EXPORT PERFORMANCE OF TRANSITION COUNTRIES

by

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(Under the Direction of Lewell F. Gunter)

ABSTRACT

This study reports the results from the estimation of an export determination model for former Soviet Union and Eastern European transition countries, for 2005-2011. We present model results from a sample of 28 transition countries and results after excluding five resource rich countries from our sample. We found that closer proximity to Europe had a positive impact on exports from countries and that Foreign Direct Investment (FDI) had larger impacts on exports of resource rich countries. We also concluded that internal trade-related infrastructure of port quality and technological advancement play important roles in exports of transition economies.

INDEX WORDS: Determination, Export, Foreign Direct Investment, Natural Resources, Port Quality, Supply, Transition Economies

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In Loving Memory of My Father.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

1.1. Purpose of Study

The correlation between a country's export performance and the growth rate of its economy has been an important point of research for many years. According to the supporters of well-known export-led growth hypothesis (ELGH), positive externalities of exports can be important determinants of growth in a country. Back in 1817, David Ricardo proved theoretically the positive impacts of trade for both countries[1] even in a case when one country had a complete advantage over another in both goods. Contemporary evidences for this perspective can be observed in the studies of Krueger (1979), Michalapolous and Joy (1975), Helpman and Krugman (1985).

The economic growth of the Asian tigers between the early 1960s and 1990s is an often cited example where a strong export orientation resulted in rapid and significant economic growth. Increased production of technology-intensive and innovative products fostered the rate of economic development in the region to a considerable degree. Export-led growth can also result from development of natural resources. Resource rich transition countries, like Azerbaijan and Kazakhstan, provide examples of this. Although economic growth rates differ between countries, a positive relationship between exports and economic development is common. On the

[1] David Ricardo's model is now familiar as two countries, two goods and a single input (labor) model.

other hand, countries with import substitution strategies have shown less satisfactory growth performance of economy (Krueger, 1979).

A rich literature analyzing differences in the economic progress of transition economies since the early 1990s has developed, including some studies of differences in the trade performance of transition economies. These studies often focus on early year differences in privatization, economic, and legal policies and examine how these differences have affected economic growth since then. Differences in growth rates of GDP and trade in transition economies continue to be observed many years after the initial transition policies were put in place.

While some countries opened up to the world markets and allowed domestic producers to participate in international competitions others did not put much effort on the foreign market globalization. Variation in the growth rate of exports was one of the reasons why some countries overcame transition in a short time span and joined European Union, while others are still experiencing difficulties of shifting to a market economy. Shortly after the collapse of Central Planning System, Eastern European countries adopted liberalization and market-oriented trade strategies by increasing exports and globalizing to European markets. This type of export oriented strategy differed from the gradualism approach to the transition, which was the main strategy for the most of FSU countries[2].

We focus on recent differences in export performance of transition countries and use recent research on trade facilitation policies and new data on export costs to examine the effect of domestic export costs and external costs to markets on the exports of transition countries. At the same time, productive capacity and domestic demand along with potential market demand

[2] Excluding Baltic States

are also included in our study. Our focus is on growth in exports rather than growth in GDP, but we are partially motivated by the relationship between the two. Our analysis is going to focus on specific group of transition countries: Former Soviet Union and Central and Eastern Europe countries. In our study we will try to clarify the reasons why the differences continue to exist and what are the main determinants of these variations. Along with traditional export growth determinants we will try to analyze the impact of the specific factors which are related to our sample of transitions.

1.2. Problem Statement

Domestic costs and external export costs to markets can affect a transition economy's export growth and transition process to a market economy. Better understanding of the impacts of these export determinants on the trade performance and their role in market-oriented policies can be of a positive impact in facilitating exports of the transition country groups. Impacts of export supply capacity, export demand, and competitiveness on the export performance of transitions can help researchers, policymakers and governments to explain "Why do some transitions do better than others, in terms of export and economic growth?"

The location factor may have also be an issue that requires special attention in explaining the export growth of transition economies. In this respect, the importance of global integration (mostly to European Union) and foreign market access factors can be useful in facilitating the export growth of certain transition economies. This problem can be particularly related to resource independent Central Asia and Transcaucasian countries, which are experiencing difficulties in accessing foreign markets access and integrating to the global market.

1.3. Objectives

The major objectives of this study are to estimate the impact of the factors described above on export growth in transition economies. We will examine the relationship between export supply capacity factors and export growth as well as how export demand and costs to major export markets shape export growth in transition economies. Specific objectives are:

- To describe the differences in economic and export growths among the various transition economies in terms of natural resource endowments.
- To identify the issues that cause differences in growth of exports in transition countries
- To build an econometric model that estimates the impact of various trade costs on the exports of transitions
- To analyze the impact of location factor, economic unions and trade agreements on the growth of exports in transition economies.

1.4. Organization

The remainder of the thesis is divided into five chapters. In Chapter 2 we describe the concepts of Export Growth in Transition Economies. Chapter 3 presents the summary of previous studies and literature review. Chapter 4 describes the theoretical framework which we applied, empirical estimation techniques and data. In Chapter 5 we present empirical results and Chapter 6 summarizes the study, concludes and outlines the limitation of study.

CHAPTER 2

EXPORT GROWTH AND TRANSITON ECONOMIES

2.1. Definition of Transition Economies

This work analyzes the export growth performance of 28 transition economies in Central and Eastern Europe, Former Soviet Union (FSU) and Mongolia. As a transition economy, we define countries which used to have a centrally planned system of economic strategy and regulation and are currently are changing to a free market system. In order to focus our analysis on the differences of the specific selected region and countries, we exclude from our sample some other transition economies among which are: Cuba, China, Vietnam and some other transition economies in Africa.

It is helpful to group the economies into Former Soviet Union and non-former Soviet Union countries. Within each category, we further subcategorize countries based on location, which may be correlated with the economic growth. FSU countries are subcategorized to Baltic, confederation of independent states, Transcaucasia and Central Asia[3] groups. Non-FSU are subcategorized as: Central/Eastern Europe and Balkan groups (Table 2.2.). This type of categorization will be helpful to analyze and determine the differences in economic condition and export growth between FSU and Non-FSU countries, and also account for differences between specific sub-groups of each category.

[3] Even though Mongolia was not an official Soviet Union State, its close economic and political relationship leads us to subcategorize it as an exception in FSU category.

The first reforms of the transition process go as far back as the 1960s in Hungary, and the 1980s in China. Certain countries in our sample (Hungary, Czech Republic, and Poland) implemented market-oriented reforms earlier than others, but most of the countries experienced the process of transition after the collapse of Soviet Union into 15 independent states.

Depending on various internal and external economic, political, and global factors the transition process for different countries of our sample might have occurred over different periods of time. While some of these economies have successfully completed the process of transition to a free market economy and are among high income OECD members (Czech Republic, Estonia, Hungary, and Poland), some others (Tajikistan, Kyrgyz Republic, and Armenia) are still experiencing difficulties in transitions.

2.1.1. Resource Rich Economies

One of the specific features of our sample is the presence of certain countries with the high level of total natural resource rents as a percentage of GDP. These countries are the mainly oil abundant countries (Azerbaijan, Kazakhstan, Russia, mineral and mining rich Uzbekistan, and forest and mineral rich Mongolia).

Table 2.1 presents the seven countries in our sample with the highest total natural resource rents as a percentage of GDP in declining order. The first five countries are the ones we regard in our study as resource abundant countries. Other countries in the sample have not been included in the table because of too low total natural resource rent as percentage of GDP (lower than 5%).

Table 2.1. Resource rich countries in the sample

Country	Average of Total Natural Resources rents as a % of GDP (2005-2010)
Uzbekistan	70
Azerbaijan	58
Kazakhstan	35
Russian Federation	31
Mongolia	28
Kyrgyz Republic	6
Macedonia	5.5

All other countries in the sample have less than 5% share of total natural resources rents in GDP.
Source: The World Bank Dataset

An important feature of resource rich countries in our sample is the fact that they differ significantly from the other countries in their subgroups by economic and export growth rates and thus their inclusion in our estimation may unduly influence our results. For instance, oil-rich, exporting country, Azerbaijan differs from other Transcaucasia countries (Georgia and Armenia) in terms of export and economic growth. This was caused by an increase in the exports of natural resources as well as increased foreign direct investment inflows to the country during the beginning of 2000s. The same can be related to Kazakhstan when compared to other Central Asian economies. An increased export of mainly natural resources in this country is an important component of its economic growth not available to other countries in the region. According to UN Comtrade database, crude petroleum oils accounted for 61% of exports of Kazakhstan in 2010.

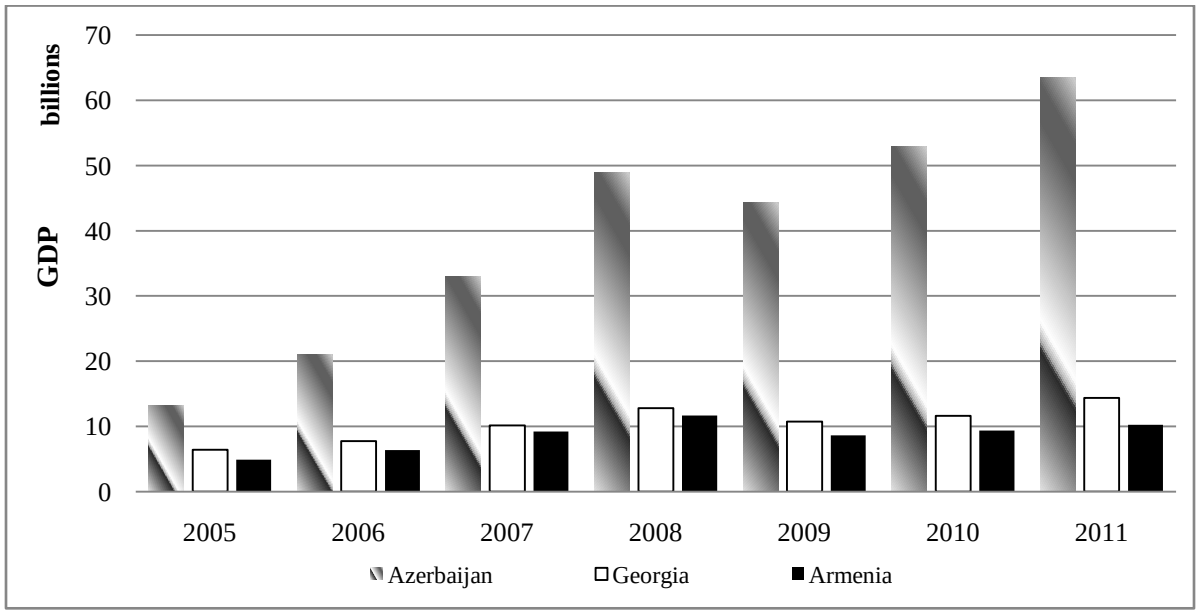
Uzbekistan can be considered as a special case of transition economies as well. In his study, Zettelmeyer (1999) tries to analyze the special Uzbek growth puzzle and states the importance of minerals, mining, and cotton exports along with self-support in energy, which alleviated the difficulties of transition process. Thus, it can be argued that favorable initial

condition in terms of wealth of natural resources helped this country during the first years of transition.

From Figures 2.1 – 2.4 we can observe how resource rich countries differ from the other representatives in their region in terms of exports and GDP.

Figures 2.1 and 2.2 differentiate Azerbaijan from its neighboring Transcaucasia countries in terms of GDP and exports respectively for the years of 2005 - 2011. Figures 2.3 and 2.4 show how resource rich transitions in Central Asia (Kazakhstan and Uzbekistan) differed from their neighbors in terms of the total GDP and exports for the same time period. This is the first reason why we are going to regard these five[4] countries further in our study as resource abundant countries and as a special case to the transition paradigm.

