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# Economic Impact of a Potential Free Trade Agreement (FTA) Between the European Union and the Commonwealth of the Independent States

## Georgia

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# 1 Introduction

The EU has become the main trade partner of Georgia. On the other hand, for the EU, Georgia is a very marginal trade partner and trade with Georgia represents a very limited share of total EU trade. The EU exports mainly machinery and transport equipment to Georgia. Georgia mainly exports mineral fuels, which represents about 60% of its total exports to the EU and agricultural products, which is around 17% of total exports.

The framework for the EU bilateral trade relations with Georgia is governed by the Partnership and Cooperation Agreement (PCA), which entered into force in 1999. The agreement implies Most Favoured Nation (MFN) treatment with respect to tariffs and quantitative restrictions are prohibited in bilateral trade. The PCA also envisage progressive regulatory approximation in the most important trade related areas (industrial standards, sanitary and phytosanitary issues, intellectual property rights, customs, public procurement etc). Furthermore, Georgia is a beneficiary of the EU Generalised System of Preferences.

The EU adopted a European Neighbourhood Policy (ENP) Action Plan with Georgia in 2006. The Action Plan covers various issues and has a specific point on future enhancement of bilateral trade relations between the EU and Georgia which includes a possible establishment of a Free Trade Agreement (FTA).

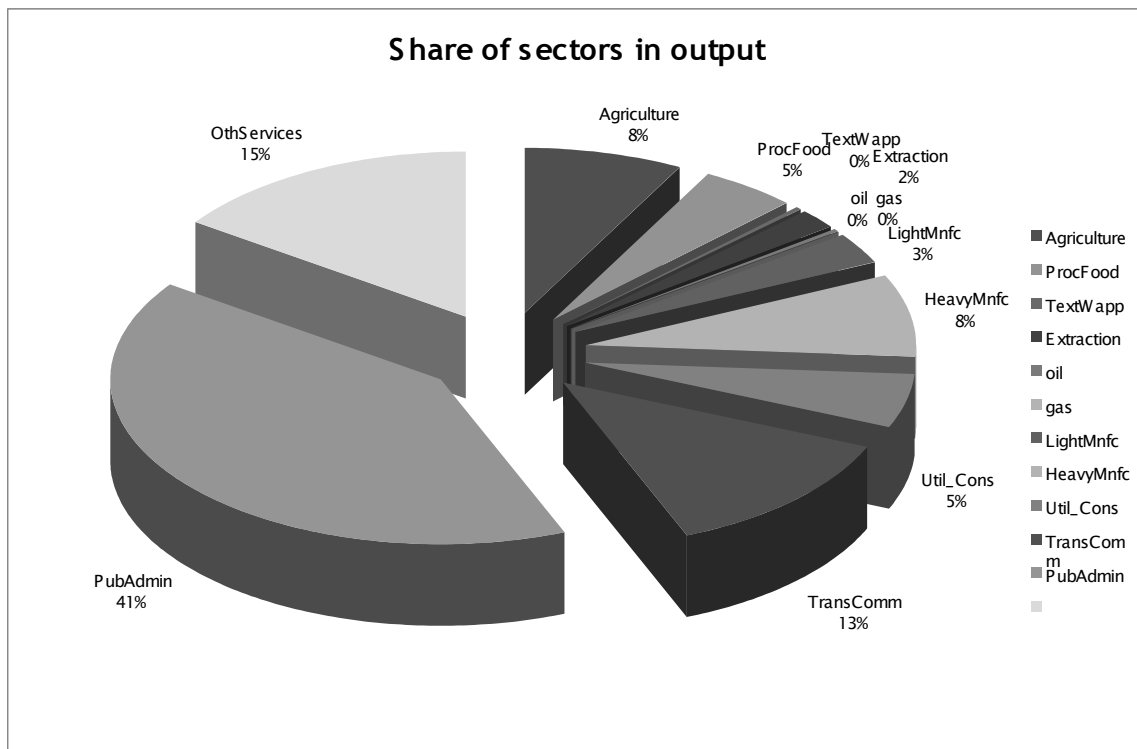
The rest of the study is organized as follows; Chapter 2 offers a general background to the production and trade of Georgia. Chapter 3 describes methodology, data and the different scenarios. Since the methodology used in this study is the same as the one which was employed looking at the CIS region as a whole and also used for looking at the effects of different FTAs on other individual CIS countries in the different studies undertaken under this project, the description in this chapter is identical to the description of the model and data in the other studies. Therefore we suggest to those readers who are already familiar with this description to skip this section and continue with the discussion

of the results. Chapter 4 discusses the results. Concluding comments can be found in Chapter 4.

