481
Ukraine	623	743	496	595	792	693	1 424	1 715	7 808

Source: UNCTAD

Appendix 5 Table 2. FDI stock per capita in Armenia and other countries, in USD, 1997-2005

Countries	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economies in transition: Asia	**131**	**173**	**207**	**244**	**292**	**352**	**433**	**554**	**619**
Armenia	**43**	**119**	**164**	**205**	**235**	**285**	**337**	**332**	**406**
Azerbaijan	262	385	446	459	484	651	1 045	1 468	1 661
Georgia	50	106	125	155	185	223	300	414	519
Kazakhstan	346	426	529	674	866	1 036	1 172	1 478	1 654
Kyrgyzstan	58	80	88	90	88	95	96	131	100
Tajikistan	13	18	18	22	23	29	31	72	80
Turkmenistan	146	158	184	210	244	262	280	272	281
Uzbekistan	15	21	26	28	31	33	36	35	36
Economies in transition: Europe	**41**	**53**	**69**	**200**	**296**	**389**	**547**	**701**	**813**
Albania	109	124	138	184	251	294	349	453	533
Belarus	50	70	114	130	140	165	192	209	243
Bosnia and Herzegovina	2	21	68	105	134	201	298	453	528
Bulgaria	129	196	298	282	347	469	796	1 183	1 184
Croatia	462	422	566	782	959	1 523	2 274	2 776	2 750
Macedonia, TFYR	101	165	181	268	454	600	801	877	924
Moldova, Republic of	43	57	74	106	131	167	190	232	291
Romania	105	198	246	293	347	356	558	945	1 101
Russian Federation	7	3	5	218	360	485	665	815	920
Serbia and Montenegro	101	112	123	125	141	154	283	376	517
Ukraine	41	56	66	79	99	123	159	203	367

Source: UNCTAD

Appendix 5 Table 3. FDI inflows in percent of domestic investment in Armenia and other countries, 1997-2005

Countries	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economies in transition: Asia	**24.4**	**24.2**	**21.5**	**17.8**	**29.1**	**34.1**	**37.0**	**39.0**	**14.9**
Armenia	***19.5***	***75.7***	***44.6***	***35.4***	***23.4***	***28.8***	***24.4***	***26.9***	***16.2***
Azerbaijan	76.1	64.8	39.0	10.7	17.4	65.5	85.4	71.0	29.3
Georgia	37.4	28.7	11.3	17.4	15.2	20.1	32.3	33.6	24.0
Kazakhstan	36.7	33.1	53.9	40.5	53.9	43.8	29.4	38.0	11.8
Kyrgyzstan	37.9	51.7	22.6	-1.0	1.9	1.8	17.4	54.4	12.4
Tajikistan	11.1	16.9	3.7	28.9	9.7	27.5	7.9	151.4	23.7
Turkmenistan	9.8	4.8	8.2	8.6	11.8	8.0	7.7	-1.2	3.6
Uzbekistan	3.2	3.1	2.6	2.3	3.2	3.0	3.3	0.0	1.6
Economies in transition: Europe	**8.4**	**10.1**	**14.5**	**10.2**	**9.0**	**8.6**	**14.2**	**18.0**	**16.4**
Albania	7.9	6.5	3.9	9.8	10.9	6.3	5.9	9.2	6.6
Belarus	9.9	5.1	13.9	4.5	3.4	7.7	3.8	2.6	4.0
Bosnia and Herzegovina	0.1	5.1	18.9	15.2	13.4	24.1	27.0	34.1	16.3
Bulgaria	44.4	32.4	41.8	50.6	32.8	31.8	54.3	68.2	36.2
Croatia	11.0	18.5	31.5	27.0	30.2	21.6	26.9	13.3	16.1
Macedonia, TFYR	4.7	20.5	5.4	30.0	86.5	12.4	12.2	16.4	9.7
Moldova, Republic of	20.5	20.2	17.5	63.7	41.1	48.9	21.3	28.0	31.7
Romania	16.3	26.5	16.5	14.8	13.9	11.7	17.4	39.9	28.0
Russian Federation	6.6	6.3	11.7	6.2	4.7	5.6	10.0	14.3	10.5
Serbia and Montenegro	28.8	4.7	6.3	1.5	9.5	5.2	37.7	23.9	33.7
Ukraine	6.3	9.1	8.2	9.7	10.6	8.5	13.8	11.7	45.2

Source: UNCTAD

Appendix 5 Table 4. Selected indicators of trading across borders in Armenia and other countries, 2007

Country	Trading Across Borders					
	Documents for export (number)	Costs of export procedures in USD	Time for export (days)	Documents for import (number)	Costs of import procedures in USD	Time for import (days)
OECD AVERAGE (2007)	4.5	905	9.8	5.0	986	10.4
Armenia	7	1,165	30	8	1,335	24
Georgia	8	1,105	12	7	1,105	14
Moldova	6	1,425	32	7	1,545	35
Russian Federation	8	2,050	36	13	2,050	36
Ukraine	6	1,045	31	10	1,046	39
Turkey	7	865	14	8	1,013	15
Bulgaria	5	1,329	23	7	1,377	21
Romania	5	1,075	12	6	1,075	13

Source: World Bank (2007)

Appendix 6

The Model of FDI

Regional economic integration is likely to affect the firm's FDI decision. A regionally integrated area may attract more inward FDI for various reasons such as access to a larger market, defensive investments by firms from non-member countries to obtain similar treatment as firms within the area, and gains in economic efficiency.

