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**Government Export Support: A
Comparative Study of European
Post-Communist Countries**

Bachelor Thesis

Prague 2012

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Year of Defence: 2012

Bibliographic Entry

PSENAKOVA, Lucia. *Government Export Support: A Comparative Study of European Post-Communist Countries*. Prague, 2012. p. Bachelor thesis, Charles University in Prague, Faculty of Social Sciences, Institute of Economic Studies, 2012

Abstract

To the best of our knowledge, this bachelor thesis is the first one to analyse official state promotion in all four Visegrad countries. Similar development of those economies in transition period after the fall of Communism is described; their extremely fast and successful reorientation towards Western markets is emphasized. Nowadays each government in the region implements its own export strategy. We could observe a mutual understanding of importance of state export support, nevertheless, very different priority territories for export. Further in the thesis we analyse export credit agencies - organisations promoting export projects under more favourable conditions with state guarantees. Firstly we compare theoretical advantages and disadvantages of different forms of export credit agencies. Then we apply data from international trade on gravity equation and we conclude that the most effective type of export credit agency in Visegrad Four region is clearly an organisation operating in the form of an insurance company. Other forms such as a bank and an institution providing both insurance and financing facilities are insufficiently effective. We show that smaller distance and higher GDP also increase the amount of export.

Keywords

international trade, state promotion, export credit agencies, gravity model, Visegrad Four

Abstrakt

Táto bakalárska práca ako prvá porovnáva oficiálnu štátnu podporu exportu vo všetkých krajinách Višegrádskej štvorky. Opisujeme podobný vývoj týchto ekonomík v prechodnom období po páde komunizmu a ich extrémne rýchle a úspešné preorientovanie sa na trhy západnej Európy. V súčasnosti každá z vlád schválila inú stratégiu na podporu exportu a môžeme pozorovať spoločné prisudzovanie dôležitosti štátnej podpory exportu, ale zároveň veľmi odlišné prioritné destinácie jednotlivých vlád. Neskôr rozoberáme exportné úverové organizácie, tj. organizácie podporujúce export v lepších podmienkach s využitím štátnych garancií. Najskôr teoreticky porovnáme výhody a nevýhody rôznych foriem exportných úverových organizácií a v záverečnej časti práce aplikujeme dáta z medzinárodného obchodu na gravitačnú rovnicu obchodu a jednoznačne ukážeme, že najefektívnejším typom exportnej úverovej organizácie v oblasti Višegrádskej štvorky je práve organizácia fungujúca vo forme poisťovne. Zvyšné typy vo forme banky či kombinácie banky a poisťovne sa ukázali ako málo efektívne. Ukážeme, že nižšia vzdialenosť či vyšší domáci produkt cieľovej destinácie takisto zvyšujú objem exportu.

Kľúčové slová

international trade, štátna podpora, exportné úverové agentúry, gravitačný model, Višegrádska štvorka

Rozsah práce: 52 strán

Declaration

Hereby I declare that I elaborated this bachelor thesis independently, using only listed literature and resources.

I agree with availability of my thesis for study and research purposes.

In Prague, July 30, 2012

Prehlásenie

Prehlasujem, že som predkladanú prácu spracovala samostatne a použila som len uvedené pramene a literatúru.

Súhlasím s tým, aby bola práca sprístupnená pre študijné a výskumné účely.

V Prahe, dňa 30.7.2012

Lucia Pšenáková

Acknowledgment

I would like to thank prof. Ing. Karel Janda M.A., Dr., Ph. D. for supervising my thesis and giving me valuable comments. I am also extremely grateful to Mr. Šon (Czech Export Bank), Mrs. Gavorníková (Eximbanka SR) and Mr. Wieclaw (KUKÉ) for providing datasets necessary to complete the thesis.

Project of Bachelor Thesis

Schedule for the bachelor exam: September 2012
Author of the bachelor thesis: Lucia Pšenáková
Supervisor of the bachelor thesis: Ing. Karel Janda M.A.,
Dr., Ph. D.

Theme: export promotion

Government Export Support: A Comparative Study of European Post-Communist Countries

Goals of the thesis: Comparison of export promotion schemes in European post-communist countries.

In my thesis I will focus on government export support analysis in selected European post-communist countries. I will compare, in detail, Czech and Slovak export credit agencies, such as the Czech Export Bank, the Export Guarantee and Insurance Corporation and EXIM-BANKA SR. I will describe their histories, current strategies, products, and measures of participation in government. Based on the data I will estimate a model that regresses the amount of export on the amount of government support for various countries. Finally, I will come to a conclusion about the effectiveness of government participation. I will work with publicly accessible data and information from institutions acting in a given field.

Synopsis:

1. Introduction
2. International trade
3. Comparison of export credit agencies

4. Empirical gravity model of trade
5. Conclusion

References:

Karel Janda & Eva Michalíková & Věra Potácelová (2009): Vyplácí se podporovat exportní úvěry?, Working Papers IES 2009/30, Charles University Prague, Faculty of Social Sciences, Institute of Economic Studies, revised Dec 2009

Ascari, R.(2007): Is Export Credit Agency A Misnomer? The ECA Response To A Changing World, SACE Working Papers 2007 – 02

Nothdurft, W. (1992): Going Global: How Europe Helps Small Firms Export, Brookings Institution Press

Bond, D. (1991): Trade or aid? Official export credit agencies and the economic development of Eastern Europe and the Soviet Union , Inst for East-West Security Studies

In Prague on

Signature of the supervisor

Signature of the author

Contents

1	Introduction	1
2	International Trade	2
2.1	Common Trade Development	2
2.2	Individual Trade Development in Visegrad Four	3
2.2.1	Czech Republic	3
2.2.2	Slovakia	5
2.2.3	Hungary	6
2.2.4	Poland	7
2.3	Summary of International Trade in Visegrad Four	8
3	Official Government Export Strategies	10
3.1	Czech Export Strategy	10
3.2	Slovak Export Strategy	11
3.3	Hungarian Export Strategy	13
3.4	Polish Export Strategy	13
3.5	Summary of Official Strategies	14
4	Export Credit Agencies	15
4.1	ECAs in Visegrad Four	15
4.1.1	Czech Republic	15
4.1.2	Slovakia	17
4.1.3	Hungary	19
4.1.4	Poland	20
4.2	International Membership	21
4.3	Products Provided by ECAs	24
4.4	Different Forms of ECAs	28
4.5	Summary	29
5	Gravity Model of International Trade	29
5.1	Theoretical Framework	31
5.2	Econometrical Model and Data Description	32
5.3	Empirical Results	35
6	Conclusion	38
	References	40

1 Introduction

European post-communist economies have gone through a period of rapid transition during the last three decades. They went from a stage of strongly planned, central and state-directed economies; oriented towards other Soviet economies at the beginning of 1990s; to a relatively free market nowadays. Their trade sharply reoriented towards Western markets after the fall of communism. Massive privatization, worldwide integration and globalization, new modern technologies or growing competition are only few factors that boosted transition economies in Europe. Entrepreneurs, manufacturers but also politicians and governments have realized a positive value of the international trade. All of the Visegrad Four countries¹; that we analyze throughout this thesis; are small economies with a high degree of openness² and hence an extensive volume of export is essential for their economic progress.

Governments of Visegrad countries publish their official export strategies periodically. In particular, financing and insurance facilities for exporters are a necessary condition to improve both quality and quantity of exporting products, and so to enhance their competitiveness on international markets; this implies growing economy and national welfare. Poland was the first country in the region to adopt an official government export promotion (in a form of an export credit agency) in 1991, followed by Hungary shortly after. The export credit agency (hereinafter: ECA) is a financing company providing trade finances to domestic companies for their international activities. Those services can have different forms: insurance, guarantees, loans etc. Its primary objective is to promote domestic export by removing a risk and uncertainty when entering new markets abroad. To provide conditions similar to those that foreign manufacturers face on their own market, state-owned export credit agencies offer not only insurance of marketable risk (provided by commercial banks) but they also insure and finance transactions that otherwise could not be realized. Thus a main feature of export credit agencies is that they insure different forms of non-marketable risk (political risk etc.). Gianturco (2001) identified an importance of ECAs as:

"One out of every eight dollars of world trade is now financed by ECAs. Much of the remaining seven dollars is influenced by what the ECAs do; whether they advocate a restrictive or expansive policy of selling goods to other nations affects ex-

¹A modern Visegrad Group is an alliance of four Central European countries: the Czech Republic, Slovakia, Poland and Hungary; established in February 1991. Its name is derived from their first meeting in Visegrad Castle in 1335.

