Economic Development and Research Center (EDRC)

EU-ARMENIA TRADE LIBERALIZATION:
A POVERTY AND SOCIAL IMPACT ANALYSIS

YEREVAN 2012

About EDRC

The Economic Development and Research Center (EDRC) is a Yerevan based non-profit, nonpartisan think-tank (established in 2001), dedicated to addressing economic and social challenges and contributing to public policy discourse in Armenia. Our mission is to provide high-quality research and build capacities in order to contribute to sound social policies and the development of a competitive economy in Armenia.

We gather and analyze data, conduct research, monitor and evaluate public policy programs and services, based on our findings we make recommendations and implement awareness rising and policy advocacy campaigns.

EDRC supports national efforts of developing and reviewing MDGs, PRSP and economic development policies, and we actively participate in civil society efforts of advocating the concept of good governance and polices.

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Abstract

The present study aims at analyzing the economic and social impact of the trade liberalization between Armenia and the EU countries within the framework of Eastern Partnership initiative. Relevant documentation has been studied, together with foreign trade regimes and regulatory systems, moreover, quantitative assessment of impact on economic situation and poverty were carried out.

The major finding of the study is that a simple free trade agreement or tariff liberalization will not bring in significant social and economic benefits for Armenia. The reason is that Armenia and the EU already have quite liberal trade regimes. Moreover, Armenia is already included in the Generalized System of Preferences in trade with the EU the potential of which is not yet fully utilized. Armenia has a relatively small and highly concentrated foreign trade and exports which is limited by its production capabilities and the current level of industrial development.

What concerns signing a Deep and Comprehensive Free Trade Agreement (DCFTA) which implies establishing a unified area of trade and production regulations with the EU, it is not feasible in the medium term. It implies introducing the EU standards and institutions of trade regulation. If these standards are obligatory for the domestic market – i.e. production and imports, economy of Armenia will be paralyzed and will suffer from negative social consequences. If it is about initial institutional and legislative harmonization and adaptation, one should not expect any economic and social benefits for Armenia since either no changes will take place in entry to the EU market or Armenian private sector will continue being in non-compliance with the EU standards.

Thus, the economic integration process with the EU should be considered a priority; however it will be economically justifiable and bring in positive social impact only if it bases on development and harmonization of domestic production and enterprises. Therefore, the policy priority should be switched from trade liberalization towards industrial development.

Abbreviations

AMD	Armenian dram
CIS	Commonwealth of Independent States
CNEAA	Commodity Nomenclature of External Economic Activity
CU	Customs Union
DCFTA	Deep and Comprehensive Free Trade Agreement or Area
EDRC	Economic Development and Research Center
EFTA	European Free Trade Association
ENP	European Neighborhood Policy
EU	European Union
EURO-MED	Euro-Mediterranean Partnership
EVRAZES	Eurasian Economic Community
FTA	Free Trade Agreement
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
IMF	International Monetary Fund
IPR	Intellectual Property Rights
MFN	Most Favored Nations
NSS	National Statistical Service of the Republic of Armenia
PCA	Partnership and Cooperation Agreement
PEP	Poverty and Economic Policy research network
RA	Republic of Armenia
RF	Russian Federation
SME	Small and Medium Enterprise
SPS	Sanitary and Phytosanitary
UAE	United Arab Emirates
UK	United Kingdom
UNDP	United Nations Development Programme
USA	United States of America
USD	United States Dollar
WB	World Bank
WTO	World Trade Organization

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1. INTRODUCTION

- Armenia is a small, landlocked and mountainous country in the Southern Caucasus that became independent from the Soviet Union in 1991. Overwhelming majority of the population are ethnic Armenians representing part of Armenian ethnicity with millennial history. In 2010, permanent population of Armenia was 3.3 mln, per capita GDP equaled USD 2885 (PPP adjusted international USD 5110), while Human Development Index (HDI) equaled 111.
- During the past 20 years since independence, the country underwent continuous change and progress. However, the social security levels of Soviet period are not feasible to achieve. Emigration and labor migration has been continuous resulting in high importance of remittances received from abroad. Continuous economic growth during 1994-2008, in particular, double digit growth rates in 2001-2007, apparently resulted in substantial economic development, however overall competitiveness of the economy is low. Complexity and development of industry is low, exports are relatively small and rely on few items with prevalence of minerals and ore. The recent global crisis had serious impact on the sustainability of economic growth and social situation almost neutralizing the poverty alleviation achieved during the high growth years.
- With its non-favorable geopolitical location and various socioeconomic and political development problems, the authorities of the country strive to achieve friendly relations with all countries of the world while implementing internal development reforms in the country.
- Relations between EU and Armenia started to develop in 1996 which was further deepened thereafter. Nowadays, Armenia is a member to Eastern Partnership. In this context, a large framework of relations, including economic relations, with EU countries is intended to be developed. In that regard, the initiative to sign a Deep and Comprehensive Free Trade Agreement between Armenia and EU is considered very important. In particular, deep and comprehensive free trade area will be established. This implies not only liberalization of tariffs between Armenia and EU, but also harmonization of standards, SPS measures, IPR protection and other areas with the EU.
- The EU Eastern Partnership Initiative aims at accelerating political and economic integration between the EU and partner countries. Negotiations on signing an EU-Armenia Association Agreement officially launched in July 2010; in its framework it is planned to create a free trade area which will be deep and comprehensive. Launching of the negotiations on the core Deep and Comprehensive Free Trade Agreement is expected in the near future.
- It is expected that signing the EU-Armenia DCFTA is a good opportunity for Armenia and will bring in a number of economic and, as a consequence, social benefits. Namely, the European side believes that an ordinary free trade agreement (mutual liberalization of trade tariffs) will not bring in significant economic benefits for Armenia. Economic benefits will become significant only under a Deep and Comprehensive Free Trade Agreement. Thus, the EU suggests accelerating regulatory reforms, as well as bringing trade regulation systems, infrastructure and standards into conformity with best international standards. In that case, Armenia will gain liberalized access to the EU market.
- Will Armenia be able to effectively benefit from the proposed opportunity? Will the implementation of intended reforms of huge economic impact bring in the desired results? What are the inherent potential risks and negative implications of this initiative? It is obvious that these questions are crucial for policy-making decisions and subject to multi-dimensional research and analyses.

- Developed public policy culture implies regular ex-ante and ex-post assessment of policies. In particular, those assessments should be participatory and independent. They should lay the basis for the preparation of the political decisions and ensuring efficiency of potential negotiations.
- Taking into account the importance of this issue, as well as the lack of necessary information and assessments, the Economic Development and Research Center initiated the present assessment within the framework of 2010 Poverty and Social Impact Assessment Research Grants project of the UN Development Program (UNDP), New York. The present initiative is overall targeted at encouraging discussion on policies and evidence-based decision-making. The objective of the study is to summarize available information and data, define the framework of the trade liberalization assessment, get an initial understanding of potential shifts in the economy and social situation in Armenia due to trade liberalization with EU, create bases for further detailed assessments and sectoral impact projections
- The results of an existing literature and relevant documentation study served as a basis for the present research study. Main impact directions were identified, and an assessment framework was developed which served as a basis for economic impact examination and assessment. At the same time, economic impact was analyzed through a Computable General Equilibrium Model (CGE), and based on the results, impact on the poverty and social snapshot was assessed through a separate micro model.
- The introduction is followed by a general overview of the Armenian economy, as well as poverty and social snapshot. The third section is dedicated to analyses and examination of Armenia's trade regimes, as well as a general overview of RA-EU trade is presented.
- In Section 4, a methodological framework was development. Overall, assessment of a Deep FTA is a difficult task, and the adequate methodological framework is rather limited. We considered a number of theoretical bases and developed the Methodological framework using studies on the process and various analyses.
- Section 5 is dedicated the core economic impact assessment. At that, preliminary discussion of the economic impact is presented first; next, an impact of tariff liberalization is discussed based on a trade data analysis. This section also discusses issues related to economic impact of a non-tariff regulation. Then, economic impact analyses through the CGE model are presented.
- Section 6 is dedicated to poverty impact analyses where we transmitted the economic impact to the level of households' incomes and expenses through the relevant micro model assessing possible changes in poverty.
- In the end, the results are summarized, main conclusions and policy recommendations are stated.
- Some useful information is provided in appendices attached. In particular, the Appendix 2 presents a detailed prehistory of the EU integration process, being a useful example of a documentation and interpretation of processes.
- The present study can be useful for a wide framework of society, researchers and policy makers. It can be helpful in terms of designing both economic and general political decisions in this sector, as well as serve as a basis for further more detailed researches and policy revisions.

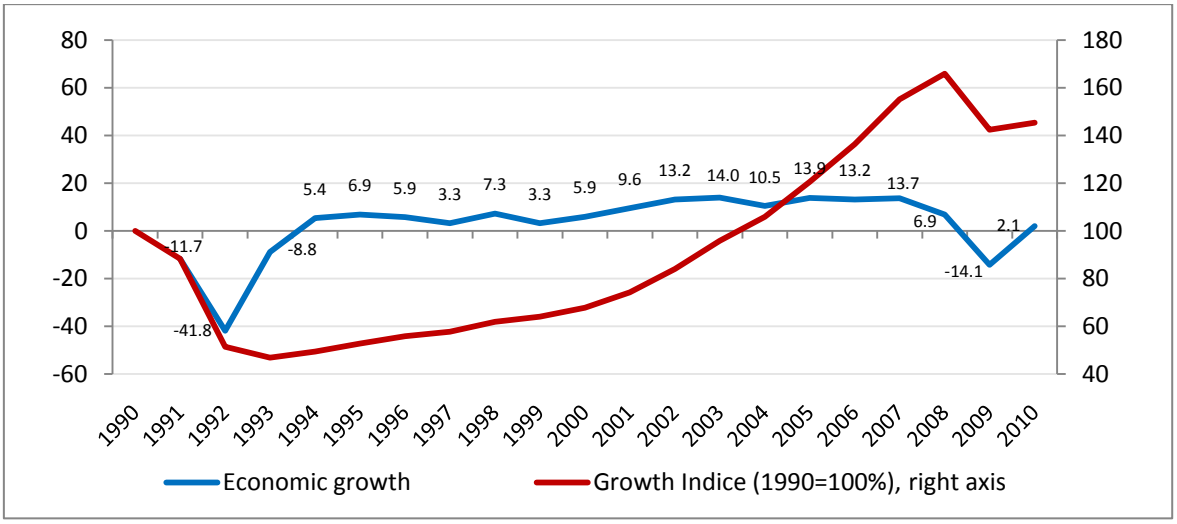
2. OVERVIEW OF THE ECONOMY AND POVERTY IN ARMENIA

2.1. General Overview of the Economy

Armenia had a well developed industrial system during the Soviet Union; however, after independence – in early 1990s, Armenia experienced a deep economic decline. Production and employment shrank drastically, former economic, production and social relations and infrastructure collapsed or became insignificant and poverty and acute social problems became wide-spread. Apart from those factors that emerged and were common in other Former Soviet Union countries, the main reasons for economic and the subsequent social crises were the 1988 earthquake and the Nagorno-Karabakh self-orientation and independence, which resulted in a war and non-friendly relations with neighboring countries.

In the period of 1991-1993, in only 3 years, the Armenian economy shrank by more than 50%, this was mainly in the industry and construction sectors. However, economic recovery started already in 1994 which uninterruptedly continued until 2008. Notably, the economic growth in 2002-2007 reached two-digit levels. Average annual GDP real growth rate in 1994-2001 equaled 5.6%, while in 2002-2007 – 13.1% (See Figure 1).

Figure 1 Economic Growth in Armenia in 1991-2010, %



Source: NSS and EDRC calculations

The impact of the recent global financial and economic crises in Armenia appeared in late 2008. Economic growth in 2008 significantly slowed down to 6.9%, while in 2009, a 14.1% decline was recorded. Armenia was the second country among CIS with such a sharp decline, following Ukraine. Economic growth recovered in 2010 to only 2.1%, and a 4.6% growth is projected for 2011 (IMF, WEO, April 2011).

The pre-crisis economic development of Armenia is subject to vigorous discussions and is criticized on issues as the concentration of the economy and markets, non-diversified production and exports, inefficient structure of economy, faster growth rates on non-tradable sectors, disproportionate regional development and emigration of population. Nevertheless, poverty in Armenia declined and social situation improved during that period. According to the WB classification, Armenia moved from low-income countries to medium-low-income countries' group in 2004.

The main source of economic growth was remittances from abroad that exceeded 10% of the GDP. Despite that, led by the construction sector, economic growth was recorded in almost all sectors of the economy.

Construction sector on average grew by 26.6% during 2001-2007, as a result, construction constituted about a quarter of entire economy in 2007 (see Table 1). During the same period, construction sector provided about one third of the economic growth: more than agriculture and industry together.

Agriculture is the next largest sector of the economy which constituted 26% of GDP in 2006, its share however decreased to 16% in 2008. The processing industry grew on average by 7% during the high growth years and made 9% of the GDP. The service sector also grew significantly, mostly in trade, transport and communication sectors. Mining industry is not a large sector in terms of employment and added value, yet, it ensures a large portion of Armenia's exports. The Financial, high-tech and IT sectors together with tourism and other services are relatively small, but, are the developing sectors of the economy and their share expanded significantly during high growth years.

Large economic decline in 2009 hit the construction sector significantly as the sector declined by more than 40%, followed by processing industry, power and services. Due to the unfavorable economic climate in 2010, the decline of the agriculture sector neutralized the recovery trends recorded in other sectors.

Table 1 GDP growth rate and structure in Armenia (2001-2010), %

	Share in Total, %							Growth rate, %			
	2001	2003	2005	2007	2008	2009	2010	2001-2007	2008	2009	2010
Agriculture, Hunting and Forestry	25.6	21.5	19.0	18.2	16.1	16.7	17.2	8.0	3.0	5.9	-15.8
Construction	9.7	15.7	19.6	24.5	25.3	18.6	17.1	26.6	11.3	-41.6	3.0
Trade, Repair of cars, home appliances and personal belongings	10.6	11.4	11.4	10.9	11.6	12.7	13.0	13.6	8.0	-4.8	4.8
Processing Industry	15.7	15.3	13.5	9.4	8.8	8.7	9.5	7.1	0.9	-7.1	13.6
Transport and Communication	7.0	5.9	6.0	6.9	6.8	7.2	6.8	13.9	8.4	-9.9	4.9
Transactions and Services with Real Estate	4.3	3.6	3.2	3.8	3.7	4.9	4.7	11.5	-1.4	-0.1	8.7
Public Management	3.0	2.7	2.8	2.5	2.7	3.8	3.8	12.7	-6.6	-5.9	6.3
Financial Activities	1.9	1.4	1.8	2.5	3.4	3.9	3.6	18.5	32.6	-1.6	1.7
Healthcare and Social Services	1.3	2.3	2.5	2.5	2.7	3.5	3.3	17.0	-7.0	-4.0	1.9
Education	3.3	3.0	2.8	2.8	2.7	3.6	3.3	8.6	-5.3	2.2	-1.3
Power and Water Supply	6.7	5.8	5.0	3.3	2.9	3.1	2.8	0.9	4.6	-13.3	-3.1
Mining Industry	0.8	1.4	3.2	2.3	1.6	1.7	2.5	10.1	3.8	6.3	19.1
Communal, Social and Individual Services	1.5	1.6	1.3	1.3	1.2	1.8	1.8	4.9	-9.3	8.5	0.5
Hotels and Restaurants	0.4	0.4	0.4	0.4	0.4	0.6	0.7	19.4	9.6	23.5	22.3
Fishing and Fishery	0.0	0.0	0.0	0.0	0.2	0.2	0.2	26.1	112.9	9.7	-7.2
Household management services	-	-	0.0	0.0	0.0	0.0	0.0	25.8	192.7	13.4	7.0
Indirectly measured financial intermediation	-1.4	-1.1	-1.2	-1.4	-1.5	-1.6	-1.5	12.6	9.1	-10.2	3.5
Net Taxes	9.7	9.1	8.6	10.0	11.4	10.6	11.1	14.6	17.1	-22.5	9.2
GDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	12.6	6.9	-14.1	2.1

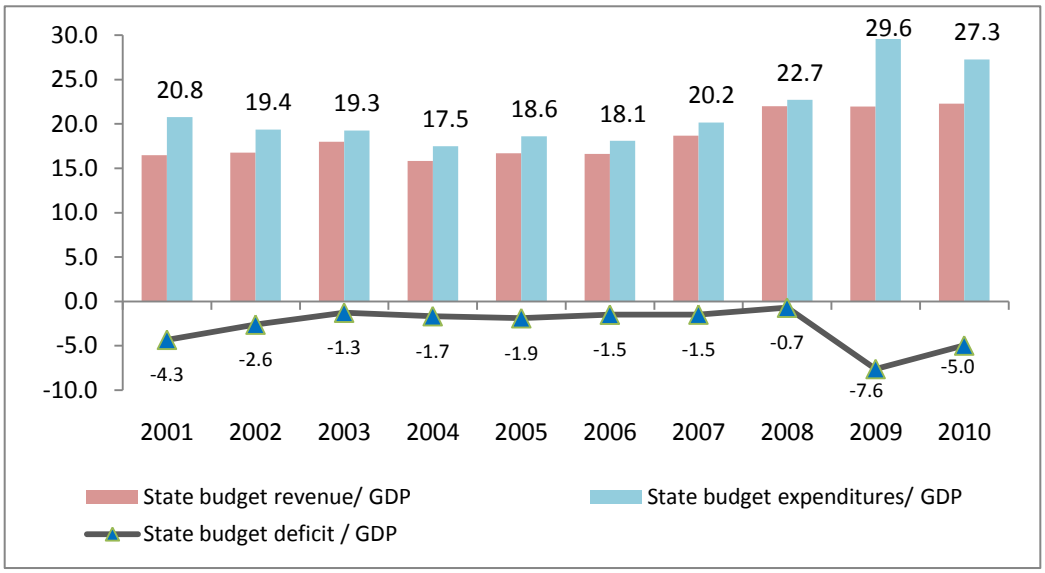
Source: NSS and EDRC calculations

Prior to the crisis, Armenia had a stable and low budget deficit and external debt levels, thus being considered a country with low indebtedness. State budget deficit did not exceed 2% of the GDP since 2003; however, due to the crisis in 2009, the deficit deepened by 9.5 times compared to the previous year

reaching 7.6% of the GDP (See Figure 2). Already in 2010, the situation improved significantly as the budget deficit was reduced to around 5% of the GDP (around AMD 0.46 bln).

The increase in the state budget deficit was accompanied by a large increase in external public debt and external debt/GDP ratio increased from 13.5% in 2008 to 35.2% in 2010. As a result, by the end-2010 public debt equaled 40.4 percent of GDP (around USD 3.8 mln). Consequently, Armenia moved from the group of low indebted countries to the group of medium indebted countries. According to the IMF projections, public debt will reach 50% of GDP by the end of 2012 and subsequently it will decrease at stable rates[1].

Figure 2 State Budget Indicators as share of GDP, 2001-2010



Source: NSS and EDRC calculations

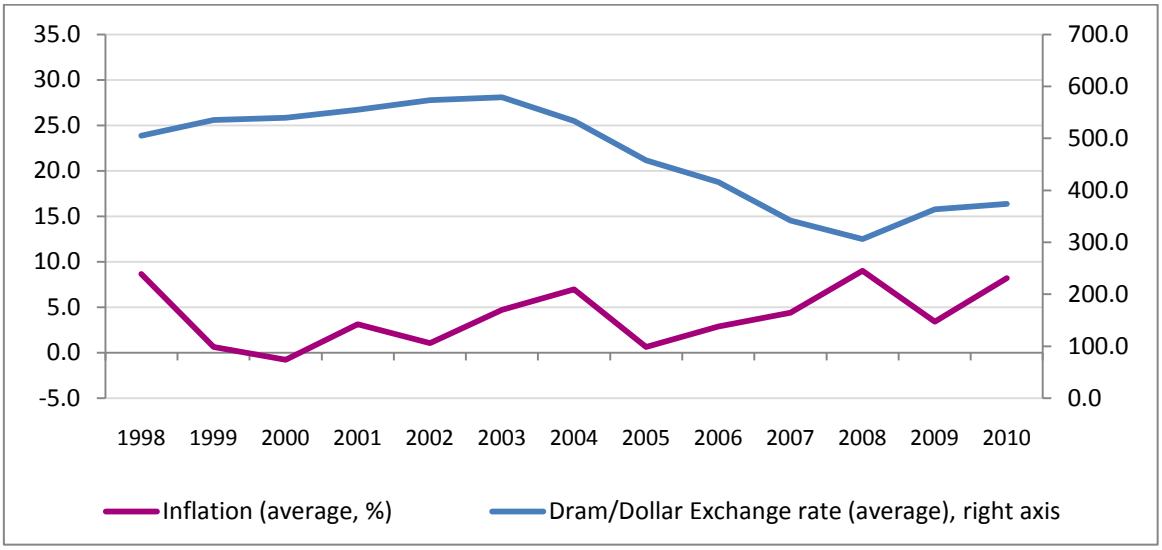
Macroeconomic stability, in particular, price stability was considered to be successfully achieved after 1990s. Inflation rates in Armenia during 2001-2009 were very low and stable (on average 2.6% annually). However, fueled by high imported inflation and other domestic factors (such as decline in agricultural production), price pressures increased during the recent years. As a result the average annual inflation in 2010 equaled 8.2%, while the end-of-year inflation was 9.4%.

Tight monetary policy aimed at maintaining low inflation had its impact on the exchange rate of the local currency, while strict financial discipline certainly restricted the expansion of financial intermediation and access to finance in the country. The well-regulated and stable banking system did not play a significant role in crediting the economy during the years of two-digit growth, while credits to physical entities and mortgage market were boosted only due to growth in real estate market. The positive results of this was that the recent economic crisis in Armenia did not grow into a financial and banking crisis, as it happened in many countries.

With regard to the exchange rate, the Armenian Dram (AMD) is perceived to be over-appreciated. This has constrained the growth of the developing sectors of the economy and, in general, the development of the tradable sector. In 1998, the average AMD-USD exchange rate was AMD 505 per 1 USD, and it depreciated further reaching AMD 579 in 2003. Yet as a result of fast and continuous appreciation of the AMD the exchange rate reached AMD 306 in 2008. In the period of 2004-2008, the AMD on average appreciated by 12% a year.

[1] Source: IMF Country Report No. 10/350, December 2010

Figure 3 Exchange and Inflation rates in Armenia, 1998-2010



Source: NSS and EDRC calculations

The pre-crisis economic developments of the country took place on the background of significant growth of imports, remittances from abroad and official assistance. Due to these factors, the current account deficit in 2007 was equivalent to 6.4% of GDP as compared to 9.4% in 2001. The current account deficit is mainly explained by the high growth rates of the trade deficit largely determined by the increase in aggregate domestic demand met by increased imports. In that regard the large flows of remittances positively impacted the deficit, yet it was insufficient to entirely finance the trade deficit. The current account deficit was mostly financed by foreign investments which totaled USD 6 bln during 2001-2010 and were mostly in communication, transport and electricity sectors (see Table 2)

Table 2 Balance of payments of Armenia (2001-2010), USD mln

	2001	2003	2005	2007	2008	2009	2010
1. CURRENT ACCOUNT	**-199.6**	**-189.4**	**-51.7**	**-589.3**	**-1381.8**	**-1368.9**	**-1300.1**
1.1 Goods	-420.2	-434.1	-587.9	-1600.3	-2663.5	-2081.3	-2141.8
Exports	353.1	696.1	1004.9	1196.6	1112.0	748.9	1113.2
Imports	-773.3	-1130.2	-1592.8	-2796.9	-3775.6	-2830.1	-3255.0
1.2 Services	-17.8	-68.3	-120.0	-212.5	-327.1	-268.1	-241.0
Exports	186.5	207.4	411.1	580.0	645.0	589.5	749.5
Imports	-204.3	-275.7	-531.1	-792.6	-972.1	-857.6	-990.5
1.3 Net Income	64.5	94.5	132.5	278.8	471.2	166.6	158.8
1.4. Net Current Transfers	174.0	218.5	523.7	944.8	1137.6	813.9	924.0
2. CAPITAL AND FINANCIAL ACCOUNT	**189.0**	**190.9**	**47.9**	**591.5**	**1369.3**	**1349.6**	**1279.9**
2.1 Capital Account	30.1	89.9	73.3	142.8	148.9	89.1	113.9
2.2 Financial Account	158.9	100.9	-25.3	448.7	1220.4	1260.4	1166.0
Net Direct Investments	69.9	120.5	232.7	701.0	925.2	724.8	569.0
Net Portfolio Investments	-5.7	0.3	-1.6	-9.2	8.4	-3.9	9.5
Net Other Investments	114.4	27.6	-94.3	303.1	53.3	1139.8	469.6
Reserve Assets	-19.6	-47.3	-162.1	-546.2	233.5	-600.3	118.0
3. NET ERRORS AND OMMISSIONS	**10.5**	**-1.4**	**3.8**	**-2.2**	**12.5**	**19.3**	**20.2**
CURRENT ACCOUNT/GDP, %	**-9.4**	**-6.7**	**-1.1**	**-6.4**	**-11.8**	**-16.0**	**-13.8**

Source: NSS and EDRC

2.2. Social Snapshot and Poverty in Armenia

Situation prior to 2008

Events and development in Armenia and in the region in early 1990s and various economic and social implications thereof resulted in acute social situation and emergence of large poverty incidence in Armenia. Despite the cease-fire, as well as stabilization policies in the country and economic recovery starting 2004, more than half of the Armenian population by the end of 1990s were poor. According to the Integrated Survey of Livings Standards of the NSS, 56.1% of the Armenian population in 1999 was poor, while 21% - extremely poor. During that period, the number of unemployed increased around three times and tremendous emigration took place resulting in serious problems in demography and labor market.

Due to high economic growth rates (double digit) during 2002-2007 Armenia managed to pass into the group of countries with middle income level: per capita GDP in 2008 (PPP-adjusted) equaled to USD 5,809 thus more than doubling the 2002 level. During that period, huge increase took place in salaries, employment and remittances from abroad. Moreover, significant steps were taken by the government to alleviate the social tensions in the country, in particular, by increasing the public expenditures in social sectors.

Labor market in 2002-2008 stabilized. About 34% of the population was employed, with a visible trend of shift of labor force from public to private sector. Unemployment rate (officially registered) dropped down to 6.3% in 2008 from 11% in 2002[2].

Figure 4 Employment structure per industries, 2002-2008, %

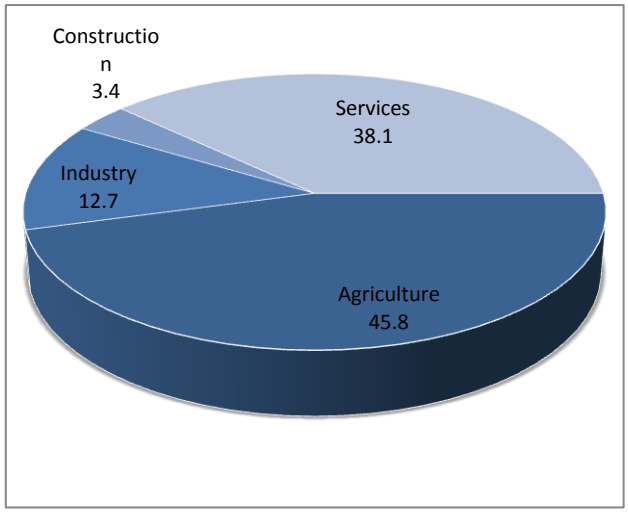
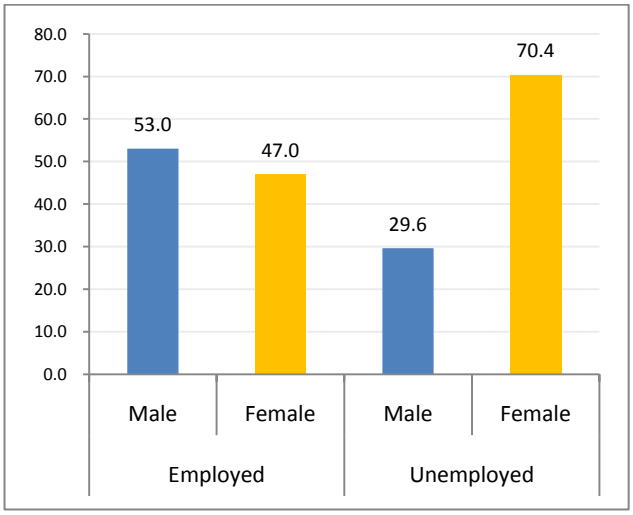


Figure 5 Employed and unemployed per gender breakdown, 2002-2008, %



Source: NSS and EDRC calculations

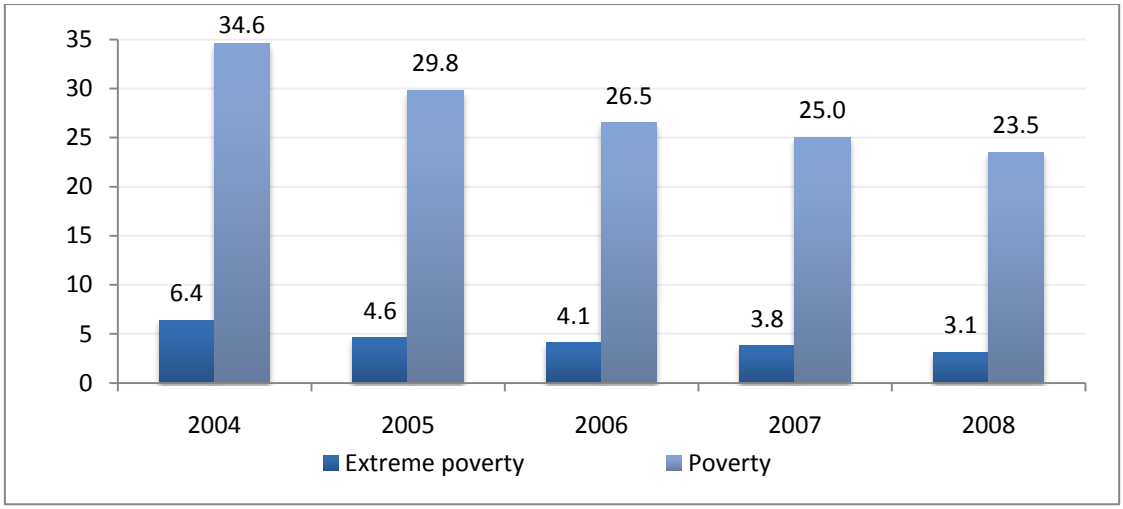
During that period, average monthly salaries more than tripled reaching AMD 87 406 in 2008. Notably, employees in the financial sector were paid the highest salaries, followed by those in construction, transport and communications and industry. The lowest salaries were paid in health and social service sectors.