## 2 Trade and Production structure of Georgia

The importance of different sectors in Georgia's output is depicted in Figure 2-1. Services represent about 70% of output in Georgia which is higher than in many other CIS countries. Among manufacturing sectors heavy manufacturing sectors take up the most important part of total output, representing about 8% of total output followed by light manufacturing which takes up only 3% of total output. Agricultural output is 8% of total output which is similar to the share of sector in some other CIS countries, such as Ukraine, Kazakhstan or Russia where the output in the agricultural sector represents also 8-9% of total output. Processed food contributes 5% of total output.

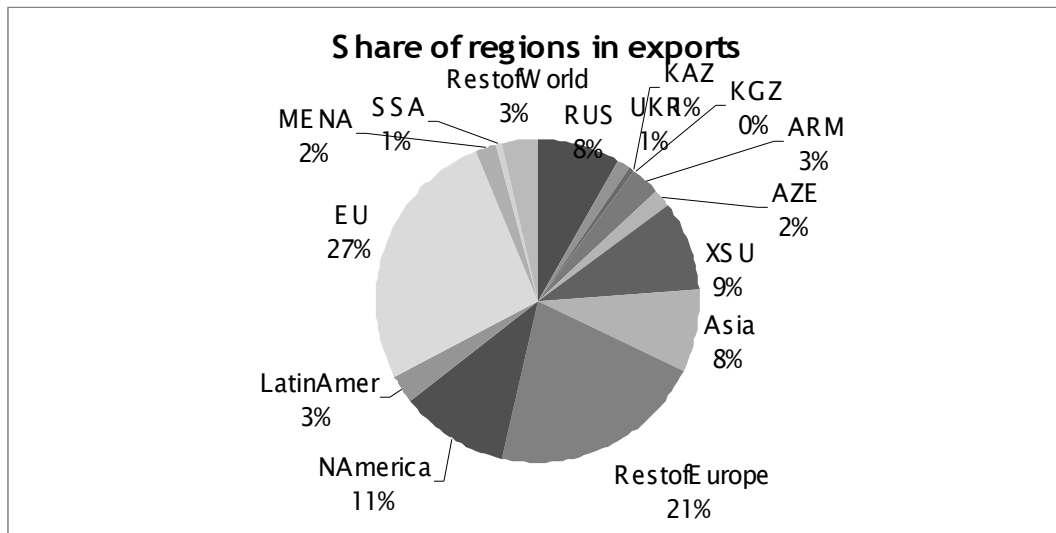
Figure 2-1 Share of sectors in output



Source: own calculations, data come from GTAP database version 7

Figure 2-2 depicts the importance of different regions and countries in Georgia's exports. The EU is the most important export destination for Georgia. About 27% of all Georgia's exports go to the EU. An important share, about one fourth of Georgia's exports are going to countries in Europe outside the EU and the CIS. Russia is also an important export partner; Russia is the destination of 8% of total exports. Other CIS countries together take up a bit more than 15% of total exports of Georgia.

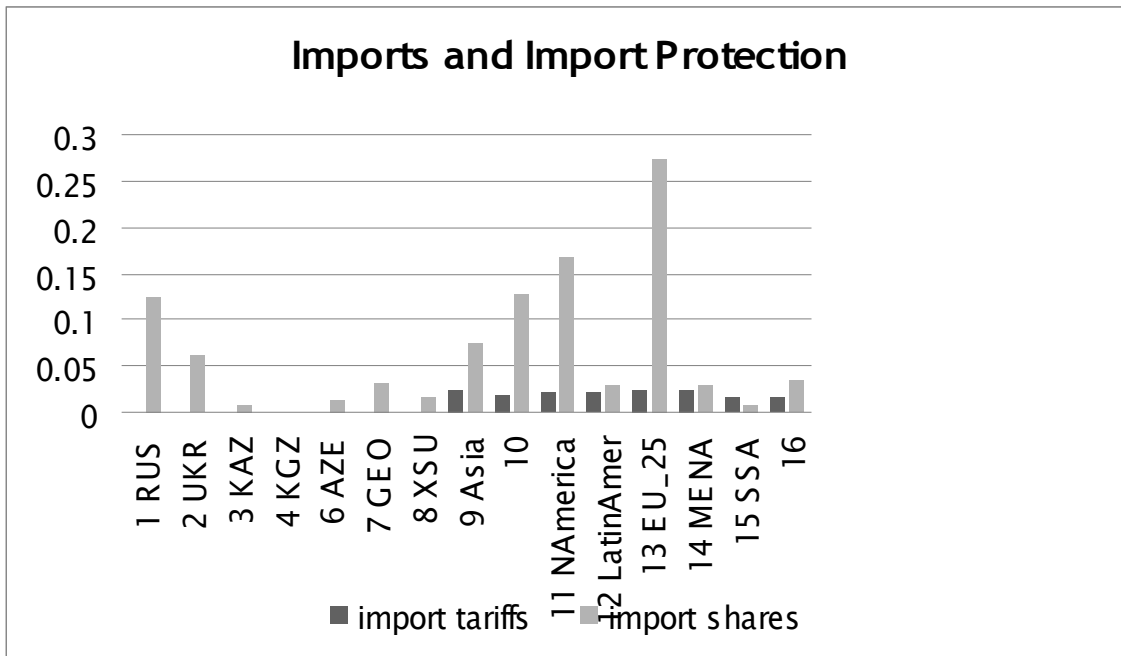
**Figure 2-2 Share of regions in exports**