²Openness of economy is indicated by the high ratio of trade to GDP.

porters' willingness to trade with particular countries and buyers and influences the terms on which trade is conducted."³

This thesis deals with state export promotion in Visegrad Group as a representative of transition, post-Soviet European economies. We begin with a summary of international trade development in Visegrad Four countries in Section 2. There is a description of official export strategies adopted by state governments in the next section. Section 4 contains an analysis of export credit agencies in the region, a list of national agencies, portfolio of their products. A commentary about different forms of export credit agencies and their membership in supranational trade and export organizations could be found in this section. The Section 4.5 contains a summarizing table. An empirical model based on a gravity equation of international trade that tests effectiveness of different types of ECAs is processed in Section 4. Conclusion in Section 5 follows.

2 International Trade

Knowledge of international trade development and its analysis is a necessary condition to understand incentives of governments when dealing with state export promotion, such as government export strategies and export credit agencies founded by the state, presented in further in this thesis. In this section we are first going to talk about development of foreign trade after the end of the Second World War. Later we are going to analyse trade development in Visegrad Four countries individually since 1990. Last section offers couple remarks concerning foreign trade and a comparison of development in Visegrad countries during last 2 decades.

2.1 Common Trade Development

Benacek and Visek (2003) traced the development of international trade of Communist countries in the Council of Mutual Economic Assistance (also known as COMECON) institution during the post-war period. They considered a trade among COMECON countries to be quite intensive. At the end of 1980s, according to Winiecki (2002), the members of COMECON traded among each other from 40-50% of their overall domestic production to as much as 75% (Romania). Nevertheless the foreign trade was sub-optimal, caused by a lack of market mechanism for a determination of a structure of a specialisation at the level of standard economic agents.

³Gianturco (2001) designated one section of his book to ECAs in transition countries and highlighted their different structures in Visegrad countries.

A market mechanism was substituted by extensive bureaucratic decision-making at the macro level. Hence some problems with external balance and growth had to necessarily occur in long run.

As a aftermath of the demise of the Soviet Union block, all former COMECON countries started to shift from control and command regimes to economies based on market institutions rather determined by supply and demand forces than by bureaucratic central planning. Eastern European countries did not operate under convertible currency system or competitive prices at this stage of their development. State planners could indeed lower prices of exports to stimulate sales, however, it would not automatically affect imports. They could also easily control consumption because they had direct control over wages, employment and prices (Poznanski, 1996).

Central European Free Trade Area (CEFTA) was established in 1994 with originally four members, the Visegrad countries. They were joined by Moldova, Romania and Bulgaria but founding members left in 2004 to join the enlarging European Union.

2.2 Individual Trade Development in Visegrad Four

This section describes trade development after the collapse of Soviet Union in 1991. Each Visegrad country is analyzed separately.

2.2.1 Czech Republic

The Czech Republic is the most Western-oriented among the four Visegrad countries, having a favourable geographical position located in the heart of the European Union surrounded exclusively by other European Union members. The proximity of developed economies has also been an important factor of its relatively above averaged economic development. Nowadays it is often characterized as one of the most successful cases of transition economies. Despite a cost related to the break up of Czechoslovakia in 1992-1993, the Czech government was fastly able to implement some perspective market-oriented reforms during the early post-communist period after the Velvet Revolution in November 1989. Extensive economic reforms, such as mass privatization and liberalization of the international trade, were the top priority for the Czech government in early 1990s even at the cost of a short run performance.

In their research paper, Svejnar and Uvalic (2009) draw our attention to an economic performance of the Visegrad economies in 1989. They characterized Czechoslovakia as one of the less reformed Central and Eastern

European (CEE) countries and much less of a market economy in comparison with Poland and Hungary. It had the highest share of public sector (97% of net national product). The economy was concentrated within monopolistic firms and it was the most dependant economy on a trade with other Soviet countries. A complicated system of bilateral trade agreements based on the non-convertible currency was introduced within the COMECON. Contrary to other Central and Eastern European countries which faced hyperinflation already in 1980s, Czechoslovakia had to face a rather moderate inflation during early years of its transition process and Czechoslovak budget deficit and unemployment were also relatively low.

Benacek and Visek (2003) pointed out that the Czech Republic increased its export to EU in years 1993-1999 from US\$8 billion to US\$18.4 billion. That implies an annual average growth rate of 16.3%, while Czech exports to the rest of the world continued to grow by a normal rate of 4% annually. Trade liberalisation created enormous opportunities for Czech exporters. Authors considered this suprisingly fast development of external trade in 1990s to be a crucial moment of Czech economic transition. Czech import and export both increased by almost 500% in total during last two decades (CzechTrade, 2008).

Mesaros (2001) further studies the foreign trade in early years of transition. Balance of payments surplus was reported in 1991, however, there has already been a balance deficit one year later. It was caused by expected instability linked to a political situation and a tax reform introducing VAT taxation. A share of imports increased as a form of pre-supplying. The first year of the Czech Republic was considered to be quite successful with export surplus. A sharply increased demand of Czech consumers could not be satisfied exclusively by Czech manufacturers in the following years and thus it needed to be covered by import. Czech export and import achieved growing year-on-year performance each time with an exception of 2002 and with the highest annual difference in 2004 for export and 1995 for import (CzechTrade, 2008). However, Czech balance deficit has been reported each year during last 2 decades.

Territorially, Czech export shifted from former COMECON countries into mostly 15 European Union countries. European Union export formed at least 80% of Czech export and minimally 70% of Czech import (CzechTrade, 2008) ever since 1993. Thus developed countries, especially Germany, have created the widest group for both Czech export and import, followed by European transition and developing countries. China has been an important import partner with gradually increasing performance. Overall, the most important trading partners for the Czech Republic after 2004

were Germany, Slovakia, Poland and France. The European Union states accounted for more than 85% and other developed states outside of the European Union for more than 9% of export.

Czech export has been historically composited mostly of goods for processing. Export of machinery and means of transportation increased throughout last two decades and they formed 43% of overall export in 1999 (Mesaros, 2003). Their quantity increased by 1000% during this period (CzechTrade, 2008). Other important group of export goods are chemicals and consumer goods such as textile and furniture, scientific devices and other industrial goods. Mesaros (2001) also pointed out an effect of free import of subsidised agricultural goods from other European Union countries that ruined Czech agriculture. In the first decade of the 21st century, machines and other transport equipment formed the biggest group of exporting products (50%), followed by manufacturing products (around 20%). Those two groups formed the biggest share of import goods too.

2.2.2 Slovakia

Jakoby (2000, 2002) published an extensive study of the Slovak foreign trade in the transition period. Similarly to the other transition economies, the international trade of the Slovak Republic is characterized by a sharp increase of exports and imports shortly after a year 1989. It was caused by removing of a state monopoly and a massive liberalization. The typical feature was a balance deficit in early years of transition. A surplus was reported in 1994 and it was replaced by a substantial deficit caused by an absence of restructuring and an inability to preserve fix exchange rate of koruna. Slovakia experienced a relative slow down of export in 1996. Thus a raising export performance together with a decrease of the balance deficit happened to be a top priority for a new Slovak government in 1998. New stabilization measures came into practise in 1999-2000, concretely an increase of adjusted prices, an increase of indirect taxes and a VAT basis and a re-introduction of import fees. Their mutual objective was to decrease domestic demand, hence to decrease import. A short-time stabilization of the balance in 1998 and an increased deficit in late 1990s caused by growing import and fairly stable export is also highlighted by Jakoby (2002). According to Jakoby (2000) the current account deficit exceeded 10% critical value of the Slovak GDP. Moreover, the Slovak foreign debt enlarged significantly throughout 1990s. Dynamics of Slovak export tended to slow down towards around 2005, with a turbulent changes of balance surpluses and deficits. In the year 2006 there was a significant growth of both export and import value (adequately of about 24% for export and of about 22% for import). The deficit increased steadily in the period 2004-2007 (Wach et al., 2008). Balance deficit sharply increased in 2008. After this year,

balance deficit moderately decreased and its surplus is reported in 2009-2011 time period.

Machinery and electronic devices formed a stable and considerable part of Slovak export in the beginning of the new century. The major part was created by intermediate products that were highly dependant on price factors. Jakoby (2000) also states that the historically important share of iron and steel decreased in 1990s and, at the same time, a modern sector with audio-visual equipment and motor vehicles became more important for exporters. This growth was mainly accomplished by Volkswagen Bratislava that became the biggest exporter in Slovakia. Agricultural products formed only around 4% of overall export. Automobil industry kept its leading position in export nowadays. On the other hand, components for the automobile industry account the biggest share in Slovak import in the new century.