Dunning's (1993) OLI (Ownership-Location-Internalisation) framework of international production shows the role of location in the overall FDI decision of a firm. According to Dunning, three factors need to be present for firms to engage in FDI: ownership-specific advantages of property rights and intangible assets in multinational enterprise (MNE); internalization incentive advantages, and the presence of locational advantages in a host country. The interaction of the particular FDI motivations and the location-specific advantages provided by a potential host country will thus prove determinant as to where a firm will seek making the investment.

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):

$$lnFDI_{ij} = \beta_0 + \beta_1 border_{ij} + \beta_2 ln\_dist_{ij} + \beta_3 ln\_gdp_i + \beta_4 ln\_gdp_j + \beta_5 ln\_pop_i + \beta_6 ln\_pop_j + \beta_7 ln\_debt_j + \beta_8 TO_j + \beta_9 ln\ TI_j + \beta_{10} ln\ gdp\_capita_j + \beta_{11} WTO_j + \beta_{12} EU_j$$

where:

$lnFDI_{ij}$ - a natural logarithm of nominal (USD) FDI flows from country i to country j,
$border_{ij}$ - dummy variable, equals 1 if i and j have common border,
ln_dist_{ij} - a natural logarithm of the distance between the capitals of country i and country j,
ln_gdp_i - a natural logarithm of the nominal (USD) GDP of countries i and j respectively,
ln_pop_i - log population 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,
TO_j - the ratio of sum of exports and imports of country j to GNI of country j,
$ln\ TPI_j$ - a natural logarithm of the EBRD Transition Progress Index of country j,
$ln\ gdp\_capita_j$ - a natural logarithm of nominal (USD) GDP per capita in country j,
WTO_j - dummy, equals 1 if a country j (a recipient country) is a member of WTO, and
EU_j - dummy, equals 1 if a country j (a recipient country) have signed the Europe Agreements

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.

We have faced a challenge of finding a suitable index of business environment which will cover the countries in the sample plus Georgia and Armenia. After comparing various indicators, it was found that the only suitable index is the EBRD transition indicators which are available at the EBRD website. The EBRD assesses progress in transition through a set of transition indicators. These have been used to track reform developments in all countries of its operations since the beginning of transition. Progress is measured against the standards of industrialised market economies, while recognising that there is neither a "pure" market economy nor a unique end-point for transition.

The measurement scale for the indicators ranges from 1 to 4+ (i.e. 4.33), where 1 represents little or no change from a rigid centrally planned economy and 4+ represents the standards of an industrialised market economy. The reform scores reflect the assessments of EBRD country economists using the criteria described in the methodological notes.

Assessments are made in nine areas: Large scale privatisation, small scale privatisation, governance and enterprise restructuring, price liberalisation, trade and foreign exchange system, competition policy, banking reform and interest rate liberalisation, securities markets and non-bank financial institutions, and infrastructure. For purposes of our research we use an average index of all of the above indicators apart from the infrastructure, we call it Transition Progress Index.

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. Finally, we directly control for the impact an EU membership has had on the FDI inflows in the region by including a corresponding 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 10 transition countries as FDI destinations (Armenia, Bulgaria, Czech Republic, Georgia, Hungary, Kazakhstan, Poland, Russia, Slovakia, and Ukraine). The sample covers years 1995-2003 that yields 819 observations in a panel under examination.

We use random effects model to estimate our model. The Haussman specification test does not reject random effects speciation at the 5% significance level. Table A1 reports the model's estimates. In line with the previous research we report significant effects of distance, GDP, population, progress in transition 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 of both home and host countries – 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, surfaces of the donor and recipient, and other variables, which 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 impact of the level of indebtedness is significantly negative, which is in line with a conventional economic logic. The more indebted an economy is, the poorer perception of the level of economic stability investors have, and, hence, the investment is less likely to happen.

The EBRD transition indicator 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.

Interestingly, the EU dummy did not turn out to be significant in our specification (we have also tried a specification which included only the EU dummy without the WTO one and received similar results). One of possible explanations for this lack of significance is that our sample covers only the years after signing of the Europe agreements, so there is no variation across time (only among countries: members and non-members). Yet, in this case other variables (for example, GDP of countries-recipients) may have stronger power in explaining differences in FDI inflows than the EU association, hence, making the dummy insignificant.