According to calculations, each percentage point of economic development during 2004-2008 contributed to poverty reduction by 0.57 percentage points. Impact elasticity for urban areas exceeded the same indicator for rural areas by 0.12 percentage points. As a consequence, poverty incidence dropped down to

[2] According to ILO methodology, unemployment in the country decreased from 38.4% in 2002 to 16.4% in 2008.

23.5% in 2008 as compared to 34.6% in 2004. Extreme poverty reached 3.1% in 2008 from 6.4% in 2004, thus reducing more than twice during 4 years.

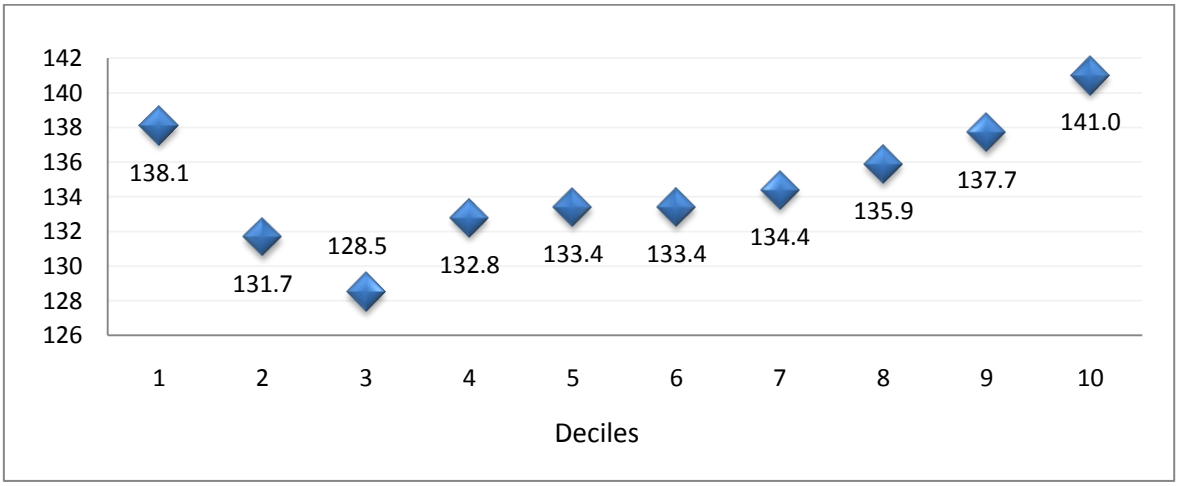
Figure 6 Poverty incidence in Armenia, 2004-2008, %



Source: Social Snapshot and Poverty in Armenia, NSS, 2009

In 2004-2008, consumption in Yerevan and other urban areas increased at higher pace (8.5% and 8.7% respectively) than the total for the country (7.8%). During those years, consumption in various income quintiles increased differently. In particular, the highest growth rate was recorded in the richest 10% and poorest 10% groups of population: 141.0% and 138.1% respectively.

Figure 7 Consumption growth rates per deciles, 2004-2008 (2004 current prices), %

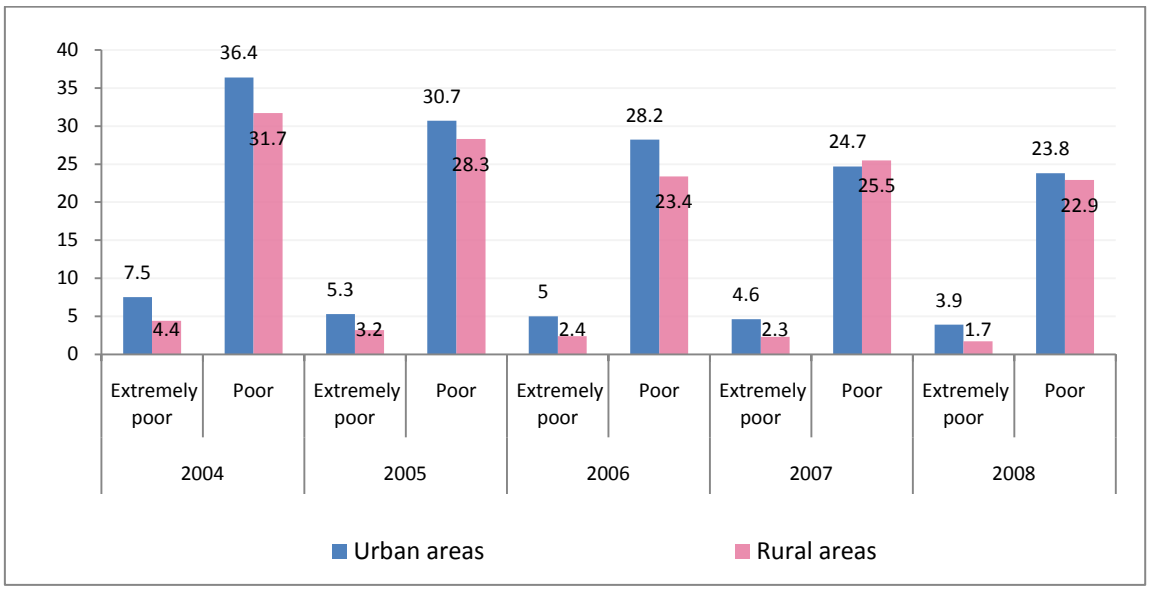


Source: Social Snapshot and Poverty in Armenia, NSS, 2009

Overall, households in middle and high-income groups benefitted from the economic growth. At the same time, annual growth rate of consumption by the extremely poor were much higher than that of the poor: 9.3% and 7.8% respectively.

Two indicators of possibility of fighting poverty and inequality between the poor – poverty gap and severity, changed positively during 2004-2008: poverty gap in 2008 equaled 3.1%, while severity – 0.8%, as compared to 7.4% and 2.4% in 2004. Poverty incidence in urban areas always exceeded that of rural areas. Nevertheless, poverty in Yerevan was significantly lower than in other urban areas.

Figure 8 Poverty in 2004-2008, per settlements, %

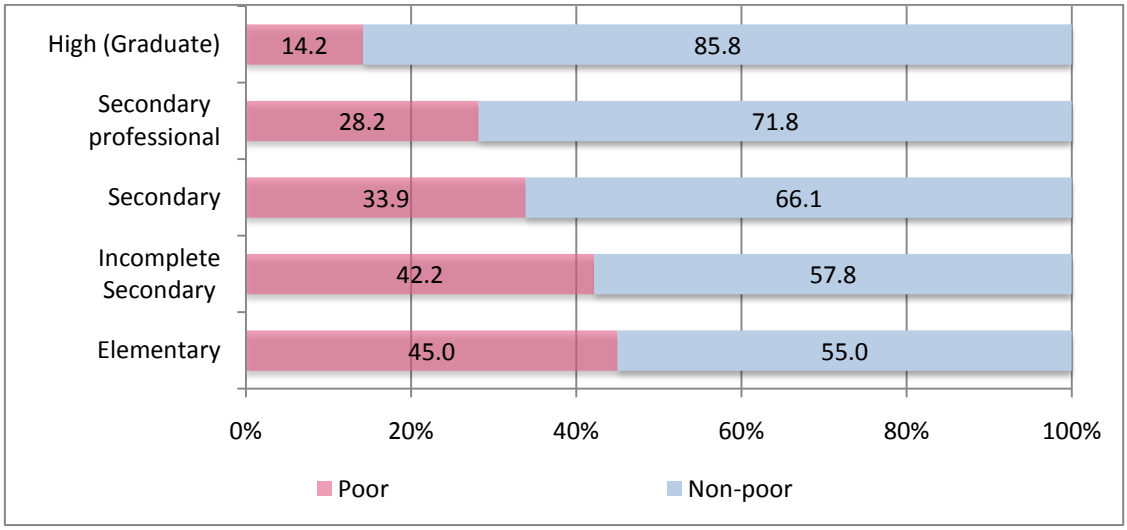


Source: Social Snapshot and Poverty in Armenia, NSS, 2009

Poverty risk is proportional to the number of members in a household. In particular, 13.2% of 1-member households were poor, while 28.5% of households with 4 members and more than half (52.8%) of households with 7 and more members were poor in 2004. In 2008, these trends overall remained the same. Large families had higher chances of falling into poverty due to large number of children.

Education is also an important factor for poverty. In 2008, 12.5% of people with higher education were poor, while 1.4% - extremely poor. Meanwhile, poverty among those with incomplete secondary education was 34.5%, with 4.9% of extremely poor.

Figure 9 Poverty per education level of the household head, 2008, %



Source: Social Snapshot and Poverty in Armenia, NSS, 2009

Along with the increase in the number of working members in a household probability of poverty reduces. In 2008, 32.9% of households without any member employed were poor (6.6% - extremely poor). At the same time, poverty equaled 17.5% in households with 3 and more members working (extreme poverty - 2.8%).

Situation after 2009 Crisis

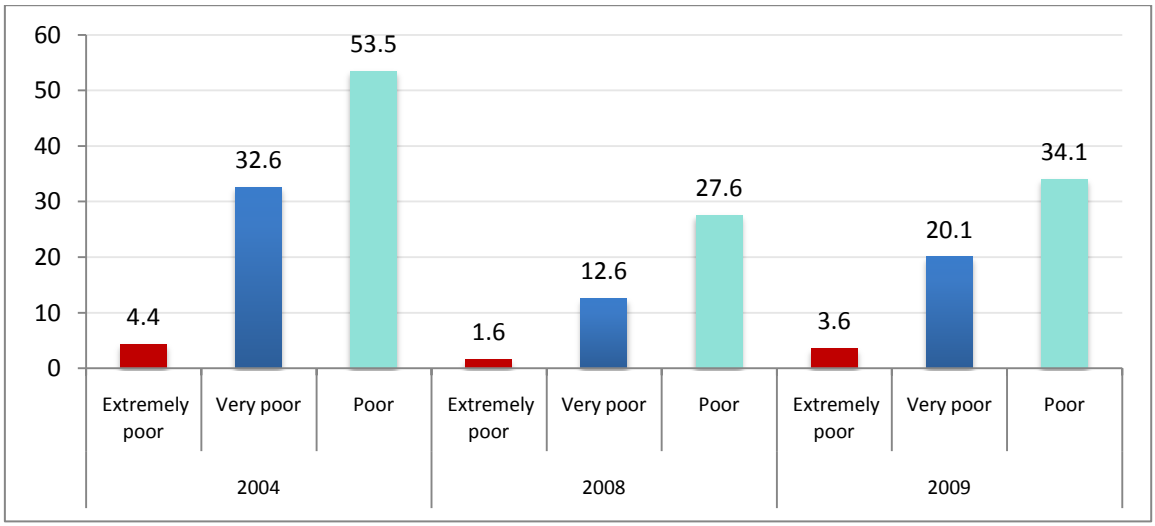
The recent global crisis interrupted the economic and social progress in Armenia. Years with high economic growth were followed by deep recession (14.1% decline in 2009) and slow recovery.

Especially the deep decline in construction sector (by 42.3%) and reduction in remittances from abroad by 31.3% had a serious social impact. The number of officially unemployed grew in 2009 by 8.7% as compared to 2008. This took place due to reduction of the employment in construction by 18% and industry (in particular, mining) by 9.8%. At the same time, employment in agriculture which almost remained unaffected by the crisis, increased by 0.6%. Economic recovery rates in 2010 were not sufficient to improve the social situation. Unfortunately, decline in agriculture by 15.8% in 2010 due to unfavorable weather and high inflation in consumer prices (8.2%) affected the social situation adversely and poverty increased.

During and after the crisis, the government put efforts to mitigate the tense social situation. Social sector and pro-poor expenditures (pensions, family benefits, education, healthcare, culture, sport etc.) of the government in general were kept at the same level at the expense of reducing expenditures in other sectors. Nevertheless, that was not sufficient to neutralize the drop in living standards of the population.

A new methodology of poverty assessment was introduced by the NSS in 2009. In order to ensure compatibility with previous years, poverty indicators for 2004 and 2008 were re-calculated and adjusted in accordance with the new methodology. According to the adjustment, poverty in 2009 increased from the previous year, especially in terms of very poor and extremely poor. However, the situation is still better than it was in 2004 (see Figure 10).

Figure 10 Poverty incidence in 2004, 2008 and 2009 according to the new methodology, %



Source: Social Snapshot and Poverty in Armenia, NSS, 2010

The ratio of poverty elasticity against GDP shows that each one percent of economic decline in 2008-2009 resulted in increase in poverty by 1.78 percentage points (2.01 percentage points in rural areas). If we compared with high-growth years, economic growth in Armenia had lower impact on poverty reduction than economic decline had on poverty increase. Poverty gap and severity indicators also worsened as compared to 2008 showing increased inequality between the poor[3].

[3] According to the new methodology, poverty gap in 2008 reached 5.1% and 7.8% - in 2009. At the same time, poverty severity reached 1.4% in 2008 and 2.4% in 2009.

3. TRADE REGULATIONS AND TRADE WITH THE EU

3.1. Trade Regimes and Preferential Trade of Armenia

Since its independence in 1991, Armenia started developing economic relations with Former Soviet Union countries. In 1992, Armenia became a CIS member, in the framework of which Armenia signed a CIS Free Trade Agreement in 1994; however, the Agreement never became effective. In turn, Armenia started signing separate FTAs with CIS countries[4]. Armenia is also an observing member of EVRAZES since 2003, participation to which can be seen as an alternative of concluding DCFTA with the EU.

Armenia became a WTO member in 2003 and also enjoys favorable trade regimes with US, EU, Canada, Japan and Switzerland as these countries have granted GSP to Armenia. In general, the trade system of Armenia is quite simple and liberal. Most of the custom duties are ad valorem. Under WTO membership, the highest ceiling of duty tariffs was set at 15%. Export is VAT and tariff exempt[5], while imports are subject to either 0 or 10% customs tariffs. For liquor, tobacco and petrol imports, special custom duties and presumptive (fix) taxes are applied.

Table 3 Distribution of custom bound rates in Armenia, %

	0% (no custom duty)	0.1-5%	5.1-10%	10.1-15%
Agricultural products	1.3	0.4	1.0	97.2
Non-agricultural products	39.2	7.8	11.1	41.8

Source: www.wto.org

Table 3 presents the commitments of Armenia under WTO agreements regarding tariff bound rates grouped per rates. As shown in the Table, Armenia is committed to apply 0-rate to 39% for non-agricultural goods and 1.3% for agricultural goods in the trade with WTO member countries, while the tariff ceiling (15% as custom duty) applies to the majority of goods imported to Armenia. Despite that, Armenia in effect applies a very liberal policy as 72.6% of custom duty tariffs are at 0-rate, while almost all the rest is subject to 10% tariff rate. As a result, the average tariff of imports to Armenia for MFN equals 2.7% which is the lowest among all WTO member countries. 0-rate is applied to those goods that can be used as raw material for further production or are part of any other production process.

The first policy review of Armenia's trade policy by the WTO took place in 2010. As a result, Armenia was ranked as a model country. Armenia's trade system is even so liberal that signing a FTA does not awake a large interest with other countries. In the 10-digit classification system of CNEEA, only 3620 items out of 9881 are subject to 10% import duty, while the rest, as noted, is free of any duty. Table 4 summarizes those goods imported to Armenia, and partner countries with which Armenia has a free trade agreement.

[4] Armenia has signed FTAs with Russia (1993), Tajikistan (1994), Moldova (1995), Kyrgyz Republic (1995), Turkmenistan (1996), Ukraine (1996), Georgia (1998), Kazakhstan (2001) and Belarus (2003).
[5] Except for products under Codes 1902, 1904 and 190531, to which 10% tariff applies.

Table 4 Armenia's imports with countries with FTAs, 2010

Code	Product label	MFN Imports tariff, %	Imports, USD mln	Share in total imports, %
271121	Natural gas in gaseous state	0	257.5	21.8
760110	Aluminum unwrought, not alloyed	0	92.4	7.8
271019	Light petroleum distillates nes	0	79.2	6.7
100110	Durum wheat	0	71.9	6.1
240220	Cigarettes containing tobacco	10	45.7	3.9
721499	Bars & rods, iron/nas, forged etc., nes	0	45.2	3.8
220860	Vodka	10	21.7	1.8
710231	Diamonds non-industrial unworked or simply sawn, cleaved or bruted	0	19.9	1.7
853720	Boards, panels, including numerical control panels, for a voltage > 1,000 V	0	19.2	1.6
860699	Railway cars nes	0	16.2	1.4
180690	Chocolate and other food preparations containing cocoa nes	10	14.7	1.2
151219	Sunflower seed/sunflower oil & their fractions refined but not chemically modified	10	14.4	1.2
100190	Wheat and muslin	0	13.9	1.2
860110	Rail locomotives powered from an external source of electricity	0	12.5	1.1
853710	Boards, panels, including numerical control panels, for a voltage <=1000 V	0	9.6	0.8
440710	Lumber, coniferous (softwood) 6 mm and thicker	0	9.4	0.8
401120	Pneumatic tires new of rubber for buses or lorries	0	8.1	0.7
721391	Hot rolled bar/rod, irregular coils, <14mm diameter	0	7.5	0.6
210690	Food preparations nes	10	7.1	0.6
151710	Margarine, excluding liquid margarine	10	6.9	0.6
Other at MFN 10%		10	161.7	13.7
Other at MFN 0%		0	244.7	20.7
Total imported under FTAs		-	1179.6	100.0
Total imports ate 10% tariff		10	272.2	23.1
Total imports ate 0% tariff		0	907.3	76.9

Source: EDRC calculations

As presented in the Table 4, the majority of goods imported under FTAs (around 80%) are already subject to a 0-rate tariff. This indicates that regardless of having an FTA, the partners already enjoy preferential trades, in other words, they will not gain significant benefits from signing an FTA with Armenia. In general, about 30% of Armenia's trade comes from countries that already have FTAs with Armenia. In particular, 23% of exports and 31% of the imports of Armenia in 2010 involved such countries (see Table 5).

Table 5 Armenia's Trade with countries with FTAs, 2010

	Exports, USD mln	Share in total exports	Imports, USD mln	Share in total exports
Russia	159.9	16%	828.3	22%
Ukraine	12.0	1%	229.5	6%
Georgia	48.2	5%	49.7	1%
Belarus	4.6	0.5%	31.9	1%
Others with FTA	12.6	1%	40.2	1%
Total with FTAs	237.3	23%	1179.6	31%
Total trade	1011.4	100%	3781.8	100%

Source: EDRC calculations

It is worth noting that, both in terms of exports and imports; trade with Russia constitutes the major part of trade with FTA countries, while shares of other countries are relatively modest. Although FTAs cannot be of special interest to trade partners of Armenia, they are very important to Armenia itself. To understand this better it is necessary to study the imports and exports of Armenia with Russia who is the largest trade partner of Armenia with whom Armenia has signed a FTA (see Table 6).

Table 6 Armenia's exports to Russia (USD mln) and tariff rates for imports to Russia under MFN

Code	Product label	2008	2009	2010	MFN imports tariff
2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	120.8	56.2	77.8	2 € per 1 liter
710239	Diamonds, not mounted or set	23.6	9.4	18.4	20%
8406	Steam turbines and other vapor turbines	0.1	0.0	8.4	15%
0806	Grapes, fresh or dried	1.0	2.0	4.7	5%
2201	Mineral & aerated waters	4.6	2.4	4.7	15%, but not less than € 0.07
6802	Works monumental/building stone & art; mosaic cube, granules	1.7	1.1	2.3	15%
8468	Machinery & app for solderg, brazg (o/t those of hd 85.15)	2.8	1.0	2.2	5%
2204	Wine of fresh grapes	1.4	1.0	2.2	20%
2008	Preserved fruits nes	1.8	1.2	2.1	15%
4002	Synthetic rubber & factice from oil	4.2	1.5	2.0	5%
0302	Fish, fresh, whole	0.5	0.0	1.9	10%
2402	Cigars, cheroots, cigarillos & cigarettes	1.2	0.9	1.9	30%, but not less than € 3 per 1000 items
90121	Coffee	3.4	2.7	1.9	10%
0303	Fish, frozen, whole	0.0	0.0	1.8	10%
853690	Electrical app for switch (ex fuse, switch etc.) not exceeding 1000 volt	2.2	1.4	1.6	10%
0809	Apricots, cherries, peaches, nectarines, plums & sloes, fresh	2.4	4.4	1.6	5%
2614	Titanium ores and concentrates	0.0	0.0	1.4	5%
2202	Non-alcoholic beverages (excl. water, fruit or vegetable juices and mi	1.0	0.9	1.3	15%, but not less than € 0.07 per liter
0406	Cheese and curd	0.7	0.9	1.2	15% but not less than € 0.3 per kg
7113	Articles of jewelry & parts thereof	8.3	1.3	1.0	20%
300450	Medicament mixtures (not 3002, 3005, 3006), put in dosage	1.1	0.9	0.9	10%
6403	Footwear, upper of leather	0.6	0.5	0.9	15% + €1.4 a pair
8535	Electrical app for switching (ex fuse, switch etc.) exceeding 1000 volt	1.7	0.9	0.8	15%
2005	Prepared or preserved vegetables nes (excl. frozen)	0.8	0.5	0.8	15% but not less than € 0.75 per kg
2009	Fruit & vegetable juices, unfermented	0.8	0.8	0.8	15% but not less than € 0.7 per kg
	Total	214.3	107.0	159.9	

Source: http://www.trademap.org and http://www.russian-customs-tariff.com

As shown in the table, Russia applies quite high MFN tariffs on goods imported from Armenia. Therefore by having an FTA with Russia, Armenia enjoys significant advantages over other countries which do not have such an agreement. As a result, among the signed FTAs, the FTA with Russia has a significant importance for Armenia as it provides Armenia certain advantages for exporting to Russia, along with other CIS members.

It is worth noting that since 2006 Armenia has been making use of EU's GSP trade system and since 2009 of the GSP+ system. The latter allows importing 6400 items of goods to the EU at a 0 tariff rate. Table 7 represents the main goods exported from Armenia to EU and their coverage by GSP+ system.

Table 7 Armenian exports to EU

Code	Product label	Exports, USD mln		GSP +
		2009	2010	
260300	Copper ores and concentrates	67.7	171.1	No
720270	Ferro-molybdenum	85.2	115.6	Yes
740200	Copper unrefined, copper anodes for electrolytic refining	60.5	92.6	Yes
710239	Diamonds non-industrial nes excluding mounted or set diamonds	41.3	44.3	Yes
710231	Diamonds non-industrial unworked or simply sawn, cleaved or bruted	3.3	16.3	Yes
810294	Unwrought molybdenum, incl. bars and rods obtained simply by sintering	9.5	15.5	Yes
260800	Zinc ores and concentrates	0.8	10.4	No
852990	Parts suitable f use solely/princ w the app of headings 85.25 to 85.28	3.2	3.9	Yes
400249	Chloroprene (chlorobutadiene) rubber (CR) nes	1.4	3.9	Yes
740400	Waste and scrap, copper or copper alloy	1.8	3.3	Yes
	Other	34.7	23.8	-
	Total	309.4	500.7	-

Source: http://www.trademap.org, http://www.unctad.org and EDRC calculations

As it is made evident by the table, 8 out of 10 major goods exported to EU are included in GSP+ system. Thus, 76% of Armenia's exports (USD 234 mln) to EU in 2009 were already covered by GSP+ system. The share of such goods in 2010 slightly decreased, since exports of copper (CNEAA 260300) tripled, which is not included in GSP+ system. Consequently, by exporting its mining output (which represents a significant share of the Armenian exports) to the EU, Armenia benefits from the preferences under the GSP+ system. Yet, unfortunately, Armenia has not able to take advantage of exporting more of the remaining 6300 goods to the EU.

3.2. Trade of Armenia with the EU countries

EU is one of the largest economies of the world and with a population of 502.5 mln and a GDP of USD 16.3 trillion, foreign trade of EU constitutes a significant share of the world turnover. According to the data of 2009, exports and imports of EU equaled respectively to 16 and 17% of the global trade. EU is a large importer of fuel (Code 27); in particular, the imports of fuel comprised 24% of total imports in 2010. Yet, the share of agricultural products in the total imports is quite low. Table 8 summarizes the largest 10 items of imports to EU (according to CNEAA 4-digit classification). Armenia is also an importer of these goods.

Table 8 EU imports in 2008-2010, USD bln

Code	Product label	2008	2009	2010	Share in total in 2010, %
2709	Crude petroleum oils	387.7	222.3	304.7	14.1
2711	Petroleum gases	111.1	98.8	102.1	4.7
2710	Petroleum oils, not crude	84.9	56.8	73.9	3.4

8471	Automatic data processing machines; optical reader, etc	52.2	42.7	63.0	2.9
8517	Electric app for line telephony, including current line system	53.5	44.9	57.3	2.6
3004	Medicament mixtures (not 3002, 3005, 3006), put in dosage	35.2	39.4	39.0	1.8
8541	Diodes/transistors & sim semiconductor devices; etc	21.2	17.9	38.1	1.8
8703	Cars (incl. station wagon)	50.1	34.1	33.7	1.6
8542	Electronic integrated circuits and micro assemblies	24.3	17.9	26.8	1.2
8443	Printing machinery; machines for uses ancillary to printing	30.5	23.7	26.6	1.2
Total listed		850.7	598.5	765.2	35.3
Total		2430.6	1794.0	2167.9	100.0

Source: EDRC calculations

The table below represents the list of countries that export to the EU. It is worth noting that the picture is different if fuel imports are taken out. In particular, 70% of EU imports from Russia and more than half of imports from Norway are fuel. 90% of the imports from Russia involve 40 product types (according to 4-digit classification) all of which are natural resources (oil, gas, coal, metal, diamonds) except electricity, chemicals (artificial rubber, fertilizers etc.) and fish.

Table 9 Large exporters to EU per countries and groups, 2008-2010, USD bln

	2008	2009	2010	Share in 2010, %
China	391.38	324.07	416.82	19.5
USA	306.50	251.64	258.92	12.1
RF	244.00	160.41	208.24	9.8
Switzerland	118.71	102.55	113.76	5.3
Norway	138.35	94.51	104.23	4.9
Japan	131.04	92.83	100.98	4.7
Turkey	69.82	52.30	58.49	2.7
South Korea	63.12	49.03	56.05	2.6
Brazil	54.62	37.97	48.89	2.3
India	45.59	37.82	46.66	2.2
Libya	47.53	29.00	38.16	1.8
Taiwan	37.28	27.36	35.87	1.7
Canada	35.72	25.74	32.93	1.5
Singapore	25.95	23.52	29.00	1.4
Malaysia	28.39	22.17	27.86	1.3
Algeria	30.74	24.23	27.53	1.3
Thailand	28.92	22.41	25.36	1.2
Southern Africa	33.57	21.08	24.53	1.2
Saudi Arabia	31.90	15.71	21.36	1.0
Kazakhstan	27.38	15.46	21.22	1.0
Total listed	*1890.52*	*1429.77*	*1696.88*	*79.5*
All Countries	*2426.58*	*1791.59*	*2133.13*	*100.0*
Group of Countries				
BRIC (Brazil, RF, India, China)	735.59	560.26	720.61	33.2
NAFTA	363.54	292.49	310.20	14.3
African countries	219.90	151.69	180.77	8.3
OPEC	209.63	132.07	171.39	7.9
ASEAN	130.40	106.34	126.75	5.8
MERCOSUR	73.43	51.70	65.01	3.0
CIS (excluding RF)	76.69	43.16	56.21	2.6

Source: EDRC calculations

It is worth noting that Turkey has a significant share in this list as almost half of its exports to EU are cars and other transportation means and parts thereof, clothing, home appliances, furniture, nuts and conserved fruits.

The total turnover of EU-Armenia trade is about USD 1.5 bln, of which 2/3 are imports. Notably, trade turnover between EU and Armenia has increased significantly during the past 10 years. In particular, exports of Armenian goods to EU grow at a significant pace in that period. The share of exports to EU in total equaled 28% in 2001, while in 2010, it reached 50%.