Slovak exporters quickly reoriented towards western markets. Two main blocks of the Slovak export (90%) were formed by the European Union and the Central European Free Trade Area (hereinafter: CEFTA). Export to the European Union doubled during the 1990s and export to CEFTA countries remained roughly stable. The biggest export drop was recorded with the Czech Republic (caused by its recession in 1997-1999) and with Russia (Slovak dependance on raw materials imports implied long-time passive balance of payments). Primary export partners became Germany (around 30% but decreasing throughout time; 23% in 2011) and the Czech Republic (around 10% with an increasing trend; 20% in 2011) in the 21st century. Other major partners in 2011 were are neighbouring countries: Poland, Hungary and Austria. Slovak export to those countries increased in comparison with the previous year.

2.2.3 Hungary

A considerable market-oriented reform and decentralization has already taken place in 1968, in comparison with Poland (early 1980s) and with Czechoslovakia with a archetypal characteristics of central planning and a state ownership and where a process of decentralization did not start until 1989. Although the reform process was gradual with many setbacks in Hungary, they came better prepared for dramatic political liberalization in 1989 (see Blanchard et al., 1994).

Hungarian external debt reached 75% of its GDP which put Hungary in the group of very highly indebted countries in the initial years of transition. Hungary was very close to a liquidity trap. According to Blanchard, Froot and Sachs (1994), a rapid export growth to Western countries improved the

balance deficit quickly. Some actors that contributed to a massive growth of exports in Hungary are considered to be a transformation to world prices in 1991 and a convertible currency. Overallly export increased each year during last two decades with an exception of a year 2009, nevertheless, Hungary experienced a negative balance since the beginning of 1990s until the year 2009.

A typical feature of transition European countries, shifting export towards Western markets, was reported also in Hungary. A share of export to European Community increased by 35% in 1990 and even by 42% in 1991. There was also a 27% decline of export to COMECON countries reported in 1991. A share of export to European Union moved from 40% shortly after opening of Western markets up to 75% in 2011.

A liberalization of private activities caused an expansion of export-oriented small businesses. They increased by 69% in 1991, especially in machinery, chemical and light industry and food processing export categories. Hungary now focuses on exporting machinery and transport equipment that accounts for more than a half of total export; followed by manufactured goods and food.

2.2.4 Poland

A composition of export goods moved towards natural-resource and unskilled labour-intensive products during 1980s. Only exporters of coal and farm products were able to succeed in increasing their shares in OECD markets. Export improved in all products categories in 1990-91, most importantly for manufacturing, with an average annual rate of growth equals to 40% (Kaminski, 1991).

Ever since 1994, an overall volume of export increased each year in comparison with a previous year. The sharpest growth was achieved in 2000. An amount of export grew by more than 600% throughout the last two decades. To describe changes in foreign trade in Poland it is necessary to point out the transformation in the period of 5 years (2001-2006) of deficit in trade from EU-15 of -6,6 milliard euro in 2001 into surplus of 1 milliard euro in 2006. The largest influence on the deficit had foreign trade turnovers from Russia and China. The growth of deficit only with these two countries in the the period 2005-2007 leveled the surplus from EU-24 countries. (Wach et al., 2008) The growth of exports started to relatively slow down in 2007 and a slightly negative growth has already been reported in 2009.

After the Second World War, the Soviet Union became the most important partner for Polish manufacturers together with Czechoslovakia and Germany for four decades. After a demise of former Soviet Union, quick re-orientation of the Polish manufacturers towards Western markets occurred. Germany became a major partner for export and especially for import. Nowadays, the European Union accounts for almost 80% of exports and 60% of imports and Central and Eastern European Countries for only around 10% of the trade turnover.

Export product goods moved significantly from minerals and food in the beginning of 1990s. The share of high-processed products in export value increased around the year 2005. The main group of export products consisted of electro-machine industry items. Increasing competitiveness of Polish goods could be observed. The share of high-processed products in export value increased from 56.8% in 2000 up to 63.7% in 2006. (Wach, 2008) Nowadays, the Polish manufacturers mainly focus on exporting machinery and electrical equipment as well as transport equipment. Note that transport equipment has been historically an important category of the Polish export. Other consequential export product groups are metals and chemicals.

2.3 Summary of International Trade in Visegrad Four

A common feature of the Visegrad countries international trade had been strong orientation towards Eastern block and COMECON countries; they traded extensively among each other. However, this trade has been considered to be sub-optimal due to state planning and a lack of free markets. A dominant part of Visegrad countries' trade shifted from the East to the West after the end of Soviet pressure for a maintenance of goods in the Soviet block. Winiecki (2002) investigated a structural change of export partners (as well as import partners, however with a lag) of CEE countries. The trade moved where the markets were, towards the high-income Western countries. On the basis of Heckscher-Ohlin factor theory, an increased export of traditional labour-intensive production goods was expected. CEE countries also possessed a location advantage, being in the heart of Europe, relatively close to some large production centers in Europe. Table 1. contains the empirical evidence of this theory. We could observe an extension of West-oriented trade to be even more rapid than it was expected.

Another typical feature of early transition trade is that all CEE countries imported more sophisticated and high-quality products from the West

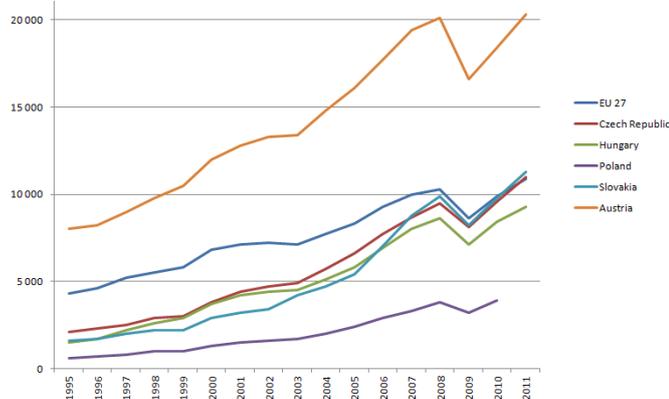
Table 1: Geographical change of exports: in % shares of aggregate exports

Country		1928	1988	1994	1996
Czech Republic	Westbound	55.2	33.5	58.9	62.8
	Eastbound	19.8	55.2	31.8	30.6
Hungary	Westbound	40.9	37.2	71.5	69.0
	Eastbound	37.3	45.5	25.2	28.8
Poland	Westbound	62.7	44.7	75.0	71.6
	Eastbound	14.2	40.8	15.0	21.4

Note that Westbound stands for 1988-1996 OECD countries except Turkey and Eastbound for ex-COMECON countries including Turkey; data for 1928 and 1988 are for Czechoslovakia
Source: Winiecki (2002)

than the ones they exported. Nowadays, a vast majority of overall export is headed towards the European Union, especially to Germany (the major partner of Czech and Polish exporters). Slovak exports are headed mainly towards the Czech Republic and also Germany.

Figure 1: Export in current prices expressed in euro per inhabitant



Source: Eurostat

Figure 1 demonstrates an overall amount of export from the Visegrad Four countries, EU27 and Austria between the years 1995 and 2011. Export is expressed in current prices and in euro per inhabitant units. We can observe that EU27 export per inhabitant is a bit higher but still quite similar to an amount of export from three Visegrad countries (excluding

Poland). There is a sharp decrease of a volume of export in every one of the observed countries in 2009 caused by a subsequent impact of the global financial crisis. Export from Slovakia per inhabitant experienced a relatively higher increase than exports from other examined countries. Its value was under Czech and Hungarian export volume at first but it exceeded both of them by 2006 and it even exceeded the European Union average value in the end of 2011. It is very interesting to observe a volume of export from Austria (developed market economy) on one side and a volume of export from Hungary (post-Communist country) on the other side. Both neighbouring countries have similar size of population, nevertheless, Austrian export is more than two times higher than Hungarian throughout the whole observed time period.

After the EU accession of the Visegrad countries in 2004 one of the most remarkable developments was the sudden upturn in mutual trade. In 2007 the value of aggregate intra-Visegrad trade was two and a half times higher than in 2003. The rate of growth in these countries' trade with the "old" EU member states was only half as much as that. Despite similarly rapid expansion, individual intra-Visegrad bilateral relations had diverging character concerning the composition of trade. Hungary's excessive specialization in transport equipment and components in exports to the other three Visegrad Group countries was considered to be extreme. Another extreme was Slovakia where the initial proportions across main commodity groups hardly changed in the period of rapid extension of trade volumes. (Hunya, 2011) Automobile and transport industry forms a major part of exports in Slovakia, Poland and Hungary. Hungary also exports food and Poland and Slovakia are both famous for their electrical device plants that are widely spread.