Appendix 6 Table 1. Estimates of the Gravity Model for FDI inflows into CEE

Independent Variables	*Dependent Variable Log (FDI)*
Border	0.763 (0.173)
Log(Distance)	-0.298 (0.135)
Log(GDP Source)	1.449*** (0.000)
Log(GDP Recipient)	0.521** (0.023)
Log (Population Source)	-0.984*** (0.000)
Log (Population Recipient)	0.199 (0.785)
Log (Debt)	-0.008** (0.045)
Log(TPI)	3.894*** (0.001)
Trade Openness	0.001 (0.973)
Log(GDP capita)	0.196 (0.873)
WTO (Dummy)	-0.402 (0.836)
EU (Dummy)	0.436 (0.815)
Constant Term	-40.238*** (0.000)
R-Squared	0.301
Number of observations	819

*** - significant at 1% level
** - significant at 5% level
* - significant at 10% level

Appendix 7

CGE Model Equations

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)[65].

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.

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.

[65] 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, 1996a), which is available for public access on Harrison's Web site.

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 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.

Equations

Markets

- Regional output

(1) $$Y_{ir} = \sum_{s} X_{irs}$$

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) $$A_{ir} = C_{ir} + \sum_{j} a_{ijr} Y_{jr} + T_{ir}$$

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) $$V_{ir} = a_{ir}^{V} Y_{ir} + f_{ir} N_{ir}$$

where V_{ir} is total sector i value added, a^{V}_{ir} 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

$$\overline{\overline{F}}_{fr} = \sum_i a^F_{fir} V_{ir} \tag{4}$$

where $\overline{\overline{F}}_{fr}$ is the endowment of factor f in region r and a^{F}_{fir} is the price-responsive demand coefficient for factor f in sector i.

• Armington supply

$$A_{ir} = \overline{A}_{ir}\left(\alpha^D_{ir}\left(\frac{X_{irs}}{\overline{\overline{X}}_{irs}}\right)^{\rho_{DM}} + \left(1-\alpha^D_{ir}\right)\left\{\sum_{r\neq s}\theta^M_{irs}\left(\frac{X_{irs}}{\overline{\overline{X}}_{irs}}\right)^{\rho_M}\right\}^{\rho_{DM}/\rho_M}\right)^{1/\rho_{DM}} \tag{5}$$

where $\overline{A}_{ir}$ is the benchmark supply, α^D_{ir} is the value share of domestic supply, $\overline{X}_{irs}$ is benchmark exports of good i from region r to s, θ^{M}_{irs} 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: .

• Value added supply

$$V_{ir} = \overline{V}_{ir}\left\{\sum_f \alpha^F_{fir}\left(\frac{a^F_{fir}}{\overline{a}^F_{fir}}\right)^{\rho^F_{ir}}\right\}^{1/\rho^F_{ir}} \tag{6}$$

where $\overline{V}_{ir}$ is benchmark value-added, α^{F}_{fir} is the benchmark value share of factor f, $\overline{a}^{F}_{fir}$ is the benchmark input coefficient and ρ^{F}_{ir} is determined by the elasticity of substitution.

• Border/transport costs

$$T_{ir} = \begin{cases} \sum_{js}\beta_{jrs}X_{jrs} & i = i_\tau \\ 0 & i \neq i_\tau \end{cases} \tag{7}$$

where τ is the index of single commodity used for transport services and β_{jrs} is the transportation cost coefficient.

• Welfare index

$$W_r = \prod_i\left(\frac{C_{ir}}{\overline{C}_{ir}}\right)^{\alpha_{ir}} \tag{8}$$

where $\overline{C}_{ir}$ is benchmark final demand for good i in region r.

Profit conditions

• Value added

$$PV_{ir} = \frac{1+t^{F}_{ir}}{\overline{PV}_{ir}}\left(\sum_{f}\alpha^{F}_{fir}PF^{1-\sigma^{F}_{ir}}_{fr}\right)^{\frac{1}{1-\sigma^{F}_{ir}}} \quad (9)$$

where f^{F}_{ir} is the ad valorem factor tax rate, $\overline{PV}_{ir}$ is the benchmark (tax-inclusive) price.