The table below summarizes the top 20 exports products to the EU (according to 4-digit classification) which made up 98% of total Armenian exports to EU in 2010 (see 10). Major exports are mining products; copper, iron, molybdenum, zinc, diamonds etc. Around the half of Armenian exports to the EU (47% in 2010) goes to Bulgaria, the Netherlands, Belgium and Spain altogether.

Table 10 Armenian exports to EU per items and partners, 2005-2010, USD mln

Code	Product label	2005	2006	2007	2008	2009	2010	Partner country in EU (2010)
2603	Copper ores and concentrates	8.56	37.53	52.23	99.18	67.65	171.13	Bulgaria, Spain
7202	Ferro-alloys	204.72	151.65	213.08	206.99	85.19	115.60	The Netherlands, Germany, Austria, Lithuania etc
7402	Unrefined copper; copper anodes for electrolytic refining	42.68	71.34	62.21	63.25	60.47	92.64	Germany, The Netherlands
7102	Diamonds, not mounted or set	117.18	107.79	96.89	85.06	44.66	60.59	Belgium, Spain
8102	Molybdenum and articles thereof, including waste and scrap	17.73	25.65	24.44	19.70	9.50	15.52	Germany
2608	Zinc ores and concentrates	0.00	0.00	2.56	4.42	0.77	10.38	Bulgaria, Spain
8529	Part suitable for use solely/princ with televisions, recpt app	0.07	1.38	5.86	7.34	3.18	3.92	Bulgaria, Spain, Belgium
4002	Synthetic rubber & factice from oil	0.88	12.45	10.32	7.09	1.45	3.87	Poland, Italy, Germany, Cyprus etc
7404	Copper waste and scrap	1.37	3.30	3.96	1.84	1.79	3.25	Germany, UK, Finland
7607	Aluminum foil of a thickness not exceeding 0.2mm	0.00	1.30	21.93	7.57	1.40	3.17	Italy, Czech Republic, Latvia, Poland etc.
2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	1.59	1.61	2.06	3.01	1.85	2.59	Latvia, Germany, Bulgaria, Czech Republic etc.
0306	Crustaceans	2.33	3.23	3.31	3.53	2.46	1.98	Belgium, France, Italy etc.
7204	Ferrous waste and scrap; re melting scrap ingots or iron or steel	3.38	4.68	3.84	3.21	4.53	1.39	Austria, Germany, Cyprus
8517	Electric app for line telephony, including current line system	0.80	0.41	2.08	0.29	0.99	1.22	The Netherlands, France, Finland, Hungary etc.
6203	Men's suits, jackets, trousers etc & shorts	0.00	0.01	0.08	0.81	0.73	1.06	Germany, The Netherlands, Italy, Austria etc.
4205	Articles of leather or composition leather, nes	0.00	0.00	0.12	0.87	0.78	1.00	France
2402	Cigars, cheroots, cigarillos & cigarettes	0.07	0.15	0.44	0.55	1.35	0.70	Sweden, Latvia, Denmark, Germany
2512	Siliceous of fossil meal & similar siliceous earths	0.01	0.03	0.04	0.16	0.03	0.60	Germany, Bulgaria
6201	Men's overcoats, capes, wind jackets etc o/t those of hd 62.03	0.00	0.00	0.01	0.33	0.62	0.59	Italy, Germany
7601	Unwrought aluminum	0.00	0.00	0.04	0.00	0.00	0.53	Estonia, Austria
Total listed		**401.37**	**422.53**	**505.48**	**515.18**	**289.39**	**491.73**	
Other		**40.60**	**48.42**	**54.75**	**60.33**	**20.00**	**8.97**	
Grand Total		**441.97**	**470.95**	**560.23**	**575.51**	**309.39**	**500.70**	

Source: EDRC calculations

Unlike exports, the share of imports from EU to Armenia of the total imports has continuously deceased since 2002 while the share of imports from other countries has grown. Goods imported from EU, in contrast to exports, represent a large variety. Below, a list of the 20 main commodities imported from EU is presented; these products together constituted 60% of total imports in 2010. As shown, a large share of imports from EU to Armenia in 2010 came from Germany, Italy, Bulgaria, Romania, France and Belgium.

Table 11 Armenian imports from EU per main items and partners, USD mln

Code	Product label	2005	2006	2007	2008	2009	2010	Partner country in EU (2010)
2710	Petroleum oils, not crude	53.30	97.07	139.94	206.45	153.47	201.27	Bulgaria, Romania, Greece, UK
7102	Diamonds, not mounted or set	146.51	111.38	104.61	74.99	45.06	49.86	Belgium
3004	Medicament mixtures (not 3002, 3005, 3006), put in dosage	15.27	23.65	34.98	45.21	46.13	49.16	France, Germany, Hungary, Italy etc.
8517	Electric app for line telephony, including current line system	14.94	9.99	55.10	84.28	48.67	34.35	France, Sweden, Germany, Hungary etc.
7108	Gold unwrought or in semi-manufactured forms	27.24	43.05	114.48	141.11	34.95	33.05	Austria, Italy, Germany
8422	Dish washing machines; machinery for aerating bottles	3.18	5.32	6.40	5.45	5.42	15.41	Germany, Italy, Sweden, The Netherlands etc.
8704	Trucks, motor vehicles for the transport of goods	3.86	6.70	6.77	10.04	6.58	13.90	Germany, Belgium, Sweden, Italy
8703	Cars (incl. station wagon)	7.15	14.97	30.85	33.21	12.26	13.34	Germany, UK, Hungary, Slovak Republic etc.
2309	Animal feed preparations, nes	2.60	3.95	5.71	8.54	9.79	12.02	France, The Netherlands. Denmark, Spain etc.
2402	Cigars, cheroots, cigarillos & cigarettes	8.37	11.44	15.73	17.45	5.93	11.40	Germany, Greece, Poland, The Netherlands etc.
4818	Toilet paper, handkerchiefs, tissues, napkins, table cloths, diapers,	0.71	2.07	6.76	12.56	10.05	10.72	Poland, Sweden, Hungary, Cyprus etc.
8429	Self-propelled bulldozer, angle dozer, grader, excavator etc.	0.19	3.76	4.89	7.99	4.40	10.46	Germany, UK, Sweden, Italy etc.
3305	Hair preparations	3.00	4.85	6.35	10.47	9.82	10.21	Germany, France, Bulgaria, Poland etc.
8544	Insulated wire/cable	4.51	9.40	6.60	14.33	10.67	9.93	Germany, Italy, Bulgaria, France etc.
8471	Automatic data processing machines; optical reader, etc	4.66	15.08	11.00	11.05	13.07	9.47	Czech Republic, Sweden, Germany, Hungary etc.
8537	Board & panels, equipped with two/more switches, fuses	1.48	5.25	1.81	4.85	14.23	8.78	Czech Republic, Germany, Poland, Italy etc.
3303	Perfumes and toilet waters	0.79	2.77	5.29	8.47	6.99	8.38	France, Sweden, Italy, Belgium etc.
805	Citrus fruit, fresh or dried	0.00	0.80	2.68	4.84	5.43	8.33	Greece, Spain
1806	Chocolate and other food preparations containing cocoa	2.23	3.592	5.725	8.867	7.717	8.158	Italy, Poland, Germany, France etc.
8414	Air, vacuum pumps; hoods incorp a fan	1.048	1.992	2.643	3.01	1.582	7.588	Austria, UK, Germany, Belgium etc.
Total listed		301.02	377.08	568.32	713.16	452.21	525.78	
Other		281.29	311.86	444.24	504.19	385.43	435.67	
Total		**582.31**	**688.93**	**1012.56**	**1217.35**	**837.64**	**961.45**	

Source: EDRC calculations

4. ASSESSMENT FRAMEWORK FOR TRADE LIBERALIZATION IMPACT

4.1. Features of Deep FTAs

The level of trade liberalization between countries is determined by two main factors: coverage of non-tariff barriers and comprehensiveness of areas (services, investment regulation, competition policy, institutional framework, etc.). In this regard, deep free trade agreements (FTA) differ from simple FTAs which mostly refer to the tariff and quota barriers to trade (see Appendix 2 and 3).

Alleviation or removal of tariffs on trade is only a small part of trade liberalization between countries. The real barriers to trade are not limited to tariffs. They go over the border touching non-tariff issues, such as technical barriers, SPS measures, IPR, etc. In this context, the new generation of FTAs emerged during the recent years aim at maximum liberalization of trade from non-tariff barriers by expanding coverage areas.

FTAs between developed and developing countries, so-called "North-South" FTAs have a special importance. North-South trade liberalization is looked at from the perspective of cooperation between countries and deepening impacts which can help developing countries overcome a number of institutional and systemic problems such as:

- Low capacities of state bodies,
- Inefficient economic policies,
- Deficiencies in the structure of the economy,
- Macroeconomic and political instability etc.

These agreements place special attention on protecting domestic protection based on the justification that in the long run it may result in slowing down economic growth, non-justified price increase and hamper emergence of an efficient structure of the economy based on the comparative advantages. Although, a great deal of opposite views on the protection of domestic production also exist.

Economic and, consequently, social development problems in Armenia are numerous and various. In addition to the problems in economic policy and public regulation of the economy, the level of industrial development and capacities to organize complex production processes are not sufficient to manufacture competitive goods.

The economy of Armenia is small, production and exports are focused in several sector therefore expansion and diversification of the economy and exports are development imperatives.

In this regard, EU suggests accelerating regulatory reforms, trade regulation systems, bring infrastructure and standards in compliance with the best international standards. In that case Armenia will receive liberalized entry into European market. Notably, the European party believes that a simple FTA (mutual removal of tariffs) will not ring significant economic benefits to Armenia. Economic benefits will be significant only under Deep and Comprehensive FTA. It is worth noting that EU already offers a favorable trade regime for 6400 goods under GSP+ (along with a number of other developing countries).

What will be the impact of the EU-proposed trade liberalization policy on Armenia? Will the liberalization of tariff and non-tariff trade regulation, harmonization of standards, SPS measures and other preconditions bring in the desired benefits? Those questions underlay the policy selection.

In 2007, UNCTAD announced that developing countries should be cautious in bilateral trade liberalization with developed countries[6]; since the benefits from such Deep FTAs are not guaranteed to developing countries and can only have short-term impact because:

- public procurement will cease to be a policy tool,
- liberalization of core service sectors means weakening for local service providers, while emergence and development of a local service sector is a precondition for the economic development (even developed countries set certain limits to the foreign capital participation in the service sector),
- majority of North-South FTAs reduces the possibilities of a country to pursue policies aimed ate FDI attraction for the development of the country, although signing of FTAs is directly linked to the acceleration of investment flows, nevertheless, the outcomes are not clear in practice,
- inclusion of IPR in the FTA framework can be very costly and may limit the policy space of a developing country,
- existence of FTAs between the developed country and other developing countries reduces the potential benefits to a developing country intending to sign a new FTA.

In the modern globalizing world, integration processes are very important. Especially those small countries that have various geo-political and development problems, are not likely overcome those problems. Avoidance of economic and trade integration can involve certain risks and simply block the growth and welfare perspectives. Nevertheless, trade liberalization and, especially, North-South FTAs should be viewed as second best option, while domestic reforms and efficient policies to foster economic development potential and growth still remain as the first best option.

The anticipated Deep FTA with the EU suggests implementation of the reforms of huge economic importance.

The main goal is to create a combined free trade area which, apart from the tariff liberalization, implies a compliance of technical regulations and standards, SPS measures, intellectual property rights protection, as well as public procurement system, services, investments and other sectors with the EU criteria.

Various assessments and discussions of economic and social impacts of all these are necessity. At that, implementation of independent assessments by different institutions may be very useful in terms of designing political decisions and alternatives, as well as ensuring an effectiveness of negotiations.

Nevertheless, the assessment of Deep FTA-s' impact, being a complex problem, is not simple, and the existing methodology framework is rather limited.

[6] UNCTAD, Trade and Development Report, 2007

4.2. The Traditional Theories of Trade Liberalization

Numerous theories and models were developed during the past six decades that attempt assessing the directions and magnitude of economic impact various regional trade agreements had. First theories on free trade areas that discussed static impact effects proved that trade liberalization may also have negative effects. The dominant belief, that mutual removal or reduction of trade tariffs affects countries development and welfare only positively, broken up[7].

The first and central theory among such theories is the Viner's Partial Equilibrium Model which mostly discusses trade liberalization effects for small economy (Viner, The Customs Union Issue, 1950). The model assumes that a country both imports from third countries and produces locally. The lowest prices are in a third country as compared to local prices and partner country. In this context it is believed that the country with the lowest price is the most efficient manufacturer for that particular product.

Prior to signing an FTA, domestic production supply is Qs1, domestic demand is Qd1 part of which is met by imports from a third country and the rest – by domestic production (See Figure 11). As a result of an FTA the third country appears in unequal conditions with the partner country and gets out of the market. As a result, prices decrease at the expense of decrease in the local production and the expansion of domestic demand. This is expressed by the following shifts Qs1->Qs2 and Qd1->Qd2.

Overall, abandoning tariff regulation of trade between countries has two major effects: trade creation and trade diversion.

Trade creation refers to the increase in imports from the partner country due to FTA that takes place because of domestic production substitution and expansion of domestic demand (as a result of decreased prices which becomes possible due to decreased or removed tariffs). I. e. impact routes of increased imports from the partner country are the following two: a) on production which refers to the reduction of the inefficient domestic production and substitution with imports and b) on consumption which refers to the decrease in prices. Production and consumption effects of trade creation are expressed as follows: (Qd2 - Qs2)-(Qd1 - Qs1). As a result, trade creation, by contributing to the efficient resource allocation inside the country, has a positive economic impact.

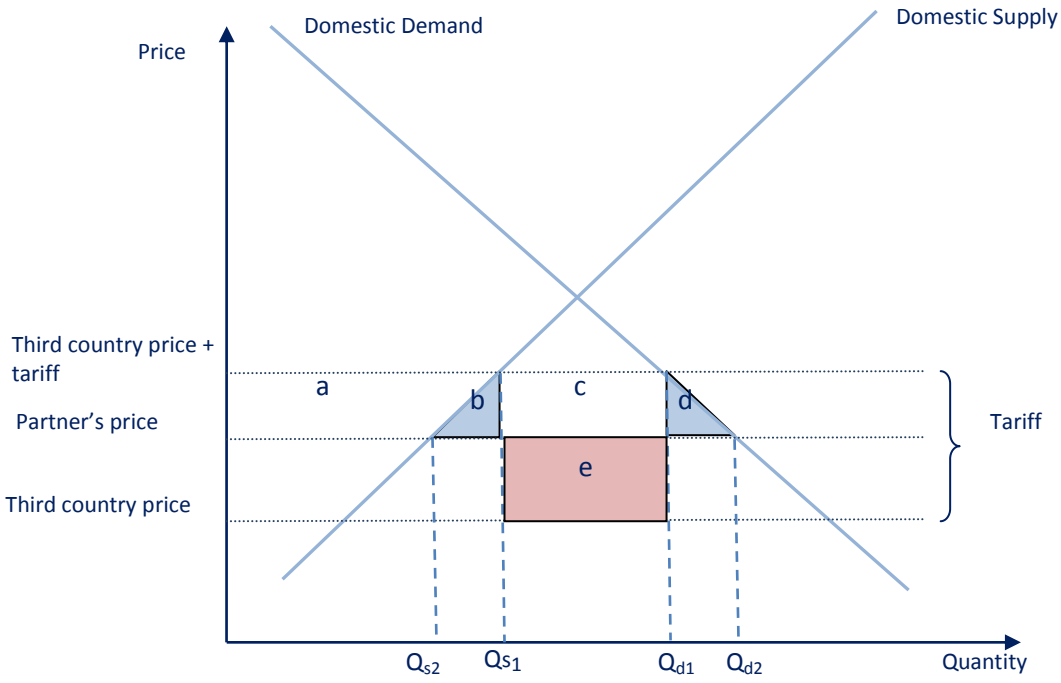
On the other hand, a second option is also feasible: trade diversion. This refers to those cases when more efficient imports from third countries are substituted by less efficient imports from the partner country (due to tariff preferences). It is obvious that trade diversion results in the loss of tariff revenues set for third countries by the given country due to evaded trade volumes from third countries, thus, leaving negative economic impact on budget revenues.

Thus, impact of FTAs on the economy can be positive if trade creation effects exceed the losses from trade diversion effects.

The Viner model is expressed graphically in the following manner:

[7] Initially, main studies were defined for CUs (Viner, Meade etc), later on it was proved that they hold true also for FTAs (Krueger 1995, Panagariya and Findlay 1996, Krishna and Panagariya 2002)

Figure 11 Viner's model



The Figure depicts the surplus in production and consumption, as well as the change in tariff income. Production surplus shows the gains of domestic producers which is graphically expressed by sector "a" above the supply curve and below the market price. Consumption surplus, which is the gains received from the consumption in domestic market, expressed by sectors a, b, c and d. Sectors c and e together represent the loss of tariff revenues. As a result, the net FTA impact is b+d-e, where (b+d) is the net effect of trade creation, while e is the effect of net trade diversion.

Thus, one can conclude that it is quite possible that FTA benefits exceed the losses if:

- prices of partner and third countries are quite close,
- importstariffs of the country before signing an FTA are high,
- imports from third countries is small,
- price elasticity of the domestic production supply and domestic demand is high.

Apart from Viner's model, Meade's General Equilibrium model also plays a central role in assessing FTA impact (The Theory Of Customs Union, Meade 1955) which refers to the FTAs signed by small countries. According to his model, such unions, resulting in both exports and imports increase, may bring in significant benefits to one of the countries through improved trade terms, thus it is not beneficial for another country. For second country perspective, unilateral removal of tariffs is more beneficial than signing a FTA, unlike the first country that receives much higher benefits that it would have been possible to realize as a result of unilateral lifting of tariffs[8].

The most frequently cited conclusion from Meade's small union model is the one stating that signing a FTA results in increase imports both from member and non-member countries; therefore, it will definitely have a positive impact on the country's economy. From the policy-making perspective, nevertheless, it is not

[8] The logic of one of the simple cases discussed by Meade is explained by construction of country supply curves that show exports of product X and imports of products Y for the first country and vice versa. Curves are compared to trade terms curves before signing a regional trade agreement and after. It is worth noting that the model bases on a number of assumptions one of which is that countries, upon signing the trade agreement, shall trade with products X and Y solely among themselves.

clear what conditions should be met by countries in order to increase imports. Moreover, numerous quantitative analyses showed that FTAs result in some trade diversion in one way or another and, usually, countries are advised to lower the tariffs thus fostering imports increase from all directions (DeRosa, WB, 1998).

Lipsey, based on Meade Small Union model (none of the countries individually or all countries together are able to change the terms of trade) came to the following conclusions (1970):

1. Those FTAs that refer to bilateral tariff reduction are more preferable than the ones that imply lifting tariffs entirely.
2. It is more probable that FTA may bring in welfare increases if the initial tariffs set for the partner country are very high as compared to tariffs for third countries.
3. A necessary condition for preferential liberalization to improve a country's welfare is that it lower the country's expenditure on its domestic good thereby increasing the volume of imports, both measured at world prices.

Later, the boundaries of Meade's study were expanded by other researchers: e. g. transport costs and world importstariffs for each country were taken into account (Wonnacott and Wonnacott, 1981). Thus, due to differences in the international trade terms, signing a FTA becomes more beneficial for each of the member-countries. The main conclusion is that a FTA is more beneficial for a group of small countries than unilateral trade liberalization between them if the trade barriers from third countries are high. Transport costs and trade barriers, in fact, are the major factors that force countries signing FTAs instead of multi-layer and non-discriminative liberalization of trade.

In addition, countries should sign FTAs in cases when entry into partner's market is relatively more valuable than into markets of third countries. In this case, FTAs have positive economic impact on member-countries.

Interesting observation was made by Schiff (1996), according to which small countries may suffer losses from unions with other small countries and, on the contrary, they benefit by joining large FTAs since large unions can meet the demand for imports without changing the international trade terms. A small country receives production and consumption benefits by increasing trade with large member-countries simultaneously reducing imports from other small countries.

Theories of Viner and Meade can be viewed as the most studied and widespread ones that give the framework of impact assessment of preferential trade liberalization without a quantitative basis for the assessment of impact magnitude.

For the assessment of the impact magnitude a number of general equilibrium models can be applied, for example according to Lloyd-McLaren, FTA impact on a country's welfare depends on the changes in domestic and international prices and imports: ≅ p1*) (m2 –m1) – (p2* – p1*)m1,

Where p and p* are respectively the domestic and international prices, m is net imports, while indices 1 and 2 refer to periods before and after signing an FTA respectively.

The difference between the domestic and international prices is the tariff revenues of the country. FTA affects positively if the trade between countries increases and affects negatively when trade terms worsen, i. e. international imports prices grow and/or international export prices – fall.

Generally, during the last six decades, in the context of widely applied trade liberalization policies, FTA impact assessment has become one of the most actual research issues. A lot of researchers widened and deepened Viner-Meade framework, valuable conclusions has been made based on ex-post evaluations.

For instance, different researchers (Wonnacott and Wonnacot 1981, Johnson 1975, Lipsey 1957) have come to the conclusion that even FTAs with trade diversion effect can have positive impact if that particular FTA results in the improvement of trade terms (export and imports price ratio). That mostly refers to large economies, however, according to some researchers (Wonnacott and Wonnacott, 1981), this can hold true also for small countries.

It is obvious that if the partner country is more efficient then there will be only the positive effect of trade creation. However, if there is no domestic production then probability of price reduction decreases. While for products where the partner is not the most efficient and there is no domestic production, trade diversion will take place together with price decreases due to crowding out a more efficient third country from the market.

Some researchers (Bhagwati, Panagariya, 1996) in general believe that establishing an FTA mostly results in net trade diversion effect; therefore, it is more reasonable to liberalize multi-layer trade relations instead of FTAs. Their conclusion is mostly true for such goods when there is no domestic production and partner country cannot fully meet the local demand (in effect, this refers to FTAs signed by small countries). For example, FTAs in Latin America failed in 1960s exactly because of negative trade diversion effects (Burfisher, etc. 2003).

Analyses of international experience prove that FTAs don't have negative effects on the welfare of small economies. Analyses of trade of countries of six RTAs (APEC, MERCOSUR, NAFTA, EU, ASEAN, CAN) shows (Crawford and Laird, 2001) that imports under these agreements grew on average by 7% annually during 1990-1999, while imports from non-member countries – by 6%. Based on this, researchers came to the conclusion that FTAs overall had net trade creation effect both for member and non-member countries, thus boosting economic growth of these countries.

As a result of quantitative analyses other researchers also concluded that FTAs mostly have a net trade creation effect (Baldwin, Venables 1995). According to the CGE model findings, many FTAs, having a net trade creation effect, have resulted in the welfare growth of many countries (Robinson, Thierfelder 2002).

Anyway, it must be considered that preferential trade liberalization according to the second best theory, does not have unequivocal impact on the welfare and do not guarantee increase in welfare of countries. It is explained by the fact that there are numerous restrictions (distortions) in the economic system and removal of any of those can have both positive and negative impact on the efficiency of the system, or do not have any impact at all. It is also possible that increasing or making any or those restrictions stronger or stricter results in increase in welfare (The General Theory of Second Best, Lipsey and Lancaster, 1956).

At the same time interestingly, it is possible to form in theory such FTAs that have positive impact not only on all members, but also on the global economy overall (Pareto-improving FTAs, Kemp–Wan Theorem). This mostly can be realized by developing mechanisms of setting tariffs that prevent trade diversion, liberalization of all trade between countries and compensation for losses.

If all impacts of trade liberalization discussed so far had static nature, dynamic effects should be viewed very carefully, the major one among them are:

- **Competition strengthening:** lifting of tariff regulation, by affecting the level of protection for the domestic production, creates favorable conditions for the development of the efficient market structure.
- **Economies of scale effect:** small domestic countries receive free access to the partner's market, thus getting the possibility to sell larger volumes of goods (in more favorable conditions).

- **Investment promotion:** creation of free trade areas results in creation of investments and diversion. I. e. favorable trade terms result in increased investment flows which, if no tariff preferences granted, would go to other countries.
- **Technological changes** are explained both by technology transfers through foreign investments and by increased domestic investments in R&D due to comparative expansion of the market.

Promotion of mutual investments can be viewed as a goal of FTAs, such as ASEAN sometimes states the real goal of its creation is the increase in investment flows between its members (ADB, 2010).

4.3. Development of an Assessment Framework

Trade liberalization with the EU can have a significant impact on the economy of Armenia, mainly effecting the trade creation and trade diversion. Consequently its short and long term impacts can differ.

It is obvious that tariff liberalization and non-tariff regulations will lead to changes in production, exports, imports, country origin of imports, internal (and exports) price changes, and reduction of budget and custom revenues. At the same time changes regarding investments, technologies, competition and competitiveness are possible, which can result in positive long-term economic impacts. As a result for the purpose of evaluation we distinct the following four types of impact:

- Production impact
- Consumption impact
- Customs revenue impact
- Development impact

The production impact is related to internal production and exports quantities, investments, employment and income changes. The consumption impact relates to consumer prices, the quality of consumption products, their diversity and security. The custom revenue impact is the change of public budget revenues due to changing trade volumes. The development impact includes technological growth, development of competition and business culture and other similar issues. The possible consequences of every impact type which can be both positive and negative are grouped in the table below.

Table 12 Types of Impact and Possible Consequences

	Positive Consequences	**Negative Consequences**
Production impact	• Export Expansion (growth of what already exists) • Export growth (export of new products) • Decreased costs of domestic production	• Substitution of domestically produced goods and reduction of employment
Consumption Impact	• Reduction of consumer prices • Improved quality of products consumed in domestic market • Increased affordability and diversity of products	• Decreased affordability and diversity of products
Customs revenue impact		• Loss of budget revenues
Development impact	• Increase of investments • Improvement of business and investments climate (culture) • Increased competition in the domestic market	

	• Increase of general economic competitiveness • Technological development and transformation	

In general, the occurrence of the indicated positive consequences can be hampered by certain factors. These factors can be related to existing economic issues and/or some of the distinctive issues of Armenia, or be of an external and/or regional nature.

Consequently, certain preconditions or limitations exist, which are crucial for the occurrence of the positive effects. We specifically signify the following three:

- Production capacity and abilities
- Financing mechanisms of internal investments
- Policy limitations regarding the flow of foreign investments and country risks.

For example, as a result of trade liberalization, a production impact can occur which can result in the creation of market opportunities for production and export of larger quantities or new types of products. Yet, the lack of production capacity and ability or the inadequate development of financial mechanisms and institutions can hamper the growth and expansion of the product offer.

Similarly, as a result of the development impact, the probability of growing foreign investments can be reduced due to economic and non-economic factors related to the country. While, external investments are decisive for technological development and transformation, and the consequent general economic competitiveness and growth.

It must be noted, that trade liberalization with EU is the second best policy as reduction of barriers to production and development and the creation of favorable circumstances in Armenia remain to be “the first best” solution.

For the creation of the general evaluation framework it is also important to understand the answers to the following questions for all production sectors:

- Whether Armenia has the ability for extending that specific production (the preconditions and limitations for development).
- Whether EU is an effective producer of a specific product compared to a third country (compared to the current and potential partner countries).
- Whether Armenia has domestic production of that certain product.

The first question is related to the existent export volumes and the possibility of enhancing the export of new products, adopting zero tariff rates with the EU and harmonization of standards, as well as realization of domestic production in compliance with the standards. So the main point is about the occurrence of production impact. The second question is more about changes in imports, and the resulting impact on consumption and/or customs revenues. The third question is important in relation to production and consumption impacts.

Below are the possible change of imports and the demonstration of production, consumption and customs revenues effects (hypothesis) in case of tariff liberalization.

Table 13 Possible Consequences of Imports Changes

	No other importer exists	***EU is the most productive producer***	***Third countries are the most effective producers***
Local production exists	**Prices fall, imports from the EU increase**		
Feature	Suspension of domestic production	Cut of non-effective imports from third countries	Cut of effective imports from third countries
Positive impacts	Consumption impact (including quality)		Consumption impact
Negative impact	Negative production impact (regarding non-effective production), Fall of customs and tax revenues		
Local Production does not exists	**No price and imports changes**	**Prices fall and imports from the EU increase**	
Feature	Profits from EU imports increase (elasticity)	Cut of non-effective imports from third countries	Cut of effective imports from third countries
Positive impacts	Does not exist	Consumption impact (including quality)	Consumption impact
Negative impact	Fall of customs revenues		

As shown in the table above, trade liberalization will result in growth of imports from the EU. This will happen with exception of cases when no local producer and other importers exist for a product including cases of non-elastic demand and or monopolistic supplier. The increase of imports from the EU happens based on the increased local demand due to decrease prices, the suspension of non-effective local production or decrease of revenues and the substitution of imports from other countries by EU imports. Whereas, if the third country importer is the more effective producer, the negative effect of trade diversion will occur. In general trade diversion leads to extra loss of customs revenues (that of existing imports from the EU plus reduction due to decreased imports from other countries). The diversion of effectively produced products will also result in a reduction of the positive consumption impact, so the quality and diversity of production will not occur.

Thus, as a result of liberalization of trade with the EU, Armenia can expect a positive consumption effect. Yet, if no positive production impact occurs, the positive consumption impact will be weakened.