3 Official Government Export Strategies

This section analyzes different official government strategies to boost export in their countries. We can observe significant differences in their export promotions, and most importantly, in governments' targets concerning export. We are first going to describe strategies adopted by each Visegrad country separately. In the last part of this section, brief comparison of main features of export strategies follows.

3.1 Czech Export Strategy

The new Export Strategy of the Czech Republic 2012-2020 was adopted by the Czech government in March 2012. It is a document describing vi-

sions and activities of the state for upcoming years to promote and develop Czech export. It follows the Export Strategy 2006-2010 and its extended update for the year 2011. The primary vision is to include the Czech Republic among the 20 most competitive countries by 2020.

The Strategy identified some of the biggest obstacles of Czech export. These are a high orientation on European Union markets, an insufficient following of trends on world markets, an insufficient utilization of European Union funds and projects for Czech exporters and a separation of a role of export agencies financed by the state.

Its concept is divided into 3 pillars: Export Information (to build a so-called Export Intelligence hence easier accession to information resources and databases, internalization), Export Development (export education, consulting and financing) and Development of Business Opportunities (building a network of exporters and their partners, marketing and lobbying activities, business policies). Targets that the Export Strategy wants to fulfill by 2020 are

- to increase a number of exporters by 15%, the overall export by 25% per capita and SME exporters by 50%
- to diversify export, especially into the countries outside of the European Union
- to shift Czech exporters into economic sectors with higher added value, more innovation in export production and manufacture

Two groups of countries were recognized, according to their ability to grow and to absorb foreign export as well as their compatibility with Czech exporters.

1. *priority countries*: Brazil, China, India, Iraq, Kazakhstan, Mexico, Russia, Serbia, Turkey, Ukraine, USA and Vietnam
2. *countries of interest*: Angola, Argentina, Australia, Azerbaijan, Belarus, Egypt, Ethiopia, Chile, Ghana, Croatia, Israel, Japan, the Republic of South Africa, Canada, Colombia, Morocco, Moldova, Nigeria, Norway, Peru, Senegal, Singapore, United Arab Emirates, Switzerland and Thailand

3.2 Slovak Export Strategy

A ratio of export on GDP was 85.7% in Slovakia in 2009. This implies a dominant position of the international trade in a Slovak business strategy. For comparison the overall volume of state aid was SKK 9.677 billion (EUR 321.22 million). The smallest part, only SKK 10.2 million (EUR 338 600), was used to promote export. This number needs to growth.

The Pro-export Politics of the Slovak Republic 2007-2013 identified some principal issues of Slovak export. Those are a size of Slovak market (insufficient for a majority of Slovak producers), a risk of persistent balance deficit, a territorial concentration of Slovak exports (above 60% to neighbouring countries, Germany and Italy) and that only 35% of overall export was created by SME exporters in 2006.

The objectives of the current export strategy are

- to significantly increase export from Slovakia (on average by 15-20% annually)
- to decrease Slovak dependence on import
- therefore to decrease the balance of payments deficit
- to increase a volume of public revenues (increased export creates higher tax income for the state budget)
- to create an effective system of export promotion instruments to increase Slovak competitiveness on international markets in particular

Three groups of countries were identified according to a territorial principle

1. *particularly important countries*: the European Union plus three countries of the European Free Trade Association, namely Norway, Liechtenstein and Iceland
2. *countries with a growing export potential*: Russia, Ukraine, Balkan countries and East Asian countries, especially China, India and South Korea. Slovakia depends on import of Russian oil and energy sources. On the other side, Slovakia cooperates in projects for building and reconstructing of Russian transportation network of oil and natural gas and Russia is an important trading partner. Slovak export to Ukraine increased by 30% in 2006 caused by their geographical proximity and mutual dependancy on energy sources. Some new opportunities for foreign investment were created in Balkan area after a period of Balkan political instability. Nowadays, there is a strong mutual tendency of removing tariffs and other trade restraints with so-called emerging economies in Asia.
3. *other countries with a growing export potential*: developed economies (USA, Japan, Canada, Australia), other countries of the The Commonwealth of Independent States, Latin America (especially MERCOSUR and Chile), Northern Africa and the Republic of South Africa.

3.3 Hungarian Export Strategy

The Hungarian government launched its general development strategy - the first Szechenyi Plan in 2001. It was considered to be a catalyst of an economic performance, nevertheless, it was characterized by unusually strong open planning and state-financed development. As the time passed, it was proved that this approach led to the boost of the economy.

The Ministry of National Economy preliminary report on the new Szechenyi Plan (2010) describes the biggest obstacles of Hungarian economy: the failure of the European Union funds allocation, the 2003 growth crack after the government election, stagnating and falling behind in the region (while the Czech Republic, Slovakia and Poland were making steady progress, measured by GDP per capita, in the European Union conversion between 2004 and 2009, Hungary was being left behind the average European Union development standards), and the most crucial - declining competitiveness. Consequently the government passed the new Szechenyi Plan for next 10 years starting in 2010.

The two primary objectives of the new Szechenyi Plan are to improve Hungarian competitiveness and to boost employment by creating one million new jobs in the following decade. There are seven break-out points of this plan: healing in Hungary (health industry), renewal of Hungary (development of green economy), home projects (residential property policy), network economy (development of business environment), knowledge economy (science – innovation – economic growth), employment (work and performance oriented economy) and transport (transit economy).

A strategy of the Hungarian Export Credit Insurance Company (Hungarian export credit agency) for the 2011-2014 period was made in accordance with the new Szechenyi Plan. Its primary goal is to support significant amount of export which contributes to a higher economic growth and a creation of new jobs in Hungary. The Hungarian Export Credit Insurance Company wants to increase an availability of resources for entrepreneurs. They want to focus on the Commonwealth of Independent States, Western Balkan and Hungarian neighbourinf countries. Nevertheless, they do not exclude their tradional partners such as Brazil, India, China or the Middle Eastern States.

3.4 Polish Export Strategy

The Council of Ministers passed an act concerning export promotion for Polish exporters and foreign importers in July 2009. A basic idea of Polish government export politics is to increase state export promotion hence to

strengthen a role of Polish export credit agencies providing either financing or insurance. The Government Program for Export Support includes the Bank of National Economy and the Export Credit Insurance Corporation.

The Government Program targets consist of two parts:

1. *qualitative*: To facilitate an access to credits for purchasing Polish goods and services.
2. *quantitative*: To increase Polish export support by PLN 5.7 million (EUR 1.3 million) by providing financing and insurance.

According to the program, credits are disbursed directly to Polish exporters. Foreign importers repay the credits on completion of goods' deliveries or services. Credits granted to the foreign importers are insured by the Export Credit Insurance Corporation. It also defines a role of the Committee for Export Insurance Policy and the Ministry of Finance (the minister responsible for public finances supervises the program).

This program considered existing insurance programs to be unsatisfactory because they require a participation of commercial banks to provide export credits. Economic results during the recent financial crisis confirmed that commercial banks do not provide financing for exports to many weakly performing countries. The program wants to fill this export gap by extensive state support of export to risky countries. Poland follows a Danish and Finish example of officially supported export scheme. It is estimated that the Government Program of 2009 will increase Polish exports by PLN 6.6 billion (EUR 1.6 billion) in upcoming years. (Ministry of Finance, 2009)

3.5 Summary of Official Strategies

The Czech, Slovak and Polish government export strategies want to increase number of exports, mostly exports of small and medium entrepreneurs (in particular the Czech Republic) and to diversify export territories. The Czech Republic wants to push export towards countries with future growing potential outside of the European Union, in particular to Brazil, China, India, Russia. On the other side Slovak government prefers exports to the European Union countries and Norway, Liechtenstein and Iceland; countries with growing potential are only its second most important destination. Both Slovakia and Poland try to significantly increase amount of export promotion from the state budget, however, Poland focuses on facilitation of access to state credits and insurance products and hence strengthening of the role of ECAs (so far Polish export financing has not been effective enough) and Slovakia wants to further develop export promotion instruments. To our best knowledge there is no official individ-

ual export strategy adopted by Hungarian government. Nevertheless we could conclude some export objectives of Hungary from their general government plan; in particular they focus on improving competitiveness and creation of new jobs.

4 Export Credit Agencies

In this section we are first going to give a description of all export credit agencies established in Visegrad Four countries. In order to better understand the way they function we must understand supranational regulation and legislation under which they operate. Therefore we analyze four international organizations with the highest impact on ECAs in the region in the following section. We compare portfolio of products that ECAs offer, divided into two subgroups: insurance and banking instruments. Later we comment on three different forms of ECAs and list advantages and disadvantages concerning their effectiveness; this is also later tested empirically.