• Marginal cost

$$PY_{ir} = a^{V}_{ir}PV_{ir} + \sum_{j} a_{jir}PA_{jr} \quad (10)$$

• Armington composite supply price

$$PA_{ir} = \left\{\alpha^{D}_{ir}\left(\frac{PD_{ir}}{\overline{PD}_{ir}}\right)^{1-\sigma_{DM}} + (1-\alpha^{D}_{ir})\left(\frac{PM_{ir}}{\overline{PM}_{ir}}\right)^{1-\sigma_{DM}}\right\}^{\frac{1}{1-\sigma_{DM}}} \quad (11)$$

where $\overline{PA}_{ir} = 1$

$$PD_{ir} = (1+\mu_{irs})PY_{ir} \quad (12)$$

and

$$PM_{ir} = \left\{\sum_{r\neq s}\theta^{M}_{irs}\left[(1+\mu_{irs})(1+\hat{t}_{irs})(PY_{is}+\beta_{irs}PT_{s})\right]^{1-\sigma_{M}}\right\} \quad (13)$$

and

$$PT_{ir} = PA_{i_{\tau}r} \quad (14)$$

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:

$$M_r = \sum_f PF_{fr} F_{fr} + \sum_i t_{ir}^Y PY_{ir} Y_{ir} + \sum_{ij} t_{ijr}^{ID} PY_{ir} Y_{jr} a_{ijr} + \sum_{fi} t_{fir}^F PF_{fr} V + \sum_i t_{ir}^C PC_{if} C_{ir} + \sum_{is} t_{irs}^X PY_{ir} X_{irs} + \sum_{is} t_{irs}^M (PY_{is} X_{isr} (1 + t_{isr}^X) + p^T T \sum_i PG_{ir} (1 + t_{ir}^G) G_{ir} - p_n^C CAPFLOW_r \quad (15)$$

• Final demand

Public sector output consists of Cobb-Douglas aggregation of market commodities:

$$G_r = \Gamma_r \prod_i G_{ir}^{\theta_{ir}^G} \quad (16)$$

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:

$$U_r = \sum_i \theta_{ir}^C \log(C_{ir}) \quad (17)$$

Aggregate final demand is then determined by regional expenditures and the unit price of aggregate commodities gross of tax:

$$C_{ir} = \frac{\alpha_{ir}^C E_r}{p_{ir}^C (1 + t_{ir}^C)} \quad (18)$$

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:

$$\sum_{irs} T_{irs} = \psi_T \prod_{i,r} TD_{ir}^{\theta_{ir}^T} \quad (19)$$

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

$$N_{ir} = \frac{\sum_{s}\left[\mu_{irs}(1+\hat{t}_{irs})(PY_{ir}+\beta_{irs}PT_{r})X_{ir}\right]}{PV_{ir}f_{ir}} \tag{20}$$

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.

Algebraic relations

The equilibrium conditions for each market where there are IRTS are estimated separately. The following notation is adopted:

X – Aggregate demand
Yk – Supply from are k
Sr – Supply from region r
qfr – Supply from firm f in region r

P – Price index for aggregate demand
Pk- Price index for supply from area k
wr – Price index for supply from region r
πfr – Sales price for supply from firm f in region r.

CES aggregators are used to create the composite goods:

(21) $$X = \left[\sum_{k} \alpha_k^{1/\sigma} Y_k^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}}$$

(22) $$Y_k = \left[\sum_{r \in r_k = k} \beta_{rk}^{1/\eta} S_r^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$$

(23) $$S_r = \left[\sum_{f} q_{fr}^{\frac{\varepsilon-1}{\varepsilon}} \right]$$

The associated price indices:

(24) $$P = \left(\sum_{k} \alpha_k p_k^{1-\sigma} \right)^{\frac{1}{1-\sigma}}$$

(25) $$p_k = \left(\sum_{r \in r_k = k} \beta_{rk} w_r^{1-\eta} \right)^{\frac{1}{1-\eta}}$$

(26) $$w_k = \left(\sum_{f} \pi_{fr}^{1-\varepsilon} \right)^{\frac{1}{1-\varepsilon}}$$

and associated demand functions:

(27) $$Y_k = \alpha_k \left(\frac{P}{p_k} \right)^{\sigma} X$$

(28) $$S_r = \beta_{rk} \left(\frac{p_k}{w_r} \right)^{\eta} Y_k \qquad \text{for } k = k_r$$

(29) $$q_{fr} = \left(\frac{w_r}{\pi_{fr}} \right)^{\varepsilon} S_r$$

Behaviour of firms

The profit of firm f in region r selling into a given market is as follows:

(30) $$\Pi_{fr}(q) = \pi_{fr} q - C_{fr}(q)$$

where C is total cost. First order conditions for profit maximisation may be written as follows:

(31) $$c_{fr} = \pi_{fr}(1 - m_{fr})$$

in which c_{fr} is the marginal cost of supply and m_{fr} is a markup over marginal cost (on gross basis):

(32) $$m_{fr} = -\frac{1}{e_{fr}} = -\frac{\partial \pi_{fr} q_{fr}}{\partial q_{fr} \pi_{fr}}$$

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.