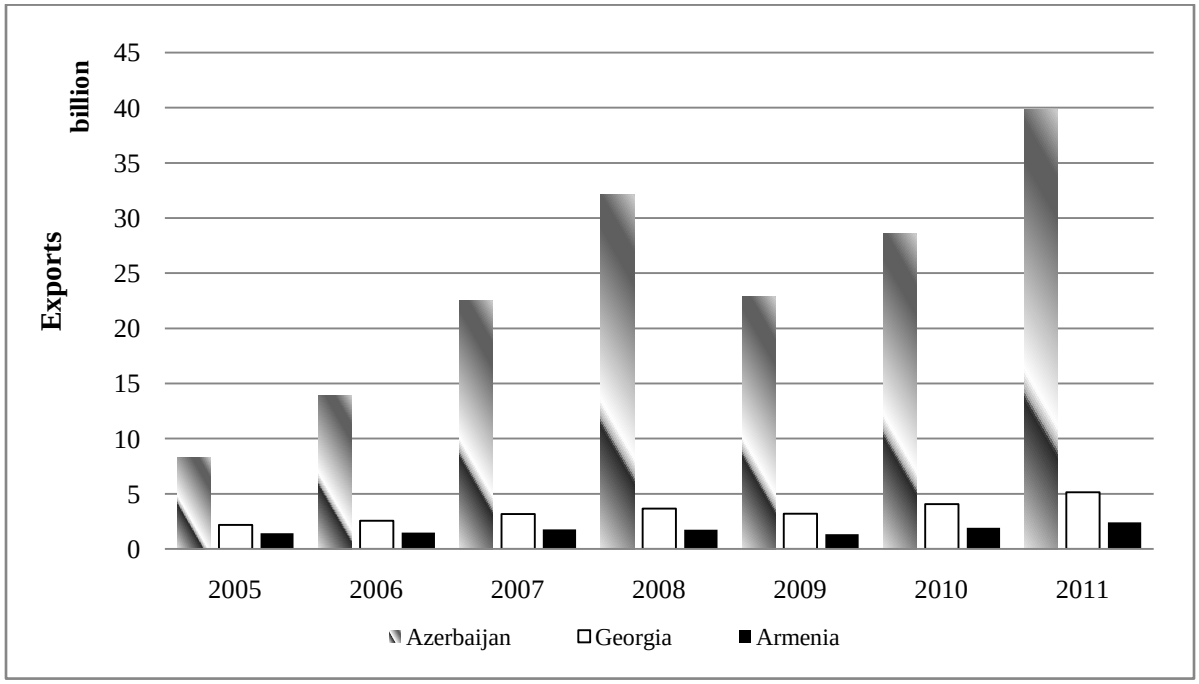
Figure 2.1. GDP of Transcaucasia Countries (2005-2011)



Source: The World Bank Database

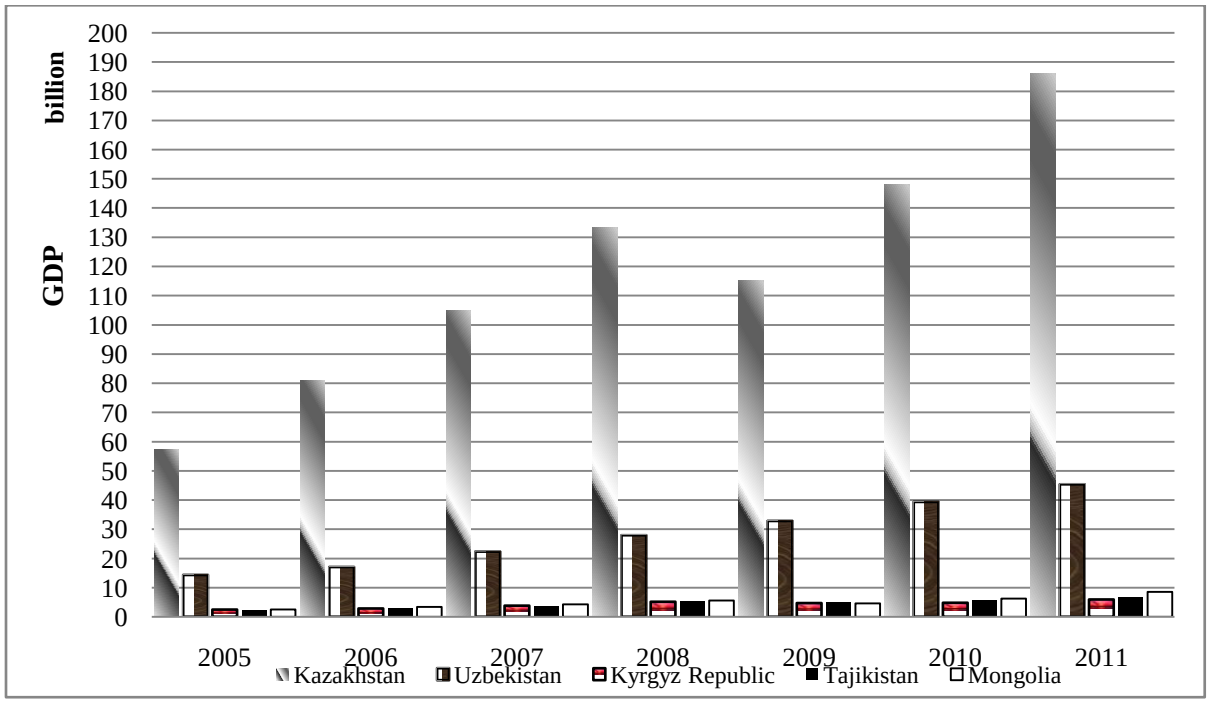
[4] Azerbaijan, Kazakhstan, Mongolia, Russian Federation and Mongolia – countries with the average of Total Natural Resources rents higher than 25 percent of GDP.

Figure 2.2. Exports of Transcaucasia Countries (2005-2011)



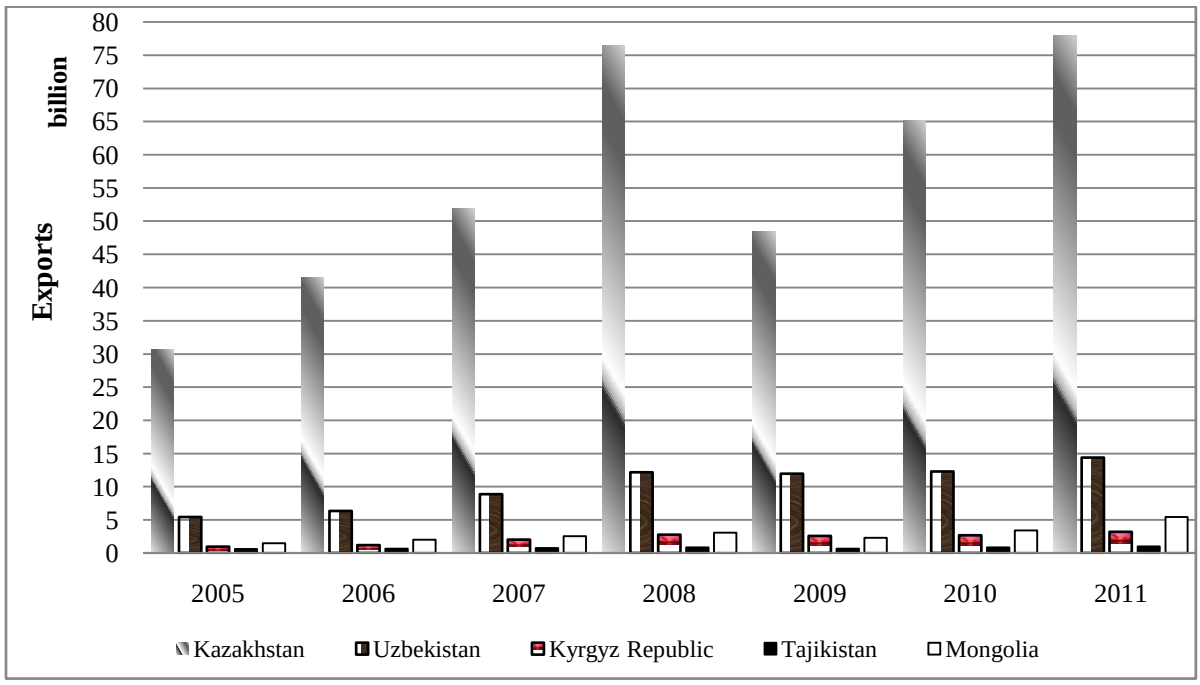
Source: UN Comtrade

Figure 2.3. GDP of Central Asia Countries (2005-2011)



Source: The World Bank Database

Figure 2.4. Exports of Central Asia Countries (2005-2011)



Source: UN Comtrade

2.2. Exports in Transitions

The transition economies came out from a mainly common system of government planning and central ownership around the same time but they differed in resource endowments, location and market access, political factors, and the level of transparency. These types of heterogeneities affected foreign trade and export growth from country to country and from region to region. Even though initial conditions were crucial during the transition process, however, types of after-transition trade reforms were also important in causing the variations in export and economic performance.

It is useful to classify transition trade reforms into rapid and gradual liberalization reforms Kaminski, Wang, Winters (1996); Svejnar (2007); Bjornskov, Potrafke (2011). In the study by Kaminski, Wang, and Winters (1996), Central and Eastern European transitions and Baltic States are mostly regarded as the main representatives of the rapid liberalization. As a

result of a rapid liberalization: quick market oriented macroeconomic policy changes, openness of the firms to operate in international markets, and the elimination of export barriers have been undertaken. Contrary to quick liberalization reforms, most of the FSU countries (excluding Baltic States) undertook a gradualist approach to the transition process, which restricted domestic producers to successfully participate in international competition and improve trade performance through globalization to the foreign markets. Differences in undertaken political, economic, and above mentioned trade reforms caused a big variation in the time it took countries to transfer their economies from centrally planned to free-market economies (Kaminski, Wang, and Winters (1996)).

2.2.1. Baltic and other FSU Export Trends

The Baltic States were among the first countries that implemented rapid liberalization reforms and market-oriented improvements. These are among the transitions with highest GDP growth for the years from 1994 – 2003 with the average increase of 96% in the region. Being post-Soviet states and thus depending on central planning to a high degree, having poor infrastructure for foreign trade and economic growth did not restrict the Baltic States from efficiently and rapidly transferring to market oriented economies.

Shortly after the collapse of Soviet Union, Baltic countries made considerable economic reforms and foreign market orientation. Baltic States increased exports during the first decade of transition by 186%, 137% and 86% for Estonia, Lithuania, and Latvia, respectively. At the same time, considerable economic growth in this group of FSU countries was also observed. Currently, Estonia[5] is considered as one of the member states of European Union and has diversified export and service sectors. These numbers are higher than any other Former Soviet

[5] High income: OECD country

state's GDP and export growth for the given time period. Exception can be Azerbaijan, which, as a result of abundant oil reserves, attracted foreign direct investments, and considerably increased petroleum exports and thus inflated both exports and economic growth.

Estonia is an example of the rapid economic transition of the Baltic States. Contrary to other FSU members, Estonia implemented a rapid market-oriented and liberalization reforms right after the collapse of Soviet Union. From agriculture-oriented exports Estonia transformed to more industrial sector, globalized to the neighbor economies (particularly Scandinavian markets and European Union) and improved overall export and economic performance. Estonia is currently considered as one of the most transparent economies with the lowest corruption rate in the region and holds the 14th position in the economic freedom ranking in the world (Andrus Anspir, Prime Minister of the Republic of Estonia). In recent years the main export products for Estonia are: machinery and equipment, wood and paper, and textiles and food products. Estonia's average annual export growth from 1994 to 2011 was 19% and with an average annual GDP growth for the same time period of 15%.

On the other hand, export performance and economic growth of transition economies in Central Asia and Transcaucasia was not as high during the first stages of transition and some of them are still experiencing problems of transferring to market-economy. This can be particularly related to natural resource poor countries, such as: Tajikistan, Georgia, and Armenia.

Figure 2.5 illustrates average growth of exports and GDP for the countries in our sample. Countries have been arranged in declining order from the highest average export growth.

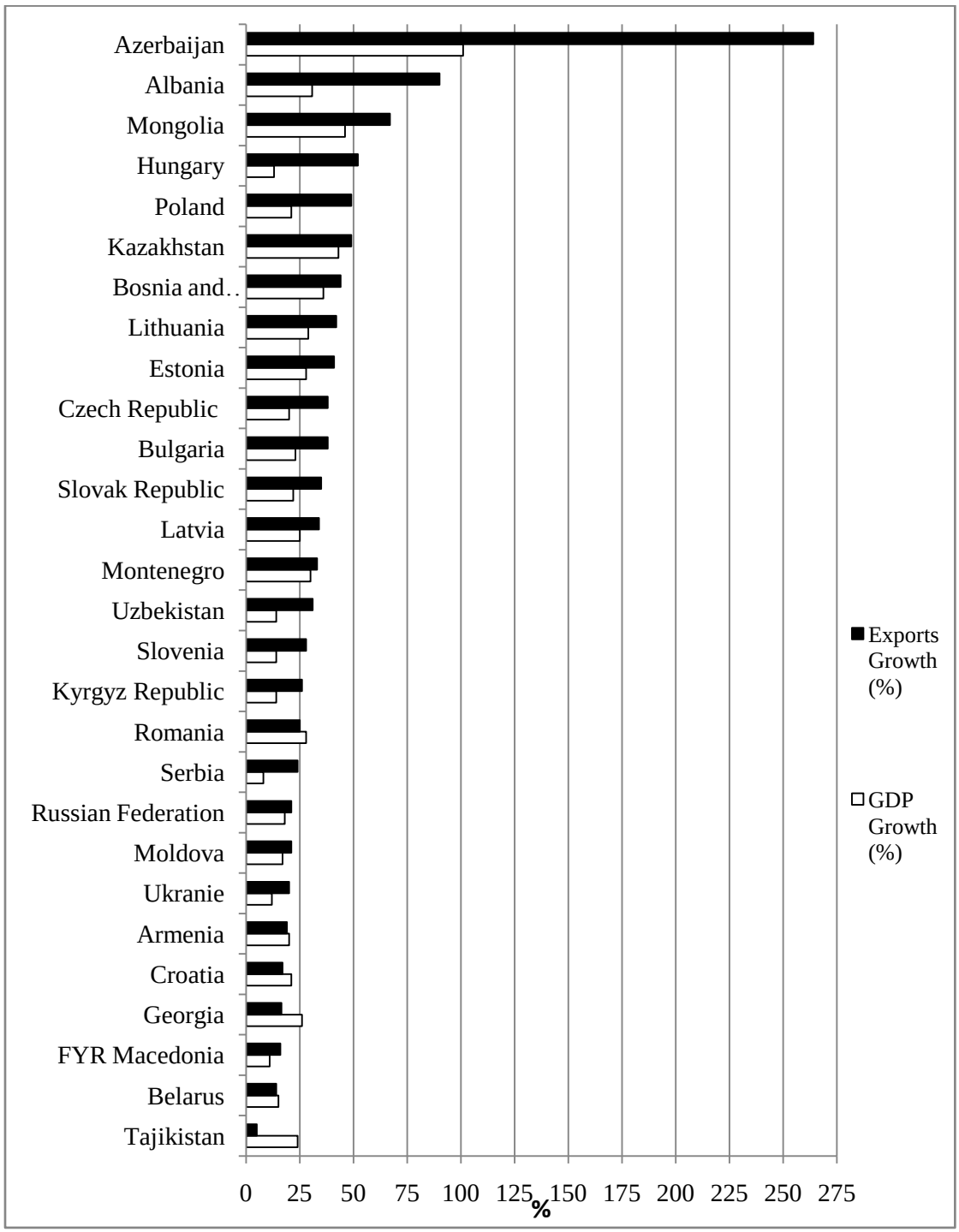
The highest export growth countries in Figure 2.5 can be classified into two groups: Natural Resource Exporters[6] and Good Export Growth performers: The first group includes

[6] Stared countries in the Figure 2.5

Azerbaijan, Kazakhstan and Mongolia. After the breakup of central planning system, these countries increased the level of exports by means of abundance of natural resources and integrated into the global markets to at least some extent. Particularly, increased oil and gas exports from Azerbaijan and Kazakhstan increased export levels in these countries and led to positive changes in economies. In addition to this, low starting points of exports and GDP in 1994 is another argument why these countries have such high export growths. The second set of high export growth countries in Figure 2.5 includes the Baltic countries (Estonia, Latvia, and Lithuania), CEEC (Czech Republic, Poland, and Hungary) and some Balkan States (Bosnia and Herzegovina, and Albania). Early levels of exports and GDP for these countries were medium (Baltic States, and Balkans) or high (CEE countries). However, successful implementation of policies, trade-related reforms as well as proximity to Scandinavian and EU markets positively impacted export and economic growth in these countries.