The production impact can be positive, or in other words Armenia will benefit, in case when the possible increase of exports is larger than the fall of local production. That is possible if, as a result of zero tariffs, existing producers in Armenia can realize larger revenues from exports, increase the volumes of production and exports, more than the possible decrease of local production. This will only happen in absence of barriers to development or presence of preconditions. For a positive production impact it is necessary that the development impact occurs (See table).

To obtain these possible benefits, in all cases Armenia will be required to pay through the loss of customs revenues. Whereas, if the trade turnover is large, the loss of customs duties will increase respectively.

In order to measure the behavior of the described hypothesis and their various impacts, it is necessary to conduct detailed case studies, and partial and general quantitative assessments. At that, the described framework mainly relates to the tariff regulation meanwhile an inclusion of other types of regulation and the level of comprehensiveness can significantly change the expected results. Assessment of RA-EU DCFTA economic impact will be a basis for poverty and social impact analyses.

5. ASSESSMENT OF THE ECONOMIC IMPACT OF TRADE LIBERALIZATION WITH THE EU

5.1. Main Directions of DCFTA

A Deep and Comprehensive FTA (DCFTA) with the EU implies wide aspects of reforms and regulatory measures. The following six directions of DCFTA can be identified based on a review of existing documents and the current negotiations process:

- Tariff regulations,
- Technical barriers to trade and non-tariff regulations,
- Sanitary and phytosanitary (SPS) measures,
- Intellectual property rights (IPR),
- Public procurement system,
- Other directions (improvement of business and investment climate).

Within the mentioned directions, various concrete changes are expected, which will have a direct influence on the economic processes and behavior in the country resulting in certain results and consequences. In accordance with the indicated directions, in Table 14, the possible economic impact chain is presented as complete as possible. Every direction and the foreseen changes are worth to be evaluated and analyzed in detail. Let us address the chosen directions and describe them.

1. Tariff regulation.

Tariff regulation or liberalization assumes applying zero tariffs to goods imported from the EU member countries to Armenia and the opposite (exports of Armenian products into the EU member countries). This may have a large impact on Armenia's exports as well as imports volumes, prices, competitiveness of local production, and budget revenues. It may cause trade creation and diversion effects resulting in possible impacts on production, consumption and costumes revenues. In this regard, it is also important to understand and evaluate the dynamic effects of trade liberalization.

2. Technical Barriers to Trade and Non-Tariff Regulations

Changes in this direction are mainly related to harmonization of Armenia's legislation on technical regulations and standards of industrial production with the EU legislation as well as development of national infrastructure in accordance to the EU standards (institutional systems of technical regulation, standardization, certification, compliance assessment, accreditation, metrology and market regulation).

Specifically, this assumes an application of the EU and international standards regarding the domestically produced or imported products in the domestic market, which requires realization of investments, technological changes and reforms. As a result, we should expect a tangible increase of product quality and consumer right protection, the accessibility of external markets, as well as creation of the ability to produce products which will be competitive on developed markets. The development of quality infrastructure will on its turn contribute to growth and sustainability of local production and exports.

It is important to notice, that a DFCTA assumes that the products which are sold in Armenia must comply with the EU standards. This issue can impact not only Armenian producers but also Armenia's other trading partners which work with other standards (such as CIS countries).

As a result, as a negative consequence, a price rise must be expected and issues regarding sales and compliance of local production and products. Changes related standards will also bring changes in the geographic flow of trade and trade partners.

3. Sanitary and Phytosanitary (SPS) Measures

It is envisaged to adjust the SPS measures to the EU standards and to eliminate the existing gaps in this sphere. The main purpose is to create a thorough and efficient food security system, which is perhaps the most difficult in terms of application and the most expensive sphere presented by the EU, and which will result in certain consequences for the agriculture. The main positive consequence may be the possibility to freely enter the EU and other external markets and the high level of food security. At the same time, this may lead to increase in costs on food production, and the problems with organization of production and sales of agricultural products on local markets. It will cause a necessity of support and large investments in agriculture. This sector is quite important and requires a separate study.

4. Intellectual Property Rights (IPR)

The reforms, legislative adjustments and particularly the application improvement in this sphere generally may lead to investment climate improvement and to the increase of level of copyright on foreign products, brands and other types of intellectual property. Despite the positive impact, it may also negatively effects on some current sectors, resulting in termination of certain activities. Particularly, it will cause a problem with names for Armenian cognac and champagne, as well as it will lead to decrease of access to audiovisual, software and other relevant products.

5. Public Procurement System

This envisages the adjustment of Armenian procurement system to EU requirements, which should lead to increase of transparency of public procurements and the assurance of equal conditions for all local and foreign producers/distributors. This will probably increase the efficiency of budget expenditures and minimize corruption risks. However, the local producers may lose their possible opportunities, while the system of public procurements as a tool of fostering of local economy will lose its importance.

Nevertheless, it should be taken into account that Armenia has already joined the WTO Agreement on Public Procurements, which already supposes to receive the expected benefits and losses.

6. Other Reforms, Improvement of Business and Investment Climate

Here the stress is putted mainly to the improvement of business and investment climate, including the measures aimed at improvement of customs administration and strengthening competition protection. This, of course, will result in certain positive economic effects.

Studying the business climate indicators (according to the “Doing Business” index of WB) for EU-15, as well as, since 2004, for other EU member countries and for countries having economic integration agreement with EU, it can be seen, that doing business conditions in all those countries are quite different. There is a positive progress in the relevant indicators of all those countries either having economic integration agreement with EU or being EU new members. Nevertheless, the adjustment to EU legislation does not necessary means the improvement in doing business conditions. In other words, the improvement of doing business requires not only the improvement in relevant legislation, but also in a business practice itself. In case of having a political will and relevant resources, business environment in the country may be intensively improved even without free trade agreement with EU, which should be considered as “first best” policy. Summarizing, the following conclusions can be made:

A) Economic benefits expected from the core trade liberalization are possible if at first, tariff liberalization lead to positive economic consequences,

B) Legislative adjustment of technical regulation and industrial standards will become a burden for businesses in the short-term period, requiring adequate investments and technological reequipment; in the mid-term, it will be possible to improve the quality of products and enter developed markets. In order to avoid economic downturn it is necessary to apply a differentiated, smooth phased transition approach.

C) Reforms and development of national quality infrastructures (institutional systems of technical regulation, standardization, certification, compliance assessment, accreditation, metrology and market control) will allow supporting business and minimize production costs related to the compliance with the standards.

D) SPS measures will directly affect agriculture, especially production and realization of livestock products and other goods with animal origin. It contains high risks and will have considerable social influence on rural poverty and non-rural poverty as well. A rather long preparatory stage is necessary, special researches and assessments are required.

E) IPR fields also deserve separated researches and assessment. It is quite difficult and can have various impact mechanisms, both positive and negative. Overall, it can be very expensive for the country and can bring forward a number of limitations, and mechanisms of expected benefits are not especially clear and evident, at least in the short-term period. Nevertheless, there is a need for some regulations in the sector.

F) Public procurement system and reforms in trade of services will not be affected much as those sectors are already quite liberalized or are in a process. In the services sector, there are a number of foreign investors; main issue is related to liberalization of air transportation which can also be considered in the context of business and investment environment reforms.

G) Business and investment environment reforms are not the main subject of RA-EU trade liberalization agreement: they are preconditions basically. Though this aspect is very important and can have a considerable economic impact, in fact, it is not the main subject of the present study.

H) In order to assess an impact of the DCFTA with the EU it is necessary to differentiate trade liberalization effects from the effects of economic and regulatory reforms implemented in the country.

I) Thus, there is a need to conduct a number of research studies to make quantitative assessments of the DCFTA impact, as in the framework of our study, it is impossible to make a quantitative impact assessment of such large reforms. In our study, we focus on assessment of tariff regulation, and we develop general discussions on non-tariff regulations.

J) In the following sections, factor analyses of impact on export and imports are presented, next we refer to consequences of non-tariff regulation, and after that, quantitative assessments through the CGE model are provided assuming that Armenia will not completely adjust its non-tariff regulation to the EU.

Table 14 DCFTA Economic Impact Chain

	Direction	Major Change	Direct Impact	Potential Outcome	Potential Implications
1	Tariff Regulation	Removing tariffs for imports from EU	Reduction in cost of goods imported from EU	Increase in volumes of goods imported from EU, Reduction of the competitiveness of the other imported and local goods sold in the domestic market	Increased competition and decrease of prices in the local market, Decrease of imports from other countries or substitution with goods produced in EU (reduction in budget revenues), Improved product quality and safety in the local market, Decreased production/employment, Need for technological modernization and capital investments
			Reduction of import duties and indirect tax collection	Reduction in budget revenues	Reduction in budget revenues
		Removing tariffs for exports from EU	Reduction in cost of goods being exported to EU	Increase in existing export volumes to EU, Exports of new goods	Increased exports, Increased production/employment
2	Non-tariff Regulation of Technical Barriers to Trade	Application of the EU standards to imported and domestic products	Ban on imports of goods not conforming with the EU standards, Ban on sales in the domestic market of those domestically produced good that do not conform with the EU standards	Improved competitiveness of countries in compliance with the EU standards and opportunities for them to enter Armenian market, Reduction of imports of goods to Armenia from countries not complying with the EU standards, Need for local products to conform with new standards and consequently reduction of sales in the domestic market	Increased imports from EU and countries conforming with the EU standards (China, Turkey), Decrease in imports from CIS countries, Georgia and Iran, Reduction in budget revenues from imports, Increased prices of imports and local production, Improved product quality and safety in the local market, Increased need to export Armenian products to countries with markets not conforming with the EU standards, Decreased production/employment, Need for technological modernization and capital investments
		Compliance of certification bodies and infrastructure	Implementation of reforms and investments	International acknowledgement, Expansion and development of activities of certification bodies, Reduction in export costs,	Increased exports,
3	SPS Measures	Ensuring compliance with Food safety system legislation and institutional aspects	Implementation of reforms and investments, Stricter requirements for food production, storage, transportation and sales, Application of limitations on imported goods and goods being sold in the domestic market	Access and opportunity to enter to EU and other foreign markets, Increased cost of food products, Problems in producing and selling local agricultural products in the domestic market, Need for agricultural support and investments	Increased imports, Price increase, Increased exports, Need for technological modernization, investments and financial resources, Change in production and employment in agriculture and processing industry, High level of Food safety and consumer rights protection, Change in food security level

	Direction	Major Change	Direct Impact	Potential Outcome	Potential Implications
4	Intellectual Property Rights	Ensuring compliance of sector legislation and enforcement	Increased protection of intellectual property and fight against copyright infringement	Favorable investment environment, High level of protection of copyright, trademark, foreign production etc., Stopping current activities in certain areas	Increase in investments, Business in some industries will become more difficult, Difficulties in liquor production sector, Reduced affordability in audio-visual goods, software and other sectors
5	Public Procurement System	Ensuring compliance of the system	Public Procurement Reforms, Increase in transparency of public procurement, Provision of equal conditions for local and external manufacturers	Increased efficiency of budget expenditures, reduction of corruption, provision of equal conditions, decreased competitiveness of local manufacturers	Reduction in corruption, increased efficiency of budget expenditures and improvement in quality of services rendered, Reduction in domestic production
6	Other Directions	Improvement of business and investment climate	Improvement of business and investment climate, Trade facilitation, improved customs administration, Increased competition protection	Ease of doing business, Increased competition	Increase in entrepreneurship and business activity, Increased foreign trade, Increased investments

5.2. Significance of the Tariff and Non-Tariff Regulations

Changes in exports in the case of tariff liberalization

In case of tariff liberalization, in particular, elimination of customs tariffs, it is possible that export will grow which can lead to a positive productive impact. For Armenia custom revenues will not change as Armenia does not apply any tariffs on exports.

Possible changes in exports from Armenia can be considered in three directions:

- Expansion of currently exported Armenian goods to non-EU countries/ exports to EU countries,
- Expansion of production/ exports of goods currently exported to the EU countries,
- New exports of goods that are currently not exported/ produced.

The latter, supposing development of a completely new products and production to be exported is a quite difficult process, which depends on a level of technological development and investments. The liberalization of trade with EU may create favorable conditions for such investment in Armenia; nevertheless it is not a sufficient condition. Finally, the proposed conditions of access to EU markets are not unique and the flow of such investment into Armenia, among other countries of the region, first of all requires urgent changes in business and investment climate, which can be viewed individually from the context of trade liberalization with EU. This issues is not in the context of primary subject of the current study, thus, we should discuss the possible changes in existing (current) export.

Thus, let us consider the production of Armenian products exported to non-EU countries in case of market conditions changes, in particular, liberalization of tariffs, and their expansion/exports to the EU countries as well. Thus we should observe the current state of Armenian export.

The table 15 presents the volume of export in 2008-2009 for the products included and not in GSP+ system, classified by export directions. As we see from the table, the major part of Armenian export, about 80%, are products which are included in EU GSP+ system and may be imported to EU under preferential regime. And though most of them (12.9 % in 2008, and 10.5 % in 2009) were produced and exported, but to non-EU countries[9].This statistics shows that the preferential conditions offered by GSP and GSP+ systems are not fully utilized by Armenia, even in case of having production and export of relevant products to other countries, which satisfies to those systems' requirements. This means that the tariff regulation is not important that much in this case; more important are non-tariff barriers and the EU requirements (standards) to products or other costs, e.g. on transportation.

Table 15 The export of products included in GSP+ system

	2008	2009	2008	2009
	Volume, USD million		*Share, %*	
Products included in GSP+ system	**882.9**	**528.9**	**83.7**	**77.3**
Exported solely to EU	102.2	71.9	9.7	10.5
Exported both to EU and other countries	644.3	385.0	61.1	56.3
Exported solely to other countries	136.5	72.1	12.9	10.5
Products not included in GSP+ system	**172.0**	**155.0**	**16.3**	**22.7**
Total Export	**1055.0**	**683.9**	**100.0**	**100.0**

Source: EDRC Calculations

[9] In 2006-2008 Armenia was included in EU GSP system, while in 2009-2011 – in GSP+ system.

Now let's observe those Armenian products, which are neither exported to EU nor included to EU preferential GSP trade system. The table 16 shows that the export of such kind of products is rather small – only USD 18 million in 2009. At the same time table 17 presents similar information, but for 2008, classified also by the export volume size.

Table 16 The export of products not included in GSP+ system

	2008	2009	2008	2009
	Volume, USD million		*Share, %*	
Products included in GSP+ system	**882.9**	**528.9**	**83.7**	**77.3**
Products not included in GSP+ system	**172.0**	**155.0**	**16.3**	**22.7**
Exported solely to EU	24.4	9.8	2.3	1.4
Exported both to EU and other countries	135.5	126.9	12.8	18.6
Exported solely to other countries	12.2	18.3	1.2	2.7
Total Export	**1055.0**	**683.9**	**100.0**	**100.0**

Source: EDRC Calculations

The table 5.4 presents, that the major part of all exported products, which are not included in GSP+ system (USD 172 million), comprised the large export. It amounted to USD 158 million and was ensured by the export of 10 products. Only 1 product out of 10 were not exported to EU, that is well-known fresh Armenian apricot (HS code 08091000), export of which amounted to USD 2 million and was directed mainly to Russian market. Another 2 products, not included in GSP system, but ensured the Armenian large export, were exported only to EU; at the same time the rest 7 products were exported to both EU and other countries (see table 17).

Table 17 The structure of Armenian export in 2008 by size, main directions and inclusion in GSP+ system

	GSP+ Yes	GSP+ No	Total	GSP+ Yes	GSP+ No	Total
	Quantity (HS 4-digit code)			*USD million*		
More that USD 10 million	**9**	**3**	**12**	**660**	**142**	**802**
Exported solely to EU	2	1	3	78	20	98
Exported both to EU and other countries	6	2	8	546	122	669
Exported solely to other countries	1	0	1	36	0	36
More that USD 1 million	**48**	**7**	**55**	**142**	**16**	**157**
Exported solely to EU	5	1	6	13	4	17
Exported both to EU and other countries	27	5	32	73	9	82
Exported solely to other countries	16	1	17	56	2	58
Total Large Export	**57**	**10**	**67**	**802**	**158**	**960**
Total Export				**883**	**172**	**1055**

Source: EDRC Calculations

So, the current volume of export of Armenian products only to other countries is not large. But the major part of it, USD 136.5 million in 2008, comprises of products included in GSP system. Out of this only USD 36 million were ensured by the export of cement, while another USD 56 million – by 16 other different products, annual export of which amounted to USD 1-10 million. The tariff liberalization of EU-Armenia trade cannot effect on access of all these products to EU market, as all of them are already exported under the preferential regimes of GSP and GSP+. At the same time the existing geographical and transportation

conditions and the requirements to products do not make currently produced Armenian products more competitive in EU markets, or even become barriers toward their access to those markets.

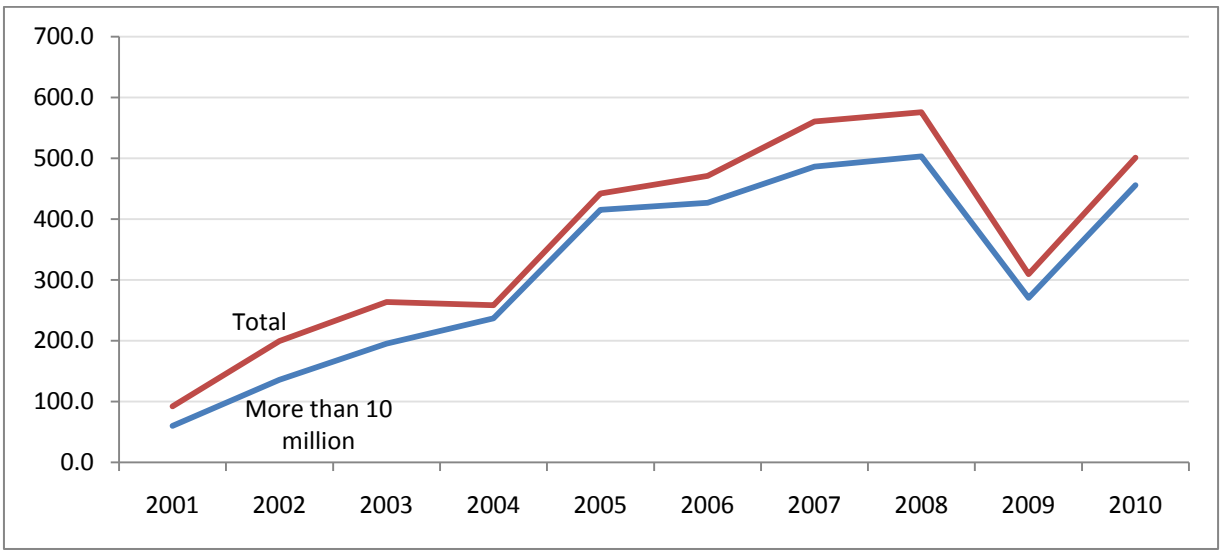
Currently produced products, which are not exported to EU and are not included in GSP system, are too small (only USD 12.2 million in 2008); only the export of Apricot annually exceeds USD 1 million, however it faces non-tariff barriers in procedures of access to EU market.

The rest of exported products is quite small, thus that kind of small or occasional export is not interesting to assess for the current study.

Now let's discuss the opportunity to expand the existing export of those products already exported to EU. We will observe the structure of those products and current tariff regimes. Once again it should be mentioned, that if those products are already included in GSP+ system, then it means that they have already a preferential conditions for trade and consequently tariff liberalization will have almost no effect on them. If currently exported products are not included in GSP= system, then we should study the general tariff regime of EU, in order to find out how much it restricts the Armenian export to EU, or what kind of improvement may be expected in case of EU tariff liberalization.

So, currently the volume of all Armenian products exported to EU amounts up to half billion USD. The maximum indicator was recorded in 2008 (in pre-crisis period), what the export to EU amounted to USD 575 million. The chart 5.1 presents the dynamic of Armenian export to EU, with special focus also on products with more that USD 10 million annual volume of export. As we can see from the chart, the Armenian export to EU countries is due to the export of 5-6 large product groups (HS 4-digit code).

Figure 12 The total export and export of products with annually more that USD 10 million export volume from Armenia to EU countries in 2001-2010, mln US Dollar



Source: EDRC Calculations

The table 18 presents more detailed statistics on export to EU countries (by HS 4-digit code classification). According to it, only 200-250 Armenian products are exported to EU. However the majority of them, about 150 products, are extremely small: the annual export volume of those products is less than USD 2 million, thus cannot be interesting and significant in terms of current assessment.

Table 18 The structure of export volume from Armenia to EU in 2001-2010

	2001		2005		2008		2010	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Up to USD 50 thousand	130	1.3	149	1.6	159	1.9	147	1.7
USD 20-250 thousand	21	2.3	23	2.5	47	5.2	35	4.0
USD 250-500 thousand	5	1.9	5	1.8	16	5.5	9	3.3
USD 0.5-1 million	7	5.0	5	3.8	12	7.8	4	2.4
USD 1-10 million	9	22.2	9	29.5	16	52.1	10	23.4
USD 10 million and more	2	59.3	5	402.8	7	503.0	6	465.9
Total	**175**	**92**	**196**	**442**	**257**	**576**	**211**	**501**

Quantity is the number of exported products by HS 4-digit classification.
Value is the value of exported products for each volume group, in million USD.

Source: EDRC Calculations

In case of liberalization of trade with EU, the nullification of EU tariffs on imports may have a positive economic impact on expansion of already existing Armenian export to EU, in case of its impact on about 30 the largest product groups. The table 19 presents the list of those groups, with indication of those inclusions or exclusion in GSP+ system. It is obvious that those groups have unsustainable dynamic and that those 30 groups includes also products with rather small volume of export.

Table 19 The 30 largest product groups exported from Armenia to EU and their inclusion in GSP+ system, mln US Dollar

HS code	Product label	2001	2005	2008	2009	2010	GSP +	TYPE*
7202	Ferro-alloys	5.8	204.7	207.0	85.2	115.6	**Yes**	**S**
2603	Copper ores and concentrates	1.8	8.6	99.2	67.7	171.1	**No**	-
7102	Diamonds, not mounted or set	44.3	117.2	85.1	44.7	60.6	**Yes**	**NS**
7402	Unrefined copper; copper anodes for electrolytic refining	0.6	42.7	63.3	60.5	92.6	**Yes**	**S**
8102	Molybdenum and articles thereof, incl waste and scrap	1.7	17.7	19.7	9.5	15.5	**No**	-
6212	Brassieres,girdles,corsets,braces,suspenders etc&parts	4.0	20.4	17.2	2.2	0.0	**Yes**	**S**
2613	Molybdenum ores and concentrates	1.7	3.7	11.6	0.7	0.0	**No**	-
7607	Aluminum foil of a thicknes not exceeding 0.2mm	0.8	0.0	7.6	1.4	3.2	**Yes**	**S**
8529	Part suitable for use solely/princ with televisions, recpt app	0.2	0.1	7.3	3.2	3.9	**Yes**	**S**
4002	Synthetic rubber&factice from oil	0.6	0.9	7.1	1.4	3.9	**Yes**	**NS**
2608	Zinc ores and concentrates	0.0	0.0	4.4	0.8	10.4	**No**	-
0306	Crustaceans	0.0	2.3	3.5	2.5	2.0	**Yes**	**S**
7204	Ferrous waste and scrap; remelting scrap ingots or iron or steel	1.7	3.4	3.2	4.5	1.4	**No**	-
2841	Salts of oxometallic or peroxometallic acids	0.0	0.0	3.1	0.0	0.0	**Yes**	**NS**
2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	0.4	1.6	3.0	1.8	2.6	**Yes**	**S**
6108	Women's slips,panties,pyjamas, bathrobes etc, knitted/crocheted	0.9	4.1	2.8	0.2	0.0	**Yes**	**S**
5514	Woven fab of syn stapl fib (> 85% of such fiber), mxd with cotton (wt	0.0	0.0	2.1	0.9	0.0	**Yes**	**S**
7404	Copper waste and scrap	0.6	1.4	1.8	1.8	3.3	**Yes**	**S**
5407	Woven fabrics of synth. filam yarn (incl. hd no 54.04)	0.0	0.2	1.3	1.2	0.0	**Yes**	**S**
5516	Woven fabrics of artificial staple fibres	0.0	0.1	1.2	0.3	0.0	**Yes**	**S**
2825	Hydrazine & hydroxylamine & their inorganic salts; other inorganic bas	0.0	0.0	1.2	0.0	0.0	**Yes**	**S**

2401	Tobacco unmanufactured; tobacco refuse	0.0	0.0	1.2	0.0	0.0	**Yes**	**S**
9001	Optical fibre, cables; sheets&plate of polarising mat	0.0	0.0	1.1	1.1	0.4	**Yes**	**S**
4205	Articles of leather or composition leather, nes	0.0	0.0	0.9	0.8	1.0	**Yes**	**NS**
8413	Pumps for liquids; liquid elevators	0.0	0.0	0.8	0.0	0.0	**Yes**	**NS**
6203	Men's suits, jackets, trousers etc & shorts	0.0	0.0	0.8	0.7	1.1	**Yes**	**S**
5209	Woven cotton fabrics, 85% or more cotton,weight over 200 g/m2	0.0	0.0	0.7	0.1	0.0	**Yes**	**S**
7113	Articles of jewellery&parts thereof	1.1	3.3	0.7	0.4	0.4	**Yes**	**NS**
5515	Woven fabrics of synthetic staple fibres, nes	0.0	0.0	0.7	0.3	0.0	**Yes**	**S**
9114	Other clock or watch parts	0.2	0.0	0.6	0.0	0.0	**Yes**	**S**
TOTAL	**All products**	**92.0**	**442.0**	**575.5**	**309.4**	**500.7**		

Source: EDRC Calculations

**S-Sensitive, NS-Non-Sensitive*

The same information in more summarized version is presented in the table 20. So, the identified 30 largest product groups ensure more than 97% of Armenian export to EU. Only 5 of those products are not included in GSP+ system. I.e., in case of DCFTA with EU the liberalization of tariffs may positively affect especially on these products. Moreover, as we seen from the table, the most important in this list is the "Copper ores and concentrates" (code 2603), which have rather large volume – USD 100-170 million.

Table 20 The largest groups of exported products from Armenia to EU classified by the fact of their inclusion or exclusion from GSP+ system, in USD million (unless otherwise specified)

	2005	2008	2010
Total export to EU	**442**	**576**	**501**
Total, the largest 30	**432**	**560**	**489**
Share in Total, %	*97.8*	*97.3*	*97.6*
Included in GSP+	**399**	**422**	**290**
Share in Total, %	*90.3*	*73.4*	*58.0*
Non-sensitive	121	98	66
Sensitive	278	325	225
Excluded in GSP+	**33**	**138**	**198**
Share in Total, %	*7.6*	*24.0*	*39.6*
HS code 2603	9	99	171
HS code 2608	0	4	10
HS code 2613	4	12	0
HS code 7204	3	3	1
HS code 8102	18	20	16

Source: EDRC Calculations

Relatively interesting may be the export of "Zinc ores and concentrates"(2608) and "Molybdenum and articles thereof, included waste and scrap" (8102) product groups. However the analysis of the EU common regimes of imports (MFN) for these products shows that the imports of those products to EU are already rather liberalized.

So, despite the fact that the imports of copper and zinc ores and concentrates are not included in GSP+ system, they already have liberalized access to EU, i.e. the tariff for the imports of those products to Europe is 0%. At the same time the generally applied import tariff for molybdenum and articles thereof, including waste and scrap, is 3% (see table 21).

The table 21 clearly shows that the GSP+ system does not have that much significance for Armenia; besides, future tariff liberalization of for EU-Armenia trade will have low significance, as well, as the generally implied EU import regime is already liberalized for all those products, which Armenia already exports to EU.

Table 21 EU tariff regime for imports of 10 largest products, already exported from Armenia

HS Code	Product Name	GSP +	EU Tariff Regime for Import
260300	Copper ores and concentrates	No	free
260800	Zinc ores and concentrates	No	free
810294	Unwrought molybdenum, incl. bars and rods obtained simply by sintering	No	3%
720270	Ferro-molybdenum	Yes	2.70%
740200	Copper unrefined, copper anodes for electrolytic refining	Yes	free
710239	Diamonds non-industrial nes excluding mounted or set diamonds	Yes	free
710231	Diamonds non-industrial unworked or simply sawn, cleaved or bruted	Yes	free
85299049	Parts suitable for use solely or principally with transmission and reception apparatus for radio-broadcasting or television, etc.	Yes	0.03
400249	Chloroprene (chlorobutadiene) rubber (CR) nes	Yes	free
740400	Waste and scrap, copper or copper alloy	Yes	free

Source: EDRC Calculations

Thus, the EU tariff liberalization will not significantly affect the Armenian export. The exported Armenian products mainly included in GSP+ system, i.e. EU already offers to Armenia rather broad preferential conditions of imports to EU. Even in case of products excluded from GSP+ system, but which are produced and exported by Armenia, EU actually implies rather preferential or even nullified MNF tariffs. The expansion of Armenian export is restricted by non-tariff barriers, which is explained by rather low level of development of Armenian production capacities and the quality infrastructure.

Summarizing, we may say, that in short-term and mid-term periods the liberalization of trade between Armenia and EU will not lead to a positive production effect due to increase of export.

Changes in Imports in the case of tariff liberalization

The tariff liberalization may lead to change in imports and diversion of trade, which can result in impacts on consumption, production and customs revenue.