The perceived elasticity of demand

Derivation of the perceived elasticity of demand begins with the inverse demand function:

(33) $$\pi_{fr} = \left(\frac{S_r}{q_{fr}}\right)^{\frac{1}{\varepsilon}} w_r$$

Then compute the derivative:

(34) $$\frac{\partial \pi_{fr}}{\partial q_{fr}} = -\frac{1}{\varepsilon}\frac{\pi_{fr}}{q_{fr}} + \frac{1}{\varepsilon}\frac{\pi_{fr}}{S_r}\frac{\partial S_r}{\partial q_{fr}} + \frac{\pi_{fr}}{w_r}\frac{\partial w_r}{\partial q_{fr}}$$

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) $$\frac{\partial S_r}{\partial q_{fr}} = \left(\frac{S_r}{q_{fr}}\right)^{\frac{1}{\varepsilon}}$$

and the term $\frac{\partial w_r}{\partial q_{fr}}$ is computed using the chain rule the second time:

(36) $$\frac{\partial w_r}{\partial q_{fr}} = \frac{\partial w_r}{\partial S_r}\frac{\partial S_r}{\partial q_{fr}}$$

Substituting (34) and (35) into (33) we get:

(37) $$\frac{\partial \pi_{fr} q_{fr}}{\partial q_{fr} \pi_{fr}} = -\frac{1}{\varepsilon} + \frac{1}{\varepsilon}\frac{q_{fr}}{S_r}\left(\frac{S_r}{q_{fr}}\right)^{\frac{1}{\varepsilon}} + \frac{q_{fr}}{w_r}\left(\frac{S_r}{q_{fr}}\right)^{\frac{1}{\varepsilon}}\frac{\partial w_r}{\partial S_r}$$

Then using (32):

(38) $$\left(\frac{S_r}{q_{fr}}\right)^{\frac{1}{\varepsilon}} = \frac{\pi_{fr}}{w_r}$$

make the substitution to obtain:

(39) $$\frac{1}{e_{fr}} = -\frac{1}{\varepsilon} + \frac{1}{\varepsilon}\frac{\pi_{fr} q_{fr}}{w_r S_r} + \frac{\partial w_r}{\partial S_r}\frac{S_r}{w_r}\frac{\pi_{fr} q_{fr}}{w_r S_r}$$

Applying the same steps at the next level we get an analogous expression:

(40) $$\frac{\partial w_r S_r}{\partial S_r w_r} = -\frac{1}{\eta} + \frac{1}{\eta}\frac{w_r S_r}{p_k Y_k} + \frac{\partial p_k}{\partial Y_k}\frac{Y_k}{p_k}\frac{w_r S_r}{p_k Y_k}$$

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:

(41) $$\frac{\partial p_k Y_k}{\partial Y_k p_k} = -\frac{1}{\sigma} + \frac{1}{\sigma}\frac{p_k Y_k}{PX} + \frac{p_k Y_k}{PX}$$

When equations (38)-(40) are assembled, we obtain an expression for the optimal Cournot markup as follows:

(42) $$m_{fr} = \frac{1}{\varepsilon} + \left(\frac{1}{\eta} - \frac{1}{\varepsilon}\right)\frac{1}{N_{fr}} + \left(\frac{1}{\sigma} - \frac{1}{\eta}\right)\frac{\theta^Y_{fk}}{N_{fr}} + \left(1 - \frac{1}{\sigma}\right)\frac{\theta^X_k \theta^Y_{rk}}{N_{fr}}$$

where the share of supply from region *r* in the supply from area *k* is denoted as:

(43) $$\theta^Y_{rk} = \frac{w_r S_r}{p_k Y_k} \qquad \text{for } k = k_r$$

and the supply from area *k* in total supply of a given good is denoted as:

(44) $$\theta^X_k = \frac{p_k Y_k}{PX}$$

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:

$$\tilde{m}_{rs} = \begin{cases} \dfrac{1}{\sigma_{DD}} + \left(\dfrac{1}{\sigma_{DM}} - \dfrac{1}{\sigma_{DD}}\right)\dfrac{1}{N_r} + \left(1 - \dfrac{1}{\sigma_{DM}}\right)\dfrac{\theta_{rr}}{N_r} & r = s \\ \dfrac{1}{\sigma_{MM}} + \left(\dfrac{1}{\sigma_{DM}} - \dfrac{1}{\sigma_{MM}}\right)\dfrac{\theta_{rs}}{N_r\theta_s^M} + \left(1 - \dfrac{1}{\sigma_{DM}}\right)\dfrac{\theta_{rs}}{N_r} & r \neq s \end{cases} \tag{44}$$

These are the optimal markups expressed as a function of elasticities of substitution, market shares, θ^M_r the market share of imports in region r and N_r the number of firms producing in the region r.