4.1 ECAs in Visegrad Four

Visegrad economies are relatively opened (see the Section 2.3) and thus their further development is dependant on international trade with other countries. One of the most common forms of government trade promotion; that is quite a novel one in this region; is to establish separate institutions that support wide range of exports. We are now going to describe their establishment and development in recent years, their functions, performance and contributions.

4.1.1 Czech Republic

There are three main export-promoting organizations in the Czech Republic, namely Czech Export Bank (export financing especially to less developed and risky countries), Export Guarantee and Insurance Corporation (a part of a state export programme to provide insurance against political and non-marketable commercial risk) and CzechTrade (providing export information and consulting services). We will take a closer look at those organizations in the next section.

Czech Export Bank

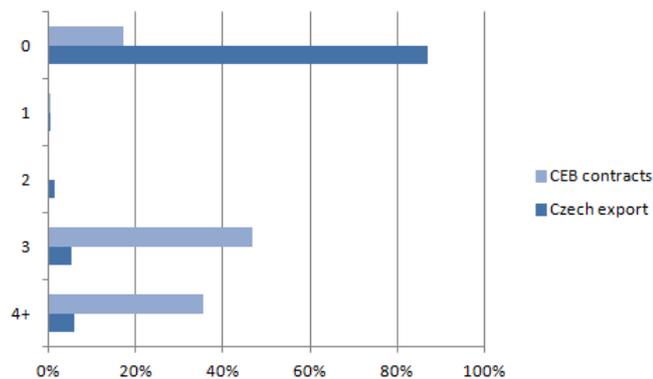
Czech Export Bank (hereinafter: CEB) was established in July 1995 as an important part of a government export-promoting programme. CEB is fully owned by Czech government, either directly or indirectly through EGAP. Main shareholders are Ministry of Finance, Ministry of Industry

and Trade and EGAP. It does not belong to any bank group. A registered value of capital at the time of incorporation was CZK 1.5 billion (EUR 59 million) and it was later increased up to CZK 4 billion (EUR 158 million).

CEB was created to offer complementary products to Czech commercial banking products. Thus CEB specializes on exporters that are not able to find necessary financing among Czech commercial banks. That means export financing with a state guarantee to countries to which Czech commercial banks do not prefer investing because of their higher riskiness. CEB's goal is to increase competitiveness of Czech exporters abroad so exporters would be operating in the same or similar conditions as their foreign counterparts. (OECD 2011, CEB 2011)

CEB clients mostly use export buyer credit (69% in 2011) and export supplier credit (16% in 2011). They deal especially with long-term credits with a maturity period longer than 2 years. The Czech Republic export is oriented towards countries with some close geographical or political relations with the Czech Republic, thus the European Union countries. Those countries are evaluated as less risky according to quarterly classification published by the Organisation of Economic Cooperation and Development (hereinafter: OECD). However, most of new CEB contracts are located in higher risky countries with a classification of 3 or more. OECD country risk classification range between 0 (no risk) and 7 (very risky). Following graph demonstrates the percentual structure of Czech export and newly signed CEB contracts, both in the year 2011, according to OECD risk classification.

Figure 2: Czech export and signed CEB contracts by OECD risk category (2011)



Source: CEB, Czech Statistical Office

Export Guarantee and Insurance Corporation

The Export Guarantee and Insurance Corporation (hereinafter: EGAP) was established already in June 1992. It is also wholly owned by state government (Ministry of Finance, Ministry of Industry and Trade and others) and its capital has a value of CZK 1.3 billion (EUR 51 million). EGAP owns 20% of CEB shares and 34% of KUPEG. KUPEG is the biggest domestic risk insurance company. It insures different kinds of commercial risks usually for a short-term period.

EGAP is a typical ECA and so according to its rules, EGAP provides state promotion only for products and territories where no commercial market insurance is applicable. That implies that EGAP insures mid-term and long-term credits in riskier territories. Again, the most common insured credit is the export buyer credit with a maturity period of 2 years or longer, according to OECD Arrangement. The export buyer credit insurance accounted for almost 70% of all EGAP's contracts signed in 2011. EGAP cooperates with almost all Czech commercial banks, however, CEB is its main partner. They also work with foreign banks financing Czech exports. (EGAP, 2011)

CzechTrade

The Czech Trade Promotion Agency or the CzechTrade was founded by the Ministry of Industry and Trade in May 1997. Its objective was to encourage Czech export by improving its competitiveness on foreign markets. The CzechTrade has a network of 8 managers operating in different regions in the Czech Republic other than in Prague. They closely cooperate with the Czech Chamber of Commerce, EGAP and CEB. There are 33 permanent establishments of CzechTrade abroad on four different continents. The CzechTrade supports export especially on markets outside of the European Union. Those contained about 80% of overall CzechTrade support in 2011. (CzechTrade, 2012)

The CzechTrade provides various services for potential exporters such as consulting, information, export assistance and export education. They organize lectures and seminars, publish export manuals and other publications, provide contact information of potential clients, market researches, marketing on foreign markets etc.

4.1.2 Slovakia

There is one organization in Slovakia, Eximbanka SR, that provides both insurance services and export financing for Slovak exporters. Slovak In-

vestment and Trade Developing Agency (hereinafter: SARIO) deals not only with improving Slovak export but also with a creation of a "business friendly" environment in Slovakia for foreign investors. The Ministry of Foreign Affairs and the Ministry of Economy play an important part in export promotion of Slovak exporters at last.

Eximbanka SR

Eximbanka was established in July 1997 as an organization fully owned by state.

Eximbanka supports export and import activities according to government export strategy. It finances different kinds of export credits, insures export credits, provides bank guarantees and refinancing in order to improve competitiveness of Slovak exporters and their products abroad. Eximbanka also provides consulting in the area of insurance, financing and foreign trade. It cooperates with its foreign business partners in different meetings and conferences of the Bern Union and the Prague Club.

Eximbanka does not provide only insurance of non-marketable risks against commercial, political or combined risk, but also marketable risk insurance, however, exclusively in the form of short-term supplier's credit insurance. Concerning Eximbank bank products, direct bill-of-exchange loans are widely used (44% overall), followed by refinance and direct export and import credit. Territorially, Eximbanka's export promotion are recently headed to European Union countries with over 80% bank products and over 70% of insurance. (Eximbanka, 2010)

Slovak Investment and Trade Developing Agency

SARIO was created in September 2001 as a government-funded organization working under the supervision of the Ministry of Economy of Slovakia. SARIO's main objective is to increase foreign investment in Slovakia by creating a convenient and lucrative environment for investors and to effectively realize and redistribute state programmes financing for export. SARIO has also been responsible for the European Union structural funds management since Slovak accession to the European Union in May 2004.

Concerning export promotion activities of SARIO, it provides consulting, information, assistance and educational services, such as organizing trade fairs both abroad and in Slovakia, creating attractive business projects, exchanging information with its foreign business partners, organizing seminars and lectures and foreign marketing. It most importantly supports small and medium entrepreneurs and new businesses. SARIO

cooperates with its foreign network of partners and it has 19 managers working in this division. (www.sario.sk)

4.1.3 Hungary

The Export Guarantee Ltd. was established in 1992 to provide full-range of export services, namely direct credits, refinancing, insurance and guarantees. In order to avoid legal problems while combining export insurance and financing under one organisation (OECD, 2001) and

”to encourage and promote external economic relations, to share the financial risks of export that cannot be covered with traditional market instruments, and to further develop the system of financial institutions and in particular the system of export financing and export credit insurance using instruments of market economy”

(Act XLII of 1994), the Export Guarantee was divided into two separated sections by the government Act of 1994. Two newly established organizations were the Hungarian Export Credit Insurance (hereinafter: MEHIB) and the Hungarian Export-Import Bank (hereinafter: Eximbank).

Export Credit Insurance Company

As mentioned earlier, MEHIB was established in 1994 as an insurance company. There was a recent bill passed in May 2012 that allowed the Minister of Economy to directly control MEHIB and Eximbank. Those two ECAs were wholly state-owned before the bill was passed too but 75% of their shares were held by the state-owned Hungarian Development Bank. The paid-in capital is HUF 4.25 billion (EUR 14.8 million).

MEHIB’s political risk insurance is protected by the state guarantees, which means that MEHIB can cover its losses from the state budget. However, MEHIB provides also marketable risk insurance for which it is fully responsible. MEHIB’s insurance activities are highly oriented towards Russian and other post-Soviet markets. Russia accounts for almost 65% of all MEHIB’s non-marketable insurance turnover in 2010 (Annual Report 2010). It is followed by Ukraine, Serbia, Kazakhstan and Belarus. Insurance into the European Union countries accounts for only 5% of overall MEHIB’s activities.