In the lower part of the figure 2.5 we can see less successful transitions in terms of export and economic growth. These are mainly FSU countries and the former Yugoslav Republic (FYR) of Macedonia, Tajikistan, Belarus, Georgia, Armenia, Ukraine, and Moldova. These are the countries that used to have a medium (Belarus, Ukraine, FYR Macedonia) or low (Tajikistan, Armenia, Georgia, and Moldova) beginning GDP, and they did not perform well in terms of export and economic growth from 1994 through 2011 in comparison to other transitions.

Figure 2.5. Export and GDP Growth (1994 – 2011)



Source: UN Comtrade and World Bank WDI

In our study, we focus on recent data and analyze how different trade policy and economic reforms affected export and growth variation in these recent years. While certain countries are classified as high income OECD countries, others are among low income countries, which are still experiencing difficulties in transferring to a market economy. The differences are clear in Table 2.2. which shows export and GDP data for 2005-through 2011.

Table 2.2 shows that export growth from the 2005-2007 base to 2009-2011 ranged from 12% to 105% for the included transition countries. The largest percentage increases were for resource (mainly oil) rich countries or countries with very low levels of exports in the base period.

Differences in export growth can be observed between the transitions located in proximity to European Union and ones more distance. It can be stated that in addition to the fact that CEE and Baltic States implemented early trade facilitation reforms they also had a chance of taking the advantages of closeness to the European Union. On the other hand, transition economies of Central Asia have had difficulties of accessing European Union's market hence foreign trade with their boarder countries, China and Russia, account for the main part of their exports.

In this respect, the purpose of our analysis is estimate the impact of different export trade-related factors on the export performance of transitions. Initial conditions, geographic location, market access and reforms all play roles in the export performance of transition economies. We will try to analyze these factors and utilize the results to give a clearer picture of impact of export growth to policy makers, governments, and researchers.

Table 2.2. GDP and Export Growth for Selected Transition Countries 2005-07 to 2009-11							
Location[1]		Average GDP 2009-11[2]	Average Exports 2009-2011[2]	Exp/GDP	% Change GDP from 2005-07[3]	% Change Exports from 2005-07[3]	Change in Exp/GDP from 2005-07
Non-Former Soviet Union Countries							
CE	Poland	473.8	200.0	0.42	33	42	0.03
CE	Czech Rep.	209.5	137.5	0.65	37	35	0.02
CE/Balkan	Romania	167.5	43.9	0.26	29	12	-0.05
CE	Hungary	135.7	112.9	0.83	15	25	0.07
CE	Slovakia	91.1	72.7	0.81	28	23	0.03
Balkan	Croatia	62.7	23.4	0.37	33	17	-0.08
Balkan	Slovenia	52.5	32.9	0.63	29	22	0.02
Balkan	Bulgaria	49.9	28.1	0.59	44	47	0.02
Balkan	Serbia	41.1	13.9	0.34	32	53	0.05
Balkan	Boznia and Herzegovina	17.2	6.3	0.37	33	29	-0.01
Balkan	Albania	12.3	3.6	0.29	31	50	0.04
Balkan	Macedonia, FYR	9.5	4.3	0.45	38	30	0.03
Balkan	Montenegro	4.3	1.5	0.35	48	25	-0.07
Former Soviet Union Countries							
Eur CİS	**Russia**	**1522.6**	**436.1**	**0.29**	**50**	**31**	**-0.05**
Eur CİS	Ukraine	139.6	70.1	0.50	23	32	0.03
CA	**Kazakhstan**	**149.5**	**63.8**	**0.43**	**85**	**54**	**-0.08**
TC	**Azerbaijan**	**53.5**	**30.4**	**0.57**	**138**	**105**	**-0.11**
Eur CİS	Belarus	53.2	30.7	0.58	41	36	-0.03
Baltic	Lithuania	41.6	26.1	0.63	51	45	0.06
CA	**Uzbekistan**	**39.1**	**12.8**	**0.33**	**118**	**85**	**-0.05**
Baltic	Latvia	28.1	13.8	0.49	55	44	0.07
Baltic	Estonia	20.6	16	0.78	20	27	0.07
TC	Georgia	12.2	4.1	0.34	50	57	0.01
TC	Armenia	9.4	1.9	0.20	38	18	-0.03
CA	**Mongolia**	**6.4**	**3.7**	**0.58**	**80**	**76**	**-0.03**
Eur CİS	Moldova	6.1	2.5	0.41	38	47	-0.06
CA	Tajikistan	5.7	0.9	0.16	90	29	-0.08
CA	Kyrgyzstan	5.1	2.8	0.55	65	90	0.09

CE – Central Europe; BA – Balkan, Eur CIS – European Commonwealth of Independent States; TC – Transcaucasia; CA – Central Asia.

[2] Current USD (billions).

[3] Percentage change from 2005 - 2007 average to 2009- 2011 average

Natural Resource rich countries are in bold

Source: Export Data is from UN Comtrade database and GDP data is from World Bank's Database

2.3. Major Export Partners

In order to find the theoretical relation between transportation cost and exports in our sample, we analyze each county's export performance and major export partners for the years from 2006 - 2011 and come to the following conclusions[7]:

1) Major export partners between FSU (excluding Baltic States) and non-FSU (plus Baltic States as an exemption) groups of countries tend to differ very much. While main export partners for FSU countries continue to remain Russia, China, and the neighboring countries of the same subgroup, non-FSU countries mostly tend to trade with the European Union member states.

2) Major export partners within each sub-group (Table 2.2.) are mostly similar with the exemption of oil rich countries: Azerbaijan, Kazakhstan, and Russia. In other words, countries within the sub-groups[8] tend to trade with the same markets as a major export partner.

3) Exemptions for the transition country paradigm are oil rich countries of FSU (Azerbaijan, Kazakhstan, and Russia). These transition countries export natural gas and oil to the port countries of Europe as a point from which natural resources can be distributed all over the world. In this respect, the first destination for the exports of natural gas and oil of Azerbaijan is Italy[9]. On average 63% of total exports of Azerbaijan from 2006 to 2011 accounts for Italy. For Kazakhstan major export partners are Italy (for oil and natural gas exports), increasingly China and Russia as the main partners. As the main export partners for Russian Federation can be considered Netherland and Italy, which on average account for more than 60% of total exports

[7] For individual country analysis we used UN COMTRADE and EU Bilateral Trade and Trade with the World Data sources
[8] See Table 2 for the sub-groups of FSU and Non-FSU states
[9] The exact route of pipelines can differ but mostly they go through: Azerbaijan-Georgia-Turkey-Italy

from 2006 to 2011. Germany and China are also among the top export partners of Russian Federation.

2.4. Aggregate Export Products

In this section, we will briefly discuss the main products of export in transition economies covered in our study. Information on the export shares of the countries are based on HS4 product classifications. We exclude the export structure of oil rich FSU countries. We start with Baltic countries structure and then follow by other FSU countries finishing with the export structures of CEE and Balkans. In general, the export structure of FSU[10] and non-FSU countries is markedly different. Raw materials, gold, metals, cotton, and agricultural products account for the most part of the exports of FSU countries with some machinery and equipment exports in Belarus and Ukraine. We cannot say the same about the CEEC, Balkan, and Baltic regions. These last three groups of countries have very diversified export structures, which include significant amounts of technology advanced exports.

The main export products of the Baltic region are: machinery and equipment, wood and wood products, metals, food products, and beverage. According to the CIA World Factbook, more than 20% of exports of Estonia and 10% of Lithuanian exports are machinery and electrical equipment. This fact supports the fundamental changes in export orientation of Baltic region after the breakup of Soviet Union.

In contrast to the Baltic countries, Central Asia and Transcaucasia countries mostly export raw materials and agricultural products. The main export products of Central Asian transitions (Tajikistan, Kyrgyz Republic, Uzbekistan, and Mongolia) are minerals, textile, wool, gold, and agricultural products. Based on the UN Comtrade data source, for the year of 2010,

[10] Exemption is Baltic region

40% of Kyrgyz Republic's exports was gold, about 20% was agricultural products and others including wool, garment, and textile. At the same time, more than 50% of Tajikistan's exports for 2010 were unwrought aluminum and more than 30% agricultural products and raw cotton. As far as Mongolia's exports are concerned, 33% coal; briquettes, 32% gold content, iron ores, zink ores and molybdenum ores are about 14 %, gold 9%.

Uzbekistan's export structure differs from the neighbors to a certain extend. For the last few years, it increased the share of cars and machinery exports. Along with cotton, raw minerals and gold, Uzbekistan tends to diversify its exports, so that in 2010, about 10% of total exports of Uzbekistan (approximately $500 million) were cars, machinery, and electrical equipment.

Transcaucasia countries[11] mainly export raw materials, gold and gold content and different metals. It is important to mention that the total exports of Georgia and Armenia are not that big and therefore, 9% car exports in Georgia[12] in 2010 make only $240 million contribution in dollar amount. For comparison we can mention that this is less than 2% of Estonian total exports for the same year.

Ukraine has a huge potential for production and export of technological goods, however, most portion of its exports consists of ferrous and nonferrous metals, fuel and petroleum products, agricultural products, and some share of machinery and transport equipment. Similarly, Belarus exports mainly consist of minerals, metals, agricultural products and some portion of its exports are composed of machinery and equipment production. Production of agricultural equipment and machinery has been inherited from the Soviet Union to these countries, however, has not been improved too much after the breakup of Central Planning system.

[11] Not including Azerbaijan

[12] Even though Georgia exports cars, it does not mean that they are produced in this country. The most part of these car exports goes to Azerbaijan and were acquired from Europe countries. However, due to the fact that the last country before they enter to Azerbaijan is Georgia, in statistics it is being written as Georgian exports to Azerbaijan.

Export structure for Central and Eastern Europe region very diversified and involves technological production. For instance, Czech Republic, Poland, Romania, Hungary, Bulgaria, Croatia, Slovak Republic, and Slovenia export not just metal and mineral products, but mostly industrialized products, innovative and technologically improved machinery and electrical equipment, transportation equipment, plastics, and rubbers.

Balkan region countries export diversified products and natural resources. Even though the total export amounts for some Balkan States are not as high as CEE countries, nevertheless, the composition and diversification of products tend to vary and involve technology and production.

CHAPTER 3

PREVIOUS STUDIES

In this section, we discuss contributions to the literature on export growth, export facilitation, and transition countries' exports.

3.1 Traditional Export Modeling

In this section we will first discuss traditional export models. These studies can be considered as foundation to export supply and demand modeling. Traditional export models used time series data on a group of countries, using a double-log econometric specification and using each country's GDP and relative price level as the main determinants of exports.

Khan (1974) estimated the impact of relative prices in determining export demand and supply of developing countries for the period of 1951-1969 and concluded that the prices do play an important role in the determination of export performance of developing countries. Econometric model specifications that Khan used in his estimation were widely applied in later literature. This study applied two stage least squares estimation technique on the following models:

Export Demand:

$$LnX_{it} = \beta_0 + \beta_1 (LnPX_{it} - LnPW_t) + \beta_2 LnW_t + \varepsilon_{it}$$

Export Supply:

$$LnX_{it} = \beta_0 + \beta_1 LnPX_{it} + \beta_2 LnPD_{it} + \beta_3 LnY_{it} + \varepsilon_{it},$$

where X_i quantity of exports of country i, PX_i is the unit value of exports of country i, PW_i is world price level, PD_i domestic price level of country i, W is the real world income and Y_i is the the real income of country i.

Warner and Kreinin (1983) is an important contribution to the literature on foreign trade modeling. Even though the basic structure of this work is similar to Khan (1974), two dissimilarities are: first, they estimated the impact of variation in exchange rate and in the expected exchange rate on the real trade flows, and second, they estimated an import model with and without petroleum products. After applying OLS technique in the model, Warner and Kreinin concluded that the exchange rates and the prices of exports in competing countries are important determinants of exports.