Source: own calculations, data come from GTAP database version 7

Figure 2-3 depicts Georgia imports coming from different destinations and the corresponding import tariffs. For Georgia, the EU is the most important import partner with imports coming from the EU representing about one quarter of total Georgian imports. There are no import tariffs for other countries in the CIS region, nevertheless the share of imports coming from these countries is rather small with the exception of Russia from where a bit more than 10% of total imports originate.

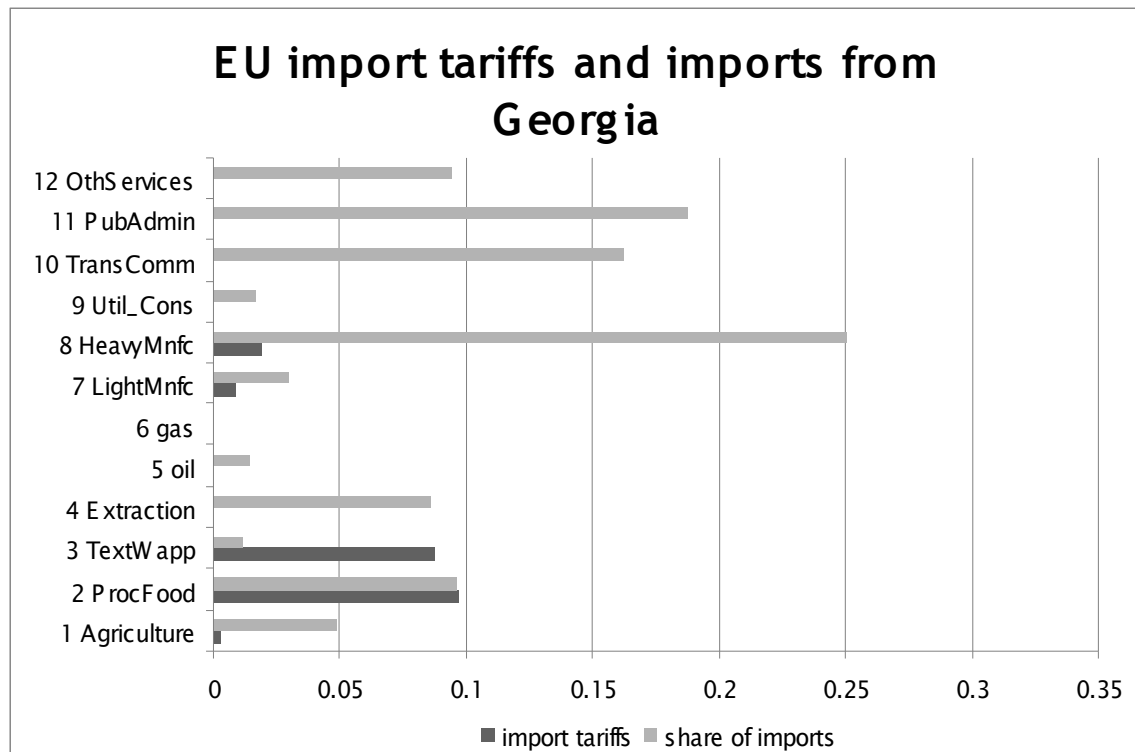
Figure 2-3 Imports and import protection



Source: own calculations, data come from GTAP database version 7

Figure 2-4 shows EU import tariffs and import in different sectors originating from Georgia. The highest import tariffs are in the processed food sector and in textiles and clothing. The share of imports in textiles and apparel sectors is rather small; imports in these sectors is around 1% while in processed food it is much higher amounting to almost 10% of total imports. The sector with the highest share of imports apart from imports in services is heavy manufacturing which represents one fourth of total imports and extractions which is around 8% of total imports from Georgia.

**Figure 1-4 EU imports and import tariffs**



Source: own calculations, data come from GTAP database version 7

### **3 The Model and the Data**

#### **3.1 The CGE model**

The methodology is comparable with recent policy analyses of the World Bank, the IMF and the OECD, incorporating a similar quantitative modeling framework. This section provides a brief overview of the global computable general equilibrium (CGE) model used in this study.