In general, the Armenian import, in comparison with export, is more diverse and developed, and covers more wide geography. In 2010 the total annual volume of imports amounted to USD 3.8 billion and exceeded the export by 3.7 times.

The main partners of Armenia, in terms of import, are EU, Russia, China, Ukraine, Iran, Turkey, USA, South Korea, Switzerland, Japan, Brazil and Georgia. The imports from the mentioned 12 countries ensures up to 85-90% of total imports of Armenia, of which imports from EU ensures 25%, while from Russia – about 20% (see Table 22).

The largest imported products in Armenia are natural gas and oil products, which comprise more that 15% of total import. Largely imported products are also wheat, diamonds, aluminum, gold, medicines and drugs, cigarettes and etc. (see Table 23).

Table 22 Armenian imports by main partner countries in 2008-2010, USD mln

	2008	2009	2010
EU	29.7	26.4	25.4
Russia	20.4	24.8	21.9
China	9.2	9.0	10.6
Ukraine	7.6	6.4	6.1
Iran	4.9	4.2	5.8
Turkey	6.5	5.6	5.6
USA	4.2	3.3	2.7
South Korea	1.9	2.8	1.9
Switzerland	0.5	3.9	1.8
Japan	2.1	1.4	1.5
Brazil	1.4	1.7	1.4
Georgia	1.0	1.2	1.3
Total for selected countries	**89.2**	**90.6**	**85.9**

Table 23 Armenian imports by largest product groups in 2008-2010

HS Code	Product Name	2008	2009	2010
2711	Natural and liquid gas	6.2	7.4	9.0
2710	Oil and products thereof, not raw	9.0	7.5	8.0
7102	Diamonds	3.6	2.1	2.5
7601	Unwrought alumimum	1.2	3.1	2.4
1001	Wheat and meslin	2.2	3.0	2.3
8517	Electric app for line telephony,	3.0	2.2	2.2
3004	Medicament mixtures (not 3002, 3005, 3006), put in dosage	2.0	2.4	2.1
2402	Cigars, cheroots, cigarillos & cigarettes	1.9	1.7	1.7
7108	Gold unwrought or in semi-manuf forms	3.7	1.2	1.6
8703	Cars (incl. station wagon)	4.2	1.5	1.6
	Total for selected products	**36.9**	**32.0**	**33.4**

The total number of goods with annual imports volume of up to USD 1 million is numerous, but in terms of imported volumes they are not significant. Products with USD 1-10 million annual volume of imports account for about one fourth of the total imports. Imported 62 products groups, with annual volume equal to USD 10-50 million, ensure about one third of total imports. In its turn, the largest 11 product groups ensure more than one third of total imports.

Table 24 Armenian imports structure by imported volumes and values

	Number (HS Code)	Volume (USD million)	Share (%)
Up to USD 1 million	669	143	3.8
USD 1-10million	294	1022	27.0
USD 10-50million	62	1214	32.1
More that USD 50 million	11	1403	37.1
Total	**1036**	**3782**	**100.0**

Source: EDRC Calculations

In general, 67% of imports in 2010 was imposed by 0% tariff, and for 33% of imports the imposed tariff was 10%. At the same time for product groups with annual volume of imports of up to USD 10 million, USD 10-50 million and more that USD 50 million we have observed almost no significant difference in tariff regimes, though in large product groups the share of use of 0% tariff was higher (75%).

Table 25 Armenian Imports tariff rates by imports value groups

	0%	10%	Total	0%	10%	Total	0%	10%	Total
	USD million			*Share in group total, %*			*Share in total import, %*		
Up to USD 10 million	726	439	1165	62	38	100	19	12	31
USD 10-50 million	740	474	1214	61	39	100	20	13	32
More that USD 50 million	1058	344	1403	75	25	100	28	9	37
Total	**2524**	**1258**	**3782**	**67**	**33**	**100**	**67**	**33**	**100**

Source: EDRC Calculations

It worth mentioning, that Armenia has free trade agreements with CIS countries, which are considered as main partner countries for Armenia. In general, 31% (USD 1.2 billion) of total imports of Armenia in 2010 was comprised of imports of products under FTA (see Section 3).

So, all those products which are imposed by 0% tariff are very numerous and do not have significant differences in volume. Thus, the trade liberalization in terms of those products will not effect at all, as in fact the trade is already liberalized. Changes in non-tariff regulation and tightening of product requirements though may lead to trade diversion, and as a result effect on prices and consumption, as well as to some extent negatively impact on production, however, it will make no changes of custom revenues.

It is obvious, that the impact of customs revenues will take place in case of products imported from EU under 10% tariff regime, as well as in case of substitution of products imported from other countries (if there is no actual FTA with those countries).

Table 26 Total Imports and imports of products under 10% tariff regime by country groups in 2001-2010

	2001	2005	2006	2007	2008	2009	2010
Total Imports	**837.5**	**1691.5**	**2194.4**	**3052.6**	**4101.2**	**3174.6**	**3781.8**
CIS Countries	*205.0*	*374.5*	*692.4*	*1062.0*	*1280.1*	*1076.6*	*1185.3*
EU Countries	*271.5*	*582.3*	*688.9*	*1012.6*	*1217.4*	*837.6*	*961.4*
Other Countries	*361.0*	*734.7*	*813.0*	*978.0*	*1603.7*	*1260.4*	*1635.1*
Total Imports under 10% tariff regime	**227.6**	**463.2**	**708.4**	**933.2**	**1480.7**	**948.6**	**1257.9**
*CIS Countries**	*30.3*	*131.7*	*187.5*	*273.5*	*359.6*	*252.5*	*270.5*
EU Countries	*70.3*	*136.1*	*182.4*	*269.1*	*367.4*	*219.3*	*251.7*
Other Countries	*127.0*	*195.4*	*338.6*	*390.6*	*753.7*	*476.8*	*735.7*

** The indicator shows the volume of turnover, which would be imported under 10% tariff regime in case of absence of FTA with CIA countries.*

Source: EDRC Calculations

The table shows that in 2010 the volume of all those products, imported from EU under 10% tariff regime, amounted to USD 252 million. As a result, it becomes obvious, that in case of trade liberalization with EU, the imports of products on about USD 250 million annually will avoid from general tariff regimes, which, in its turn, will lead to decrease of state budget revenues by about USD 25 million for customs revenues and by about USD 5 million for revenues from VAT (as a result of reduction of tax base). Thus, in case of tariff liberalization the state budget revenues annually will lose about USD 30 million, which equals to 3% of total budget revenues. This evaluation does not include extra loss of revenues from trade diversion, as well as cuts in revenues in case of negative production impact.

Table 27 Armenian Imports by MFN tariff rates and by country groups

	RA MNF tariff		Total	RA MNF tariff		Total
	0%	10%		0%	10%	
	Value			Quantity		
Total Import	**2,524**	**1,258**	**3,782**	**716**	**320**	**1036**
Imports from EU	710	252	962	568	286	854
Imports from Other countries	1,814	1,006	2,820	680	314	994
Imported both from EU and Other countries	2,073	1,107	3,180	532	280	812
From EU	*703*	*251*	*954*			
From Other countries	*1,370*	*856*	*2,226*			
Imported solely from EU	7	1	8	36	6	42
Imported solely from Other countries	444	150	594	148	34	182

Source: EDRC Calculations

In order to assess the possible trade diversion, let's discuss the statistics on Armenian actual imports from non-CIS and non-EU countries. As we discuss only issue of tariff liberalization, therefore it should be noted that trade diversion is possible only in case of substitution of imports from other countries conditioned by price competitiveness (the imports from CIS countries is already liberalized despite the fact that some of those products are under the 10% tariff regime). According to the table mentioned above, the imports from Other countries significantly increased in 2008, and then decreased in crisis period with further recovery in post-crisis period. In 2010 the imports from other countries, done under 10% tariff regime, amounted to USD 735.7 million. Table 28 presents the distribution of those products by being imported from EU and by the imports volume size. We see that the significant share (USD 591 million) of products imported from other countries is currently imported also from EU countries. I.e. the possibility of substitution of the imports of those products is rather high, as they are imported also from EU. For instance, there are three groups of products with annual more that USD 50 million imports volume, which import from other countries, amounted only to USD 92 million in 2010. Those products are cigar and cigarettes, cars and electric apparatus for telephones, which were imported also from EU countries in a volume of USD 50 million. It is quite possible tariff liberalization will lead to increase in competitiveness of European products and to substitution of part of products imported from other countries (with total value of USD 591 million) with European ones.

Table 28 The structure of products imported from other countries (excluding EU and CIS) under 10% tariff regime in 2010

	Value, USD million	Quantity (HS 4-digit Code)
Imports from both Other countries and EU	**591**	**280**
Up to USD 10 million*	258	253
USD 10-50 million*	241	24
More that USD 50 million*	92	3
Imports from Other countries solely	**145**	**34**
Up to USD 10 million*	6	33
USD 10-50 million*	0	0
More that USD 50 million*	139**	1
Total Imports from Other countries	**736**	**314**

**presents the annual volume of imported products to Armenia*

***the study shows that the substitution of these products is impossible*

Source: EDRC Calculations

In case of tariff liberalization the extent of substitution of imported products from other countries depends on the price elasticity for such products, which required much more detailed evaluation. It is supposed, that the maximum decline in prices (in total up to 12%) may take place in case of avoiding from 10% tariff regime and VAT. In this case the coefficient of imports substitution is evaluated as 10%. Thus, it is envisaged about USD 60 million decrease in imports of products imported to Armenian from Other countries (with total imports of such products equal to USD 600 million) under 10% tariff regime applied in accordance to MNF concept, and instead, a substitution of those products with European ones. In its turn Armenian will have a USD 7.2 million loss in customs revenues (USD 6 million from customs duty and USD 1.2 million from VAT).Thus, finally the annual loss in customs revenues will amount to about USD 37 million.

Taking into account the fact that the overall prices in Armenia are rather high, and that the products imported from EU are usually considered competitive (or at least as an alternative) both for locally produced products and those imported from other countries, thus trade liberalization with EU may bring a decline in imports prices, which will certainly have a positive impact on consumption. Nevertheless, this may lead also reduce the production in agriculture, manufacturing and food production, and some other minor industries in favor of growth in imports from EU. Tariff liberalization will not lead to a visible decline in the prices on imported resources of production and reduction of local costs on production, as the imports of products used as resources of production in Armenia are already imposed by 0% tariff.

Impact of Non-Tariff Regulation and Standards Harmonization

In terms of assessing the DCFTA economic impact, as it already mentioned, the level of harmonization of technical regulations, SPS measures and industrial standards applied in Armenia is very important. It is worth noting, that the coverage and application degrees thereof may considerably change the pattern of the trade liberalization impact. In that regard the following questions become crucial:

- Whether the EU standards and sanitary and phytosantary measures should apply also to all products imported to the Armenian market,
- Whether the EU standards and sanitary and phytosantary measures should apply to all products produced in Armenia and sold in the Armenian market.

The deep and comprehensive FTA implies that Armenia shall have a unified trade regulation area where the same standards, technical regulations, SPS measures shall apply. Under this assumption, any product imported to or sold in the Armenia market shall comply with the EU standards.

It is necessary to differentiate the legislative adjustment or harmonization of such standards, technical regulations, SPS measures from bringing the domestic production into conformity with such requirements. Today, it is mostly about legislative/ judicial harmonization. Meanwhile, the major challenge is the actual compliance of the private sector with those requirements. How should that take place, how much and what type of investments is required? Is the private sector able and willing to undergo that change, make adequate investments and technological upgrades? How should foreign investments be attracted? What will be the role of the government? Do the international donor community and the European Commission have adequate tools to support the private sector in this process?

Those issues mainly relate to industrial development policy and economy transformation which are essential in terms of signing the DCFTA. Thus, the main issue is the private sector harmonization: reconstruction and development of enterprises.

As we noticed in the above mentioned analyses, tariff liberalization will not be inspiring enough for the private sector to make investment to comply with the standards for the perspective of exporting to the EU market. On the other hand, this is not a simple task: this could already have taken place as an ongoing opportunity by now; furthermore, it was expected to be achieved under GSP and GSP+ systems.

Thus, if it is feasible to ensure production of goods in Armenia complying with the EU standards that can be competitive, Armenia would be able to gain significant economic and, consequently, social benefits. Quality infrastructure improvement and expected reforms in business and investment environment will lead to reduction of costs of production and standards compliance; however, the enterprise development and investments issue remain crucial.

Adoption of European standards in any case implies huge imports diversion volumes, particularly, from CIS countries, China, Iran, Turkey and elsewhere: imports from these countries will be substituted with imports from the EU resulting in huge losses of tariff revenues. On the other hand, expensive and high quality imports of goods complying with the EU standards from other countries will result in price increases.

If legislative compliance with the EU legislation in terms of technical regulations, SPS measures and standards and its obligatory application in Armenia takes place without enterprise restructuring and technological upgrading, improvement of business environment and quality infrastructure development, it will lead to a considerable economic recession and so sharp increase of poverty. The results would be similar with the changes of socioeconomic conditions in early 1990s.

An obligatory application of the EU technical regulations and standards is possible only gradually, during a quite long period of time, following the results of the industrial development policy.

Summarizing the factor analysis of tariff and non-tariff liberalization, we can insist that:

A) In general, tariff liberalization cannot lead to desirable economic consequences for Armenia in the short-term and mid-term perspectives. The loss of state revenues will make AMD 37 million annually, no increase in production or employment will be recorded (though, decline is possible), however increase in accessibility to some consumer goods will take place. If taking into account that those are goods with European origins, which are of high quality and price, then their main consumers are non-poor population. Therefore the possible positive impact will not be pro-poor. Simultaneously, possible effects of development are indefinite. Those results are summarized in the table below.

Table 29 Possible impact in case of tariff liberalization

Type of Impact	Impact Assessment	Overall Assessment
Impact on Production • Expansion of export • Growth in new export • Reduction of costs on local production • Substitution of local production and decrease in employment	 • Almost will not happen • Almost will not happen • Almost will not happen • In some branches of food production and manufacturing	**Not positive**
Impact on Consumption • Decrease in consumer prices • Improvement of product quality • Growth in variety and availability of products	 • Some decline is possible • Possible • Possible	**Positive**

Impact on Customs Revenues	• Loss of annually USD 30 million from trade with the EU • Loss of annually USD 7 million from trade diversion	**Negative**
Impact on Development	• Possible only in long-term period, in case of improvement of business environment and quality infrastructure.	**Indefinite**

Source: EDRC Calculations

B) Non-tariff regulations, which are the core preconditions for the DCFTA, are possible only in case of a long-term and phased transition. It will result in large volumes of imports diversion, and economic decline will be tangible in case of insignificant increase in exports causing a rapid price rise as well. Non-tariff regulation should follow the results of the industrial development policy and enterprise development programs.

5.3. Assessment of the Economic Impact through a CGE Model

In order to assess and compute the complete and comprehensive economic impact of the trade liberalization with the EU it is necessary to apply general equilibrium models of the economy taking into consideration distribution and redistribution movements of resources throughout various sectors and markets of the economy.

It is rather convenient to apply a computable general equilibrium (CGE) model to this issue; however its construction and inclusion of all reforms into that system is a very complicated task[10].

Two studies, by Maliszewska et al. (2008) (hereinafter, the CASE study) and by Jensen and Tarr (2011) (hereinafter, the Jensen-Tarr study), are dedicated to the assessment of an impact of the foreign trade liberalization between Armenia and the EU. Both studies were carried out through CGE models. The CASE study was carried out by request of the European Committee and was rather aimed to develop the negotiation agenda.

Thus, the CASE and Jensen-Tarr studies considered the impact of the DCFTA on Armenia in the following possible ways: (1) reduction of border costs, (2) standards harmonization, (3) liberalization of services sector, (4) improved investment climate. According to the CASE study, as a result of a joint impact of the (1)–(3) factors the real growth of the GDP as compared to the base period was estimated 3.4%, meanwhile it was 1% in the Jensen and Tarr study. The real growth of the Armenia's GDP as a result of a joint impact of the aforementioned four factors was estimated 8% by the CASE and 1.2% by Jensen-Tarr.

Jensen and Tarr explain this notable difference between results by a) significant differences between initial barriers of the trade liberalization, b) different modeling assumptions.

The CASE study was implemented in 2007 and thus it included assessments of Armenia's foreign trade barriers for that point of time (or even earlier), and the Jensen-Tarr study was carried out after three years based on more recent data. The point is that in the interim, substantial institutional reforms implemented in Armenia had their impact thus the level of initial trade barriers is lower in the Jensen-Tarr study and is closer to nowadays reality.

[10] There have been some attempts to develop CGE-s and to apply them for policy analysis in Armenia, however, in general, this culture is not developed, mainly reasoned by a lack of necessary statistical data and technical skills.

On the other hand, the Jensen-Tarr study database was more inclusive which allowed getting more accurate estimations. The models assess possible benefits from preferential approaches of the trade liberalization with separate countries in a different way. The impact of the investment environment improvement and the long-term behavior of the model are different as well.

The CGE model developed by Jensen and Tarr, as well as analysis based on it are more inclusive and describe our reality quite well. In general, those results comply with our approaches presented in previous sections and the results of the analysis of main impact factors.

To assess the complete and comprehensive impact of the trade liberalization with the EU on Armenia's economy we just apply the CGE model developed by Jensen and Tarr updating the database and making small changes in the initial assumptions of the model.

Description of the Jensen-Tarr CGE model

The algebraic description of the model developed by Jensen and Tarr is presented in papers of Balistreri-Tarr (2011, Appendix F), and Jensen and Tarr (2011) in detail.

In general, the CGE model developed by Jensen and Tarr for Armenia (a comparative static CGE model for a small open economy) includes 21 sectors. The sectors are classified by the type of competition: six sectors are imperfectly competitive business services, two sectors are imperfectly competitive Dixit-Stiglitz goods and the remaining thirteen sectors are perfectly competitive goods and services.

Four regions are separated in the Model: the European Union, the CIS (Georgia is also included), rest of the world (the remaining countries) and Armenia, at that, only the economy of Armenia is entirely modeled.

Production factors comprise labor force and capital. Three types of firms (enterprises) are separated in the model, which are classified in three groups based on their activity sectors: firms acting in perfectly competitive goods and services sectors, in imperfectly competitive goods sectors, and in imperfectly competitive services sectors with FDI. Structure of costs, production and price formation are significantly different by the firm types, and there are primary inputs imported by multinational service providers, reflecting specialized management expertise or technology of the firm. Regardless of the sector, all the firms minimize the cost of production. It is natural that the structure of costs of firms in imperfectly competitive sectors is different by regions[11].

The following closure rules (balancing conditions) are applied in the model:

1. The total quantity of labor force in the economy is fixed, the labor force is mobile across sectors and receives the same real wage in all sectors.
2. The total quantity of capital is also fixed. It can be easily invested, moved from one sector into another, and the real rate of return is the same in all sectors. At that, the share of capital is distinguished by sectors, as well as, by firms in each imperfectly competitive sector.
3. It is assumed that the real exchange rate is flexible ensuring constancy of the trade balance.
4. The government (state) revenues is also assumed unchanged in the model, so any loss of the revenue due to tax or tariff decreases must be made up in alternate taxes.

[11] The initial assumptions underlying the Model are presented in Jensen-Tarr paper (2011) in detail.

The assumptions 3 and 4 allow conducting a welfare analysis based on the principle of a Hicks equivalent variation (hereinafter, EV) of representative consumer welfare.

Jensen and Tarr considered 5 separate scenarios of an impact of the trade liberalization on Armenia's economy. The first scenario relates to the core impact of the DCFTA with the EU (EU FTA), the second one relates to the impact of the additional preferential liberalization (for services) of trade with the CIS countries (CIS FTA). The third scenario considers the joint impact of the first two scenarios, and 4-th and 5-th scenarios are more enhanced versions of the previous ones[12].

For each scenario, main assumptions are distinguished and their impacts are analyzed separately. They relate to: (i) reduction of barriers towards the EU services, (ii) reduction of border costs, (iii) reduction of standardization costs, (iv) elimination of tariffs for the EU, (v) an impact of the mentioned four factors on the investment environment.

The Table 30 summarizes main results of the modeling, in particular, an assessment of changes in GDP and state budget revenues from tariffs for the aforementioned 5 scenarios.

Table 30 Mid-term and long-term impact of the FTA on welfare and tariff revenues (by Jensen-Tarr model)

	Scenario 1	**Scenario 2**	**Scenario 3**	**Scenario 4**	**Scenario 5**
	EU FTA	CIS FTA	EU-CIS FTA	Unilateral	Unilateral& Domestic
Mid-term perspective					
Welfare (EV as % of GDP)	1.0	0.1	1.1	0.8	1.0
Increase of custom revenues, %	-40.9	0.1	-40.8	-100.0	-100.0
Custom revenues/GDP, %	0.6	1.0	0.6	-	-
Long-term perspective					
Welfare (EV as % of GDP)	1.2	*	*	1.0	1.3
Increase of custom revenues, %	-40.4	*	*	-100.0	-100.0
Custom revenues/GDP, %	0.6	*	*	-	-

* **Long-term impact of the Scenarios 2 and 3 is not modeled**

Source: Jensen-Tarr (2011)

According to Jensen and Tarr, the impact of the trade liberalization on Armenia is quite weak both in mid-term and long-term perspectives. From the point of the strength, the least significant is the impact of the Scenario 2, which is natural, as the trade conditions with the CIS countries and Georgia are already favorable and their further improvement resource is small.

So, the authors estimated 0.1-1.3% economic growth for the different discussed scenarios. At that, with the most favorable scenarios, in the mid-term period, the highest possible level of GDP real growth is 1.1% (scenario 3), and 1.3% in the long-term period (Scenario 5 which implies a complete unilateral liberalization).

Updating and modification of the Jensen-Tarr model

Taking into consideration the fact that in Armenia, reforms are of persistent nature and at the same time, the economy structure is continuously changing, the application of recent data in the Model is very important to illustrate the real picture, holding everything else constant. Therefore, we first decided to

[12] The scenarios are presented in detail in Jensen-Tarr paper (2011).

update the Jensen-Tarr model database using the most recent data available (comparable data for Input-Output table for 2008).

In its turn, this will allow comparing estimated results of the Model based on data for different periods of time, and as a result, better understanding the overall impact of the system. The NSS and International Trade Center (ITC) served as sources for statistical data. We updated the model in GAMS software, which was provided to us by the authors; this ensured comparability from the methodological point of view.

Input-Output table which is the basis of the CGE model is not calculated by the NSS. The Supply-Use table contains all the elements required for the Input-Output table, but significant deviations in supply from use exist in most of the sectors. Therefore, balancing procedures are developed, involving an optimization problem, to arrive at a balanced Input-Output table (Jensen and Tarr, 2011). To update the trade data we used HS classification of goods by mapping into the NACE sectoral classification.

Besides, the Jensen-Tarr model was modified to some extent. The Model developed by the authors includes limited data on the industry sector. In the Model, the mining industry is separated, and the rest of the industrial sectors are combined and presented as one sector. After the Model modification, the industry was disaggregated into 12 separate subsectors. As a result, the number of sectors included in the modified Model was increased up to 31 (see Table 31).

Table 31 List of Sectors, Factors and Regions in the Armenia Modified Model

Business Services	**Other goods and services**
Telecommunication	Agriculture, hunting, forestry and fishing
Insurance	Electricity, gas and water supply
Banking	Construction
Air transport	Wholesale, retail trade and repair
Transport via pipelines	Hotels and restaurants
Railway transport	Road transport
Dixit-Stiglitz Goods	Auxiliary transport activities
Mining and quarrying	Post and courier activities
Food Manufacturing	Real estate and professional services
Cigarette Manufacturing	Public administration and defence
Textiles Manufacturing	Education
Chemical Manufacturing	Health and social work
Manufacture of non metallic mineral products	Other social and personal services
Metallic Manufacturing	
Manufacture of fabricated metal products	
Machine Manufacturing	**Regions**
Furniture Manufacturing	Armenia
Jewelry	EU: The 27 members of the European Union
Other manufacturing	CIS+Georgia: Azerbaijan, Belarus, Georgia,
Factors of Production	Kazakhstan, Kyrgyzstan, Moldova, Russia,
Labor	Tajikistan, Turkmenistan, Ukraine, Uzbekistan
Capital	Rest of the World: All other countries

Source: EDRC CGE Modified Model

In the framework of the following research study, we are interested in the Scenario 1 suggested by Jensen-Tarr, that is, possible economic impacts of the DCFTA with the EU on Armenia (in the mid-term and long-term perspective).

Jensen and Tarr assessed that the costs necessary for Armenian products to comply with the EU standards make 15.8% of total production costs for agricultural products, and 21.6% for manufacturing goods. At that, in the Model, it is assumed that the mentioned costs in both agriculture and manufacturing sectors will decrease by 23% in case of the DCFTA.

In the Jensen-Tarr model it is assessed that border costs make 8.9% in case of exports and 9.1% in case of imports. In the Model, it is assumed that those costs will be reduced by 2.2-2.5% after signing the DCFTA.

In the modified Model, we make a number of changes in the initial assumptions. In particular, dislike the Jensen-Tarr model, we assume that:

a) costs to comply with the standards will decrease to a small extent, by 5%,

b) no reduction in border costs.

To assess border costs, Jensen and Tarr used estimations calculated for 2007 (10.4%) revising them with an inflation and taking into account the export/imports prices per a container (by Doing Business Index 2010). Thereafter, the authors assume that as a result of signing the DCFTA with the EU, border costs in Armenia will decrease up to those in Ukraine and Georgia. At that, the authors mention also the experience of Bulgaria where an expected reduction of costs did not occur (for more details, see Jensen-Tarr (2011), appendix D).

We analyzed indicators of Doing Business 2012 according to which in Armenia, as well as in Georgia and Ukraine, exporting and importing costs per container increased. At that, it is worth mentioning and taking into account that for Armenia, transportation costs make a major part in exporting/importing price/costs per container, and the other 3 groups of costs have comparably small portion. This implies that in Armenia, despite continuous reforms the potential for border cost reduction is small. Taking into consideration the importance of border costs we neutralized their reduction impact by applying a version where they remained unchanged.

Like in the Jensen-Tarr model, in our modified Model, it is assumed that the compliance of current technical regulations and industrial standards with the EU requirements is not compulsory and does not apply to domestic production and import.

Main results

According to the modified Model, the DCFTA between Armenia and the EU will have a smaller impact on the welfare in Armenia than it was assessed in the original Model. If Jensen and Tarr assessed that the DCFTA will lead to a real growth of GDP by 1% in Armenia, with our changes the growth is estimated 0.3% (see Table 32). The main deprivations of the results are reasoned by our more conservative assumptions on standards and border costs, as well as, we applied more recent data. Nevertheless two options do not deprive from each other notably and the main conclusion is that the DCFTA will not affect welfare notably both in mid-term and long-term perspectives.

Table 32 Mid-term and long-term impact of the DCFTA between Armenia and the EU (percentage change from the initial equilibrium)

	EU FTA	EU FTA Steady-state	EU FTA	EU FTA Steady-state
Scenario definition	**Jensen-Tarr**		**EDRC**	
Reduction of discriminatory barriers on the EU services firms	Yes	Yes	Yes	Yes
Removal of tariffs on the EU sourced goods	Yes	Yes	Yes	Yes
Reduction in border costs	Yes	Yes	No	No
Reduction in standards for the EU exports	Yes	Yes	Yes	Yes
Steady-state capital stock	No	Yes	No	Yes
Aggregate welfare				
Welfare (EV as % of GDP)	1.0	1.2	0.3	0.4
Welfare (EV as % of consumption)	1.4	1.8	0.5	0.6
Government budget				
Tariff revenue (% of GDP)	0.6	0.6	0.6	0.6
Tariff revenue	-40.9	-40.4	-41.4	-41.2
Aggregate trade				
Real exchange rate	0.6	0.9	0.9	1.0
Aggregate exports	13.9	15.1	2.7	3.2
Factor Earnings				
Capital	2.0	1.0	1.1	0.6
Labor	2.0	2.9	1.1	1.5
Factor adjustments				
Capital	0.4	0.0	0.3	0.0
Labor	0.4	0.6	0.3	0.4
Capital stock and investment		1.9		0.9

Source: Jensen-Tarr (2011), EDRC (2012)

Real growth in consumption of households is estimated only 0.5% in the mid-term and 0.6% in the long-term periods, and in the original Model, they made 1.4% and 1.8% respectively (see Table 32).

Difference in the made assumptions are mainly expressed in the export indicator. According to the Jensen and Tarr estimations, the export will increase by 13.9% in the mid-term and by 15.1% in the long-term periods. With our assumptions the Model estimates an increase in export by only 2.7% in the mid-term and by 3.2% in the long-term. At that, the real exchange rate devaluation is always the same. Similarly, rate of return of capital will increase only by 0.9% (against the 1.9%). Thus, according to an analysis of the Jensen-Tarr model results, standards and border costs reduction are main sources of Armenia's economic growth and welfare.

Reduction of customs revenues is almost the same in both options of the Model, about 41.4%, making about 0.6% of the GDP.

Impact on production and labor income

The assessment of the economic impact of the DCFTA via the modified CGE Model shows that its impact on production in different sectors of Armenia's economy is either insignificant or negative by directions (see Table 33).