Warner and Kreinin (1983) used quarterly data for the period 1957:1-1970:4 (fixed exchange rate period) and 1972:1-1980:4 (floating exchange rate period) on the following export demand equation:

$$LnX_i = \beta_0 + \beta_1 LnYW_i + \beta_2 LnPx^{LC}{}_i + \beta_3 LnE_i + \beta_4 LnE^{P}{}_i + \beta_3 LnP^{FC}{}_{comp} + \varepsilon_{it},$$

where X_i is the country's export volume, YW_i is the weighted average GDP of 23 major importing countries facing country i, $Px^{LC}{}_i$ is the export unit value index, 1974=100, E_i is the effective exchange rate index of the currency in country i (1975=1), $E^{P}{}_i$ is the expected rate of change in exchange rate, and $P^{FC}{}_{comp}$ is the average export price of 64 competing countries expressed in foreign currencies, weighted by each competing country's exports into each of the markets.

Santos-Paulino (2010) is another contribution to the export studies, which expands on the traditional approach of regarding export growth as a function of GDP and relative prices in the country. This work focuses on determinants of a higher value added of a country's exports. An Export Productivity index measures how much value is added to the export products of a

country. According to Santos-Paulino (SP), countries with the higher export productivity index exports more technologically progressive products rather than the country with the relatively lower index. In his model, SP estimates the importance of human and physical capital, economic freedom and technology-intensity on the export productivity along with traditional export determinants. This study applies panel data for a sample of 74 countries over the period 1990-2004.

$$EXPY_{it} = \alpha_i + \delta_t + \beta_1 LRER_{it} + \beta_2 LPCY_{it} + \beta_3 LHC_{it} + \beta_4 EF + \beta_5 D_C + \beta_6 D_T + \varepsilon_{it} ,$$

where α_i and δ_t are country-specific and year-specific effects of panel data, $EXPY_i$ is export productivity for country i, *RER* real exchange rate, *PCY* denotes real GDP per capita, *HC* is human capital, *EF* index of economic freedom, D_C and D_T are dummies for technology intensity level, and *L* is the natural log of variables.

Santos-Paulino used an export productivity index (*EXPY*) developed previously by Hausmann et al. (2007), a quantitative index, which sorts traded goods in terms of the level of value added to them. In other words, higher *EXPY* for the country implies increasing share of higher value added products in the export basket of the country. On the right hand-side, along with the traditional export growth determinants(Real Exchange Rate and real Per Capita GDP), Human Capital controls for the level of education and skills in the country. According to results, the human capital index has positive and significant sign, implying the positive relation between education and skills level of the country and its increasing higher value added of a country's exports. The Economic Freedom Index (Heritage Foundation) controls for the effect of economic and political liberalization on export performance and also has positive contribution to export productivity. Dummies for medium and high engineering intensive technology (D_C and D_T) were created and classified by SP based on the taxonomies of export structure by sector. SP

concludes that institutional features and relative prices do play a role in determination of export productivity in the country.

Works of Khan, Warner and Kreinin and Santos-Paulino play an important role in the structure of our approach as they include important base determinants of export growth, which we will take into account in our model. Therefore, our model will refer to the frameworks used in these studies when we will construct the export framework for the economies of transition.

Redding and Venables (2003) measure the effects of external market access and internal supply capacity on export performance and economic growth. They applied standard bilateral gravity models and concluded that economic geography and sources of supply significantly matter for the economic development of a country, even after controlling for a variety of other determinants of income per capita.

Fugazza (2004) emphasized the importance of supply-side conditions on export performance, particularly in Africa and the Middle East. Using quantile regression techniques, Fugazza estimated the impact of foreign market access and internal supply-side characteristics on the export performance of a country. He estimated exports as a function of GDP, population, internal transportation costs, a competitiveness index, and a constructed variable used as a proxy for foreign market access. He found that internal infrastructure and quality institutions along with international market access can be considered key determinants of export development.

Krugman and Venables (1995) made a key contribution to the literature of trade and globalization, which is directly correlated with the scope of our study. Their analysis evaluates the relation between globalization and gains from trade and the importance of transportation costs. According to the results of this study, economic integration and transportation costs play an important role in determination of trade performance of the countries. They also concluded

that the level of integration between countries should be balanced to the extent which maximizes the gain from unification for the both sides.

Krugman and Venable's work can be considered of special interest for our research, as we try to estimate the impacts of external costs to the major markets as well as the impact of economic integration on the export growth of transition country. In this respect, our theoretical approach will partially refer to Redding and Venables (2003; 2004), Fugazza (2004) and Krugman and Venables (1995) studies. At the same time we will define the importance of traditional export models to our analysis.

Works by Krugman, Redding, Venables, and Fugazza contribute to our study by helping to define the importance of 'External Costs to Markets' in the theoretical framework. Based on the structure of traditional export studies, we can emphasize the importance of country's productive capacity, domestic demand, potential market demand and external costs to markets in determining the export growth.

3.2 Trade Facilitation Literature

A recent topic in the export literature is the study of the impact of trade facilitation policies on export performance. These studies mainly differ from traditional export growth models by estimating the impact of specific trade, economic or political reform policies on a country's export performance. 'Trade facilitation' has mainly been defined as increasing the quality of the processes that lead commodities to be exported or imported and improving the efficiency of transactions associated with trade. The most important issue for researchers in this sphere has been how regulations, procedures and trade policies should be organized within countries in order to reduce trade-associated costs and increase trade amounts and efficiency.

Analysis and quantitative techniques used in the works of McCallum (1995), Obstfeld and Rogoff (2001), Iwanow and Kirkpatrick (2007), and Wilson, Mann and Otsuki (WMO) (2004) are significant contributions in trade facilitation studies. Most of these works apply a common methodological approach that measures export performance with respect to trade costs based on Tinbergen's (1962) model.

McCallum (1995) presented a case study on the impact of the Canada-US border on regional trade patterns. Using gravity type models based on Tinbergen (1962), Linneman (1966) and others, McCallum defines the regional trade between Canada and United States as a function of each region's GDP and the distance. Then the impact of preferential trade blocs on the trade patterns was estimated. Author concludes that "even relatively innocuous Canada – US boarder" have significant impact on continental trade patterns.

The study by Iwanow and Kirkpatrick (2007) estimates the impact of trade facilitation reforms, infrastructure, and quality of reforms indicators on export performance. This work applies a standard gravity model in the estimation process with panel data from 2000 to 2004 for 78 countries. They construct a trade facilitation variable from data on hidden export barriers and irregular payments in exports and imports. They also construct aggregate indexes of trade facilitation using components of World Bank's Doing Business Dataset. They use indicators of 'Trading Across Border' and 'Enforcing Contracts' categories of Doing Business dataset. They conclude that positive impacts of trade facilitation reform do exist; however, transportation, communication and quality of internal reforms are no less important.

Wilson, Mann, Otsuki (2004) (WMO) estimated the relationship between trade facilitation and trade flows across 75 countries during 2000 and 2001. This work takes into account the importance of four categories on trade flows: port efficiency, customs environment,

regulatory environment, and service sector infrastructure. Each of these categories is an aggregate index of indicators from The Global Competitiveness Report dataset. All four factors were positive and statistically significant in trade-flow estimation.

Allen Denis and Ben (2007) estimated the impact of cost of exporting, domestic market entry and international transport cost on export diversification in developing countries. They used data from the World Bank's Doing Business Database in the study and implemented cross-sectional analysis of a single year 2005. Their estimation was based on a set of 118 countries, and they found that decreases in the cost of exporting or international transport cost resulted in increased export diversification. They also concluded that lower domestic market entry costs can enhance export diversification.

Manchin and Francois (2007) use bilateral trade flows data for the years 1988 – 2002. In their study of institutions, infrastructure, and trade they concluded that both institutional quality and the availability of developed transport and communications infrastructure are important determinants of exports. They also concluded that the impact of colonial and geographic factors and trade preferences on exports is significant.

In her study, Krueger (1980) addresses the issues of importance of trade policies and their relation to economic development. According to results of this study, internal effectiveness and international market-oriented trade policies have a higher rate of return for the economic growth of Least Developed Countries than other possible policy changes. Krueger emphasizes "the enormous difficulties and costs of achieving the institutional and other policy changes that economic growth requires".

Chris Alexander's and Ken Warwick's (2007) study of governments, exports, growth and globalization, defines the positive impacts of exporting, openness and globalization on the

economic performance of the country. Even though empirical estimations were not implemented in this research, it very strongly notes certain policy improvements for the governments in favour of exports and growth. According to the authors, eliminating international trade barriers and setting foreign direct investment and government policy in the in the context of various market failures can lead to efficiency gains from increased specialization.

Sanjaya Lall's study (1997) of the impact of selective policies on export performance discusses the successful experience of the 'Asian Tigers' during 1990-94, and draws conclusion from it for other developing countries. The importance of two types of policies was mentioned in this work: 'permissive' policies leading to strong macroeconomic and business environment and 'positive' policies designed to have more of direct impact on product and factor markets, including export promotion, technological improvements, human capital, trade and foreign direct investment. Even though Lall emphasizes certain limitations of selective policies, in general, he concluded that with the absence of these policies export growth and diversification can be 'slow and shallow'.

Works by McCallum, Kirkpatrick, and WMO make an important contribution to the scope of our study in terms of defining the significance of trade-related infrastructure, internal transportation and transaction costs in the export performance of transition economies. Based on the literature of trade facilitation mentioned above, we will define the main data sources and variables which can be used for measuring the importance of trade facilitation in the exports of transitions.

3.3 Exports of Transition Economies

The main characteristic of this literature is about applying export models and trade facilitation studies to a sample of transition countries. These works estimate the impact of different policies and reforms on the export and growth performance of transition economies. They also define 'successful' and 'poor' reformers in terms of trade expansion and economic growth.

Most of the transition country export studies (Hamilton and Winters (1992); Harvylysyn and Al-Atrash (1998); Kaminski (1996); analyze Central and Eastern Europe countries' (CEEC) and other transitions export performance by using bilateral gravity types of models. Findings of these studies indicate that removing central planning limitations on foreign trade and implementing market-oriented reforms and policies increased the amount and shaped the structure of foreign trade in transition economies. Among the changes from such policies were increased exports of CEEC and improved foreign market integration to European Union.

Kaminski, Wang and Winters (1995) study of export performance of transition economies of Europe and Central Asia concluded that early transition implementation of stabilization and liberalization reforms had a positive effect on a country's export performance. This study emphasizes the necessity of removing export controls over import controls in the short-run; however, in the long-run an "open import regime, realistic exchange rate and privatization are necessary to assure the efficient transmission of market signals and sustained growth". Kaminski explains export performance of transitions as a function of exogenous determinants (initial conditions, geography and market access), macroeconomic policy and trade policy reforms. An important conclusion of this study is that macroeconomic stabilization and price liberalization

which is associated with the removal of export controls can lead to an improvement in transition country's export performance.

Damijan, Rojec and Ferjancic (2008) studied export performance of CEEC[13] and certain EU member transition economies from 1994-2004. By applying a gravity model and following the empirical approach of Redding and Venables (2003, 2004), and Fugaza (2004) this work estimated the effects of foreign/EU market access and internal supply capacity on export performance. According to their results, contribution of foreign market access versus supply capacity to export performance is almost equal for all CEEC countries in the sample. The importance of FDI in creating economic potential for future export growth is another important conclusion of the study.

Havrylyshyn and Al-Atrash (1998) analyze the progress of foreign trade in transition economies in terms of foreign market integration and trade openness. From their pooled regression analysis for two years (1995 and 1996) they find significant positive impacts from trade openness and geographical proximity of transition economies to EU countries. Geographical diversification to the European Union has a bigger positive impact for the countries with more advanced economic reforms.

Besedes (2010) investigated structural variation of trade in 17 transition economies from 1996 to 2006. Besedes considered exports of three types of products: homogenous goods, reference priced goods and differentiated goods. He estimated export shares of each type of good and intensive and extensive margins. Most countries increased the share of differentiated goods in exports during this time-period; however a few increased the share of homogenous goods. Larger economies tended to increase the number of countries they export to, while richer

[13] The study classifies CEEC countries into two groups: ones which joined European Union in 2004 (CEEC-8: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) and the group which joined in 2007 (CEEC-3: Bulgaria, Croatia, Romania).

economies increased the amount of products, especially in homogenous and reference priced goods.

CHAPTER 4

MODELING EXPORTS OF TRANSITION COUNTRIES

4.1. Introduction

The export models discussed in Chapter 3 focus on different aspects of export determination, but share a common framework that includes variables representing excess supply and excess demand. Excess supply determinants in these models include factors related to the productive capacity and cost in each exporting country and domestic demand for the goods that country can produce. Excess demand determinants include measures of the potential markets for the exporter's goods including costs of getting exports to the market.

We summarize the most important categories of excess supply and demand variables used in previous studies in Table 4.1 and discuss the variables we use in this study.

Excess supply factors in export models include measures of the productive capacity of the economy, domestic demand, and domestic costs of exporting goods.

Productive capacity measures the ability of a country to produce goods that could potentially be exported. Productive capacity variables include measures of the size of economy, resources to produce goods, and characteristics of the business and legal structure of economy, which may impact production efficiency.

Excess supply also accounts for the domestic demand for the goods produced in the country. Domestic demand is associated with market characteristics of the country including measures of the size of the economy, population and income.

The final elements of excess supply are related to costs associated directly with exporting goods. This includes such factors as internal transportation costs, internal export transaction costs, and the costs associated with the quality of trade-related infrastructure.

Excess demand represents the potential demand for exports from a country. The primary elements of excess demand in the export literature measure characteristics of the economies of relevant markets a country may sell to and costs of getting exports to these markets. In bilateral models which focus on trade between pairs of individual countries, excess demand variables are specified for each individual market. Export performance models, such as this study, use aggregates of excess demand characteristics to measure the demand for the country's exports.