The CGE-model is based on an input-output structure (which stem from national input-output tables) which explicitly links industries through chain of value added in production, from primary goods, through stages of intermediate processing, to the final assembling of goods and services for consumption. This inter-sectoral linkage works both through direct linkages, e.g. the use of steel in the production



of transport equipment, and indirect, i.e. via intermediate use in other sectors. These linkages are captured in the model by the usage of firms' use of factors and intermediate inputs. An overview of the model is provided in Box 3.1 below, while a more detailed description is available in the Technical Annex.

Recent developments in international trade and economic geography focus on the importance of scale economies (e.g. starting from Krugman (1979), (1980), Helpman and Krugman (1989) and onwards) and imperfect competition in determining the patterns of production and trade. In order to incorporate this development into the analysis, our model is expanded to take into account differences in underlying market structures across sectors.

Furthermore, in order to further increase the quality of the analysis, we employ estimates on elasticities as reported in the recent paper by Antweiler and Trefler (2002).

Impediments to trade in services are not as clearly visible as is the case with tariffs for trade in merchandise. Rather, trade barriers in the service sector often entail prohibitions, quantitative restrictions and government regulations, which are designed to limit the market access of foreign suppliers. These are not easy to quantify. In order to remedy this lack of data, we follow Francois (2003) in estimating tariff equivalents for the service sector through the use of a gravity type equation. These estimates are then incorporated into the analysis. Further information about these estimates is available in the Technical Annex.

### **3.2 *Model data***

The GTAP database, version 7, provides the majority of the data for the empirical implementation of the model. The database is the best and most updated source for internally consistent data on production, consumption and international trade by country and sector. For more information, please refer to Dimaranan and McDougall (2006).

The GTAP version 7 dataset is benchmarked to 2004, and includes detailed information on input-output, trade and final demand structures for the whole world this year. However, there are some important changes to the trade policy environment that have happened since then, that we wish to include in the basic dataset. Therefore, before conducting any policy experiments, we first run a 'pre-experiment', where we include the ATC phase-out and EU enlargement. Moreover, several of the CIS countries are currently in the process of joining the WTO. The EU would most probably only negotiate FTAs if the given partner country would already be a WTO member. Therefore, we implement the result from WTO accessions of all non-WTO members of CIS as well in our baseline.

For the purpose of this study, the GTAP database has been aggregated into 16 regions and 12 sectors. The list of sectors and regions is shown in . The detailed mapping between the aggregated sectors and the original GTAP sectors, together with a list of regions used in the model can be found in the Technical Appendix to the main report.

**Table 3.1: Sectors in the model**

Sectors	Regions
Agricultural products, food	Russia
Processed Food	Ukraine
Textiles and Clothing	Kazakhstan
Coals and other minerals	Kyrgyzstan
Oil	Armenia
Gas	Azerbaijan
Light Manufacturing	Georgia
Heavy Manufacturing	Rest of Former Soviet Union
Utilities and Construction	East, Southeast and South Asia
Transport and Communication	Rest of Europe
PubAdmin/Defence/Health/Educat	North America
Other Services	Latin America
	European Union 25
	Middle East and North Africa
	Sub-Saharan Africa
	Rest of World

### **3.3 Setting up the analysis; baselines and trade liberalization scenarios**

All results are compared to the baseline, which takes into account the effects of a successful WTO accession, the EU enlargement and the phase-out of the ATC.

The core of our analysis is structured around a set of scenarios. We simulate these three scenarios assuming that all CIS countries have the same FTAs with the EU. These scenarios are based on alternative liberalization approaches for agriculture, manufactured goods and services trade, as well as measures to facilitate trade. Trade facilitation measures aim to reduce less transparent trade barriers, such as customs procedures, product standards and conformance certifications, licensing requirements, and related administrative sources of trading costs. The scenarios which we use as basis for our analysis are summarized in the table below.

**Table 3.2: Scenarios**

Nr	Description	Assumptions			
		Food	Non-food	Services	Trade facilitation
1	Partial 1 trade agreement	No tariff reductions	Full bilateral tariff reductions	no reduction	None
2	Partial 2 trade agreement	Full bilateral tariff reductions	Full bilateral tariff reductions	no reduction	None
3	Full FTA	Full bilateral tariff reductions	Full bilateral tariff reductions	Full services liberalisation	2% of value of trade

The partial trade agreements imply more realistic outcomes of the trade negotiations than the Full FTA scenario described above. With regards to the outcome of the bilateral trade agreements on non-food, the assumption is the same as in the full FTA, namely full bilateral tariff reduction. The second partial trade agreement scenario offers a deeper liberalisation between the regions implying full bilateral reduction in not only manufacturing goods but also in the food sector. No trade facilitation is assumed to take place in the partial scenarios.