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_r) which results in calibrated conjectural variations (CV_{rs}) which are as close as possible to 1. This looks as follows:

$$\min_{CV^i_{rs},N_{ir}} \sum_{rs} (CV^i_{rs} - 1)^2 \tag{46}$$

subject to:

$$\begin{aligned} & FC_{ir} = \sum_{rs} X^i_{rs} M^G(CV^i_{rs}, N_{ir}, \sigma, \theta) \\ & 0 \le N_{ir} \le 100 \\ & CV^i_{rs} \ge 0 \end{aligned} \tag{47}$$

where M^G is a markup equation, i.e. equation (44), and X^i_{rs} 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.

$$\min_{r} N_{ir} \tag{48}$$

subject to:

$$\begin{aligned} & FC_{ir} = \sum_{rs} X^i_{rs} M^G(CV^i_{rs}, N_{ir}, \sigma, \theta) \\ & 0 \le N_{ir} \le 100 \\ & CV^i_{rs} = 1 \end{aligned} \tag{49}$$

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) $$c = f + mq$$

where f is fixed cost, m is constant marginal cost and q denotes the output level. Average cost function looks as follows:

(51) $$ac = \frac{f}{q} + m$$

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) $$\frac{c_1}{q_1} = \frac{nc_1}{nq_1} = \frac{C_1}{Q_1}$$

given the initial data we know already one point on the firm's average cost curve i.e.:

(53) $$\frac{c}{q_1} = \frac{f}{q_1} + m$$

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) $$\beta\frac{c}{q_1} = \frac{f}{\alpha q_1} + m$$

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) $$\frac{C}{Q_1} = \frac{F}{Q_1} + m \qquad \text{and}$$

(56) $$\beta \frac{C}{Q_1} = \frac{F}{\alpha Q_1} + m$$

where F is the fixed cost. Further, we solve the above equations for the fixed and marginal costs:

(57) $$F = C_1(\beta - 1)\frac{\alpha}{\alpha - 1} \text{ and}$$

(58) $$m = \left(\frac{C_1}{Q_1}\right)\left(\frac{\beta\alpha - 1}{\alpha - 1}\right).$$

Since the cost disadvantage ratio is defined as f/c, which by symmetry equals F/C, we know that at the initial equilibrium:

(59) $$CDR = \frac{(\beta - 1)\alpha}{1 - \alpha} \quad .$$

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 rage 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 Appendix 7 Table 1 below.

Following others such as Gasiorek, Smith and Venables (1992) or HRT (1994), we are 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.

Appendix 7 Table 1. Data on CDR values

	Share of MES (á)	Percentage Cost Increase at Output Level (â)	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	
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 β in the CDR calibration equation.

Column 2: Data corresponds to (β-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).

Appendix 8

CGE Model Results – Armenia

Appendix 8 Table 1. Welfare, GDP and factor returns results of the CGE simulations – net effects compared to the 2006 scenario

	2006	SIMPLE FTA	SIMPLE FTA BIS	DEEP FTA	DEEP FTA+
	(1)	(2)	(3)	(4)	(5)
Welfare (% change)					
Russia	0	0	-0.001	0	0.002
Ukraine	0	-0.002	-0.004	0.005	0.006
Armenia	**0.381**	**0.178**	**0.075**	**3.375**	**7.952**
Azerbaijan	-0.009	0	0.001	0.017	0.027
Georgia	0.031	-0.004	-0.018	0.14	0.186
Turkey	0	0	0	-0.003	-0.004
EU27	0	0.001	0.001	0.001	0
CIS	-0.001	0.001	0	0.002	0.002
ROW	0	0	0	-0.001	-0.002
GDP (% change)					
Russia	0.058	0	0	0.001	0.002
Ukraine	0.174	-0.002	-0.003	0.005	0.006
Armenia	**0.403**	**0.177**	**0.076**	**3.352**	**7.939**
Azerbaijan	0.015	0	0	0.022	0.03
Georgia	0.115	0	-0.023	0.137	0.183
Turkey	0.093	0	-0.001	-0.004	-0.005
EU27	0.03	0.001	0.001	0	-0.001
CIS	0	0	0	0.001	0.001
ROW	0.013	0	0	-0.001	-0.002
Wages of unskilled workers (% change)					
Russia	0	-0.001	-0.001	0	0
Ukraine	0	-0.002	-0.004	0.005	0.006
Armenia	**0.45**	**0.447**	**0.375**	**3.955**	**7.996**
Azerbaijan	-0.011	0	0	0.057	0.072
Georgia	0.032	-0.004	-0.02	0.151	0.206
Turkey	0	0	0	-0.002	-0.003
EU27	0	0.001	0.001	0.001	0
CIS	0	0	0	0.001	0.001
ROW	0	0	0	-0.001	-0.001
Wages of skilled workers (% change)					
Russia	0	0	0	0	0
Ukraine	0	0	-0.001	0.003	0.004
Armenia	**0.357**	**0.405**	**0.386**	**2.565**	**6.126**
Azerbaijan	-0.017	0	0.001	0.081	0.095
Georgia	0.025	-0.002	-0.009	0.046	0.071
Turkey	0	0	0	-0.002	-0.003
EU27	0	0.001	0.001	0	0
CIS	0	0	0	0	0.001
ROW	0	0	0	-0.001	-0.001