Table 33 Mid-term impact of the DCFTA between Armenia and the EU on production and labor incomes and foreign trade (percentage change from base values)

	Output	Labor income	Exports			Total Exports	Imports			Total Import
			EU	CIS	RoW		EU	CIS	RoW	
Total	**0.3**	**1.1**	**2.8**	**3.2**	**1.8**	**2.7**	**33.1**	**-0.2**	**-6.5**	**3.8**
Business Services										
Transport via railways	0.8	0.9		1.2		1.2		-0.2		-0.2
Transport via pipelines	0.8	0.9		1.2		1.2		-0.2		-0.2
Air transport	8.3	8.4	0.5	0.5	0.5	0.5	-3.9	-15.6	-16.5	-12.5
Telecommunications	1.2	1.3	1.5	1.5	1.5	1.5	-0.4	-0.6	-0.5	-0.5
Insurance	1.0	1.9	-0.9	-0.9	-0.9	-0.9	5.2	-2.5	-3.6	-0.4
Banking	1.0	1.9	0.1	0.1	0.1	0.1	2.7	0.0	-0.1	0.5
Dixit-Stiglitz Goods										
Mining and quarrying	0.3	1.3	0.8	0.8	0.8	0.8	-0.3	-0.3	-0.8	-0.4
Food Manufacturing	-1.7	-0.8	8.5	4.3	4.3	4.4	53.8	-0.5	-17.2	6.5
Cigarrete Manufacturing	-1.6	-0.8	2.5	0.9	0.9	1.3	38.9	-0.5	-10.5	5.6
Textiles Manufacturing	0.6	1.4	9.1	0.9	0.9	7.1	28.3	2.0	-3.7	4.4
Chemical Manufacturing	-0.5	0.4	3.2	1.4	1.4	2.0	24.7	1.2	-6.5	4.4
Manufacture of non metallic mineral products	0.0	0.9	12.8	0.5	0.5	1.0	3.2	3.2	3.2	3.2
Metalic Manufacturing	-0.4	0.5	2.2	1.0	1.0	2.0	74.9	1.3	-4.9	4.2
Manufacture of fabricated metal products	-0.2	0.7	1.7	0.7	0.7	1.6	23.7	1.7	-2.5	3.9
Machine Manufacturing	-0.8	0.0	12.4	5.2	5.2	6.8	28.6	0.7	-12.4	6.0
Furniture Manufacturing	0.2	1.1	6.2	1.0	1.0	3.9	25.7	1.9	-3.4	4.0
Jewelry	-1.5	-0.6	6.3	3.9	3.9	5.0	14.9	-0.4	-16.6	6.4
Other manufacturing	-0.8	0.1	12.7	4.3	4.3	5.7	32.5	0.7	-11.8	5.7
Other goods and services										
Agriculture, hunting, forestry and fishing	-0.5	0.4	3.9	-0.1	-0.1	0.3	76.6	-4.4	-4.4	3.0
Electricity, gas and water supply	-0.2	0.6			0.4	0.4			-0.8	-0.8
Construction	0.0	1.0			0.6	0.6			-0.6	-0.6
Wholesale, retail trade and repair	1.4	2.3			0.0	0.0			0.0	0.0
Hotels and restaurants	2.8	3.1			4.9	4.9			-0.7	-0.7
Other land transport	1.2	1.5			3.0	3.0			-1.1	-1.1
Auxiliary transport activities	1.2	1.5			3.0	3.0			-1.1	-1.1
Post and courier activities	1.2	1.5			3.0	3.0			-1.1	-1.1
Real estate and professional services	0.6	1.5			0.9	0.9			0.3	0.3
Public administration and defence	0.1	0.7			1.5	1.5			-1.3	-1.3
Education	-0.2	0.7			-0.3	-0.3			-0.2	-0.2
Health and social work	-0.1	0.8			0.6	0.6			-0.9	-0.9
Other social and personal services	0.0	0.8			0.7	0.7			-0.5	-0.5

Source: EDRC (2012)

It is estimated that output will increase in 18 sectors of economy out of 31, and in remaining 13 sectors it will decrease (see Table 34). The highest growth in production is estimated in the services sector as like it was assessed in the Jensen-Tarr original Model analyses. As we can see in the Table 34, in 15 sectors of the economy, the growth will be limited up to 1.2% and a maximum increase in labor revenues will make 1.9%. In 10 sectors of economy, signing of the DCFTA will lead to decrease in output by 0.8%.

With our assumptions a more notable reduction in output (by 1.7%) is antiicpated in the food manufacturing which will be accompanied by 0.8% decrease in labor incomes. Production of cigarrete

manufacturing will decrease by 1.6% where the labor income reduction will make 0.8%. Production of jewelry will decrease by 1.5% and labor incomes by 0.6%.

Table 34 Grouping of estimated growth rates in production and labor incomes by sectors (percentage change against base values)

№	Sectors	Output	Labor income
1	Air transport	8.3	8.4
2	Hotels and restaurants	2.8	3.1
3	Wholesale, retail trade and repair	1.4	2.3
4-18	15 Sectors	from 0 to 1.2	from 0.9 to 1.9
19-28	10 Sectors	from -0.8 to -0.01	from 0.02 to 0.8
29	Jewelry	-1.5	-0.6
30	Cigarette Manufacturing	-1.6	-0.8
31	Food Manufacturing	-1.7	-0.8

Source: EDRC (2012)

In major sectors of economy, agricultural production will decrease by 0.5% and construction will not be affected significantly by the DCFTA, increasing by 0.01%.

In case of signing the DCFTA, the most vulnerable sector will be manufacturing where reduction is expected in all subsectors (see Table 33). At that, in the Model it was assumed that application of the EU standarsds and technical regulations is not compulsary for Armenia (otherwise the impact would be quite unfavorable).

At the same time, the Model results show that labor revenues will decrease only in 3 sectors out of 31 sectors of economy: food manufacturing, cigarettes manufacturing and jewelry (see Table 34).

Impact on export

According to the results of the modified Model the trade liberalization with the EU will lead to increase of Armenia's export volumes by 2.7%.

Export volumes will decrease only in 2 sectors out of 31 sectors of the economy. Nevertheless, export expansion will not exceed 2% in 19 sectors, and it will range from 3% to 4.9% in 6 sectors. Only in 4 sectors it will expand by 5% and more (see Table 33). This means that for exports, like in case of production and labor incomes, the impact of the DCFTA is positive however it is small. It cannot create a basis or perspective for serious economic developments.

The highest increase in exports, by 7.1%, is expected in textiles manufacturing as a result of increased exports to the EU by 9.1%. In machine manufacturing, 6.8% increase in export is expected due to increased exports to the EU by 12.4% and to the CIS and other countries by 5.2%.

Export to the EU countries will increase by 2.8% meanwhile it will increase by 3.2% to the CIS countries and by 1.8% to other countries. Exports to the EU will especially increase from machine manufacturing, manufacturing of non metalic mineral products, textiles and food manufacturing sectors. Notable increase in exports to the CIS and other countries will occur in food manufacturing and machine manufacturing.

Such modest rates of export growth are reasoned by existing GSP+ trade regime and the level of liberalized entry to the EU market.

Impact on import

According to the Model results the trade liberalization with the EU will lead to Armenia's imports expansion by 3.8%. At that, a rapid increase in imports from the EU, by 33.1%, is expected. In general, imports from

the CIS countries will not be affected by RA-EU trade liberalization and will decrease by 0.2%, however Armenia's imports from otehr countries will be reduced by about 6.5%. In other words, RA-EU DCFTA trade diversion will make 7%.

Table 35 Increase in EU imports and volumes of possible trade diversion (percentage change from base values)

Sectors	Imports			Total Imports
	EU	CIS	RoW	
Total	**33.1**	**-0.2**	**-6.5**	**3.8**
Agriculture, hunting, forestry and fishing	76.6	-4.4	-4.4	3.0
Metallic Manufacturing	74.9	1.3	-4.9	4.2
Food Manufacturing	53.8	-0.5	-17.2	6.5
Cigarette Manufacturing	38.9	-0.5	-10.5	5.6
Other manufacturing	32.5	0.7	-11.8	5.7
Machine Manufacturing	28.6	0.7	-12.4	6.0
Textiles Manufacturing	28.3	2.0	-3.7	4.4
Furniture Manufacturing	25.7	1.9	-3.4	4.0
Chemical Manufacturing	24.7	1.2	-6.5	4.4
Manufacture of fabricated metal products	23.7	1.7	-2.5	3.9
Jewelry	14.9	-0.4	-16.6	6.4
Insurance	5.2	-2.5	-3.6	-0.4
Manufacturing of non metallic mineral products	3.2	3.2	3.2	3.2
Banking	2.7	0.0	-0.1	0.5

Source: EDRC (2012)

In 15 sectors of economy out of 31 imports prices will rise. Apart from agriculture, an expansion of imports from the EU will be mainly directed to industry where imports volumes will increase except for mining industry (see Table 35). Trade diversion will be especially notable in food manufacturing, jewelry, machine manufacturing and cigarrete manufacturing sectors. Main reduction in imports from the CIS countries will be in agricultural products and busness services.

Summary

According to the Jensen and Tarr (2011) study Armenia's GDP will grow by 1.2% as a result of the RA-EU trade liberalization. With some modifications of the Jensen-Tarr CGE Model we came to more conservative results. At that, it is assumed that Armenia will not mandatory apply the EU standards and technical regulations to domestic production, export and imports with other countries, at least until a real membership to the EU. Otherwise it would paralyze the economy and lead to tremendous negative economic and social consequences.

In general, the obtained results are consistent with our factor analysis conducted in previous sections. The key conclusion is: business environment reforms and reduction in transaction costs have a significant economic growth potential in Armenia regardless of any additional free or preferential trade agreement. The core DCFTA may lead to notable decrease in custom revenues without a significant positive impact on export or production. Armenia may benefit from the DCFTA if its industry is capable to produce competitive products complying with the EU standards.

6. POVERTY AND SOCIAL IMPACT ANALYSIS

According to official data currently about one third of population in Armenia is poor. During 2001-2008, there were quite serious trends of poverty reduction which was due to remittances, economic growth and increased social transfers. The situation was worsened after the crisis. In 2009, poverty level made 34.1%. Unemployment was high and labor incomes were rather low in the country.

Various and complex changes which are assumed to take place after the trade liberalization with the EU can have different impact on poverty and social situation. First, they will lead to changes in various economic spheres and activity behavior/rules and as a result will end up changes in poverty and social situation.

To assess possible changes in poverty snapshot we first need to have quantitative estimations of economic changes and shift them to household level. The problem complication is mainly related to an assessment of impact on various non-tariff regulation aspects for which a number of studies are necessary.

Risk of poverty increase can be mainly reasoned by reduction in incomes, employment and social transfers, as well as by price increase and reduced accessibility of some consumer goods. In the framework of the following research we mainly focus on consequences of tariff liberalization with the EU, and non-tariff regulation is assumed to be applied partially, step-by-step and will not be mandatory for Armenia.

With such an approach there will not be a significant impact on prices and it is even possible that price and accessibility of some products (expensive and high-quality) will decrease and the economy will expand to a small extent (about 1% of GDP real growth). Though an estimated reduction in customs revenue is notable (more than 40%), it is small in terms of total budget revenues (about 1%).

Calculation of poverty indicators

Before presenting the applied methodology of quantitative assessment of poverty, we will first briefly refer to the poverty calculation methodology. The subject of our study is material poverty of households and for its calculation the methodology of the NSS is applied.

Poverty is calculated based on consumption aggregate comparing it with poverty lines. At that, consumption aggregate is calculated for an adult equivalent household member. Consumption of an adult equivalent household member is calculated by dividing total consumption of a household by the number of adult equivalents member in the following way:

$$Cons_EA_i = \frac{Cons_i}{EA_i} \quad (6.1)$$

where:

i – household index,

$Cons_EA_i$ – consumption of adult equivalent member of household *i*,

$Cons_i$ – total consumption of household *i*,

EA_i – number of adult equivalent members in household *i*,

which is calculated through the following formula:

$$EA_i = (A_i + a \cdot C_i)^{\theta} \quad (6.2)$$

A_i – number of adult members in household *i*,

C_i – number of children in household *i* (members below 15 are considered children),

θ – scale parameter, $\theta = 0.87$,

a – proportion of expenses per child to expenses per adult, $a = 0.65$.

Total poverty line is determined based on food poverty line. In 2009, food poverty line was defined AMD 17,483 and the total poverty line was AMD 30,920 per adult monthly. Households where consumption per adult equivalent member was below total poverty line were considered poor and if the consumption was below even the food line they were considered extremely poor.

The modeling of households' income and consumption

In order to obtain quantitative estimations of poverty change it is necessary to connect the CGE model with the model of households' income and consumption changes. At that, those two models should be integrated in a way that they have mutual and continuous impact on each other. Nevertheless we currently have a micro model of households' incomes and expenses, which was developed in the framework of our research study, which just exogenously uses the results of economic situation modeling (in this case, the CGE). In other words we have set an objective to assess the impact of labor income from various sectors on households' consumption.

With this purpose we apply the results of our modified version of the Jensen-Tarr CGE model as well as data from Integrated Living Conditions Survey (ILCS) conducted by the NSS. Data analysis is based on the ILCS 2009 database which summarizes results of a sample survey among 7,872 households[13].

In order to ensure data comparability it was necessary to group data in the ILCS database according to sectoral grouping aggregation applied in the CGE model. In particular, main employment sectors of household members were separated which served as a basis for household members classification in accordance with the sectoral grouping aggregation applied in the CGE model. According to that, 7 comparable sectoral aggregations were separated. The Table 36 presents the aforementioned sectors and estimations of poverty and employment within them.

Table 36 Population structure by economy sectors in 2009

	Total	Non-poor	Poor	of which: extremely poor
Employed population	**100.0**	**67.3**	**32.7**	**2.8**
Sector 1. **Agriculture**	100.0	62.8	37.2	2.6
Sector 2. **Mining and quarrying**	100.0	69.5	30.5	1.2
Sector 3. **Electricity, gas and water supply**	100.0	71.2	28.8	5.5
Sector 4. **Construction**	100.0	62.3	37.7	2.8
Sector 5. **Manufacturing**	100.0	60.3	39.7	2.7
Sector 6. **Business services**	100.0	73.1	26.9	1.9
Sector 7. **Other**	100.0	74.1	25.9	2.8
Unemployed population	**100.0**	**58.8**	**41.2**	**8.0**
Total	**100.0**	**65.9**	**34.1**	**3.6**

Source: EDRC calculations based on NSS ILCS database

[13] The last available ILCS data related to 2009.

As a supplement to sectoral classification of employed members there was a need to classify the unemployed members by the same classification as well. For the classification of unemployed members' profession, age and gender profiles of members were used. Hence based on sectoral classification of households' employed and unemployed members a link between the CGE model and the micro model of households' incomes and costs is created.

It is assumed that consumption level of households depends on revenues of that household. At that it is assumed that increase in incomes of a household will affect the consumption aggregate to the same extent, adjusted with an adult equivalence scale. That is, the marginal propensity to consume (MPC) equals 1. This assumption that simplifies the problem solution is reasoned by the circumstance that the subject of this research is poor households or those which are close to the poverty line, whose primary consumption needs are not completely satisfied and additional income would be directed to consumption expansion rather than to savings.

It is also assumed that changes in labor incomes in any sector will affect employed and unemployed members in that sector with the same probability, thus respectively affecting the household incomes. That is, in each household, income changes depend on increased income of employed members and the case of unemployed people to become employed in that sector.

Increase in labor incomes in any sector, obtained by the CGE model, can be passed on to increase in wages and/or employment. Theoretically, 3 options are possible:

1. increase in labor incomes is entirely due to an increase in wages,
2. increase in labor incomes is entirely due to an increase in employment (creation of new workplaces),
3. due to an increase in both wages and employment.

Therefore, it is necessary to have an assessment of income grow distribution by sectors, between wages and employment; that is, to assess which portion of a unit increase in incomes is directed to the rise of wages and which part is the new employment in each sector. For this purpose sectoral elasticity of wages and elasticity of employment to labor income changes are applied. Using indicators of average nominal wages and employment for 2004-2009 arc elasticity coefficients were assessed[14]. Arc elasticity coefficients were calculated were calculated through the following formulas:

$$E_{LI_{jt}}^{W_{jt}} = \frac{\dfrac{W_{jt} - W_{jt-1}}{(W_{jt-1} + W_{jt})/2}}{\dfrac{LI_{jt} - LI_{jt-1}}{(LI_{jt-1} + LI_{jt})/2}}, \quad j = \overline{1;7} \quad t = \overline{2005;2009} \tag{6.3}$$

$$E_{LI_{jt}}^{Emp_{jt}} = \frac{\dfrac{Emp_{jt} - Emp_{jt-1}}{(Emp_{jt-1} + Emp_{jt})/2}}{\dfrac{LI_{jt} - LI_{jt-1}}{(LI_{jt-1} + LI_{jt})/2}}, \quad j = \overline{1;7} \quad t = \overline{2005;2009} \tag{6.4}$$

[14] See "Labour market in the Republic of Armenia for 2005-2009", NSS: http://armstat.am/am/?nid=82&id=1206

$$E_{LI_j}^{W_j} = \frac{1}{5}\sum_{t=1}^{7} E_{LI_{jt}}^{W_{jt}}, \quad j = \overline{1;7} \tag{6.5}$$

$$E_{LI_j}^{Emp_j} = \frac{1}{5}\sum_{t=1}^{7} E_{LI_{jt}}^{Emp_{jt}}, \quad j = \overline{1;7} \tag{6.6}$$

where:

t – index of the considered year, t = $\overline{2005;2009}$,

j – index of the considered sector, j = $\overline{1;7}$,

W_{jt} - average wage in sector *j* in year *t*,

Emp_{jt} - employment size in sector *j* in year *t*,

LI_{jt} - labor income size in sector *j* in year *t*,

$E_{LI_{jt}}^{W_{jt}}$ - elasticity coefficient of average wages to labor income changes in sector *j* in year *t*,

$E_{LI_{jt}}^{Emp_{jt}}$ - elasticity coefficient of employment to labor income changes in sector *j* in year *t*,

$E_{LI_j}^{W_j}$ - elasticity coefficient of average wages to labor income changes in sector *j*,

$E_{LI_j}^{Emp_j}$ - elasticity coefficient of employment to labor income changes in sector *j*.

Thus having elasticity coefficient of wages to labor income ($E_{LI_j}^{W_j}$) and elasticity coefficient of employment to labor income ($E_{LI_j}^{Emp_j}$) we can determine through the CGE model how wages and level of employment in each sector will change in case of changes in labor income obtained through the CGE model. In Table 37, calculated elasticity coefficients are presented.

Table 37 Elasticity coefficients of wages and employment to labor income

	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7
	Agriculture	Mining and quarrying	Electricity, gas and water supply	Construction	Manufacturing	Business services	Other
elasticity of average wages to labor income, %	1.02	0.76	1.64	1.05	0.75	0.74	0.99
elasticity of employment to labor income, %	-0.02	0.24	-0.64	-0.04	0.25	0.26	0.01

Sources: EDRC estimations

Thus, increase in labor income obtained by the CGE model is transferred to the consumption of households through the following model:

1. For each sector, the CGE model results are imported which are then divided into increase in wages and increase in employment using elasticity coefficients calculated for that sector (calculating “wage growth rate” and “employment growth rate” respectively),

2. Actual incomes from a sector are expanded according to the "wage growth rate" for all households that have members, who are employed in that sector,

3. From the list of households that have unemployed members with relevant profile of age, gender and profession, a number of households are randomly selected (with equal probability) and unemployed members are replaced with employed ones according to the "employment growth rate", giving those people incomes equivalent to the sectoral average wage,

4. In each sector, changes in households' incomes, due to increased wages and employment level, are extended to the consumption indicators; new consumption aggregates are calculated and used to assess the new level of poverty with the existing poverty line.

The model of determining the new consumption aggregate for an adult equivalent member of a household has the following mathematical expression:

$$New_Cons_EA_i = Cons_EA_i + \frac{\Delta Inc_i}{EA_i}, \qquad i = \overline{1;\ m} \tag{6.7}$$

$$\Delta Inc_i = \Delta Inc_W_i + \Delta Inc_Emp_i = \sum_{j=1}^{n}\sum_{k=1}^{K} Inc_W_{ijk} \cdot W_GR_j + \sum_{j=1}^{n}\sum_{k=1}^{K} New_Inc_W_{ijk} \tag{6.8}$$

$$W_GR_j = \frac{LI_GR_j \cdot E_{LI_j}^{W_j}}{100}, \qquad j = \overline{1;\ n} \tag{6.9}$$

where:

i – index of a household, $i = \overline{1;\ 7872}$,

j – index of a sector, $j = \overline{1;\ 7}$,

k – index of a household member, $k = \overline{1;\ 15}$,

$New_Cons_EA_i$ – new consumption of an adult equivalent member of the household *i*,

$Cons_EA_i$ - consumption of an adult equivalent member of the household *i*,

EA_i – number of adult equivalent members in the household *i*,

ΔInc_i – increase in income of the household *i*,

ΔInc_W_i – increase in income from increased wages in the household *i*,

ΔInc_Emp_i – increase in income from employment expansion in the household *i*,

Inc_W_{ijk} – labor income of the member *k* of the household *i* received in the sector *j*,

W_GR_j – wage growth rate in the sector *j*,

Emp_GR_j – employment growth rate in the sector *j*,

LI_GR_j – labor income growth rate in the sector *j* (is exogenous obtained from the CGE model),

$E_{LI_j}^{W_j}$ – coefficient of average wage elasticity to labor income in the sector *j*,

$E_{LI_j}^{Emp_j}$ – coefficient of employment elasticity to labor income in the sector *j*,

Emp_j – employment size in the sector *j*,

$New_Inc_W_{ijk}$ – new labor income of the member *k* of the household *i* received in the sector *j*.

In regard to the $New_Inc_W_{ijk}$ component, it was calculated as an average for households receiving labor income from the sector j. The number of household members by which the number of employed people in the sector *j* will be increased was calculated through the following formula: $Emp_GR_j \cdot Emp_j$, where $Emp_GR_j = \frac{E_{LI_j}^{Emp_j} \cdot LI_GR_j}{100}$. The number of employed members was increased randomly in the households having unemployed members.

The main results

Using the labor income growth rates estimated by the CGE model, we calculated wages and employment growth rates by sectors (see Table 38). Then, poverty indicators were estimated, which are presented in Table 39 and Table 40.

Table 38 Growth rates for labor income, wages and employment

	labor income growth rate (LI_GR), %	wages growth rate (W_GR), %	employment growth rate (Emp_GR), %
Sector 1. **Agriculture**	0.40	0.41	-0.01
Sector 2. **Mining and quarrying**	1.30	0.99	0.31
Sector 3**. Electricity, gas and water supply**	0.60	0.98	-0.39
Sector 4. **Construction**	1.00	1.05	-0.04
Sector 5**. Manufacturing**	-0.10	-0.07	-0.02
Sector 6. **Business services**	2.70	2.01	0.69
Sector 7**. Other**	1.30	1.28	0.02

Sources: EDRC estimations

The poverty incidence was estimated 33.6%, and extreme poverty was estimated 3.4%. In particular, an analysis shows that reduction in poverty level by 0.5 percentage points or 1.5% is possible. Reduction in extreme poverty will be smaller. The tables illustrate poverty reduction profile by sectors.

The described methodology will allow calculating poverty estimations for different assumptions of the CGE model and different estimations of the economic output. In particular, as we assumed a quite conservative approach to localization of standards and technical regulations, we didn't estimate significant changes in the economic output which in its turn didn't bring to significant changes in poverty snapshot.

Table 39 Estimations of poverty and extreme poverty, %

	Poverty Incidence		Extreme poverty	
	Actual	Estimation 1	Actual	Estimation 1
Employed population	**32.7**	**32.2**	**2.8**	**2.7**
Sector 1. **Agriculture**	37.2	37.1	2.6	2.5
Sector 2. **Mining and quarrying**	30.5	30.5	1.2	0.04
Sector 3**. Electricity, gas and water supply**	28.8	28.2	5.5	5.3
Sector 4. **Construction**	37.7	36.9	2.8	2.8
Sector 5**. Manufacturing**	39.7	38.9	2.7	2.7
Sector 6. **Business services**	26.9	24.4	1.9	1.4
Sector 7**. Other**	25.9	25.4	2.8	2.6
Unemployed population	**41.2**	**40.8**	**8.0**	**7.4**
Total population	**34.1**	**33.6**	**3.6**	**3.4**

Source: EDRC estimations

Table 40 Estimated changes in poverty from the initial level

	Poverty Incidence		Change	
	Actual	Estimation 1	Percentage point	%
Employed population	**32.7**	**32.2**	**-0.5**	**-1.5**
Sector 1. **Agriculture**	37.2	37.1	-0.2	-0.4
Sector 2. **Mining and quarrying**	30.5	30.5	0.0	0.0
Sector 3**. Electricity, gas and water supply**	28.8	28.2	-0.6	-2.1
Sector 4. **Construction**	37.7	36.9	-0.8	-2.0
Sector 5**. Manufacturing**	39.7	38.9	-0.8	-2.0
Sector 6. **Business services**	26.9	24.4	-2.6	-9.5
Sector 7**. Other**	25.9	25.4	-0.6	-2.2
Unemployed population	**41.2**	**40.8**	**-0.4**	**-1.0**
Total population	**34.1**	**33.6**	**-0.5**	**-1.5**

Source: EDRC estimations

Impact of price changes

Price changes are not considered in the aforementioned analyses. It is implied by our discussed hypothesis of the trade liberalization. As it was already discussed, price pressures will take place if Armenia ensures an obligatory compliance of a number of industrial standards and regulations, SPS measures and apply them to domestic market and imports.

Thus, with simple FTA, which only implies tariff liberalization, no price increase is expected, whereas in case of Deep FTA rather high price increase is possible. Though, price changes are not considered in our CGE model, it is important to incorporate them in order to have complete poverty analyses. As the final expected prices change is unclear, we will make a simplified approach. We will run price increase scenario, which we find more probable, and 10% price increase level will be selected as an example. This will enable understanding strength of price increase impact on poverty. For this purpose we will adjust the calculated consumption aggregate for an adult member with the consumer price index for all households.

As illustrated in the Figures 13 and 14, the consumption aggregate distribution curve will shift down in case of 10 % price increase scenario. Comparing new consumption aggregate with the existing poverty line we will get new estimations of the poverty.

Figure 13 Distribution of households by consumption aggregate per adult equivalent member and an impact of price rise by 10%

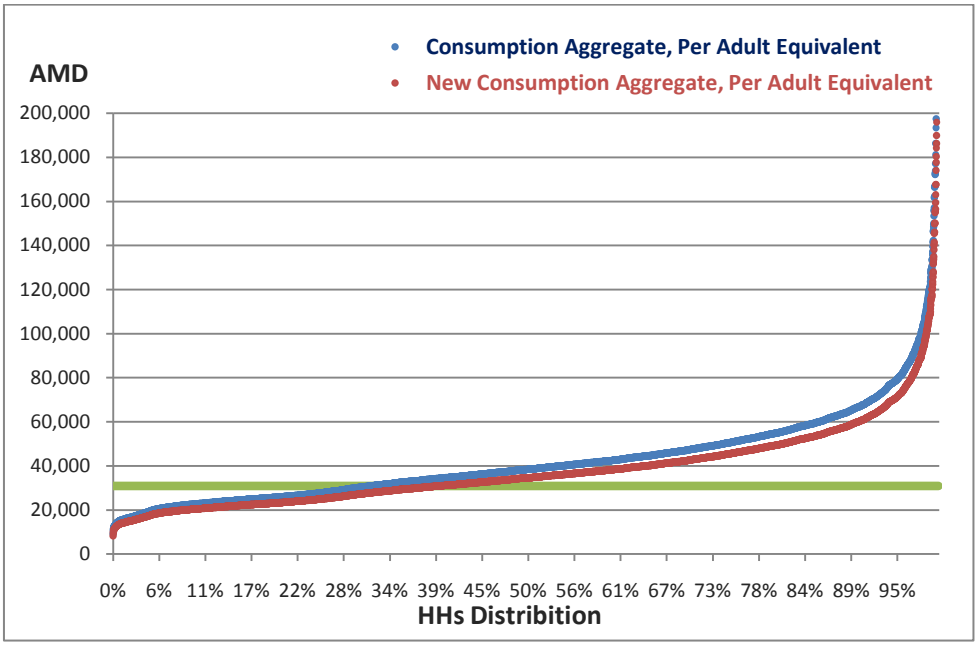
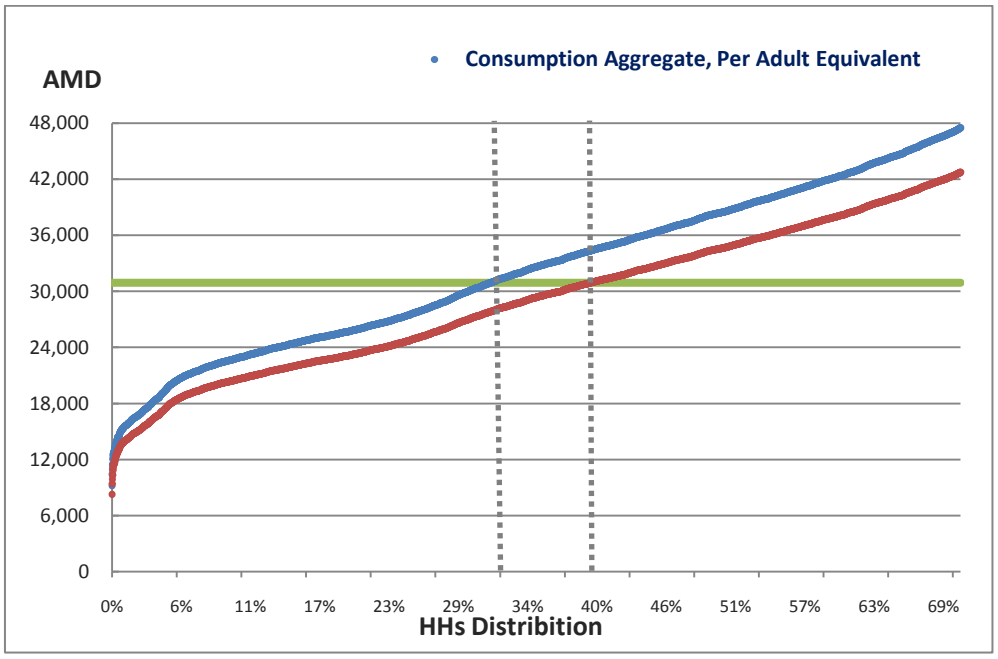


Figure 14 Distribution of households by consumption aggregate per adult equivalent member and an impact of price rise by 10%



Source: EDRC estimations

In the Table 41, poverty and extreme poverty estimations for 10% price increase are presented (see Estimation 2), besides, changes in the estimations from the initial level are presented in the Table 42.