Table 4.1 Theoretical Framework for Export Model

Excess Supply			
Resources	Productive Capacity	Domestic Demand	Domestic Export Costs
	Size of economy Population	Size of Economy Population	Internal transportation costs
	Natural resources	Income	Internal export transactions costs
	External Investment Human capital		Port costs
Instit-utions	Business Climate Technology		
Excess Demand			
	External Costs to Markets	Potential Market Demand	
	Transportation costs to markets	Size of market	
	Import transactions costs in relevant markets	Relative prices and exchange rates	
		Income in market	

4.2. Empirical Model

4.2.1. Excess Supply Variables

The first category of excess supply variables is productive capacity. Following the literature discussed in Chapter 3, we include measures of the size of the economy proxied by GDP, productive resources including population and natural resources, and the variables associated with the business climate and technology level of the country.

We expect GDP and population to be positively associated with the productive and export capacity of the economy. Higher levels of GDP and population, however, are also associated with increased domestic demand, which decreases the amount of goods available for export. Given that these variables are associated with higher production and higher domestic demand, their expected signs in an export determination model are unclear. These variables are included in previous models, however, and GDP has been consistently found to be positively associated with higher levels of exports, when higher levels of population are usually associated with the lower levels of exports, ceteris paribus.

Heterogeneity in natural resource endowments can be a deterministic factor for the country's export performance. All other factors held constant, countries with the big amount of natural resource reserves have higher potential to export and grow their economy in comparison to ones with fewer resource endowments. This can be relevant to our study as we have countries in our sample which increased their exports at the beginning of the century as a result of extraction of oil and gas natural resources. We expect the natural resource variable to have positive impact on the country's export performance.

External investment is another deterministic element of the productive capacity of the country in our model. External investment factor reflects how attractive the country is to foreign

investors. We choose to proxy this factor by Foreign Direct Investment (FDI) inflows into the county. Given that FDI is associated with the higher capital inflows into the country and increased business activities, we expect it to positively impact the country's productive capacity. Some of the previous studies consider this variable as an important element of technological and macroeconomic environment of the country. Based on the UNCTAD (Trade and Development Report, 2002), FDI can improve country's competitiveness in foreign markets by increasing the technological structure of the exports.

It is expected that countries with more market-oriented institutions, transparent business climate, and with the higher efficiency of regulations are expected to create better conditions for domestic producers to operate. Consistently with the previous literature (Francois and Manchin, 2006), (Sonora, 2008), (Fugazza, 2004) we estimate the impact of business conditions, competitiveness environment and market transparency factors in our study. We apply interchangeably economic freedom and competitiveness indexes to control for the business climate and efficiency of institutions factors. Based on results from previous literature (Francois and Manchin, 2006), (Sonora, 2008), (Fugazza, 2004) and on theoretical consistency, higher economic freedom in the country, transparent competition policy and market oriented institutions are expected to motivate business climate and have a positive impact on the productive capacity and export performance in the country.

The competition variable is an index from the European Bank of Reconstruction and Development (EBRD) that combines several measures of policies that impact the business environment of a country. This index ranges from 1 (little policy improvement toward increasing competitiveness) to 4 (representing the norms of industrialized market economy). This variable is intended to capture country-specific progress in transitions in terms of competition policy and

institutional development. Competitive environment and market oriented institutions can be important determinants of productive capacity in transition countries. For this determinant, we use index variable from European Bank of Reconstruction and Development (EBRD) for assessment of competitiveness policy efficiency.

As an alternative to the 'competition' variable we use the index of economic freedom from the Heritage Foundation, which aggregates ten separate economic freedom areas grouped into four pillars: rule of law, limited government, regulatory efficiency, and open markets. This index is similar to the 'competition' variable in terms of attempting to account for differences in internal market efficiencies in a country but econometrically is less correlated with other exogenous variables in the model. Economic freedom index is expected to control for institutional transparency and market openness. Considering a high level of positive correlation between 'competition' index variable and index of 'economic freedom' variable, we use them interchangeably.

Another element of productive capacity in our model is the efficiency of legal system in the country. Transparent legal system, less bureaucratic and less corrupted legal system of regulation in the country can be deterministic factor in the country's internal efficiency, business climate, and productive capacity. We try to measure the impact of transparency in legal system on the export growth of transition economies.

We select to use the 'number of procedures to enforce a contract' variable from the World Bank's Doing Business Dataset, as a proxy for measuring the transparency of legal system in the country. Keeping everything else constant, a lower number of procedures to enforce a contract is associated with the less bureaucracy, better legislation system, and higher productive capacity in the country. Therefore, we expect the 'number of procedures to enforce a

contract' to be negatively correlated with the productive capacity and export growth in the country.

One more determinant of productive capacity category that we use in the study is the level of technology adoption in the country. Higher level of technology adoption can be an important factor in the production process and lead a country to export more technologically advanced goods. On top of this, higher technology adoption can also increase efficiency of production, decrease operational, processing and transaction costs and bring competitive advantage to the exports.

We use the 'technological readiness' index from the Global Competitiveness Index Report as a proxy for technology. This is an aggregate index, which ranges from 1(worst) to 7 (best) and is expected to control for the impact of information and communication technology use and technology adoption in the country. It is expected to positively impact exports of the country and higher levels of 'technological readiness' is associated with the lower trade costs, better productive capacity, and higher levels of exports, ceteris paribus.

Human capital is another determinant that characterizes country's productive capacity. Higher level of human capital is associated with the improved education system and higher productive capacity in the country. Education data is limited for the observation years and the countries in our sample, however, and we did not include an education variable in our model.

Another category of excess supply variables is domestic export costs. Following to the previous literature mentioned in Chapter 3, as well as relevance to our study, we used measures of internal export costs and costs associated with the quality of trade-related infrastructure and ports as determinants of domestic export costs. We explored previous studies on export facilitation (Iwanow and Kirkpatrick (2007), Djankov (2006), Wilson, Mann, Otsuki (2003)) as

well as Global Competitiveness Index Report and World Bank's Doing Business Datasets in selecting the exact determinants for the domestic export cost group of variables.

As a determinant of internal export cost, we use the 'cost to export' variable from the Trading Across Borders group of World Bank's Doing Business Dataset. It includes the costs of exports ($US), ranging from packing at the warehouse to their departure from the port, costs of all documents, administrative charges and fees (excluding tariffs) for exporting a 20 foot container. It is expected to have negative impact on the exports of a country, as higher internal export fees do not tend to motivate exports of the country.

We select the 'cost to export' variable over two other available determinants in the same dataset 'time (days) to export' and 'number of documents required to export' due to the fact that it combines the features of both of the later indicators in monetary terms. First, it includes all documentation cost and thus, accounts for all the factors under 'number of documents' variable in monetary terms. Also, it covers the costs of inland transport handling, customs clearance and inspection, port and terminal handling which are the parts of 'time' indicator. Higher variation over time in 'cost to export', better relevance to our theoretical foundation and broader utilization in the previous literature (Djankon, 2008) leads us to select cost to export variable as an important part of our study.

We use 'port quality' index from the Global Competitiveness Index Report (GCI) as a domestic export cost factor in our study. It has been used in previous studies (Portugal-Perez, 2010), (Wilson, Mann, Otsuki (2003)) and is expected to measure the impact of the trade-related infrastructure on the export performance. It estimates the efficiency and quality of port facilities and how accessible they are in the country. We expect it to have a positive impact on the export

growth as better trade-related infrastructure is expected lessens internal costs and promote exports.

'Port Quality' is a sub-index of 'Infrastructure' pillar in GCI report. Following the previous literature, we select it over other sub-indexes and pillars of sub-indexes, such as 'electricity and telephony infrastructure', 'transport infrastructure', 'electricity and telephony infrastructure'. The main reason for selecting 'port quality' over other indexes is its direct relation to the trade-related infrastructure which is one of the main interests of this category.

4.2.2. Excess Demand Variables

The first group of excess demand determinants is external costs to markets. This group includes transportation costs to markets and import transaction costs in relevant markets. We used different studies mentioned in Chapter 3 (by Redding, Krugman, Venables, Fugazza) in selecting the data sources and variables for this group.

As transportation costs to relevant markets we select to use distance from the country to the major export market. Higher transportation cost is expected to have negative impact on exports. In other words, the proximity of major export markets can encourage exports through easiness and lower costs of foreign market access. Based on the discussion from Chapter 2, as a transportation cost for Central Asian countries we used the distance from the country to China or Russia. Following to Iwanow and Kirkpatrick (2007) for the rest groups of countries we used distance from Frankfurt as the proxy for transportation cost, as Frankfurt is being considered as the central point in Europe.

As a proxy for import transactions costs in relevant markets we use dummy variables for being a member of different economic unions or trade agreements. Following studies by Krueger

(1980), Redding and Venables (2003) and Fugazza (2004), we measure the importance of being a member of European Union and the impact of Central European Free Trade Agreement on export growth in the country. It is expected that being a member of an important economic union is associated with the better foreign trade relations and thus lower external costs to markets and higher exports. However, the relative signs of impact trade union variables can vary, depending on the members and conditions of trade agreement. Therefore, expected sign of being a member of trade agreements is unclear.

The second category of excess demand determinants is demand in the potential market. This group includes variables associated with the measures of the size of economy, relative prices and exchange rates, and income level in target markets. Two important variables we use as representatives of the potential market demand group are GDP in major markets and the real effective exchange rate.

GDP in major market is used as a proxy for the relative size of economy in potential market. We used the aggregated value for the GDP of the five main export markets for each country in the sample based on the weight they play in the country's exports. We expect the size of the major market associated with a country's export to positively impact the country's trade performance. Therefore, higher GDP in major markets is associated with the higher exports of the country, keeping everything else constant.

The real effective exchange rate (REER) (2007=100) was used as another determinant of potential market demand. We get the data for this variable from the Bruegel database, which is a European think tank specializing in economics.

This variable accounts for exchange rate change in each country in our model over the time span of our analysis. Increases in the value of a country's currency are expected to decrease

the potential market demand for the country's exports. We can expect the sign for REER to be negative, although in previous studies the significance level of this variable is often low.

4.3. Model Specifications

We started with a simple base version of the model and then added new variables to assess their impacts.

The base model was:

$$\ln(EX_{it}) = \beta_0 + \beta_1 \ln(GDP_{it-1}) + \beta_2 \ln(POP_{it}) + \beta_3 \ln(NatRes_{it}) + \beta_4 Distance_i + \beta_5 \ln(GDPMM_{it}) + \varepsilon_{it}$$

EX_{it} represents the value of exports of country i at time t. GDP_{it-1} denotes lagged gross domestic product, and POP_{it} represents country *i*'s population. Both of these variables are related to excess supply capacity and both are expected to have a positive impact on exports through increasing productive capacity and a negative impact on exports by increasing domestic demand. Consistently with the previous literature, we expected GDP and POP to have positive and negative impacts on exports, respectively. $NatRes_{it}$ controls for the natural resource endowments (total natural resource rents as a % of GDP) in the country and is considered an important supply capacity determinant and a positive impact on exports is expected for higher values of this variable. $Distance_i$ is an external market access cost determinant in the model and measures the natural log of distance for each country to the major export markets (in our model Germany, China, or Russia) and serves as a proxy for transportation cost. We expect the distance to have a negative impact on exports. $GDPMM_{it}$ is the population weighted average of gross domestic products of the five main export partners for the country i. It proxies the potential market demand in the major market and higher values of this variable are associated with the higher demand for the country's exports while ε_{it} is the error term.

Initial additions to the base model were the macroeconomic variables $REER_{it}$ which is the real effective exchange rate and FDI_{it-1} which is lagged Foreign Direct Investment inflows. We lagged FDI and GDP to help avoid endogeneity, which we will discuss later in this chapter.

The next specifications added some of the trade facilitation variables discussed in Chapter 3. These variables account for the impact of policies under control of government on exports. For these specifications we included 'competition' and 'economic freedom' indexes in the model along with other business climate factors.

We also expanded our model by adding the 'technological readiness' index from GCI report and the 'number of contracts' variable from World Bank's Doing Business dataset.

The final specifications add domestic export costs to the models. These are: 'export fees' and 'port cost' factors. These variables measures: fees for exporting a 20 foot container from each country and quality of internal trade-related infrastructure. We were concerned about endogeneity of export fees with the level of exports so we followed Djankov (2006) and used an instrumental variable approach to include 'export fees' in the model. Following Djankov we used export fees in neighboring countries as an instrument.

The most comprehensive model estimated was:

$$\ln(EX_{it}) = \beta_0 + \beta_1 \ln(GDP_{it-1}) + \beta_2 \ln(POP_{it}) + \beta_3 \ln(NatRes_{it}) + \beta_4 \ln(REER_{it}) + \beta_5 \ln(FDI_{it-1}) + \beta_6 ExportFees_{it} + \beta_7 PortCost + \beta_8 EconFreedom + \beta_9 ContractProced + \beta_{10} \ln(GDPMM_{it}) + \beta_{11} \ln Distance_i + \beta_{12} EU + \beta_{13} CEFTA + \varepsilon_{it}$$

$$ExportFees_{it} = \eta Z_{it} + \nu_{it}$$

Where Z_{it} is the average Export Costs for countries adjacent to country *i*.