Appendix 8 Table 1. Welfare, GDP and factor returns results of the CGE simulations – net effects compared to the 2006 scenario

	2006	SIMPLE FTA	SIMPLE FTA BIS	DEEP FTA	DEEP FTA+
	(1)	(2)	(3)	(4)	(5)
Total exports (% change)					
Russia	0	-0.001	-0.002	-0.003	-0.001
Ukraine	0	-0.002	-0.006	0.004	0.007
Armenia	**2.926**	**3.204**	**4.435**	**18.881**	**27.291**
Azerbaijan	-0.099	0.001	-0.001	0.218	0.201
Georgia	0.149	0	-0.055	0.477	0.757
Turkey	0	-0.001	-0.001	-0.01	-0.012
EU27	0.001	0.003	0.004	0.006	0.006
CIS	-0.001	0	0	0.003	0
ROW	0	0	-0.001	-0.003	-0.004
Total imports (% change)					
Russia	0	-0.002	-0.002	-0.003	0
Ukraine	0	-0.002	-0.005	0.006	0.008
Armenia	**1.631**	**1.556**	**2.101**	**12.193**	**16.398**
Azerbaijan	-0.04	0.001	0.002	0.046	0.068
Georgia	0.074	-0.009	-0.037	0.255	0.403
Turkey	0	-0.001	-0.001	-0.008	-0.009
EU27	0.001	0.003	0.003	0.006	0.005
CIS	-0.001	0	0	-0.001	0
ROW	0	0	0	-0.004	-0.005
Capital stock (% change)					
Armenia	0.66	0.357	0.15	6.891	19.513

Appendix 8 Table 2. Armenia - Output changes (%)

	2006	SIMPLE FTA	SIMPLE FTA BIS	DEEP FTA	DEEP FTA+
Grains, fruits, vegetables, crops nec	0.3	0.3	0.2	3.9	9.6
Livestock	0	-0.1	-0.4	3.3	8
Forestry	-0.4	-1	-1.4	-0.6	4.2
Fishing	5.1	10.3	17.4	19	27.4
Coal	0	0		0	0
Oil	0	0		0	0
Gas	0	0		0	0
Mining and quarrying	1.1	0.8	1.4	-3.8	5.5
Food products, beverages and tobacco	-0.8	-1.8	-2.9	-1.3	2.3
Textiles and textile goods	5	59.2	60	219.8	229.8
Leather products	2.9	4.6	5.7	36.9	43
Wood products	-2.3	-8	-7.4	-4.7	-5.4
Paper products, publishing	0.6	-0.9	-0.7	-1.4	8.6
Petroleum, coal products	-0.1	0.5	0.8	-3.5	6.9
Chemical, rubber, plastic products	0.1	-0.2		-2.4	4.3
Mineral products nec	5.7	1.9	2.4	31.7	38
Metals and metal products	5.1	5.1	5.6	19.7	22.6
Transport equipment	0.9	-2.1	-1.7	-0.5	5.5
Machinery and electronic equipment	1.3	2.7	3.1	5.4	9.9
Manufactures nec	3.2	4.4	5.6	42.5	59.4
Electricity	0.3	0.2	0.3	1	7.2
Gas manufacture, distribution	0.3	0.6	0.9	0.2	16.3
Water	0.4	0.7	0.6	5.6	12.8
Construction	0.3	0.6	0.4	4	10.5
Trade	0.3	0.5	0.4	3.3	9.5
Transportation and Storage Services	-0.1	0.5	0.9	-7.8	-3.4
Communications	-0.3	-0.4	-0.2	-3.9	4.9
Banking lending and insurance	-0.5	-0.6	-0.3	-11.2	-8.1
Business services nec	0.3	0.9	0.8	4.5	18.6
Other Communal, Social and Personal Service s	-0.2	0	0.6	-3.3	7.3
Public administration, education, health care	0.1	0.1	0.1	1.3	4.5
Investments	0.3	0.5	0.3	4.1	9.8

Appendix 8 Table 3. Armenia - Price changes (%)