Table 41 Comparison of poverty estimations

	Poverty Incidence, %			Extreme Poverty Incidence, %		
	Actual	Estimation 1	Estimation 2	Actual	Estimation 1	Estimation 2
Sector 1. **Agriculture**	37.2	37.1	**44.5**	2.6	2.5	**4.4**
Sector 2. **Mining and quarrying**	30.5	30.5	**32.7**	1.2	0.04	**1.6**

Sector 3**. Electricity, gas and water supply**	28.8	28.2	**35.1**	5.5	5.3	**5.8**
Sector 4. **Construction**	37.7	36.9	**43.9**	2.8	2.8	**4.4**
Sector 5**. Manufacturing**	39.7	38.9	**45.0**	2.7	2.7	**4.1**
Sector 6. **Business services**	26.9	24.4	**34.8**	1.9	1.4	**2.2**
Sector 7**. Other**	25.9	25.4	**32.7**	2.8	2.6	**3.7**
Total population	**34.1**	**33.6**	**41.2**	**3.6**	**3.4**	**5.1**

Source: EDRC estimations

Table 42 Estimated changes in poverty from the initial level, based on 10% price increase hypotheses (Estimation 2)

	Poverty		Extreme Poverty	
	Incidence, %	Change, percentage points	Incidence, %	Change, percentage points
Sector 1. **Agriculture**	44.5	7.2	4.4	1.8
Sector 2. **Mining and quarrying**	32.7	2.2	1.6	0.4
Sector 3**. Electricity, gas and water supply**	35.1	6.3	5.8	0.2
Sector 4. **Construction**	43.9	6.2	4.4	1.6
Sector 5**. Manufacturing**	45.0	5.3	4.1	1.5
Sector 6. **Business services**	34.8	7.9	2.2	0.3
Sector 7**. Other**	32.7	6.8	3.7	1.0
Total population	**41.2**	**7.1**	**5.1**	**1.4**

Source: EDRC estimations

Thus, discussed 10% price rise contains rather high risk of poverty. It can lead to an increase of the total poverty level by 7.1 percentage points and the extreme poverty level by 1.5 percentage points. The risk is especially high among households employed in agriculture.

Summary of results

In order to assess social impact of Armenia-EU DCFTA, economic impact estimations should be transmitted to the level of households' incomes and expenses. We applied estimations of labor income growth rates obtained through the CGE model modified model and transmitted them to incomes and employment of households through relevant elasticity coefficients. Consequently, it turns out that the trade liberalization with the EU will positively affect the poverty snapshot in Armenia leading to a small reduction in poverty, by 0.5 percentage points.

Those results are correct and comply with the hypothesis that the EU standards and technical regulations will not be compulsory in all fields, activity sectors and foreign trade of Armenia.

Besides, we also estimated a scenario of price rise by 10% according to which rapid increase in poverty and extreme poverty were estimated, by 7.1 and 1.5 percentage points respectively. This also suggests that the process of non-trade regulations and compliance with the EU standards, that contain price rise risk, should be managed carefully.

In general, an obligatory compliance of a number of industrial standards and regulations, SPS measures with the EU criteria and their application contain high risks in terms of increase in poverty. Their application to the domestic market and imports will lead to rapid decline in output and employment in agriculture and manufacturing sectors, reduction in imports from other countries and diversion, big loss in custom revenues and rapid rise of consumer prices.

7. CONCLUSIONS AND RECOMMENDATIONS

1. The EU Eastern Partnership Initiative aims at accelerating political and economic integration between the EU and partner countries. Negotiations on signing an EU-Armenia Association Agreement started in July 2010: it is expected that a DCFTA will be signed as a result of those negotiations.

2. The EU-Armenia DCFTA is a "North-South" type of regional integration process which implies implementing a number of institutional and regulatory reforms in Armenia, as well as harmonize economic and trade regulation legislation with the EU legislation and, as a result, achieve a higher level of entry and access to the EU markets.

3. Armenia already has a wide agenda of cooperation with the EU. The EU supports the reforms in Armenia within the framework of that cooperation. At the same time, Armenia favors from the EU GSP preferential trade system.

4. Armenia is a WTO member country and has quite liberal and simplified trade regimes. Nevertheless, the level of Armenia's economic openness is small, Armenian exports is highly concentrated around very few items majority of which are mining or raw materials, while majority of imports items are fuel: gas and oil products.

5. Armenian exports are mostly limited by production capacities and insufficient industrial development. This hampers access to developed markets because of not being capable to comply with standards and requirements set for products in foreign markets. Furthermore, transaction costs are quite high in Armenia, including, in particular, transport costs.

6. Most of items exported to the EU from Armenia fall into GSP+ system, i. e. the EU has already granted wide import preferences to Armenia. On the other hand, for those items exported from Armenia to the EU that are not included in GSP+, the EU has very favorable or 0-rate MFN (Most Favored Nations) tariffs.

7. However, Armenia is not able to fully benefit from the GSP+ (formerly – GSP), as well as the EU MFN imports tariffs. Even in cases when Armenia exports such items to foreign markets, very often these goods are not exported to the EU countries.

8. Mere tariff liberalization will not bring in substantial economic impact for Armenia since the potential for exports expansion is quite small, meanwhile, because of current liberal import regimes, the risk of losing import customs revenues or imports diversion is not high. It is worth noting that imports of goods that will be used for further production is already subject to 0-rate tariff, therefore it is not expected to achieve any reduction in domestic production cost due to imported production goods (parts, raw materials etc.).

9. Quantitative assessment of the EU-Armenia trade liberalization was conducted in 2007 (CASE) and in 2010 (Jensen-Tarr). According to the first study, signing a DCFTA would bring in 8% GDP increase as compared to the initial level, while according to the second – in 1.2% GDP growth (which is based on more recent data).

10. Jensen-Tarr analyses recommended refraining from full and obligatory application of the EU industrial standards prior to actual membership to the EU. The model suggested by the authors bases on this assumption, at the same time, significant reduction in production costs were projected due to expected harmonization in standards and decreased border costs.

11. Analyzing the border costs in Armenia which, according to the WB 2012 Doing Business index, have increased and, taking into account that majority thereof are transportation costs (explained by economic reasons); we preferred to apply a more conservative approach. We decreased the rate at which production costs were initially expected to decrease due to harmonization of standards. At the same time, we updated the statistical data in the model and disaggregated the industry data. The new results revealed a much smaller positive impact of trade liberalization with THE EU. Thus, reforms in business environment in Armenia and reduction of transaction costs have a substantial potential for economic growth irrespective of any additional free or preferential trade agreement.

12. Estimated economic impact from the EU-Armenia DCFTA was transformed into impact on incomes and expenditures on households through a micro model. Using the estimates of growth in salary income performed through the modified CGE model of Jensen-Tarr and extrapolating them onto the employment and incomes of households, we obtained new estimates of poverty. As a result of this, the potential impact on poverty is also very small, though positive. Poverty is expected to decrease by 0.5 percentage points, including extreme poverty – by 0.2 percentage points.

13. These findings are also derived from the hypothesis that the EU standards and technical regulations will not be compulsory for all sectors, economic activities and foreign trade.

14. In addition, the impact of consumer price increases on poverty was estimated according to which a 10% increase in prices will result in drastic increase in poverty and extreme poverty (by 7.1 and 1.5 percentage points). This, in turn, indicates high social risks in compulsory harmonization with the EU standards and regulations.

15. Full harmonization with the EU industrial standards, technical regulations, SPS measures and compulsory implementation in the domestic market and foreign trade will result in drastic decline in production and employment in agricultures and processing industry, as well as reduction in imports and imports diversion (from other countries), sharp decline in customs revenues and increase in consumer prices.

16. Therefore, the process of legislative and regulatory harmonization with the EU shall take place gradually and in a phased manner following the harmonization and compliance of the private sector and industrial development. Otherwise, this process will paralyze the economy and result in huge negative social impact.

17. Thus, despite that the DCFTA and creation of a unified trade regime has a certain potential for growth and development, in practice, its implementation is uncertain. If initially only institutional and legislative harmonization and preparation take place which will not be compulsory for the domestic market, entry to the EU markets for Armenian products will either not change or Armenian products will continue being non-compliant with entry requirements.

18. Legislative harmonization in areas of technical regulations and industrial products' standards will be a burden for businesses in the short term requiring adequate investments and technological upgrading. In the medium term, it may improve the quality of products and have access to developed markets. In order to avoid economic downturn it is necessary to apply selective, phased and smooth transition approach.

19. Reforms and development of national quality infrastructure (technical regulations, standardization, certification, metrology and institutional systems of market oversight) will allow supporting business activities and reduce production costs associated with standards compliance.

20. SPS measures will have a direct impact on agriculture, in particular cattle-breeding and production and sales of and other products of animal origin. It contains huge risks and will have large social impact in rural poverty and elsewhere. It is necessary to have a sufficiently long preparatory period, as well as more detailed studies and assessments are required.

21. The area of IPR also requires special attention. It is very complex and can have various impact mechanisms, both positive and negative. Overall, this may be very costly for a country and bring in a number of restrictions, while the mechanisms of expected positive benefits are not very clear and visible, at least for the short term. Nevertheless, the need for some degree of regulation is obvious.

22. Public procurement system and trade of services in Armenia are already quite liberalized or are in the process of liberalization. The major problem lies in the air transportation liberalization which can be considered in the context of business and investment climate improvement.

23. Improvements in business and investment climate, in fact, are not the major subject in the EU-Armenia FTA, but rather are preconditions to that agreement. This direction is crucial and can have huge economic impact; however, it needs to be discussed separately from the trade liberalization policies.

24. Overall, it is necessary to delineate the effects of trade liberalization and economic impacts of regulatory reforms implemented in the country. Armenia may enjoy economic and social benefits from the suggested liberalization model in trade with the EU if it is capable ensuring competitive production that complies with the EU standards.

25. Thus, economic transformation and industrial development shall be the priority of economic policy which implies development and implementation policy programs aimed at enterprise development and technological modernization. At the same time, the reforms in business climate and national quality infrastructure should continue. In that case, the road to gradual implementation of the European standards and achieving economic and social benefits from foreign trade will open up.

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Appendix 1. Foreign Trade of Armenia

Total Foreign trade turnover of Armenia in 2010 reached USD 4.8 bln (51.1% of GDP) which was decrease of 12.6% compared to 2008. Around 20% of trade transactions are exports, the rest involve imports. During the economic growth period, the indicator of openness of the Armenian economy decreased, resulting in deepening of the trade balance due to faster growth rates of imports over exports. The share of exports in the GDP decreased year after year (see Table 43). As a result of the crisis, both exports and imports decreased significantly. Currently, the trade deficit is equivalent to 30% of GDP.

Table 43 Foreign trade indicators of Armenia as share of GDP (2001-2010), %

	2001	2003	2005	2007	2008	2009	2010
Trade Turnover	57.6	70.0	56.6	48.0	47.0	47.2	51.1
Exports	16.1	24.4	19.9	12.5	9.1	8.3	10.8
Imports	41.4	45.6	36.8	35.5	38.0	38.9	40.3
Trade Balance	-25.3	-21.2	-16.9	-23.0	-28.9	-30.6	-29.5

Source: NSS and EDRC calculations

Closed borders of Armenia with two of its neighbors (Turkey and Azerbaijan), together with other geographic and infrastructural difficulties are serious obstacles for the Armenian foreign trade. These issues contribute to an increase of transportation costs and dependence upon transit through Georgia.

Annual exports of Armenia are in the range of around half a billion USD which is mostly concentrated around several items of goods. The geographic focus of exports is also quite limited. The main export partner of Armenia is the EU which has been the destination of about half of Armenia's total exports in 2010. The largest partners in EU are Germany, Bulgaria, the Netherlands and Belgium. The next large partner group is the CIS of which Russia (16% in 2010) and Ukraine have a significant share. Exports to the US from Armenia constituted 8% of total exports in 2010 (see Table 44).

Table 44 Armenian exports per destination countries, 2001-2010

	USD mln							Change from previous period			
	2001	2003	2005	2007	2008	2009	2010	2002-2007	2008	2009	2010
EU	92.0	262.6	440.8	558.6	574.0	309.1	500.7	35.1	2.7	-46.2	62.0
RF	57.7	91.1	115.8	198.8	214.3	107.0	159.9	22.9	7.8	-50.1	49.4
USA	51.5	55.0	61.6	49.1	52.2	66.4	82.3	-0.8	6.3	27.3	23.9
Georgia	11.9	12.3	34.1	69.1	77.0	48.4	48.2	34.1	11.4	-37.1	-0.5
Iran	31.5	21.7	24.9	37.4	24.5	14.0	39.6	2.9	-34.6	-42.7	182.8
China	0.1	4.6	9.2	7.9	1.8	17.9	30.9	121.8	-77.2	897.1	72.6
Canada	0.9	3.0	11.4	5.9	15.9	34.3	29.6	36.8	167.9	115.7	-13.7
Switzerland	23.0	32.7	34.6	49.2	12.1	25.2	16.9	13.5	-75.4	108.1	-33.0
Ukraine	10.9	6.7	13.6	46.2	21.9	12.6	12.0	27.2	-52.5	-42.4	-5.1
Turkmenistan	0.8	3.5	0.8	2.0	4.2	2.7	8.3	16.8	106.1	-35.0	203.9
UAE	7.2	16.6	10.2	6.6	7.8	4.4	8.0	-1.6	18.5	-43.0	81.5
India	0.1	0.0	0.4	3.2	2.5	2.9	5.5	90.2	-23.6	16.6	90.9
Belarus	1.2	2.1	4.0	2.5	2.8	4.5	4.6	12.8	12.6	61.7	1.4
Israel	33.4	142.3	2.5	26.4	5.0	0.4	4.2	-3.8	-81.2	-91.8	937.2
Other	13.7	16.3	112.2	58.4	39.2	34.1	60.8	26.6	-34.6	-7.4	64.4

Total	**335.8**	**670.5**	**60.9**	**1121.2**	**1055.0**	**684.0**	**1011.4**	**22.3**	**-5.9**	**-35.2**	**47.9**

Source: EDRC calculations

In terms of imports, the main partners of Armenia again are the EU member countries (25% of total imports in 2010). Imports from Germany, Italy, France, Belgium, Austria and UK constitute a significant share of the total. Generally, about one quarter of the imports come from EU countries, however, the trend of stable decline is evident due to faster growth of imports from other countries. The next largest share of imports comes from Russia – 22%. Around 11% of total imports come from China, of which the share has increased significantly during the recent years.

Table 45 Armenian imports per destination countries (2001-2010)

	USD mln							Change from previous period			
	2001	2003	2005	2007	2008	2009	2010	2002-2007	2008	2009	2010
EU	271.5	426.3	582.3	1012.6	1217.4	837.6	961.4	24.5	20.2	-31.2	14.8
RF	166.2	197.7	250.6	482.7	835.0	788.4	828.3	19.5	73.0	-5.6	5.1
China	2.1	7.4	26.1	192.4	376.3	284.8	402.1	112.1	95.6	-24.3	41.2
Ukraine	22.0	34.3	67.2	251.5	310.0	202.6	229.5	50.1	23.3	-34.6	13.3
Iran	72.8	66.9	101.0	141.0	200.9	133.9	217.7	11.6	42.4	-33.3	62.6
Turkey	29.0	33.3	53.1	130.4	267.4	177.8	210.5	28.5	105.1	-33.5	18.4
USA	83.5	109.3	103.2	129.3	171.7	104.5	101.5	7.6	32.8	-39.2	-2.8
South Korea	0.8	2.0	4.0	56.5	78.3	88.1	71.5	103.0	38.5	12.6	-18.9
Switzerland	28.3	54.5	87.9	22.3	19.6	123.0	69.5	-3.9	-11.8	526.6	-43.5
Japan	2.9	8.7	2.6	51.4	84.6	44.3	55.6	61.7	64.6	-47.7	25.4
Brazil	0.2	0.4	2.7	26.2	57.7	54.7	51.3	120.4	120.8	-5.3	-6.3
Georgia	12.9	23.0	39.3	42.0	40.0	37.9	49.7	21.7	-4.8	-5.1	31.2
India	5.1	5.5	10.7	21.5	48.8	43.4	45.9	27.1	127.0	-11.1	6.0
UAE	44.5	57.1	85.4	18.8	31.6	30.4	36.3	-13.4	67.7	-3.7	19.3
Belarus	1.0	5.0	11.5	23.5	28.3	24.6	31.9	70.5	20.2	-13.1	29.5
Other	94.6	205.2	263.8	450.5	333.6	198.5	418.9	29.7	-25.9	-40.5	111.0
Total	**837.5**	**1236.6**	**1691.5**	**3052.6**	**4101.2**	**3174.6**	**3781.8**	**24.1**	**34.4**	**-22.6**	**19.1**

Source: EDRC calculations

As noted before, Armenian exports are concentrated around several items most of which are commodities or raw materials. Table 46 presented the 26 major goods which represent 87% of exports in 2010, this includes the first 5 items (metals, diamonds and brandy) which together make up more than 60% of the total exports.

Table 46 Armenian exports per groups of goods (2001-2010)

		USD mln							Share in Total, %		
Code	Product label	2001	2003	2005	2007	2008	2009	2010	2001	2005	2010
2603	Copper ores and concentrates	11.7	17.0	16.6	88.1	101.6	98.8	210.6	3.5	1.8	20.8
7202	Ferro-alloys	6.2	13.9	235.3	235.7	208.8	86.5	119.6	1.9	25.1	11.8
2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	36.0	57.4	79.9	116.1	141.8	71.6	95.7	10.7	8.5	9.5
7402	Unrefined copper; copper anodes for electrolytic refining	9.7	11.7	42.7	66.7	63.3	60.5	92.6	2.9	4.6	9.2

7102	Diamonds, not mounted or set	85.8	287.9	263.0	160.6	145.6	59.8	90.3	25.5	28.1	8.9
7607	Aluminum foil of a thickness not exceeding 0.2mm	6.2	23.1	0.2	37.3	36.4	58.1	78.5	1.9	0.0	7.8
7108	Gold unwrought or in semi-manufactured forms	19.2	35.4	36.5	18.3	5.3	32.8	28.6	5.7	3.9	2.8
2716	Electrical energy	16.6	11.0	17.9	9.8	2.4	0.5	26.2	5.0	1.9	2.6
8102	Molybdenum and articles thereof, including waste and scrap	1.7	2.7	17.7	24.4	19.7	9.5	15.5	0.5	1.9	1.5
2711	Petroleum gases	0.0	0.0	0.7	3.2	4.0	5.3	14.5	0.0	0.1	1.4
2608	Zinc ores and concentrates	0.4	0.9	1.2	6.8	4.4	5.9	13.7	0.1	0.1	1.4
7113	Articles of jewellery & parts thereof	15.5	26.1	34.0	27.3	21.9	10.8	13.2	4.6	3.6	1.3
7010	Carboy, bottle & other container of glass	0.4	0.7	3.5	17.3	10.4	10.1	11.3	0.1	0.4	1.1
7204	Ferrous waste and scrap; re-melting scrap ingots or iron or steel	3.0	3.4	4.7	6.8	5.1	6.5	9.8	0.9	0.5	1.0
4002	Synthetic rubber factice from oil	12.2	3.5	7.0	23.7	13.4	4.9	8.7	3.6	0.8	0.9
8406	Steam turbines and other vapor turbines	0.0	0.0	0.0	0.0	0.1	0.0	8.4	0.0	0.0	0.8
2402	Cigars, cheroots, cigarillos & cigarettes	1.8	2.0	3.2	3.9	6.2	7.2	8.2	0.5	0.3	0.8
7404	Copper waste and scrap	3.1	2.6	3.8	7.4	4.7	4.4	7.0	0.9	0.4	0.7
0901	Coffee	0.2	1.8	7.4	14.7	15.3	9.5	5.6	0.0	0.8	0.6
2201	Mineral & aerated waters	0.5	1.0	1.4	4.5	5.2	3.1	5.3	0.2	0.2	0.5
0806	Grapes, fresh or dried	0.0	0.0	0.1	0.6	1.0	2.0	4.9	0.0	0.0	0.5
3004	Medicament mixtures (not 3002, 3005, 3006), put in dosage	1.2	1.1	1.3	2.8	3.4	3.5	4.8	0.4	0.1	0.5
6802	Works monumental/building stone & art; mosaic cube, granules	0.3	0.5	1.6	3.3	2.9	3.0	4.3	0.1	0.2	0.4
7602	Aluminum waste and scrap	11.5	5.0	4.2	4.9	3.4	2.2	4.1	3.4	0.4	0.4
Other		92.4	161.8	153.1	237.0	228.7	127.5	130.0	27.5	16.3	12.9
Total		**335.8**	**670.5**	**937.0**	**1121.2**	**1055**	**684**	**1011.4**	**100.0**	**100.0**	**100.0**

Source: EDRC calculations

The largest group of imported goods to Armenia is fuel, gas and oil products, representing 17% of total imports (see Table 47). The next largest group, according to the 4-digit classification is diamonds, which are processed and re-exported from Armenia. Imports of aluminum, wheat, phones and medicine are also quite large.

Table 47 Armenian imports per groups of goods, 2001-2010

		USD mln							Share in Total, %		
Code	Product label	**2001**	**2003**	**2005**	**2007**	**2008**	**2009**	**2010**	**2001**	**2005**	**2010**
2711	Petroleum gases	85.6	70.6	96.9	231.1	252.6	235.2	339.5	10.2	5.7	9.0
2710	Petroleum oils, not crude	88.1	9.8	155.5	226.4	369.4	238.1	304.1	10.5	9.2	8.0
7102	Commodities not elsewhere specified	86.0	281.8	270.8	163.4	145.7	65.5	93.9	10.3	16.0	2.5
7601	Diamonds, not mounted or set	0.0	0.0	0.0	38.4	49.1	97.0	92.6	0.0	0.0	2.4
1001	Unwrought aluminum	42.4	42.6	47.9	84.0	88.7	94.7	87.9	5.1	2.8	2.3
8517	Electric app for line telephony, including current line system	6.5	18.4	15.8	89.3	123.4	70.4	81.4	0.8	0.9	2.2
3004	Medicament mixtures (not 3002, 3005, 3006), put in dosage	27.4	34.1	42.9	89.8	81.2	75.2	80.2	3.3	2.5	2.1
2402	Cigars, cheroots, cigarillos & cigarettes	25.7	29.5	42.9	62.4	77.5	53.7	64.7	3.1	2.5	1.7
7108	Gold unwrought or in semi-manufactured forms	18.7	49.2	74.3	129.8	153.1	38.2	60.1	2.2	4.4	1.6
8703	Cars (incl. station wagon)	7.3	33.5	37.6	114.9	172.4	48.4	59.2	0.9	2.2	1.6
8471	Automatic data processing machines; optical reader, etc	8.2	11.2	14.5	26.3	32.8	31.7	47.1	1.0	0.9	1.2
7214	Bars & rods of iron/non-al/s, nfw than forged, hr, hd,/hot-extruded	3.3	6.9	15.8	45.9	78.0	32.5	47.0	0.4	0.9	1.2
8537	Board & panels, equipped with two/more switches, fuses	2.9	1.5	2.4	3.7	8.3	31.9	42.9	0.3	0.1	1.1

0207	Meat & edible offal of poultry meat	10.3	8.4	10.5	23.5	39.1	31.6	39.9	1.2	0.6	1.1
1806	Chocolate and other food preparations containing cocoa	4.4	7.1	12.4	28.4	41.9	35.0	35.9	0.5	0.7	0.9
8704	Trucks, motor vehicles for the transport of goods	1.9	10.4	25.0	29.5	38.0	19.7	34.7	0.2	1.5	0.9
8544	Insulated wire/cable	3.4	2.0	7.6	15.8	33.6	23.2	33.3	0.4	0.5	0.9
1701	Cane or beet sugar and chemically pure sucrose, in solid form	18.1	21.4	25.5	25.0	31.2	21.1	30.8	2.2	1.5	0.8
7210	Flat-rolled prod of iron or non-al/s wd>/=600mm,clad, plated or coated	2.8	7.0	6.7	21.0	36.1	23.8	29.9	0.3	0.4	0.8
2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	1.0	3.9	9.1	21.4	31.0	22.5	29.6	0.1	0.5	0.8
4011	New pneumatic tires, of rubber	3.1	4.8	12.9	23.1	32.5	22.7	27.5	0.4	0.8	0.7
9403	Other furniture and parts thereof	3.3	5.3	8.6	18.2	36.1	22.4	26.5	0.4	0.5	0.7
7308	Structures (rods, angle, plates) of iron & steel nes	0.5	0.7	8.1	16.4	15.6	54.7	26.1	0.1	0.5	0.7
0901	Coffee	13.8	8.0	13.7	20.4	30.0	24.0	25.7	1.6	0.8	0.7
8418	Refrigerator, freezer, etc	2.4	4.7	8.6	17.3	29.4	14.7	23.8	0.3	0.5	0.6
Other		370.3	563.8	725.2	1487.5	2074.6	1747.1	2017.6	44.2	42.9	53.4
Total		**837.5**	**1236.6**	**1691.5**	**3052.6**	**4101.2**	**3174.6**	**3781.8**	**100.0**	**100.0**	**100.0**

Source: EDRC calculations

Appendix 2. European Economic Integration and Eastern Partnership

In the modern world, regional and global integration processes gradually intensify; covering almost all possible areas including political, economic, social and cultural. This is most prominently revealed by the accelerated flows of goods and services, capital, information and international migration of people. As a result, countries follow a path of removing existing barriers, liberalization of trade and movement of economic factors, or in other words, deepening international economic integration, which, during the previous six decades, has proven its economic impact and significance.

The first formal level of economic integration between countries is the creation of Free Trade Areas (FTAs). A Free Trade Area is the most widespread and simple type of economic integration and implies reduction or removal of all tariffs and quotas (quantitative barriers on trade) between partner countries. Most of the regional integrative unions are FTAs, such as NAFTA (North American Free Trade Agreement), EFTA (European Free Trade Agreement), SAFTA (South Asian Free Trade Agreement), AFTA (Asian Free Trade Agreement) etc.

The next level or type of economic integration is the Customs Union (CU). In the framework of such unions, in addition to removing tariffs and quantitative restrictions between countries, a unified tariff system is applied by all partner countries. This implies that member countries apply the same tariff system for third countries. Examples of CUs are CACM (Central American Common Market), CAN (Andean Community), MERCOSUR (Southern Common Market) etc.

A Common Market which is the next step of integration also implies liberalization of capital and labor flows in addition to the free trade and unified tariff regimes. The subsequent stage of integration is characterized by Economic Unions which imply harmonization of major economic policy directions. The next and final stage of economic integration is the Total Economic Union (political integration) where countries that have created a common market adopt common unified economic policies which are pursued by a common government.

In the beginning of the 1990s the European Economic Community transformed into a common market. Yet the creation of the European Union entailed the establishment of an Economic Union where member states (by creating a common market) implement agreed economic policies (monetary, fiscal etc.). The different types of international economic integration and their main features are listed in Table 48. The shading illustrates the policies implemented in a given type of integration.

Table 48 Major types of International Economic Integration

Type of integration / *Policy type*	**Free Trade Area**	**Customs Union**	**Common Market**	**Economic Union**	**Total Economic Union**
Removal of tariffs and quotas					
Common external tariff					
Factor mobility					
Harmonization of economic policies					
Total unification of economic policies					

Source: Miroslav Jovanovic, 2006

Free Trade Areas and CUs, being the easiest integration steps among countries, often restrict or do not allow a maximum utilization of economic benefits of integration. Therefore, partner countries try to further deepen integration by reaching new agreements. Thus, old regionalism is complimented with a new one.