The Full FTA agreement implies full bilateral tariff reductions for manufacturing goods, full bilateral tariff reductions in the agriculture and processed food sectors, full liberalization of trade in services and trade facilitation measures corresponding to 2 percent of value of trade. From a policy point of view, this scenario can be seen as quite radical in its assumptions. Nonetheless it is very useful in providing an upper benchmark for the effect of potential measures to liberalize trade.

## 4 Results

### 4.1 Real Income Effects

Trade liberalization would have a positive income effect for Georgia under the two second scenarios which are shown in Table 4.3. However, a small negative effect would occur under the first FTA scenario which would result in a 0.03% real income reduction which is much smaller than the effects in the EU or in the CIS on average. The second FTA scenario which would involve liberalization in agriculture and processed food sectors as well would have a small positive real income effect. The third, full FTA scenario would have the highest positive real income effect with a 0.68% real income increase which is similar to the effects on CIS's real income.

**Table 4.3. Real Income Effects** (percentage change from baseline)

Scenario	Partial 1 trade agreement	Partial 2 trade agreement	Full FTA
EU	0.14	0.13	0.21
CIS	-0.53	-0.83	0.62
Georgia	-0.03	0.12	0.68

Source: Model simulations.

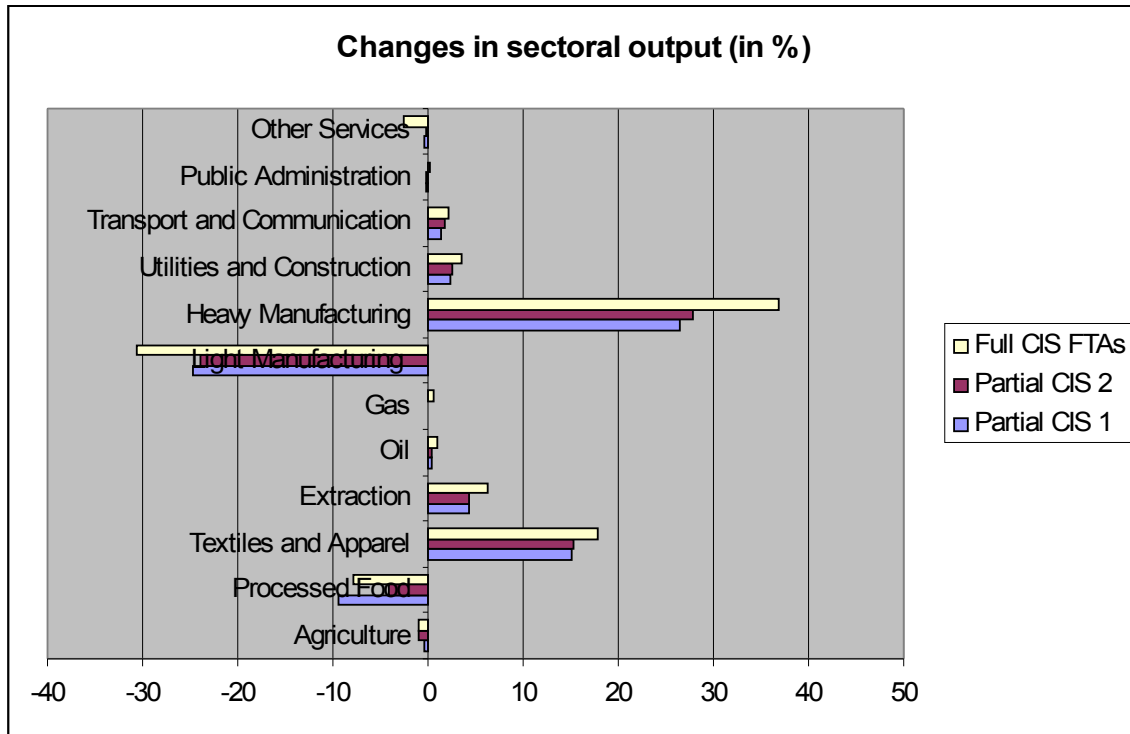
## **4.2 Changes in sectoral output in Georgia**

Our analyses of the expected changes in sectoral output as a result of different forms of trade liberalisation show that important changes would occur in the sectoral output of Georgia. Figure 4-1 depicts changes in the output of different sectors in Georgia after the three different FTA would take place.

The most pronounced decrease would take place in the light manufacturing sectors. The light manufacturing sector would experience a decrease in output which would be around 25% in case of the first two scenarios and would be somewhat higher, around 30% under the full FTA scenario. Apart from light manufacturing sectors, processed food products would also experience a drop in their output which would be the highest under the first FTA with a magnitude of 10% and somewhat lower under the two other FTA scenarios.

Most other sectors would have a small increase in the production under the different scenarios. Sectors belonging to heavy manufacturing sectors would experience an important increase in their output representing a 26-28% increase under the first two scenarios and a 37% increase under the third type of FTA scenario which would incorporate liberalization in services. Apart from heavy manufacturing an important increase would occur in textiles and apparel amounting to 15-18% increase depending on the scenario.