	2006	Simple FTA	Simple FTA BIS	Deep FTA	Deep FTA+
Grains, fruits, vegetables, crops nec	0.2	0.2	0.1	2.1	1.9
Livestock	0.2	0.2	0	2.4	2.1
Forestry	0.2	0.3	0.2	2.3	1.7
Fishing	0.1	0.1	0	1.6	0.3
Coal	0	0	0	0.1	0.1
Oil	0	0	0	0	0
Gas	0	0	0	0	0
Mining and quarrying	0	0	0	0.1	0.1
Food products, beverages and tobacco	-0.2	-0.5	-1.1	1	0.9
Textiles and textile goods	-0.6	-4.4	-4.4	-4.4	-4.5
Leather products	0	-6.3	-6.3	-6.2	-6.2
Wood products	-1.2	-3.1	-3.1	-4.1	-4.4
Paper products, publishing	0.1	-0.3	-0.3	-0.6	-1.2
Petroleum, coal products	0	0	0	0	0
Chemical, rubber, plastic products	0	-0.1	-0.1	0	-0.1
Mineral products nec	-1.4	-4.7	-4.7	-6.5	-6.5
Metals and metal products	-0.3	-0.3	-0.3	-0.4	-0.5
Transport equipment	0	-2.1	-2.1	-2.1	-2.2
Machinery and electronic equipment	0	-0.4	-0.4	-0.3	-0.4
Manufactures nec	0	-0.6	-0.6	-0.2	-0.6
Electricity	0.2	0.2	0.1	1.8	0.8
Gas manufacture, distribution	0	0.1	0	0.5	-0.4
Water	0.1	0.2	0.1	1.3	-1.1
Construction	0	0	-0.1	0.9	-1.2
Trade	0.1	0	-0.1	1	-0.7
Transportation and Storage Services	0.1	0.1	0	-1.5	-1.6
Communications	0.1	0.1	0.1	0.8	-0.4
Banking lending and insurance	0.2	0.2	0.1	-0.5	-0.5
Business services nec	0	0	0	0.4	-2.8
Other Communal, Social and Personal Services	0	0	0	0.2	-0.1
Public administration, education, health care	0.2	0.2	0	2.1	2.4
Investments	0	-0.2	-0.2	0.6	-1.2

Appendix 8 Table 4. Armenia - Change in exports to all regions (%)

	2006	SIMPLE FTA	SIMPLE FTA BIS	DEEP FTA	DEEP FTA+
Grains, fruits, vegetables, crops nec	10	11	12	28	31
Livestock	1	1	2	-1	2
Forestry	0	-1	0	-6	0
Fishing	40	81	136	125	153
Coal	0	0	0	0	0
Oil	0	0	0	0	0
Gas	0	0	0	0	0
Mining and quarrying	1	0	1	-7	1
Food products, beverages and tobacco	5	7	10	-1	1
Textiles and textile goods	7	78	79	259	268
Leather products	7	31	33	47	50
Wood products	14	20	22	55	68
Paper products, publishing	1	2	3	11	24
Petroleum, coal products	0	0	1	-6	5
Chemical, rubber, p lastic products	1	1	2	-5	1
Mineral products nec	15	20	21	71	77
Metals and metal products	6	6	7	23	24
Transport equipment	1	7	7	9	13
Machinery and electronic equipment	1	3	4	6	9
Manufactures nec	3	4	5	39	53
Electricity	-1	-2	-1	-14	-7
Gas manufacture , distribution	-1	-2	-1	-12	12
Water	-1	-2	-1	-11	10
Construction	0	0	1	-8	12
Trade	-1	0	1	-9	6
Transportation and Storage Services	-1	-1	0	-10	-7
Communications	-1	-1	-1	-12	
Banking lending and insurance	-2	-3	-1	-19	-18
Business services nec	0	0	0	-4	34
Other Communal, Social and Personal Services	0	0	1	-6	4
Public administration, education, health care	-2	-1	0	-18	-20
Investments	10	11	0	28	31

Appendix 8 Table 5. Armenia - Change in imports from all regions (%)

	2006	Simple FTA	Simple FTA BIS	Deep FTA	Deep FTA+
Grains, fruits, vegetables, crops nec	1	2	1	18	23
Livestock	3	5	4	30	34
Forestry	1	1	-1	13	14
Fishing	2	3	3	15	14
Coal	0	0	0	5	9
Oil	0	0	0	0	0
Gas	1	1	1	4	10
Mining and quarrying	3	3	3	11	14
Food products, beverages and tobacco	6	12	17	24	28
Textiles and textile goods	2	21	21	81	86
Leather products	2	14	14	63	68
Wood products	3	5	5	21	28
Paper products, publishing	0	1	0	9	12
Petroleum, coal products	0	0	0		4
Chemical, rubber, plastic produ cts	0	1	0	6	11
Mineral products nec	1	2	2	10	16
Metals and metal products	2	2	2	11	15
Transport equipment	0	0	-1	3	7
Machinery and electronic equipment	0	0	0	3	9
Manufactures nec	1	3	3	21	28
Electricity	1	2	1	12	13
Gas manufacture, distribution	1	2	1	7	9
Water	1	2	1	13	7
Construction	1	1	0	9	4
Trade	1	0	0	9	6
Transportation and Storage Services	1	2	1	18	22
Communications	1	1	0	15	14
Banking lending and insurance	1	2	1	39	44
Business services nec	1	1	1	8	-2
Other Communal, Social and Personal Services	0	0	0	3	7
Public administration, education, health care	1	1	0	14	19
Investments	0	0	0	0	0