The level of trade liberalization between countries is determined by two main factors: coverage of non-tariff barriers and comprehensiveness of areas (services, investment regulation, competition policy, institutional framework etc.). In this regard, deep and/or comprehensive free trade agreements differ from standard FTAs which mostly refer to liberalization of the tariff and quota barriers to trade. The following three main groups of non-tariff barriers can be distinguished:

1. Public regulation of foreign trade (subsidies, public procurement, foreign exchange restrictions, quotas, embargo etc),
2. Administrative procedures (rules of origin, anti-dumping policy, licensing, red tape etc.),
3. Technical barriers and standards (technical, health, food safety, environmental (green) standards, expertise and certification, patents, property rights) etc.

Currently, multilateral relations between most of the countries are regulated by WTO related agreements which regulate areas covering goods, services, intellectual property through GATT (General Agreement on Trade and Tariffs) GATS (General Agreement on Trade of Services) and TRIPS (Trade-Related Aspects of Intellectual Property Rights). Two fundamental principles apply to all of the 153 WTO member countries:

- Most Favored Nations (MFN): equal treatment of all, according to which member countries cannot discriminate their trade partners and consequently favorable trade conditions granted to any country, should also apply to all WTO member countries.
- National Treatment (NT): equal treatment of domestic and imported goods. Domestic and imported goods shall be treated equally at least after imported goods enter the domestic market.

If the initial GATT (1947) obliged all member countries to apply MFN principle, the 1971 Amendments to the Agreement allowed developed countries to grant more favorable export conditions to developing countries. This system is called the Generalized System of Preferences (GSP) and is currently used by the EU and 10 other countries (Australia, USA, Belarus, Canada, Japan, New Zealand, Norway, Russian Federation, Switzerland and Turkey).

Under the GSP system, developing countries can export selected goods to the mentioned countries at low or zero tariffs. The major objectives of GSP are to increase exports income of developing countries, boost industrialization of these countries and accelerate economic growth. Currently, 198 developing countries (and territories) in the world benefit from GSP granted by at least 9 countries.

In general, economic integration processes are taking place all around the world; this has resulted in the establishment of more than 200 regional and inter-regional so-called trade blocks. Examples of such regional unions are numerous (including the EU, EFTA, NAFTA, CACM, MERCOSUR, CAN, AFTA, SAFTA etc.), examples of inter-regional blocks are the GSTP (Global System of Trade Preferences between Developing Countries), LAIA (Latin-American Integration Association) etc. Among the listed integration units, one of the most influential is the European Union, which has passed through almost all stages of economic integration within a half century and has expanded to include 27 countries.

The EU has a significant influence on international integration processes with regard to the establishment of both bilateral and multilateral integration units (regional trade agreements), as well as the development

of trade liberalization rules (in the framework of WTO Doha Development agenda negotiations[15]). The EU participates in WTO activities in a number of different directions: elaboration of multi-layer trade rules, trade liberalization, sustainable development etc. As noted, EU also participates in GSP and grants three types of different trade preferences to developing countries in the form of GSP, GSP+ and EBA (everything but arms).

GSP allows developing countries to export a selected group of 6350 items at zero or lower-than-MFN tariffs, while EBA allows exporting all goods (except weapons) at zero rates (UNCTAD, 2008). The advantage of GSP+ over GSP is that it applies zero tariffs to sensitive goods from designated countries (except those tariffs for goods subject to ad-valorem tariff and tariffs determined for special value, when tariff is calculated only for the special value). EBA terms are granted only to least developed countries. Currently GSP is applied to 21, GSP+ to 13 countries (including Southern Caucasus countries), while EBA – to 49 countries. The list of the established trade relations of EU with different countries is provided in Table 49.

Table 49 Current EU Regional Trade Agreements (as of June 2011)

Bilateral FTAs* **		
Europe	**Middle East**	**Africa**
*Albania *(2006/2009)*	*Israel (2000)*	*Algeria (2005)*
Bosnia and Herzegovina (2005)	*Jordan (2002)*	*Egypt (2004)*
Iceland (2005)	*Lebanon (2003)*	*Morocco (2000)*
Croatia (2000/2005)*	*Palestine (1997)*	*South Africa (2000)*
Macedonia (2001/2004)*	*Syria (1977)*	*Tunisia (1998)*
Montenegro(2008/2010)*	**America**	*Cameroon (2009)*
Norway (2005)	*Mexico* (2000)*	*Cote d'Ivoire (2009)*
Serbia (2005)	*Chile* (2003/2005)*	
Faeroe Islands (2005)		
Multilateral FTAs		
Overseas Countries and Regions (OCT) (1971)		
*European Economic Area** (EEA) (1994)*		
Caribbean Forum (EPA)(2008)*		
Switzerland and Lichtenstein (1973)		
Customs Unions		
Andorra (1991)		
Turkey (1996)		
San Marino (2002)		

Source: WTO Regional Trade Agreement database, available at: http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx

*** Countries where FTA is applied to services in addition to goods.**

**** Services only**

*****Second year refers to the liberalization of services.**

As illustrated in the table above, most of the regional trade agreements of EU are related to the trade of goods that facilitate entry into new, mainly developing markets and expand investment opportunities. Currently negotiations on FTAs with India, Canada and South Korea take place.

Despite the wide geographic area of EU regional integration, two main directions of integration can be seen; namely, the integration of EU candidate and potential candidate countries and the integration of

[15] The EU is a WTO member since 1995

other countries. Officially, there are five EU member candidate countries: Croatia, Iceland, Macedonia, Montenegro and Turkey. Trade of goods and services with these countries is already liberalized, yet the liberalization is less extensive regarding Turkey (the CU with Turkey excludes services and agricultural products) and Iceland. Albania, Bosnia and Herzegovina, Kosovo and Serbia are declared potential candidate countries. European integration processes with other countries develops in accordance with the directions of foreign regional policy (See Table 50).

Table 50 EU Regional Policies

	EU Regional Policy	Target Countries	Start
1	**European Economic Area (EEA)**	27 EU and EFTA countries, excluding Switzerland	1994
2	**Northern Dimension**	Norway, Iceland, RF	1999
3	**European Neighborhood Policy**	Eastern Partnership and EURO-MED countries	2004
4	**Central Asia Strategy**	Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan	2007
5	**EURO-MED (former Barcelona process, 1995)**	Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia	2008
6	**Arctic Policy**	Iceland, Norway, RF, USA	2008
7	**Black Sea Synergy**	Armenia, Azerbaijan, Georgia, Moldova, RF, Turkey, Ukraine	2008
8	**Eastern Partnership**	Armenia, Azerbaijan, Georgia, Ukraine, Moldova, Belarus	2008

Source: http://eeas.europa.eu/regional_policies/index_en.htm

It can be noticed from the table above that the regional policies of EU mostly target Eastern European, Middle-Eastern and Central Asian, as well as North-African developing countries. In that regard, the European Neighborhood Policy (ENP) which was initiated in 2004 aims to neutralize the possible delineation between expanded EU countries and neighboring countries. The ENP is mainly bilateral and is directed at ensuring the development, stability and security of countries through creating close political, economic and cultural links. In order for the policy to be targeted, countries adopted ENP Action plans that define the short and medium-term priorities and socio-economic reform areas in cooperation with EU within the ENP framework. After several years from its initiation the ENP was fostered with the introduction of new multi-layer cooperation formats, such as the Black Sea Synergy, EURO-MED and Eastern Partnership.

Eastern Partnership is a result of the 2007 Polish-Swedish initiative which aims to ensure necessary conditions for the acceleration of political and economic integration between these countries and EU (Joint Declaration of the Prague Eastern Partnership Summit Prague, 2009). Bilateral cooperation between EU and partner countries under Eastern Partnership Program takes place in the following main directions:

1. Signing Association Agreements for New Contractual Relations

Association Agreements that are meant to replace the Partnership and Cooperation Agreements (PCAs), aim to create strong political links and foster further integration by spreading EU legislation and standards. The content of the agreements will vary from country to country depending on the objectives and capacities of partner countries. The EU offers a range of technical and financial assistance tools in order to help partner countries prepare for the negotiations, go through that process and implement the commitments. This assistance includes a special program developed by the EU for building the capacity of public sector agencies which is the Comprehensive Institutional Building program (CIB).

2. Gradual Economic Integration through Deep and Comprehensive Free Trade Agreements

Free markets and economic integration is of great importance to partner countries. To that end, EU initiated the creation of free trade arrangements under Eastern Partnership Program. The opportunity to sign new generation of Free Trade Agreements appeared under European Neighborhood Policy. In the case of Eastern Partnership, EU has carried out economic feasibility studies and officially suggested Eastern partners to create Deep and Comprehensive Free Trade Agreements (DCFTAs). Therefore, DCFTAs will regulate a wide range of issues in mutual trade and investments.

3. Cooperation regarding Mobility and Security Issues

One of the priorities of Eastern Partnership between EU and partner countries is promotion of the move of people which implies cooperation regarding migration, border management as well as gradual simplification and liberalization of visa regimes.

4. Cooperation regarding Energy Security

Bilateral cooperation in energy sector, which will also be reflected in Association Agreements in respective clauses on energy independence, this implies establishment of long-term links in power supply and transit.

5. Assistance with regard to the Socio-Economic Development

EU social and economic policies are targeted at supporting reforms in partner countries regarding infrastructure, human capital, SME developments and other directions under the EU Harmonization policy.

Eastern Partnership implies deepening of not only bilateral relations between EU and partner countries (Armenia, Georgia, Azerbaijan, Ukraine, Moldova and Belarus) but also cooperation in 27+6 format with 6 Eastern countries. That is, Eastern partner countries were included in multilateral cooperation which will takes place on democracy, good governance and sustainability, economic integration and adaptation to EU policies, power security and links between people. Furthermore, priority initiatives were developed at multilateral levels (flagship initiatives) that consolidate funds provided by various international financial institutions and private sector investments (integrated border management, SME tools, regional energy markets etc.).

Currently, preparatory efforts and negotiations take place under the Eastern Partnership, however, there are certain issues in each country which are determined by not only the obvious differences between countries but also by respective EU policies. In particular, Ukraine is considered a more advanced Eastern partner. Negotiations on Association Agreement with Ukraine started even before the official start of Eastern Partnership program – in 2007. As a result, significant progress is recorded in the negotiations process on the EU-Ukraine Association Agreement (including a DCFTA).

Certain preconditions were set by EU for the start of DCFTA negotiations with Armenia, Georgia and Moldova. Preconditions were developed by the EU Fact-finding Missions to partner countries which revealed the existing deficiencies in legislation and other problems or obstacles for signing a FTA. Concerning Azerbaijan and Belarus, DCFTA negotiations did not start with Azerbaijan since Azerbaijan is not a WTO member, and there no negotiations are initiated with Belarus. To this date, EU has not signed a DCFTA with any country; therefore a detailed understanding of a possible agreement can only be formed on the basis of information provided in the negotiation process.

Appendix 3. The Process of Establishing a Deep and Comprehensive Free Trade Area

The basis for the possible political, economic, socio-cultural or any other type of cooperation between Armenia and EU has been laid in the PCA (effective since 1999) which will remain valid until the EU-Armenia Association Agreement is signed and effective.

An important milestone in developing relations with EU is the European Neighborhood Policy initiative in the framework of which ENP Action plan is being carried out in Armenia since 2006. The Action Plan aims at institutional and regulatory reforms in a number of sectors.

Already in 2006, Armenia was granted the opportunity to sign a FTA with EU under the ENP Action Plan. Under the Eastern Partnership program initiated in 2008, Armenia was one of the four countries to establish a FTA with EU. Yet, despite the fact that FTA is an element of the Association Agreement, it's preparatory and negotiation processes are separated. The negotiations on the EU-Armenia Association Agreement officially started in July 2010, and go beyond just an ordinary FTA and involve signing of a DCFTA.

In 2007-2008, EU carried out an Economic Feasibility and Impact Assessment Study[16] for the potential EU-Armenia FTA. That study evaluated the economic impact and significance of different levels of EU-Armenia integration for Armenia. In particular, four levels of FTA were discussed by the study (see Table 51).

Table 51 Options of EU-Armenia FTAs

Agreement Options / *Policy Type*	**Simple FTA (1)**	**Simple FTA (2)**	**Deep FTA (1)**	**Deep FTA (2)**
Removing quantitative barriers and setting 0-rate for all tariffs except food products				
Decreasing tariffs for food products by half				
Removing tariffs and quantitative barriers to trade				
Reducing non-tariff trade barriers and investment barriers (adaptation of standards)				
Fostering competition, anti-corruption measures, reduction of investment risks				

According to analyses carried out by the European Commission the implications of simple FTAs for Armenia will be insignificant. On the other hand, in case of a Deep FTA, visible benefits can be expected (3.38% GDP growth is projected), whereas significant growth in investments is expected in case of the second more comprehensive option which is projected to result in a GDP growth of up to 7.95%.

As a result, the EU made de decision to offer Armenia an agreement similar to the second option of a Deep FTA, which in other words meant establishing a DCFTA. A DCFTA includes a relatively large framework of removing or reducing tariff and non-tariff barriers by covering a comprehensive range of sectors. In this case, the term "comprehensive" designates that the agreement covers a large spectrum of issues

[16]Economic Feasibility, General Economic Impact and Implications of A Free Trade Agreement Between The European Union and Armenia, CASE, 2008, available at http://trade.ec.europa.eu/doclib/docs/2008/october/tradoc_141170.pdf

pertaining to trade, whereas the term "deep" relates to the cross-border issues, such as non-tariff trade barriers, existing investment and competition policies, legislation adaptation etc.

For the start of preparatory stage of EU-Armenia DCFTA, a Fact-finding Mission of the European Commission arrived to Armenia in February 2009. After studying non-tariff trade barriers and legislative obstacles to EU-Armenia trade, the Commission presented the preconditions for the start of the negotiation process to the Armenian side in June 2009.

These preconditions comprise primary and secondary (or the additional) priorities. Primary priorities are those issues on which Armenia needs to book progress in order for the DCFTA to pass from the preparatory stage into the negotiation stage. The additional or secondary priorities were set to facilitate the DCFTA negotiations in later stages. These priorities are summarized in the table below.

Table 52 Preconditions of the European Commission (summary)

Key Issues Containing Preconditions and Directions of Proposed Preconditions	
1.	**General Issues (general coordination)** _ Create institutionally transparent and effective government structures for the implementation of DCFTA negotiations _ Develop administrative capacities of those institutional structures.
2.	**Technical Barriers to Trade, Technical Regulations and Standards** _ Develop and implement a government program to adapt the Armenian legislation with regard to technical regulations and standards for industrial goods, as mentioned in the PCA and ENP Action plans with the focus on EU legislation for product safety and quality assurance. _ Ensure progress in developing an institutionally independent national system for technical regulation, standardization, accreditation, certification, metrology, adequacy assessment and market oversight.
3.	**Sanitary and Phytosanitary Measures** _ Develop and start implementing a comprehensive strategy for the establishment of a profound and effective food security system.
4.	**Intellectual Property Rights** _ Ensure significant progress in implementing relevant cases of PCA and ENP Action Plans which will aim at largely improving the implementation and enforcement of the current legislation on IPR, especially with regard to piracy and copyright infringement.
Secondary Priority Areas and Directions of Proposed Preconditions	
1.	**Trade Facilitation and Customs Administration,** main directions are: _ Organization and management, _ Customs inspection and enforcement _ Trade facilitation and cooperation with businessmen.
2.	**Rules of Origin**, main directions are: _ Awareness on EU preferred rules of origin. _ Certificate of origin _ Verification of origin _ Treatment of products from Nagorno-Karabakh and inspection of origination.
3.	**Public Procurement** _ Improve awareness on EU public procurement legislation and practices _ Ensure creation of an independent body and sufficient institutional capacity _ Develop a long-term strategy for public procurement reforms.
4.	**Competition** _ Increase penalties to a preventive impact level _ Expand the authority and budget of the competition body _ Develop and introduce rules of enforcing state assistance by the competition body.
5.	**Service and Investments,** main directions are: _ Financial services

	_ Postal and messenger services _ Free flow of capital _ Enterprise registration and provision of services overseas _ Law on companies _ Accounting and audit _ Fight against money laundering.
6.	**Sustainable Development,** main directions are: _ Trade and sustainable development _ Social and labor issues _ Environmental issues.

With regard to general coordination, Armenia has already recorded certain progress by creating the future negotiation structures for DCFTA and carrying out capacity development activities. The Ministry of Economy is responsible for the preparation and implementation of DCFTA negotiations in Armenia. The Minister of Economy is the Political Coordinator of negotiations, while the deputy Minister is the Principal Negotiator. A unit is established in the structure of the Ministry to support the Principal Negotiator.

With regard to progress for the second group of preconditions – Technical Barriers to Trade, Technical Regulations and Standards – the Government of Armenia has approved the Reform Strategy and Action Plan for Quality Infrastructure in 2010. The Government of Armenia also drafted relevant strategic reform programs in SPS Measures and IPR. A decree of the Prime-Minister from June 17, 2011 approved the time-schedule of measures to ensure the start of EU-Armenia DCFTA negotiations.

In general, the EU regularly provides assistance to Armenia for the implementation of reforms through European Neighborhood and the Partnership Tool (amount of assistance in 2011-2013 is set EUR 157.3 mln). Along with existing ones, recently a new tool (CIB) was developed for the capacity development of state bodies. From EUR 32 mln designated to the CIB, 60-70% of will be directed to the capacity strengthening of structures involved in DCFTA negotiations.

Currently, Armenia receives assistance from the EU Advisory Group (EUAG) for the preparation of the DCFTA negotiations, as well as a number of other countries and international structures. Germany, EU, WB and IFC are actively involved in the area of technical barriers to trade. International Organization for the Protection of the IPR and European Patent Bureau are involved in the IPR. The Food and Agriculture Organization is involved in the SPS area; and an EU-funded BTSF (Better Training for Safer Food) project is being implemented.

Thus, the preparatory and negotiations phase for EU-Armenia DCFTA, as well as the implementation phase of the commitments resulting from possible signing of the agreement, imply implementation of significant reforms which will have a serious impact on the Armenian economy and trade, and consequently on poverty and the social situation in the country.

Appendix 4. Data on the CGE model

Table 53 Basic Exogenous assumptions of Jensen-Tarr modified model

	EU FTA
Model	
Own use externality	yes
Dixit-Stiglitz exports	yes
Sector specific capital (%)	50%
Domestic rent capture (%)	0%
Policies	
Service barriers reduction (all firms)	0%
Service barriers reduction (EU firms)	50%
Service barriers reduction (CIS firms)	0%
Service barriers reduction (ROW firms)	0%
EU goods tariff reduction	100%
ROW goods tariff reduction	0%
Elasticities	
Dixit-Stiglitz (services firms)	3
Business services vs VA	1.25
Value added substitution	1
Substitution (intermediates)	0
Transformation (domestic vs foreign)	4
Substitution (domestic vs foreign)	4
Substitution (foreign vs foreign)	8
Dixit-Stiglitz (goods firms)	
Mining & quarrying	17
Food Manufacturing	7.3
Cigarette Manufacturing	3.3
Textiles Manufacturing	6.6
Chemical Manufacturing	4.6
Manufacture of non metallic mineral products	7.5
Metallic Manufacturing	3.8
Manufacture of fabricated metal products	3.2
Machine Manufacturing	11.1
Furniture Manufacturing	4.8
Jewelry	7
Other manufacturing	9.6

Source: EDRC (2012)

Table 54 Sectoral value-added (%, unless otherwise indicated)

	Capital (%)	Labour (%)	GDP	
			bln AMD	% of total
Business Services				
Transport via railways	46.0	54.0	13.0	0.4
Transport via pipelines	46.0	54.0	7.9	0.2
Air transport	46.0	54.0	45.5	1.3
Telecommunications	46.0	54.0	97.5	2.9
Insurance	66.3	33.7	1.2	0.0
Banking	66.3	33.7	97.1	3.0
Dixit-Stiglitz Goods				
Mining and quarrying	47.9	52.1	39.7	1.1
Food Manufacturing	46.9	53.1	164.0	4.9
Ciggarete Manufacturing	46.9	53.1	10.2	0.3
Textiles Manufacturing	46.9	53.1	4.2	0.1
Chemical Manufacturing	46.9	53.1	15.2	0.5
Manufacture of non metallic mineral products	46.9	53.1	33.5	1.0
Metalic Manufacturing	46.9	53.1	72.7	2.2
Manufacture of fabricated metal products	46.9	53.1	13.4	0.4
Machine Manufacturing	46.9	53.1	15.2	0.5
Furniture Manufacturing	46.9	53.1	3.7	0.1
Jewelary	46.9	53.1	8.3	0.2
Other manufacturing	46.9	53.1	12.3	0.4
Other goods and services				
Agriculture, hunting, forestry and fishing	75.6	24.4	590.1	17.8
Electricity, gas and water supply	38.5	61.5	121.1	3.6
Construction	56.0	44.0	1,009.4	30.7
Wholesale, retail trade and repair	61.6	38.4	401.1	12.1
Hotels and restaurants	25.2	74.8	10.7	0.3
Other land transport	46.0	54.0	39.1	1.2
Auxiliary transport activities	46.0	54.0	15.4	0.5
Post and courier activities	46.0	54.0	1.1	0.0
Real estate and professional services	85.7	14.3	118.5	3.5
Public administration and defence	7.6	92.4	105.6	3.2
Education	23.1	76.9	107.2	3.3
Health and social work	56.0	44.0	108.7	3.3
Other social and personal services	43.1	56.9	37.3	1.0

Source: EDRC (2012)

Table 55 Trade Flows

	Imports			Exports		
	bln AMD	% of total	% of supply	bln AMD	% of total	% of supply
Business Services						
Transport via railways	6.9	0.5	27.2	2.8	0.7	13.2
Transport via pipelines	4.2	0.3	27.2	1.7	0.4	13.2
Air transport	24.2	1.9	27.2	9.8	2.5	13.2
Telecommunications	51.9	4.0	27.2	21.1	5.4	13.2
Insurance	0.1	0.0	9.4	0.1	0.0	6.5
Banking	11.3	0.9	9.4	7.6	1.9	6.5
Dixit-Stiglitz Goods						
Mining and quarrying	81.3	6.3	71.2	44.7	11.4	60.8
Food Manufacturing	447.6	34.6	55.8	106.8	27.2	34.5
Ciggarete Manufacturing	27.9	2.2	55.8	6.7	1.7	34.5
Textiles Manufacturing	11.6	0.9	55.8	2.8	0.7	34.5
Chemical Manufacturing	41.4	3.2	55.8	9.9	2.5	34.5
Manufacture of non metallic mineral products	91.4	7.1	55.8	21.8	5.6	34.5
Metalic Manufacturing	198.3	15.3	55.8	47.3	12.1	34.5
Manufacture of fabricated metal products	36.6	2.8	55.8	8.7	2.2	34.5
Machine Manufacturing	41.4	3.2	55.8	9.9	2.5	34.5
Furniture Manufacturing	10.1	0.8	55.8	2.4	0.6	34.5
Jewelary	22.6	1.7	55.8	5.4	1.4	34.5
Other manufacturing	33.7	2.6	55.8	8.0	2.1	34.5
Other goods and services						
Agriculture, hunting, forestry and fishing	51.2	4.0	5.8	5.4	1.4	0.7
Electricity, gas and water supply	5.0	0.4	2.9	6.6	1.7	3.7
Construction	1.7	0.1	0.1	3.5	0.9	0.2
Wholesale, retail trade and repair						
Hotels and restaurants	26.0	2.0	46.8	10.2	2.6	25.7
Other land transport	20.8	1.6	27.2	8.4	2.2	13.2
Auxiliary transport activities	8.2	0.6	27.2	3.3	0.8	13.2
Post and courier activities	0.6	0.0	27.2	0.2	0.1	13.2
Real estate and professional services	10.1	0.8	6.6	18.0	4.6	11.1
Public administration and defence	7.9	0.6	4.0	3.5	0.9	1.8
Education	12.6	1.0	9.4	8.7	2.2	6.7
Health and social work	3.2	0.2	2.0	4.5	1.1	2.8
Other social and personal services	4.3	0.3	6.1	2.1	0.5	3.8

Source: EDRC (2012)

Table 56 Benchmark Distortions (%)

	Output tax	Tariff	Border costs		Standards for EU exports	Regulatory barriers	
			Imports	Exports		All firms	Foreign firms
Business Services							
Transport via railways	2.2					20	
Transport via pipelines	2.2					40	
Air transport	2.2						106.8
Telecommunications	2.2					1.7	0.3
Insurance	0.6					9.6	15.8
Banking	0.6					1.5	5.6
Dixit-Stiglitz Goods							
Mining and quarrying	4.1		9.1	8.9			
Food Manufacturing	1.5	6.6	9.1	8.9	15.6		
Ciggarete Manufacturing	1.5	8.0	9.1	8.9	15.6		
Textiles Manufacturing	1.5	3.3	9.1	8.9	34.4		
Chemical Manufacturing	1.5	3.8	9.1	8.9	11.65		
Manufacture of non metallic mineral products	1.5	3.4	9.1	8.9	44		
Metalic Manufacturing	1.5	9.6	9.1	8.9	9.6		
Manufacture of fabricated metal products	1.5	4.6	9.1	8.9	9.6		
Machine Manufacturing	1.5	3.8	9.1	8.9	16.8		
Furniture Manufacturing	1.5	3.5	9.1	8.9	31.4		
Jewelary	1.5	3.3	9.1	8.9	9.6		
Other manufacturing	1.5	4.1	9.1	8.9	23		
Other goods and services							
Agriculture, hunting, forestry and fishing	0.70	8.6	9.1	8.9	15.8		
Electricity, gas and water supply	0.96						
Construction	0.25						
Wholesale, retail trade and repair	1.06						
Hotels and restaurants	3.98						
Other land transport	1.89						
Auxiliary transport activities	1.89						
Post and courier activities	1.89						
Real estate and professional services	1.91						
Public administration and defence	0.44						
Education	0.09						
Health and social work	0.27						
Other social and personal services	7.74						

Source: EDRC (2012)

Table 57 Trade Flows by Trading Partner (%)

	Exports			Imports		
	EU	CIS	ROW	EU	CIS	ROW
Business Services						
Transport via railways	0	100	0	0	100	0
Transport via pipelines	0	100	0	0	100	0
Air transport	29.5	29.5	41.0	29.5	29.5	41.0
Telecommunications	5.7	39.0	55.3	5.7	39.0	55.3
Insurance	29.5	56.5	14.0	29.5	56.5	14.0
Banking	21.1	48.9	30.1	21.1	48.9	30.1
Dixit-Stiglitz Goods						
Mining and quarrying	65.9	25.2	8.9	31.7	51.5	16.8
Food Manufacturing	2.5	93.2	4.3	21.1	51.8	27.0
Ciggarete Manufacturing	22.6	30.2	47.2	20.4	60.6	19.0
Textiles Manufacturing	76.6	9.7	13.8	24.6	2.7	72.7
Chemical Manufacturing	34.4	45.6	20.0	30.8	17.1	52.1
Manufacture of non metallic mineral products	3.7	89.0	7.3	30.4	7.2	62.4
Metalic Manufacturing	87.4	1.3	11.3	6.2	67.1	26.7
Manufacture of fabricated metal products	87.1	3.9	9.0	19.7	30.7	49.6
Machine Manufacturing	21.3	45.5	33.2	39.9	15.7	44.4
Furniture Manufacturing	56.4	24.5	19.1	23.9	8.7	67.5
Jewelary	49.2	21.0	29.8	71.5	3.0	25.5
Other manufacturing	16.4	68.5	15.0	33.2	22.6	44.3
Other goods and services						
Agriculture, hunting, forestry and fishing	11.4	84.2	4.4	9.1	39.6	51.3
Electricity, gas and water supply	0	0	100	0	0	100
Construction	0	0	100	0	0	100
Wholesale, retail trade and repair	0	0	100	0	0	100
Hotels and restaurants	0	0	100	0	0	100
Other land transport	0	0	100	0	0	100
Auxiliary transport activities	0	0	100	0	0	100
Post and courier activities	0	0	100	0	0	100
Real estate and professional services	0	0	100	0	0	100
Public administration and defence	0	0	100	0	0	100
Education	0	0	100	0	0	100
Health and social work	0	0	100	0	0	100
Other social and personal services	0	0	100	0	0	100

Source: EDRC (2012)

Table 58 Market Shares in Sectors with FDI (%)

	Armenia	EU	CIS	ROW
Business Services				
Transport via railways	0	0	100	0
Transport via pipelines	0	0	100	0
Air transport	70	9	9	12
Telecommunications	0	6	39	55
Insurance	31	20	39	10
Banking	26	16	36	22

Source: EDRC (2012)

Table 59 Estimates of supply elasticity of firms with respect to price

	Armenia	EU	CIS	ROW
Business Services				
Transport via railways	2	10	2	15
Transport via pipelines	2	10	2	15
Air transport	2	10	2	15
Telecommunications	3	13	3	20
Insurance	3	3	3	10
Banking	3	3	3	10
Dixit-Stiglitz Goods				
Mining and quarrying	3	3	3	10
Food Manufacturing	2	10	2	15
Ciggarete Manufacturing	2	10	2	15
Textiles Manufacturing	2	10	2	15
Chemical Manufacturing	2	10	2	15
Manufacture of non metallic mineral products	2	10	2	15
Metalic Manufacturing	2	10	2	15
Manufacture of fabricated metal products	2	10	2	15
Machine Manufacturing	2	10	2	15
Furniture Manufacturing	2	10	2	15
Jewelary	2	10	2	15
Other manufacturing	2	10	2	15

Source: EDRC (2012)