Export-Import Bank

Eximbank is a MEHIB’s sister organization that was created in May 1994. It is fully directly state-owned with a capital of HUF 1 billion (EUR 3.5

million) that was later increased up to HUF 10.1 billion (EUR 35 million). Its shares officially belong to the Ministry of National Economy.

Eximbank is engaged in export financing (both direct and indirect, and both pre- and post-shipment) and export guarantees (both loan and commercial). Its financing products are created to fill the gaps of commercial financing products. So it does not compete with commercial banks, it promotes projects that otherwise would not be realized. Eximbank's main destination country in 2010 was Russia, followed by Germany (Hungary's primary export destination), and Austria. (Eximbank Annual Report 2010)

4.1.4 Poland

Official Polish state export support, governed by the Ministry of Finance, is administrated by two state organizations. Export Credit Insurance Corporation Joint Stock Company provides export credit insurance and guarantees. The National Economy Bank or Bank Gospodarstwa Krajowego provides export credits and interest rate support mechanism.

Export Credit Insurance Corporation

Export insurance service for Polish entrepreneurs started in 1991 by creation of the Export Credit Insurance Corporation Joint Company (hereinafter: KUKÉ). Hence it was the first ECA in the territory of the Visegrad Four countries. There are only 2 shareholders of KUKÉ, namely the Ministry of Finance representing the State Treasury with the waste majority of shares (more than 88% nowadays) and Bank Gospodarstwa Krajowego (Bank of National Economy). Share capital of KUKÉ has a value of PLN 79775800 (almost EUR 20 billion).

KUKÉ and the Bank of National Economy are entrusted to fulfil Polish Government Export Support Programme. Its main goal is to support Polish exporters by financing and carrying out their business activities, especially to protect them from non-payment of their foreign trading partners. KUKÉ noted a significant boost of insurance activities with the Programme in 2010. (KUKÉ, Annual Report 2010)

KUKÉ focuses on small business operations and underlying risk of non-payment. It developed three different programs assigned for small entrepreneurs: Europolicy, Package Policy and Policy for the East. Analogous programs are used also for larger entrepreneurs, together with direct investment abroad insurance and different kinds of bonds. KUKÉ insured more

than 2.5% of all Polish exports registered by the Central Statistical Office in 2010. More than 40% of all KUKE's insurance was sent into Germany, Netherlands and Russia. (KUKE, Annual Report 2010)

Bank of National Economy

The Bank of National Economy or Bank Gospodarstwa Krajowego (hereinafter: BGK) is the only state-owned bank in Poland established already in 1924. It is essential to mention that BGK is not a typical ECA but rather a state development bank. Its primary objective is to provide banking services for the public finance sector, especially government support programs (including state export promotion). Together with KUKE, BGK forms an important part of the Government Program for Export Support created in 2009. BGK's role is to provide short-term (post-financing documentary letters of credit, discounting receivables from documentary letters of credit) and long-term (buyer's credit granted through importer's bank and buyer's credit) financing. It is necessary to point out that the above mentioned short-term financing programs are designated for banks registered in non-marketable risk countries only.

4.2 International Membership

All four Visegrad countries are members of the European Union, Organisation for Economic Cooperation and Development and the World Trade Organization. EGAP, Eximbanka SR, MEHIB and KUKE, regional export credit agencies dealing with insurance, are members of the Berne Union and Prague Club. International membership implies multiple agreements and regulations signed and fulfilled by export credit agencies. The most important among them are characterized in the next section.

Organisation for Economic Cooperation and Development

As a part of the European Union, all four Visegrad countries are members of Organisation for Economic Cooperation and Development. That implies their membership in OECD Export Credit and Guarantees Group, or formally, the Working Party on Export Credits and Credit Guarantees. OECD's *Arrangement on Officially Supported Export Credits* or Arrangement OECD came into existence in 1978⁴. The lack of rules prior to this time caused a constant growth of competition among governments to provide the most attractive financial support of exporters leading to huge

⁴The Arrangement OECD was built on the export credit "Consensus" agreed among a number of OECD countries in 1976. Its current version came into practice in September 2011.

financial subsidies and trade distortions. The Consensus is a Gentlemen's Agreement among the participants; it is not an OECD Act. Its participants are Australia, Canada, the European Union, Japan, Korea, New Zealand, Norway, Switzerland and the United States, other non-members might be invited by participants. (OECD, 2011) Hence there are 5 members of OECD that did not agree on the Consensus; those are namely Chile, Iceland, Israel, Mexico and Turkey.

A brief study about a content of the Consensus was published by Potacelova (2009). The Consensus applies on all officially supported export promotions (credits, guarantees, refinancing, insurance or their combination) with a maturity of two years or longer. The Consensus allows financing of the credit up to 85% of a nominal value of the transaction in case of a government promotion, the rest of the transaction must be paid in cash. The Consensus also defines a maximum maturity period, according to the World Bank classification of countries (GDP per capita of the country is considered): High Income countries form Category I and the rest of the world is Category II. A determination of the Commercial Interest Reference Rates (CIRR) mechanism is also described. The participants can not charge less than the applicable Minimum Premium Rate (MPR) for credit risk that is determined by the official OECD country risk classification, ranging between 0 and 7. The whole chapter is dedicated to a tied aid and its general principles. The Consensus does not apply on exports of military equipment and agricultural products.

Berne Union and Prague Club

The Berne Union name comes from a location of the first meeting of four export credit insurers from France, Italy, Spain and the United Kingdom in 1934. Their incentives did not change much ever since the year 1934; they try to actively facilitate cross-border trade by supporting international acceptance of principles in export credits and foreign investment and to provide a forum for professional exchanges among their members. Shortly after, in 1959, the Berne Union already had 22 members including companies outside of Europe (US Eximbank, EDC Canada and EFIC Australia) and companies insuring foreign investment started to take part in 1974. The Berne Union members formed two groups in 1999, one of them focuses on short term and the other one on medium/long term export credit business. 70 companies from all around the world are current members of the Berne Union, they are mix of private and public companies. Five criteria need to be fulfilled to become a member of the Berne Union. Then they work according to official guideline and they discuss topics and exchange experiences. Annual meetings, workshops and collaborations are organized and the members have access to the Berne Union intranet to share online

information.

The Berne Union Prague Club was established in 1993. It is an information network for new and establishing export credit agencies. The Prague Club members were initially Central and Eastern European agencies, members from Asia and Africa were later included. Nowadays there are 33 members of the Prague Club including all four insurance export credit companies from the Visegrad region. It is crucial to mention that all four of them met criteria for the Berne Union membership, where they have already taken part, but they still remain to be active members of the Prague Club too. Other members from the region of Eastern Europe are Bulgarian Export Insurance Agency, Eximbank of Romania, Credit & Export Guarantee Fund Estonia, Joint Stock Company the State Export-Import Bank of Ukraine; none of them has qualified as a member of the Berne Union.

European Union

The European Commission plays a main role in export support negotiations on our continent. More precisely, it is the DG Trade department. A recent study by EEIP (2011) mentions a European Union regulation and laws applying on government export promotion, the Council Decisions 73/391/EHC and 76/641/EHC in particular. The European Union member countries are not allowed to support export on the European Union internal market. They could also ask other member countries whether they consider a state promotion of a specific transaction or a project. So Council Decisions support negotiations, consultations and cooperation among members of the European Union. Other European Union documents arranging export promotion are the Council Decision of 2000 about OECD export credits, the Council Decision of 2006 about obligatory consulting of export credits and multiple directives of the Commission.

World Trade Organisation

A World Trade Organisation (hereinafter: WTO) published a regulation about an export promotion called the Agreement on Subsidies and Countervailing Measures. Member countries of WTO agreed that a subsidy exists if: a government practice involves a direct or potential transfer of funds; a government revenue that is otherwise due is not collected (e.g. tax credits); a government provides goods or services other than general infrastructure, or purchases goods; or a government makes payments to a funding mechanism. The agreement further specifies prohibited subsidies and adverse effects of subsidies on another member state of the Agreement, an identification of actionable and non-actionable subsidies and other principles of

the application of subsidies and remedies and countervailing measures in case of a violation of the Agreement. The Agreement recalls also Article VI of GATT 1994 (special provisions, anti-dumping) and establishes the Committee on Subsidies and Countervailing Measures composed of representatives from each of the member states. A role of developing country members is explicitly mentioned.