**Figure 4-5 Changes in sectoral output**



Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

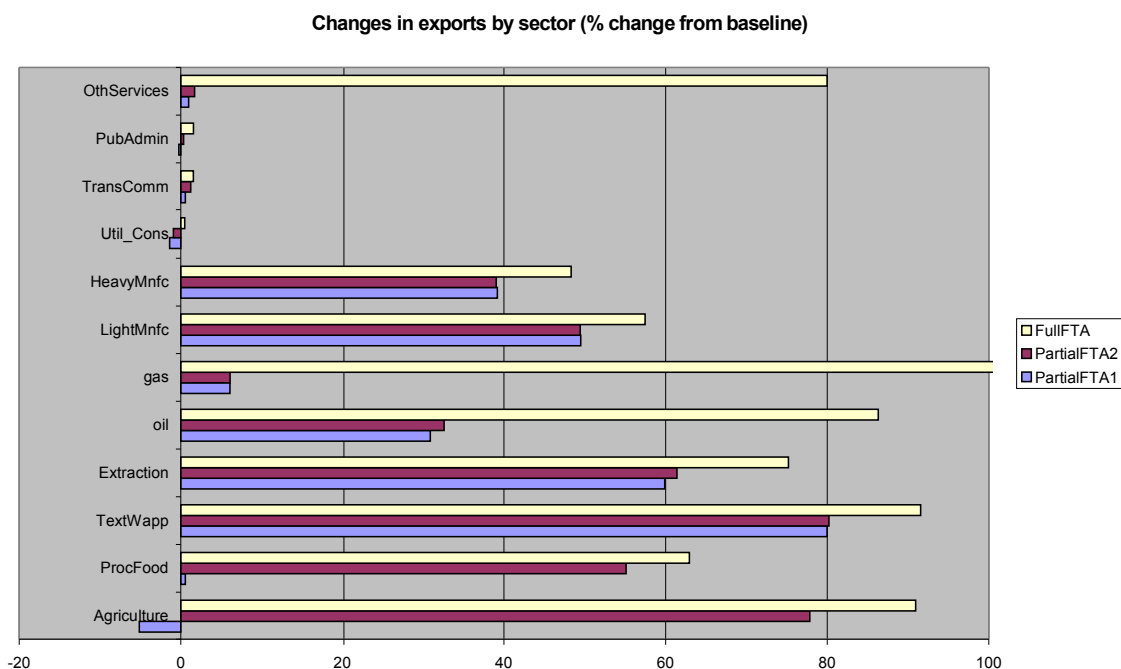
### **4.3 Effects on bilateral trade flows**

In this section we provide detailed results on trade impacts in the three scenarios, and we present the changes in trade flows by sector.

The figure below depicts changes in EU exports towards Georgia after the three different FTA scenarios. Under the third scenario, trade in services sectors belonging to ‘other services’ is liberalised. As a consequence of this there would be an important, about 80% increase in EU exports in other services sectors towards Georgia. An important increase would occur in exports of textiles and apparel under all scenarios, the biggest increase occurring under the third scenario. The exports in these sectors would increase by 80-90% towards Georgia. Extractions, heavy and light manufacturing exports would also increase under all different scenarios. The highest increase would occur under the third, full FTA scenario which would result in 75% increase in exports of extractions,

57% increase in light manufacturing, and 48% increase in heavy manufacturing. When trade liberalisation would occur also in agriculture and processed food sectors, these sectors would also experience an important increase in their exports towards Georgia. There would be an increase in gas exports, which according to the graph is important in terms of percentage change compared to the baseline scenario. The table below shows the percentage changes compared to the baseline together with the share of exports in each sector. The share of gas and oil sector's exports is very close to zero, thus the increase shown in the graph in the exports of gas Georgia in terms of level is minimal.

**Figure 4-6 Changes in EU exports to Georgia by sector.**



Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

**Table 4 Percentage changes in sectoral exports of the EU**

	Partial CIS 1	Partial CIS 2	Full CIS FTAs	share in total exports
Agriculture	-5.14	77.84	90.94	1.51%
Processed Food	0.56	55.11	62.95	10.19%
Textiles and Apparel	79.99	80.21	91.56	2.06%
Extraction	59.89	61.4	75.21	0.07%
Oil	30.88	32.59	86.32	0.00%

Gas	6.07	6.1	271.93	0.00%
Light Manufacturing	49.49	49.44	57.46	18.20%
Heavy Manufacturing	39.13	39.03	48.3	47.88%
Utilities and Construction	-1.38	-0.92	0.49	0.77%
Transport and Communication	0.57	1.18	1.56	10.17%
Public Administration	-0.47	0.35	1.51	2.41%
Other Services	0.96	1.71	79.99	6.72%

Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

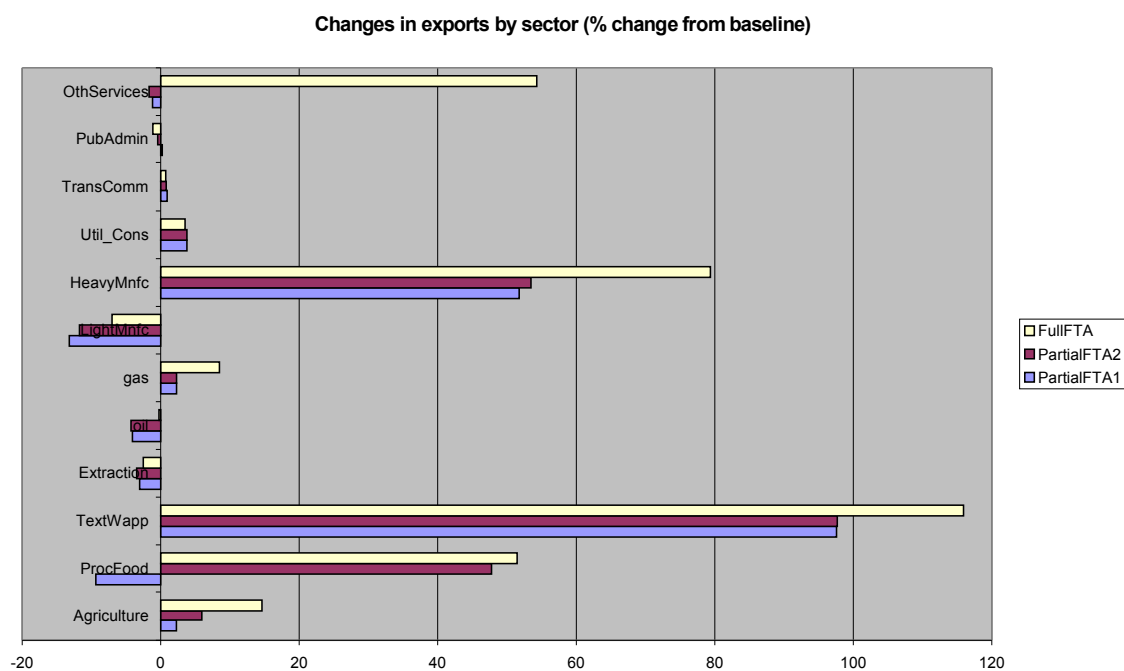
Figure 4-3 shows percentage changes in exports of Georgia by each sector towards the EU. Similarly to the case of EU exports in services, an important increase would occur in other services exports if trade would be liberalised between the EU and the CIS in these sectors.

While there would be a reduction in exports of oil, extractions, and light manufacturing under all the different FTA scenarios. In some other sectors, such as in processed food reductions would occur under certain FTA scenarios.

The most pronounced increase would occur in the textiles and apparel sectors. Under the first and second scenarios, the increase would be 97% and would be around 116% in case of full liberalisation. Exports in heavy manufacturing would increase by 52-53% under the two first scenarios and by 79% in case of full liberalisation. Increase in exports of processed food would take place under the second and third FTA which would incorporate elimination of agricultural tariffs.



**Figure 4-7 Changes in Georgian exports to the EU by sector.**



Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

Table 5 shows the percentage changes in sectoral exports together with the share of each sector in total exports towards the EU in the baseline. Although the most important increase would occur in the textiles and apparel sector with exports to the EU increasing by 116% under the full FTA scenario, this sector only represents a small share of exports in total exports, only 1% of exports occur in these sectors.

**Table 5 Percentage changes in sectoral exports of Georgia**

	Partial CIS 1	Partial CIS 2	Full CIS FTAs	share in total exports
Agriculture	2.26	5.93	14.62	4.91%
Processed Food	-9.36	47.77	51.47	9.13%
Textiles and Apparel	97.58	97.68	115.92	1.07%
Extraction	-3.04	-3.48	-2.51	8.51%
Oil	-4.08	-4.28	-0.25	1.46%
Gas	2.28	2.28	8.21	0.00%
Light Manufacturing	-13.2	-11.84	-7.04	2.90%
Heavy Manufacturing	51.76	53.45	79.37	23.50%
Utilities and Construction	3.78	3.59	3.16	1.75%

Transport and Communication	0.93	0.8	0.73	17.05%
Public Administration	0.23	-0.43	-1.14	19.83%
Other Services	-1.18	-1.69	54.29	9.90%

#### **4.4 Other Macroeconomic Results**

In this section other macroeconomic results, such as changes in wages and GDP are discussed. These results are summarized in Table 4.6 and Table 4.5 below. Georgia would have an increase of 1.18% in its GDP under the full FTA scenario which is shown in Table 4.6. This increase is very similar to the average increase in the CIS.