4.3. Data

We employ data from multiple sources. 'Export fees' and 'contract procedures' comes from World Bank's "Doing Business Indicators". Export data comes from United Nation's COMTRADE database, 'technological readiness' and 'port cost' from Global Competitiveness Report (GCR), distances are from http://www.indo.com/distance/, language and other bilateral data are from the GeoDist datasets of Institute for Research on the International Economy (CEPII). Table 4.2 presents a summary of the main variables and data sources used in the study.

Table 4.2. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Source
Ln(exports)	196	23.36	1.62	20.21	26.97	UN COMTRADE
Ln(GDP)	196	24.05	1.51	21.41	28.13	World Bank WDI
Ln(population)	196	15.67	1.14	13.34	18.77	World Bank WDI
Ln(NatRes)	196	24.89	2.38	17.99	31.53	World Bank WDI
ln(FDI)	196	25.51	2.49	21.17	29.64	World Bank WDI
ContrProcedures	196	35.58	5.43	27	50	WB Doing Business
TechReadiness	196	3.45	0.75	1.97	5.49	Global Competitiveness Report
Competition	196	2.48	0.65	1	3.67	EBRD Dataset
EconFreedom	196	60.61	7.34	45	78	Heritage Foundation
ExportFees	196	7.21	0.49	6.21	8.36	WB Doing Business
PortCost	196	3.32	1.02	1.12	5.63	Global Competitiveness Report
Ln(GDPMM)	196	29.38	2.27	22.04	31.87	World Bank WDI
Distance	196	7.34	0.55	6.30	8.34	CEPII Dataset
ln(REER)	196	4.61	0.08	4.20	4.86	http://www.bruegel.org/datasets/
EU	196	0.33	0.47	0	1	European Union Web-site
CEFTA	196	0.25	0.43	0	1	CEPII Dataset

4.4. Estimation

Our empirical model includes a panel of the 28 transition countries listed in the Table 2.2 for the years from 2005 through 2011. The data period goes back only to 2005 based on the

availability of the Export Cost variable. We used Generalized Method of Moments (GMM) and GMM Instrumental Variables techniques for the estimation.

In our estimation we use the instrument variable GMM estimation technique based on Hansen (2000, Ch. 11), Hayashi (2000, Ch. 3) and Wooldridge (2002, Chapter 8) We chose GMM based on advantages of this approach for our model. First, GMM generates efficient estimates in the presence of heteroskedasticity of unknown form. This is the case in our panel data. After applying Breusch-Pagan / Gook-Weisberg tests we observed heteroskedasticity in our dataset. Even though standard IV estimators with the robust standard errors can be consistent, they are relatively inefficient. Second, efficient GMM has an advantage of consistency in the presence of arbitrary heteroskedasticity[14].

It is possible that 'export fees', carries a problem of endogeneity as higher exports in countries may lead to a high or low values of export fees. In this case, it can be correlated with the error term which under the usual OLS can lead us to the biased results. We use export fees of neighboring countries as an instrument for each country's export fees following Djankov (2006; 2010). Specifically we use the average value of export fees of the neighboring three countries, which will avoid us getting into the problem of selection biasness by using a single neighbor.

Both econometrically and theoretically our instrument is meeting both exogeneity and relevance conditions and was used in the previous studies (Djankov (2010)).

In addition to meeting the GMM test results[15] in STATA, we also apply Haussmann Endogeneity and Sargan-Hansen test. These tests significantly support the validity of the instrument used in the model.

[14] If heteroskedasticity in fact does not exist, then the GMM is 'no worse asymptotically than the IV estimator' (Baum, Schaffer; 2003).
[15] Tests are available in STATA with ivreg2, which is the special type of the GMM modeling.

In addition to the export fees variable there is a possibility of having an endogenity problem in GDP, FDI. This is the reason why we lagged these two variables in our estimation.

We considered the possibility of applying two other panel data econometric estimation techniques (fixed effect and random effect). However, due to the following reasons we did not use them in our study.

First, in fixed effect any time-constant variable will disappear from the model as a result of 'within transformation' process. In other words, "any time-constant explanatory variables are removed along with unobserved effect" (J. Wooldridge, 2006, Chapter 14, page 481). Therefore, we are unable to estimate the impact of distance variable on the export growth in our model which is considered as one of the essential determinants of 'external costs to markets'.

In addition, fixed effect and random effect econometric estimation techniques require that assumption of strict exogeneity of the explanatory variables to hold. In other words, idiosyncratic error terms in the model should be uncorrelated with each explanatory variable across all time periods. This can be questioned in our model. In order to avoid this and other previously mentioned econometric problems, we choose to apply the GMM estimation technique.

CHAPTER 5

RESULTS

Results for various specifications are presented in Table 5.1 and Table 5.2. Table 5.1 includes all 28 countries listed in Table 2.2., and Table 5.2. excludes five "resource rich" countries (Russia, Kazakhstan, Azerbaijan, Uzbekistan, and Mongolia) where the annual natural resource value of production represents more than 30% of GDP. In general, results are robust throughout the estimations and adding variables step-by-step assists this conclusion. We estimate both groups of countries since the presence of large quantities of natural resources available for export could have effects on exports that can't be accounted for by other variables in the model.

Both in the base model and as we add other determinants, based on the previous theory and theoretical relevance, estimated signs and significance levels of the important variables do not change considerably. This can be considered as a type of robustness check for the empirical estimation.

In order to better communicate the results, we interpret them consistently with our theoretical framework structure in Table 4.1. We start from 'excess supply' group of variables and then interpret results of 'excess demand' determinants. Differences from the "all country" sample to smaller sample can be observed from the tables; therefore, we will present the interpretation of sample groups separately.

5.1. ‘All Countries’ Estimation Results

The “all country” estimation results reported in Table 5.1 will be discussed first. When all countries are included in the estimation, coefficients for the lagged GDP and Natural Resources variables are consistent and robust across all six specifications and they indicate positive and statistically significant effects on exports. Positive and significant sign of GDP and Natural Resource variables also indicate that the transition countries with larger economies and greater endowments of natural resources tend to export more.

The population variable is negative and in two out of six specifications highly significant. This is consistent with our theoretical foundation, as we were expecting negative relation between the domestic demand and the growth of exports. The coefficient of the population variable across specifications is not robust and is not significantly different from zero in four of the models. This is consistent with mixed results for this variable in previous work.

Contrary to domestic demand variable, demand in the major exporting market stays significant as we add other control variables to our base model. Positive and significant parameter on the GDP of major export partners indicates the importance of the demand factor in the main markets. In other words, increase in demand in the export markets promotes exports of transition economies.

Coefficients for distance from major markets are negative, significant, and of similar magnitude across all specifications reflecting the export depressing impact of higher transportation costs. Highly significant parameter of this variable throughout the specifications indicates the robustness and importance of transportation cost for the export performance in transition countries.

As we add macroeconomic variables into the model, magnitude and significance level of the previous variables do not change highly. We can observe some decrease on the impacts of the previous variables; however, all variables stay of the same high significance as in first specification.

The real exchange rate coefficient was insignificant across all specifications, as it was in previous studies as well (Santos-Paulino; Fugazza), it is not being omitted from the studies with the purpose of avoiding the omitted variable bias. In our study it is used as a proxy for relative prices and exchange rates, which are the subcategory variables for the potential market demand.

Lagged Foreign Direct Investment was included in five of the specifications and the coefficients were positive, significant, and of approximately the same magnitude across all of them. Consistently with expectations, higher FDI inflows promote exports of countries through utilization of low-cost human capital and natural resources.

As we add business climate and later internal export cost variables into our model all the previous determinants keep their signs and significance levels, with an exception of population variable which gets insignificant.

Measure of economic competitiveness was significant and positive in the specifications. Index of economic freedom had positive and significant sign in one out of three specifications. Business environment and technology determinants: contract procedures and technological readiness both have expected negative and positive impacts respectively.

Internal export costs were insignificant but coefficient on port cost variable is positive and significant indicating the importance of trade-related internal infrastructure on the export growth. Possible reasons for the insignificance of ‘export fees’ can vary and they go beyond the scope of this study. It is likely that the very small monetary amount of this variable and relatively

small number of observations cause a negligible impact on the growth of exports. After including additional countries or years (when available) possibility of getting significant parameter estimates on export fees variable can increase.

The last specifications include dummies of being a member of EU and Central European Free Trade Agreement. Being an EU Member state is estimated to have a positive and significant impact on the export growth in transition countries. On the other hand, Central European Free Trade Agreement estimated to have negative and significant impact on the exports, which is primarily because of the fact that the members of CEFTA trade organization are comparatively less developed (in terms of GDP and exports) representatives of Central and Eastern Europe. As these countries expand their economy and meet the requirements of EU membership, they become no more the members of CEFTA.

5.2. 'Non Resource Rich' Countries Estimation Results

Even though the estimation results when the 5 "resource rich" countries are excluded are similar to those for all countries a few exceptions exist. The GDP coefficients remain positive and significant across all specifications but the magnitude of the coefficients increases somewhat with the smaller number of countries. The natural resource coefficients remain positive and significant for 5 of the 6 specifications for the smaller group of countries but their magnitudes are about 1/3 smaller than estimates for the full set of countries. When we drop resource rich countries distance stays highly significant for both groups of countries but larger negative impact on exports for non resource rich countries appears from results. At the same time, FDI gets less significant for simpler models and generally has lower impact on exports. This suggests a larger

impact of FDI for countries with abundant resources. Results for the 'export fees' variable were almost identical for the two country groups.

As we mentioned earlier in the study, "resource rich countries" can cause distortions to our model which can lead to getting less exact parameter estimates for the usual transition paradigm. This can be observed from the parameter estimates of the transportation variable which are lower when we include resource rich countries in our sample. One of the possible explanations for this might be due to oil and natural gas being major exports in resource rich countries and since they are being exported by pipelines and large tankers, distance has a smaller impact on oil exports.

This can be one of those reasons, why the coefficient on transportation cost gets higher, indicating that as we take out resource rich countries from our sample, purer impact of external costs to markets we obtain.

The significance level for business climate, technological readiness, transportation costs to markets, drop in some model specifications when resource rich countries are excluded. Positive and significant parameter of port cost becomes less significant but remains positive as it was expected.

Significance level of technological readiness and two dummies of import transaction costs in relevant markets decreases but remains significant in specifications, as we exclude resource rich countries. One of the possible reasons can be the decreased number of observations, leading to higher standard errors in the estimation results.

Table 5.1. Estimation Results - All Countries						
Dependent Variable: *Ln(Exports)*						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
lag(GDP)	0.886***	0.762***	0.564***	0.653***	0.599***	0.554***
	(0.039)	(0.057)	(0.066)	(0.063)	(0.057)	(0.066)
ln(NatRes)	0.153***	0.147***	0.159***	0.139***	0.147***	0.158***
	(0.021)	(0.021)	(0.019)	(0.018)	(0.019)	(0.018)
ln(Population)	-0.157***	-0.108**	0.009	-0.063	-0.039	-0.006
	(0.046)	(0.049)	(0.061)	(0.057)	(0.061)	(0.068)
lag(FDI)	-	0.131***	0.208***	0.217***	0.221***	0.231***
		(0.045)	(0.042)	(0.042)	(0.041)	(0.041)
ContrProcedures	-	-	-0.025***	-0.029***	-0.022***	-0.023***
			(0.005)	(0.005)	(0.005)	(0.005)
TechReadiness	-	-	0.127*	-	-	0.147**
			(0.071)			(0.068)
Competition	-	-	0.143**	-	-	-
			(0.059)			
EconFreedom	-	-	-	0.007**	-0.007	-0.008
				(0.003)	(0.005)	(0.005)
ExportFees	-	-	-	0.081	0.062	-0.022
				(0.142)	(0.135)	(0.129)
PortCost	-	-	-	0.063**	0.067*	-
				(0.031)	(0.035)	
ln(GDPMM)	0.078***	0.068***	0.035***	0.036***	0.022*	0.026**
	(0.011)	(0.012)	(0.011)	(0.011)	(0.012)	(0.011)
Distance	-0.412***	-0.406***	-0.274***	-0.318***	-0.306***	-0.275***
	(0.073)	(0.072)	(0.067)	(0.095)	(0.082)	(0.079)
ln(REER)	-	0.303	0.128	0.133	0.241	0.2-3
		(0.351)	(0.308)	(0.363)	(0.316)	(0.312)
EU member	-	-	-	-	0.279***	0.197**
					(0.089)	(0.093)
CEFTA	-	-	-	-	-0.104	-0.137**
					(0.066)	(0.065)
Constant	1.441*	-0.551	1.085	0.589	1.643	1.382
	(0.811)	(1.816)	(1.606)	(1.792)	(1.571)	(1.561)
Observations	196	196	196	196	196	196
R-squared	0.958	0.961	0.971	-	-	-
Root MSE	-	-	-	0.2847	0.2711	0.2725