4.3 Products Provided by ECAs

This section is divided between two subsections dealing with typical banking products and later with insurance products provided by export credit agencies in Central Europe. Note that terminology and definitions presented in the first section are given by CEB. Definitions by other banks do not differ significantly, however, there are slightly different conditions requested by each bank, such as a minimum maturity period or interest rate. We are first going to give a brief definition of an instrument provided by export banks and then comment on its application in different states. Slovakia is represented by Eximbanka SR, the Czech Republic by the Czech Export Bank, Poland by BGK and Hungary by Eximbank. A summary could be found in a following table.

First category of banking products provided by export credit agencies are credits. *Pre-export credit* finances the costs connected to export contracts with an export buyer. It is designated for domestic exporters or manufactures. This type of credit is provided by Slovak and Czech bank. *Direct export supplier credit* provides financing of domestic exporters directly. This credit could be found in Czech, Slovak and Hungarian export banks. Another type of export credit instrument is a so-called *direct and indirect export buyer credit*. It is an agreement on financing between a foreign buyer (direct credit) or his bank (indirect credit) and the export bank. All Visegrad countries offer this financing facility. *Credit for investment abroad* is designated for domestic investors to finance projects abroad. All but Polish export credit agencies provide this instrument.

Banks usually provide also refinancing of different types of credits mentioned above. *Refinancing of supplier's or buyer's export credit* enables an exporter's or foreign importer's bank to obtain funds that are going to be used to provide credits to the exporter or foreign importer under more favourable conditions. Once again all but Polish exporters or their foreign buyers could use this product.

Next category of banking products accounts for other instruments than typical credits. First of this type is *forfeiting*. It enables a domestic ex-

porter to realize at present his export receivable connected with a letter of credit with deferred payment or draft acceptance. Exporters in all Visegrad countries can use this service. Furthermore, *purchase of export insured receivables* is linked with an export receivable insured against export credit risk. This receivable could be hence realized at present time. Czech and Polish banks offer this instrument.

Table 2: Bank Products

	CZ	SK	PL	HU
Pre-export credit	Yes	Yes	No	No
Direct export supplier credit	Yes	Yes	No	Yes
Direct export buyer credit	Yes	Yes	Yes	Yes
Indirect export buyer credit	Yes	Yes	Yes	Yes
Credit for investment abroad	Yes	Yes	No	Yes
Refinancing of supplier's export credit	Yes	Yes	No	Yes
Refinancing of buyer's export credit	Yes	No	No	Yes
Forfaiting	Yes	Yes	Yes	Yes
Purchase of export insured receivables	Yes	No	Yes	No
Non-payment bank guarantees	Yes	Yes	Yes	No
Payment bank guarantees	No	Yes	No	No

Source: www.ceb.cz; www.eximbanka.sk; www.kuke.com.pl; www.bgk.com.pl; www.eximbank.hu

Last type of banking products offered for entrepreneurs in Visegrad Four region are *bank guarantees*. This category includes bid, performance, retention, advance payment bond or guarantee and warranty. The Czech Republic, Slovakia and Poland offer those products. Eximbanka SR has the widest range of bond products of this category.

Now we are going to describe insurance instruments used in government export promotion. The Czech EGAP's terminology is applied, again, with a short description followed by a brief comment on instrument's utilization. Slovak export insurance is represented by Eximbanka SR, Hungarian by MEHIB and Polish by KUKA insurance company. A summarizing table follows.

Analogically to categorization of banking products of export credit agencies, insurance products could be divided into 3 categories: insurance of credits, insurance of guarantees and other types of insurance. Insurance of credits accounts for an *insurance of a short term or a medium and long term export supplier credit*. It is an insurance of an credit extended by an

exporter to a foreign importer in the form of deferment of payment of delivered goods or services. The payment may be deferred for the maximum period of 2 years in case of the short-term credit and it exceeds 2 years in case of the medium or long term export supplier credit insurance. A short term insurance is offered by all Visegrad countries but Poland and medium and long term insurance is offered by all of them except Hungary. A bank is an insurer in case of an *insurance of a short term or a medium and long export supplier credit financed by a bank*. It is covered against the risk that the foreign importer will not pay the full owed amount. Maturity periods of the short term or medium and long term insurance are 2 years and exceeding 2 years, respectively. The short term insurance of this type is possible in the Czech Republic and in Hungary and the medium and long term is proposed by the Czech Republic exclusively. Next type, *export buyer credit insurance* is designated for a bank that is covered against the risk of the non-repayment of the extended export buyer credit by a foreign importer. Conditions of this type of the insurance are governed by the OECD Consensus. These rules require a payment of at least 15 per cent by the foreign importer before the credit is extended. The product is provided by all four countries. *Insurance of credit for pre-export financing* insures a bank against a non-repayment of the credit for reasons of inability of the exporter to fulfil the export contract or inability of the producer to manufacture goods or provide services for export. It is offered by the Czech and Slovak insurance companies. At last, *insurance of credit for the financing of investment of domestic legal persons abroad* belongs to a credit for the financing of an investment in a foreign country, extended by a bank for acquisition of assets in a foreign company controlled by a domestic investor or for acquisition of a foreign company by a domestic investor. Slovak and Czech legal persons could use this type of an insurance facility.

Insurances of a bank guarantees issued in relation to an export contract belong to the second category of insurance product. It insures a bank that is covered against the risk of fair and optionally also against unfair calling of the guarantee by the Beneficiary in favour of which the guarantee has been issued. All but Polish banks could benefit from this product.

Last category of other insurance products accounts for *confirmed letter of credit* that is provided by the Czech Republic and Slovakia and it insures a confirming bank of an exporter. The bank is covered against the risk of material damage resulting from a non-payment in accordance with conditions of the confirmed Documentary Letter of Credit. *Insurance of investment of domestic legal person abroad* is designated for all Visegrad country legal persons for an investment in a foreign country. *Insurance of prospection of foreign markets* is connected with a prospection; an ex-

Table 3: Insurance Products

Insurance of	CZ	SK	PL	HU
Short Term Export Supplier Credit	Yes	Yes	No	Yes
Short Term Export Supplier Credit Financed by a Bank	Yes	No	No	Yes
Medium and Long Term Export Supplier Credit	Yes	Yes	Yes	No
Medium and Long Term Export Supplier Credit Financed by a Bank	Yes	No	No	No
Export Buyer Credit	Yes	Yes	Yes	Yes
Confirmed Letter of Credit	Yes	Yes	No	No
Credit for Pre Export Financing	Yes	Yes	No	No
Investment of Domestic Legal Persons Abroad	Yes	Yes	Yes	Yes
Credit for the Financing of Investments of Domestic Legal Persons Abroad	Yes	Yes	No	No
Prospection of Foreign Markets	Yes	No	No	No
against the Risk of Inability to Fulfil an Export Contract	Yes	Yes	No	No
Bank Guarantees Issued in Relation to an Export Contract	Yes	Yes	No	Yes
Short Term Export Receivables	No	No	Yes	No
Leasing	No	No	Yes	Yes

Source: www.egap.cz; www.eximbanka.sk; www.kuke.com.pl; www.mehib.hu

porter's activity leading to penetration of one or more new markets. It is primarily an utilization of advertising and promotional materials and it is offered for Czech exporters. *Short term export receivables insurance* is offered by Polish insurance company exclusively. It covers factoring programs. *Insurance of leasing* is an insurance of financial leasing agreements with repayment terms of two years and more and it is provided for Polish and Hungarian exporters only. The last type of insurance instruments is *insurance against the risk of inability to fulfil an export contract* or against so-called manufacturing risk consists of an insurance of a possibility of cancellation or interruption of an export contract on foreign importer's part during manufacturing. It is used in the Czech Republic and Slovakia.

The analysis of ECA products in this section implies that the widest portfolio of both insurance and financing products is offered by the Czech Republic (22 different types all together), followed by Slovakia (18), Hungary (12) and Poland (4). A proximity of Czech and Slovak export product portfolio could be observed; this might be explained by close historical ties and joint development of banking and insurance sector.

4.4 Different Forms of ECAs

EEIP's study (2011) identified all three types of export credit agencies and listed their advantages and disadvantages.

The first model is an *individual state export bank*. It is the most common model in the European Union. We could say that its advantages overcome its disadvantages because if it is incorporated as a joint-stock company, it is usually able to gain its own revenues. This implies significantly lower public expenses for the state. Since the state is usually its only shareholder, state has a big impact on the portfolio of credits that the bank provides, and thus, the state can also choose priority territories to promote. On the other side, it can not operate just by itself and it has to insure a vast majority of its credits in another insurance company. This could be have been prevented by introducing a special state legislation for eximbanks.