Georgia would experience an increase in wages for both the skilled and unskilled workers. This increase would be somewhat higher than those reported for the CIS average for the wages of skilled workers where 1.64% increase would occur. The increase in Georgian wages for unskilled workers would be around 1.35%.

**Table 4.6: Macroeconomic results from Full FTA (in %)**

	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>
Change in GDP	0.18	1.195	1.18
Unskilled worker wage	0.26	1.56	1.64
Skilled worker wage	0.24	1.47	1.35

Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

The results with regards to the effect on other macroeconomic variables of the more realistic scenarios of trade agreements are summarized in Table 4.7 below. These results are different in magnitude and represent smaller increases than the full FTA scenario. The first scenario would result in a small, 0.24% increase in the GDP while the second scenario would have a slightly higher positive effect.

Both skilled and unskilled workers in Georgia would experience an increase in their wages similarly to the full FTA scenario although the effects would be lower. The changes in wages in Georgia would be higher than those experienced by workers on average in the CIS or in the EU. The increase in wages in Georgia

would be higher for unskilled workers and lower for skilled workers under all three FTA scenarios.

**Table 4.7: Macroeconomic results from Partial 1 & 2 trade agreement**

	<b>Partial 1 trade agreement</b>			<b>Partial 2 trade agreement</b>		
	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>
Change in GDP	0.12	-0.13	0.24	0.10	-0.35	0.67
Unskilled worker wage	0.18	0.22	0.77	0.18	0.16	1.16
Skilled worker wage	0.16	0.32	0.49	0.15	0.36	0.85

Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

#### **4.5 Terms of Trade Effects**

The table below shows terms of trade effects in the case of full free trade agreement with liberalization not being limited to only agriculture and manufacturing products but also services trade and technical barriers. While the EU would have small terms of trade improvement amounting to about 0.11%, the CIS on average would experience 0.83% deterioration and the terms of trade deterioration would amount to 0.69% in the case of Georgia.

**Table 4.8: Terms of trade results from Full FTA (in %)**

	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>
Terms of trade effects	0.11	-0.83	-0.69

Source: Model simulations. Note: All results are reported as percentage change compared to baseline.

The terms of trade effects for the two other forms of trade liberalisation are presented in the table below. Georgia again, similarly to the full FTA case would experience a terms of trade deterioration however it would be slightly lower under the first two FTAs than under full FTA liberalization. The decrease in terms of trade would be slightly smaller in magnitude under the first and second scenarios than the CIS average terms of trade changes. On the other hand the terms of trade gains for the EU would be significantly much smaller than for Georgia and always positive.

**Table 4.9: Terms of trade results from Partial 1 & 2 trade agreement**

	<b>Partial 1 trade agreement</b>			<b>Partial 2 trade agreement</b>		
	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>	<b>EU</b>	<b>CIS</b>	<b>Georgia</b>
Terms of trade effects	0.09	-0.63	-0.5	0.10	-0.76	-0.67

## 5 Conclusions

In this study we explore the economic effects of potential measures to liberalize trade between the European Union and Georgia. In so doing, we have a Computable General Equilibrium Model, CGE Model, based on the most recent version of the GTAP data base, i.e. GTAP 7, which is benchmarked to data from 2004. Our CGE model follows recent research in trade theory in taking differences in underlying industry specific market structures and elasticities into account. Furthermore, the model incorporates estimated non-tariff trade barriers to trade in services, stemming from industry-specific gravity equation, which enhances the analysis of the service sector. The results are compared to a baseline which incorporates recent developments in the trade policy environment, i.e. the phase out of ATC, enlargement of the EU and CIS accessions to the WTO. The analysis takes agricultural liberalization, liberalization in industrial tariffs, and liberalization in services trade as well as trade facilitation measures into account.

The EU is a very important trading partner for Georgia. On the other hand, Georgia is only a very small trading partner for the EU compared to other countries. Furthermore, CIS as a region represents only a relatively small share of EU trade. As a consequence of this asymmetric relationship the effects of an FTA between the EU and the CIS would have asymmetric effects on the EU and Georgia. The impact of an FTA would be more pronounced for Georgia and rather marginal for the EU.

Only a rather limited income effect would occur in the EU as a consequence of the FTAs while the income effect in Georgia would be higher in magnitude under the full FTA scenario. While Georgia would experience a very small, negative income effect under the first FTA scenario, a positive but small income effect under the third and a somewhat higher positive effect under the full FTA, the effect for the EU would be small but positive.

The change in GDP on the other hand would be positive for both regions the effect being much higher for Georgia under all the three different scenarios. The highest GDP increase for Georgia would take place in case of a full FTA while the change in GDP would be significantly smaller under the first FTA.