Standard errors in parentheses

*** p<0.01,**p<0.05,* p<0.1

Table 5.2. Estimation Results – Non-Resource rich Countries						
Dependent Variable: *Ln(Exports)*						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
lag(GDP)	0.911***	0.833***	0.591***	0.649***	0.556***	0.546***
	(0.064)	(0.074)	(0.085)	(0.075)	(0.082)	(0.084)
ln(NatRes)	0.116***	0.146***	0.141***	0.152***	0.167***	0.177***
	(0.036)	(0.034)	(0.031)	(0.031)	(0.031)	(0.031)
ln(Population)	-0.109**	-0.092*	0.021	-0.101	0.005	0.001
	(0.054)	(0.055)	(0.092)	(0.088)	(0.091)	(0.097)
lag(FDI)	-	0.053	0.114*	0.227***	0.179***	0.192***
		(0.058)	(0.064)	(0.071)	(0.068)	(0.071)
ContrProcedures	-	-	-0.023***	-0.032***	-0.021***	-0.022***
			(0.006)	(0.007)	(0.007)	(0.007)
TechReadiness	-	-	0.009	-	-	0.131*
			(0.085)			(0.078)
Competition	-	-	0.291***	-	-	-
			(0.081)			
EconFreedom	-	-	-	0.006*	-0.001	-0.002
				(0.003)	(0.005)	(0.005)
ExportFees	-	-	-	0.218	0.173	0.087
				(0.176)	(0.178)	(0.168)
PortCost	-	-	-	0.053	0.081*	-
				(0.046)	(0.048)	
ln(GDPMM)	0.071***	0.069***	0.039***	0.036***	0.023*	0.031**
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)	(0.012)
Distance	-0.471***	-0.461***	-0.511***	-0.407**	-0.527***	-0.466***
	(0.112)	(0.109)	(0.115)	(0.135)	(0.136)	(0.128)
ln(REER)	-	0.542	0.135	0.233	0.382	0.442
		(0.415)	(0.361)	(0.364)	(0.363)	(0.364)
EU member	-	-	-	-	0.264**	0.162
					(0.121)	(0.114)
CEFTA	-	-	-	-	-0.118*	-0.157**
					(0.071)	(0.071)
Constant	1.571	-1.334	4.104	-0.124	2.013	1.409
	(1.335)	(2.357)	(3.819)	(2.148)	(2.205)	(2.201)
Observations	161	161	161	161	161	161
R-squared	0.949	0.955	0.968	-	-	-
Root MSE	-	-	-	0.2938	0.2832	0.2848

Standard errors in parentheses

*** p<0.01,**p<0.05,* p<0.1

CHAPTER 6

CONCLUSION AND POLICY IMPLICATIONS

Much attention has been given to studying the economic performance of former Soviet Union and Eastern European transition economies and much of the focus of those studies has been on the economic impacts of early transition policy differences. Recent data indicates that major economic differences among transition countries continue to exist including significant differences between countries in export growth since 2005. In this study we used annual export data for 28 transition countries for the years 2005 through 2011 to attempt to identify sources of these differences in export performance. We had a particular interest in the impact of differences in export fees and other trade-related costs on exports of transition countries. Export cost data has only recently become available and there has been little empirical research on the impacts of these costs. We are also trying to measure the impact of trade-related infrastructure and technological advancements on the export growth in transition countries. Heterogeneity in the level of development of these factors across transition countries likely to impact export growth in the region.

6.1. Study Summary and Conclusion

In this study, we measured the impact of 'domestic export cost' and 'external costs' on the export growth in transition economies. Our study covered the sample of transition economies emerged after the break-up of Central Planning System of regulation. Sample included Former

Soviet Union countries, Central and Eastern Europe countries and Mongolia. We applied our analysis on the most recent available years for our data from 2005 through 2011.

Theoretical model was based on the previous traditional export growth and trade facilitation literature and on the specific features of transition economies. Theoretical framework of our study defined export growth as a set of variables which were classified into 'excess supply' and 'excess demand' determinants. Together these factors put together main subcategories of variables covered partially in 'traditional export' and partly in 'trade facilitation' literatures. Based on this, we came up with the empirical model and estimations which included both traditional export determinants and specific variables for the structure of our study. In empirical part we applied GMM estimation technique with the instrument for the 'domestic export costs'.

Differences in export and growth performance of transition countries continue to exist. Along with traditional export determinants, domestic export costs, business climate and external costs to markets appeared to have important impact on the exports. High importance of Natural Resource and Foreign Direct Investment factors were also specific to the export growth performance of our sample. It appeared that the availability of natural resources plays important role in export growth even after controlling for the heterogeneity in other determinants. Foreign Direct Investment was particularly important in export growth of 'resource rich' countries as abundance of resources (particularly oil and gas) attracts foreign investors and increases productive capacity of the country to export. This was concluded from the results as we applied two different models with and without 'resource rich' countries.

We presented two tables of results for 'all country' sample of 28 transition countries and results after excluding five 'resource rich' countries from our sample. Our findings were

generally consistent with theory and previous findings where the size of the economy and distance from markets have strong influences on exports. Among these transition countries, we found major positive impacts on exports from greater availability of natural resources.

Our results also suggest that FDI has a greater positive impact on exports for natural resources abundant countries. The importance of Foreign Direct Investment was higher when we have 'resource rich countries' in our sample. It has been proposed that high level of FDI inflow into 'oil rich' transitions, such as: Azerbaijan, Kazakhstan and Russia causes increased exploitation of underground resources and promotes exports of these resources. When we excluded 'resource rich' countries from our sample, the impact and significance of FDI variable dropped which was consistent with our hypothesis.

Internal export fees appeared to have no impact on exports from transition countries. Port cost seems to be another significant export growth determinant. It appears from results that high quality and easy accessibility of ports in the country decrease domestic export costs and promotes growth of trade.

Importance of transaction cost and economic unions, such as being a member of European Union, appears to have impact on the variation in export performance between transition economies. On the other hand, trade unions are not always causing export growth. This can be observed from the CEFTA variable which does not promote export growth. The main reason for this can be the fact that the members of CEFTA are the economies of Central Europe region with relatively smaller markets when compared to the European Union member state CEE countries.

Competitiveness and business climate factors also have significant impact on the export growth performance in transitions. More market oriented policies and promotion of competitive

business environment in the country supports export growth. High level of technological development and transparent legislation system are also deterministic factors for export growth in transitions.

Distance from markets and natural resource endowments are two export determinants that are beyond the control of any country. In contrast, government policies related to a competitive business environment and export costs can be changed in an effort to increase exports and economic growth. This is the motivation for the recent trade facilitation literature and for our interest in recent year export performance of transition countries and the impacts of export costs (fees) on exports.

6.2 Possible Policy Implications

Based on the results of our study, it is important to mention some of the possible policy implications and governmental regulation techniques which can be applied towards increasing export growth in the country. We base our policy implications on the results of this work and on previous studies in this area (Krueger, 1980; Krugman, 1995; Baldwin and Venables, 1995).

Considering high costs of institutional and infrastructure improvements for the countries in transition, one of the important policy implications for the export expansion can be market-oriented trade reforms. Reforms that can increase the opportunities for the domestic producers participate in the world competition, trade liberalization and lowering the domestic market protections.

In order to diminish the impact of transportation and transaction costs, economically separated countries can increase amount of trade by means of Regional Integration Agreements (RIA), international transactions. As we observed from results (Table 5.1, Table 5.2.), being a

member of European Union has a positive and significant impact on the export growth of transition economies. Globalization to the European markets, through regional agreements and increased amount of transactions, might decrease the magnitude of the impact of transportation costs for Transcaucasia and CIS-Europe countries. Based on results of this study we can state that regional integration and integrated-economy approach can lead transition economies to take advantage of heterogeneities in factor endowments and increasing returns.

Important contribution to the exports growth in transition economies can be technology improvements in exports. Variation in technology can be a cause of comparative advantage. Performance of 'Asian Tigers' group of countries between the early 1960s and 1995 can be a support for this point. Specializing in the areas of competitive advantage and increasing high-tech exports along with other factors enforced export growth in this region to a considerable degree and as a result led to economic growth and development. Similarly, CEE countries in our sample can be classified as relatively high-tech exporting countries thus, achieving higher export growth and economic expansion. This is the opposite to what can be observed in the most of Central Asian and Transcaucasia transition countries. Relatively low levels of technology involved exports are among the factors of low export and economic growth in these regions.

Technological expansion can have positive impact on both supply capacity improvements, through increased exports of high-tech goods, and on foreign market access, through increased foreign direct investments inflows and better relations with the developed markets. In this respect, important policy implication from this study can be putting more emphasize on production and exports of technology involved goods.

Even though trade related infrastructural improvements can be relatively costly, positive impacts on the exports were obvious from the study. Better infrastructure and less time

consuming contracting strategies can lower operational costs for export, decrease the time spent on the procedures and thus motivate the countries to increase the amount of bilateral transactions

For oil rich economies in our sample, such as: Azerbaijan, Kazakhstan, Russia, implementing export fostering policies can be easier than for others. Wise use of oil revenues and investing into long-term development of economy can promote export and economic growth in the region.

Last but not least important policy suggestion can be made to CIS-Europe countries: Belarus, Ukraine and Moldova. Important to mention that these countries are almost at the same distance from the EU markets as CEEC or Baltic States are. In this case, taking advantages of the closeness to the developed markets, matching the transition process to the successful transitions in the neighboring countries, increased level and quality of market-oriented reforms can possibly bring to the positive changes on the export growth in these countries.

6.3 Limitation and Future Research

Unavailability of the data on important variables put some restrictions on the current study. As data becomes available, more specific studies with respect to the country groups can be implemented separately. In this respect, future researchers can expand the scope of this study by concentrating on the separate transition groups and studying them individually.

Analysis of policy contributions and improvements in terms of reducing negative impact of trade costs on the export growth can be another topic of interest for the future studies. Researches can put more effort on finding the most efficient way for regulation of domestic costs affecting the export growth. At the same time, future researches can focus on the possible ways of decreasing the negative impact of external costs to markets.

Based on the fact that the most recent available data has been utilized in this study and not many works on the exports of transitions covered the same issues previously, we believe this work will be a good contribution to the literature on the exports of transition economies.

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APPENDIX

MAIN EXPORT PARTNERS OF ECONOMIES IN TRANSITIONS

For illustration, Kyrgyz Republic is a Central Asian transition country which shares its borders with: Russia, Tajikistan, Uzbekistan, Kazakhstan, and China. Later three countries are also main export partners of Kyrgyz Republic. Exports in 2011 for Kyrgyz Republic was only slightly above $ 3 billion which accounts for export growth of 17% from 2010 to 2011. In contrast, another landlocked transition economy, Slovak Republic (Central and Eastern Europe transition economy), had exports of more than $ 84 billion for the same year, with the growth of 23% from 2010. The main trade partners for Slovak Republic were Germany, Czech Republic and Poland. Along with many other factors, proximity to EU and thus, higher chances for global integration can be considered as possible advantages for the exports of CEE countries, when compared to Central Asian economies.

We are interested in determining the possible comparative advantages of CEEC and Baltic States from being located closer to the major markets and having advantages of globalization when compared to Central Asian and Transcaucasia transition countries.

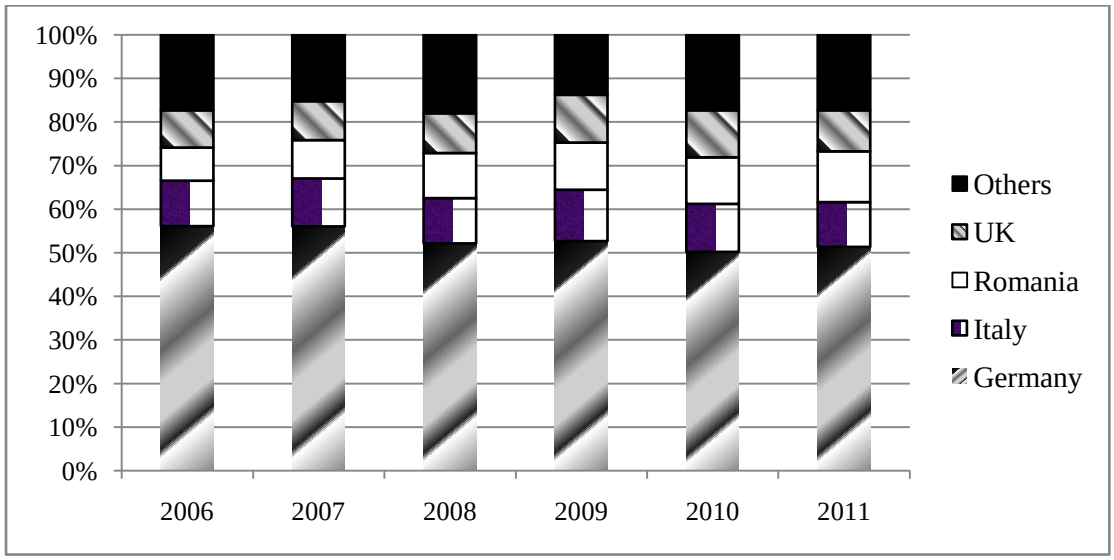
In order to better illustrate the conclusions above we shortly discuss major export partners of each subgroup of countries within the FSU and Non-FSU groups for the years of 2006-2011:

Central and Eastern Europe sub-group:

This sub-group includes Poland, Czech Republic, Romania, Hungary and Slovak Republic. Germany is the major export partner for all of the members of this subgroup. Also Italy is another major export destination for the countries in this sub-group.

For illustration, we take Hungary[16] as a representative of CEE group's sample. From four major export partners of Hungary (Figure A1), on average about fifty percent of exports go to Germany for the years of 2006 – 2011. For all of the countries in the given subgroup Germany is considered as the major market and accounts for the biggest share of exports.

Figure A1. Hungary's Export Shares with the four major markets (2006-2011)



Source: UN Comtrade Database

Balkan Countries:

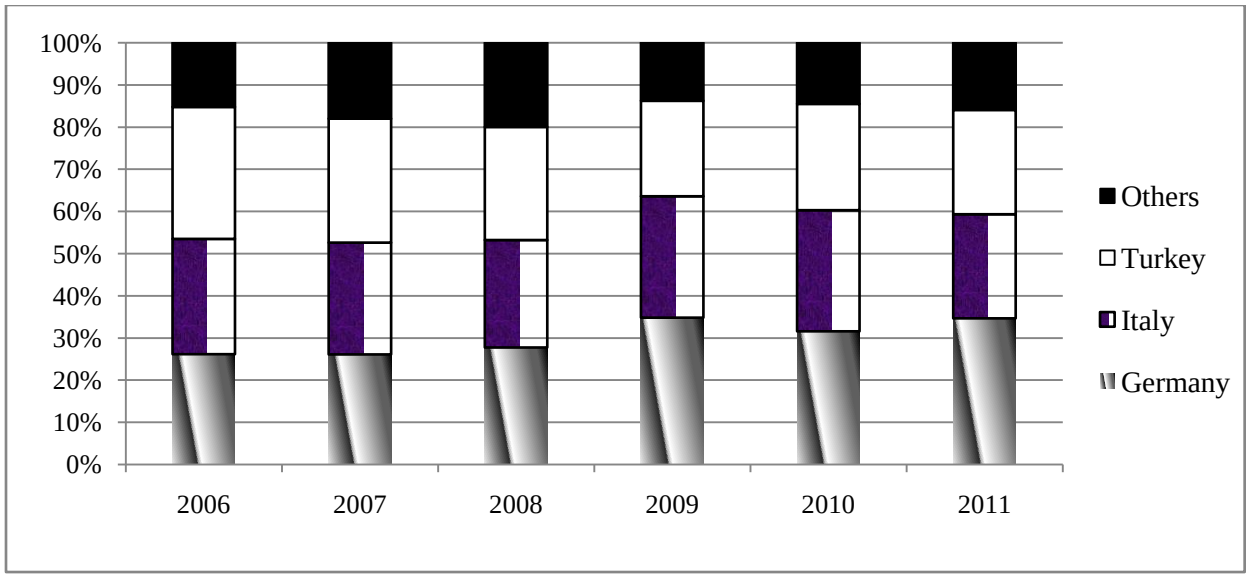
This sub-group includes: Croatia, Bulgaria, Slovenia, Serbia, Bosnia and Herzegovina, Albania, Macedonia and Montenegro. Similarly to CEEC these countries mainly trade with other European Union States as well as between each other. For some countries Germany is the major

[16] Instead of Hungary any other country can be applied and the general picture does not change.

export partner (Bulgaria, Slovenia) for others Italy (Croatia, Albania, Serbia etc.). Other than these countries, representatives of this group also trade with other Balkan countries.

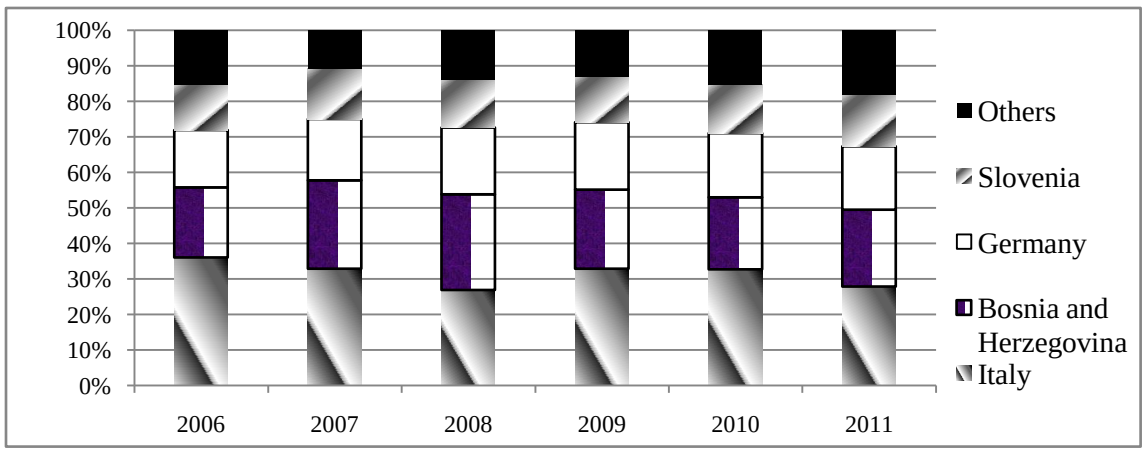
We select to present Bulgaria and Croatia as two representatives of this group, with the major partners of Germany and Italy respectively.(Figure A2 and Figure A3)

Figure A2. Bulgaria's Export Shares with the major markets (2006-2011)



Source: UN Comtrade Database

Figure A3. Croatia's Export Shares with the major markets of (2006-2011)



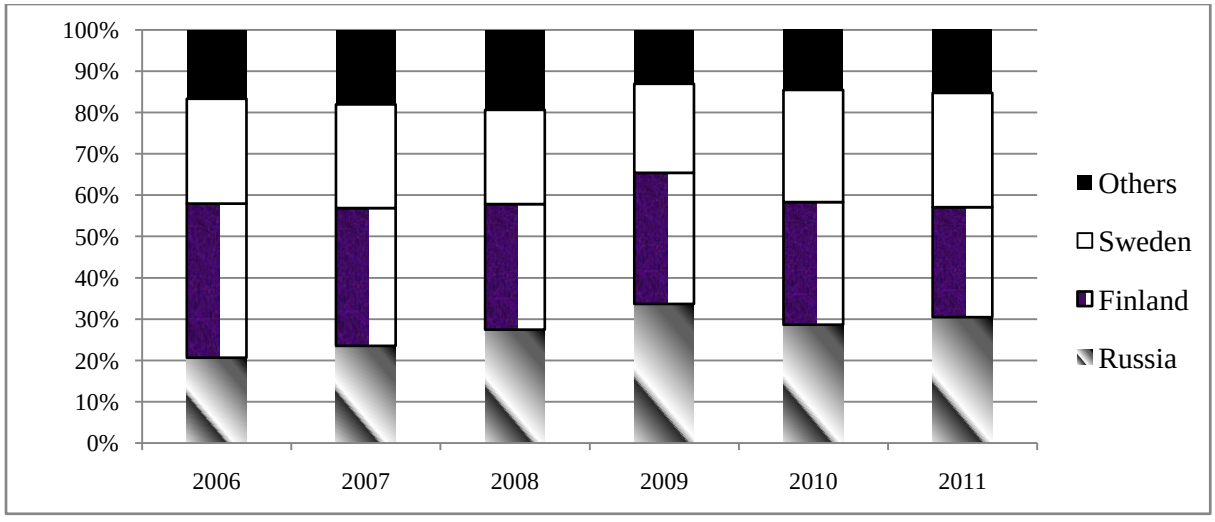
Source: UN Comtrade Database

Baltic Countries:

Exceptional case for Former Soviet Union is Baltic States which include Latvia, Lithuania and Estonia. Major export partners for this group of countries are European Union member states and particularly Scandinavian countries. More than 70% of Estonia's exports go to other Member States of the European Union (Andrus Anspir, Prime Minister, 2011). Important to mention that Russia is also considered among the top export partners of these countries even though it has less shares than European Union Member States.

As a representative of Baltic States subgroup in Figure A4 we select Estonia[17]. Exports to Russia accounts for a big share out of total export to the major markets, However, the share of exports to Russia is not as big as the share of Scandinavian countries (Finland and Sweden) taken together. Therefore, In our analysis we consider EU market as the major market for the exports of Baltics.

Figure A4. Estonia's Export Shares with the major markets (2006-2011)



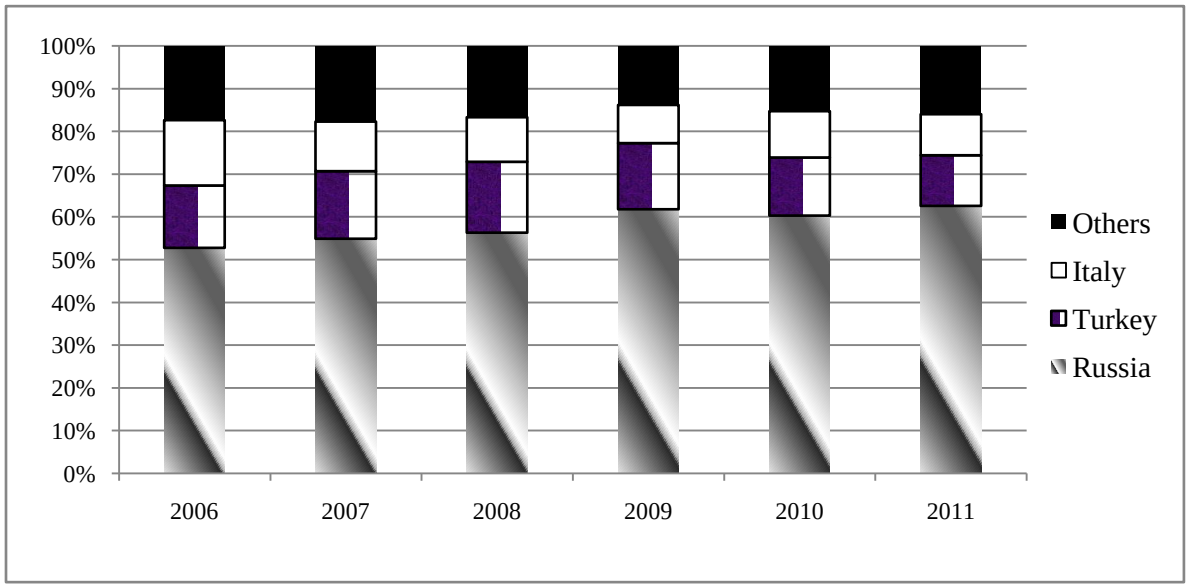
Source: UN Comtrade Database

[17] Just like in the previous sub-groups, other representatives of this subgroup (both Latvia and Lithuania) reveal fairly similar picture.

Europe CIS countries:

This group includes: Belarus, Ukraine[18], Moldova, Armenia and Georgia. Major export partners for this group of countries are both Russian Federation and European Union Member States in addition to other CIS countries. In this respect, Georgian exports mostly go to other CIS representatives like Azerbaijan or Armenia, at the same time Russia accounts for the most of exports of Belarus and Ukraine (Figure A5)

Figure A5 Ukraine's Export Shares with the major markets (2006-2011)



Source: UN Comtrade Database

Central Asia:

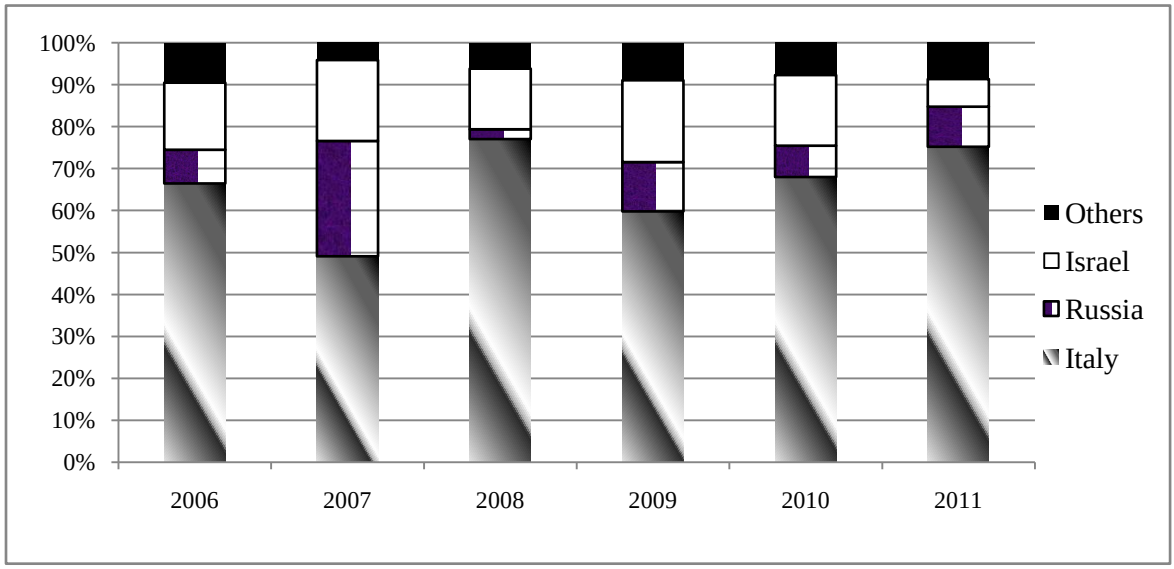
This sub-group of FSU countries has mostly similar export partners: Uzbekistan, Tajikistan, Kyrgyz Republic and Mogolia[19]. Special characteristic of this group is having as a main export partner either Russia or China. For Instance, more than 85% of overall exports of

[18] Ukraine is an unofficial member of CIS.
[19] Even though Mongolia was not officially member state of Former Soviet Union, due to the political and economic similarities in most of the studies it has been included as an FSU country.

Mongolia for the year of 2011 went to China[20]. Also considering the small economies of these countries they tend to trade between each other and this account for a big portion of the relative exports. In this respect, Kazakhstan plays an important role as an export partner for Kyrgyz Republic, Tajikistan, and Uzbekistan.

In conclusion, natural resource independent FSU countries (excluding Baltic States) as a major export market tend to trade with Russia and/or China. In contrast, Non-FSU countries of our sample as well as Baltic countries mainly export to EU member states. Later in the model we will come back to these points when we try to estimate transportation costs to exporting to the major markets. Major export partners for Natural Resource rich countries: Azerbaijan, Russian Federation and Kazakhstan have been discussed earlier (Figure A6).

Figure A6. Azerbaijan's Export Shares with the major markets (2006-2011)



Source: UN Comtrade Database

[20] Source: EU Bilateral Trade and trade with the world