The second model, usually connected with the model of the individual state export bank, is an *individual insurance company*. Similar to the individual export bank, there is a possibility of long-term operation on its own budget and revenues when the insurance company is incorporated as a joint-stock company. Then direct risk for the state decreases and so there is no need for accounting of direct state guarantees in a state budget. By analogy, the individual insurance company is necessarily reliable on commercial banks' financing. Its disadvantage is that the state can not influence territorial targets of the insurance company. To do so, the state export bank must be employed.

The last type of the form of export credit agencies is an *institution offering both insurance and banking products*. This model is entitled as a combination model for the purposes of this thesis. Its disadvantages, derived from the previous discussion, are that this institution can not use only its own financing to operate. Furthermore, it is quite difficult to define this institution: Is it a bank or is it an insurance company? This also implies that it is not possible for this type of ECA to obtain its own rating, therefore it has to face an extensive risk. At the same time, a special laws must be adopted for this institution to operate as a separate joint-stock company (such as Act No. 80/1997 Coll. on the Export-Import bank Slovak Republic). Commercial banks might not be willing to provide financing that is sometimes necessary. On the other side, this type of an institution has a wider range of products offered in one place and its costumers can benefit from its one stop shop approach. This institution can also use its own "know-how" and support.

4.5 Summary

Export credit agencies are organization providing either financing or insurance mainly to exports that otherwise could not be realized due to their risky potential. They form a complement to commercial financing and insurance. A typical model of export credit agencies in Europe is to have a separate institution providing credits and guarantees, hence operation in a form of a bank; and an insurance company providing different types of export insurance, usually with state guarantees. All three models of ECAs have their advantages and disadvantages: their combination offers wider range of products and shares know-how, on the other side, separate institutions are less risky for the state and they are usually able to operate on their own budget. A model of two separate export credit agencies (banking and insurance institution) is implemented in the Czech Republic, Poland and Hungary. All ECAs are fully state-owned, either directly (Slovak Eximbanka, Czech EGAP, both Hungarian agencies and Polish BGK) or indirectly (CEB through EGAP and KUKE through BGK). CEB has the highest share of capital. All ECAs in the form of insurance companies in the region fulfilled conditions for Berne Union but they remained members of the Prague Club too.

Basic summary characteristics of export credit agencies from Visegrad Four countries could be found in the Table 4.

5 Gravity Model of International Trade

A natural question arises when discussing and analysing different schemes of export credit agencies: Which one of export credit agencies (a bank, an insurance company or their combination) is the most effective? Or in other words, state promotion from which type of export credit agency has the highest impact on the structure of exports? A theoretical discussion of advantages and disadvantages of ECAs could be found at the end of the Section 4.4 and now we are going to test their effectiveness by using the gravity model approach.

The gravity model of trade used in international economics was independently introduced in literature by Tinberg (1962) and Poyhonen (1963). Its name is derived from Newton's Universal Law of Gravitation. In its easiest form, the amount of trade between two countries depends positively on the mass and negatively on the resistance. The mass could be approximated by the size of economies in those countries that could be measured by their GDP. Analogically, the resistance could be expressed by the dis-

Table 4: Summary

Organization	CZ		SK		HU		PL	
	CEB	EGAP	Eximbanka SR	Eximbank	MEHIB	BGK	KUKE	
Form	bank	insurance	bank and insurance	bank	insurance	bank	insurance	
Ownership	80% state 20% EGAP	state	state	state from 2012	state from 2012	state	88% state 12% BGK	
Share Capital ^a	158	51	100	35	15		20	
rating ^b	A1		A1 (2010)					
Berne Union	No	Yes	Yes	No	Yes	No	Yes	
Prague Club	No	Yes	Yes	No	Yes	No	Yes	
main territories with promotion ^c	Russia		former Soviet countries, Near and Middle East	Russia, Ukraine, Serbia	Russia, Ukraine, Serbia	Russia, Ukraine	Russia, Ukraine	

^aEUR million, approximate numbers

^bMoody's long term rating

^cfor countries outside EU27 - source EEIP (2011)

tance of countries (we use geographical distance of capital cities). This model is widely used in econometrical analysis of trade flow between countries because of its high consistency with other macroeconomic models. It explains many types of flows, such as migration, commodity shipping, tourism or commuting (Bergstrand, 1985).

The concept of the gravity model has been further examined in multiple empirical papers regarding an export promotion. Egger and Url (2006) investigated a panel of data from Austria and found out that public export credit guarantees have a less than proportional positive effect on international trade volume. They predominantly affect the country structure of foreign trade but leave the industry specialisation almost unchanged. Moser, Nestmann and Wedow (2009) applied the empirical gravity model on data from German bank Hermes and they investigated the effect of public guarantees while controlling for political risk in importing country. They found a statistically and economically significant positive effect of public export guarantees on exports which proved that export promotion is indeed effective. Baltensperger and Herger (2009) examined how far an export promotion boost international trade in OECD countries. They found out that countries issuing export credits with state generous guarantees did not register any significantly higher amount of exports towards politically unstable countries and they concluded that export support rather promotes exports to higher income countries. Herger and Lobsiger (2010) examined how far officially backed guarantees on trade finance achieve their determined goal of promoting exports in Switzerland. They concluded that guarantees increase exports in the manufacturing sector by around 1%. Furthermore, Potacelova (2009) applied the model on data from the Czech Republic. Export promotion is represented by the Czech Export Bank guarantees and this concept was further developed in Janda, Michalikova and Skuhrovec (2012) working paper on robust evidence of more sophisticated econometrical models of export credits.

We will contribute to the discussion of effectiveness of export credit agencies by providing the answer to this question by using the empirical gravity model with an exogenous variable "export promotion". ECA in the form of bank is represented by the Czech CEB, an insurance company by Polish KUKE and their combination by Slovak Eximbanka.

5.1 Theoretical Framework

As mentioned above, gravity model of trade is analogous to Newton's gravity law in mechanics: Gravitational pull between two physical bodies is proportional to the product of each body's mass divided by the square of

the distance between their respective centres of gravity; or:

$$F = G \frac{M_1 M_2}{D^2}$$

Its analogy for trade could be interpreted as: The trade flow between two countries is proportional to the product of each country's *economic mass*, generally measured by GDP, each to the power of quantities to be determined, divided by the distance between the countries' respective *economic centres of gravity*, generally their capitals, raised to the power of another quantity to be determined. This is the baseline gravity model that offers room for further estimation.

$$M = k Y_M^\beta Y_X^\gamma D^\delta$$

where M is the flow of exports into country X from country M, Y_M and Y_X are country M's and country X's GDPs, and D is the geographical distance between the countries' capitals. The logarithmical form of the gravity model (commonly used in econometrical analysis) is

$$\log(M) = \beta_0 + \beta_1 \log(Y_M) + \beta_2 \log(Y_X) + \beta_3 \log(D)$$

Nevertheless, there are more factors that influence exports, hence different sets of explanatory variables and dummy variables are added to the model and a common practice is to remove $\log(Y_M)$ when investigating the structure of exports from just one country. (Christie, 2002)

5.2 Econometrical Model and Data Description

We estimate three different specifications of gravity model along the lines with Egger and Url (2006) and Potacelova (2009). Our baseline equation has a form:

$$\begin{aligned} \ln(\text{export}_{it}) &= \beta_0 + \beta_1 \ln(\text{promotion}_{it}) + \beta_2 \ln(\text{GDP}_{it}) + \\ &+ \beta_3 \ln(\text{distance}_i) + \beta_4 \ln(\text{population}_{it}) + \\ &+ \beta_5 \ln(\text{risk}_{it}) + \mu_i + \mu_t + \epsilon_{it} \end{aligned}$$

where t stands for a year⁵, i for a receiving country destination, μ_i is a country specific error term, μ_t is a time specific error term and ϵ_{it} stands for an error term with zero mean and constant variance.

⁵Model describing the bank (CEB) covers time period 2003-2011; an insurance company (KUKA) model covers time period 2002-2011; and model of the combination (Eximbanka SR) covers only year 2010-2011, there were no precise data available for the prior period.

An endogenous variable in our regression models is logarithm of export from observed country (the Czech Republic, Poland, Slovakia) to country i in year t . It is expressed in current US dollars. In case of the Czech Republic, data were obtained from the Czech statistical office in CZK and then transferred to USD by using an average yearly exchange rate (obtained from the Czech National Bank); other data were downloaded from the Cometrade database already in USD.

A key variable in our model is $\ln(\textit{promotion}_{it})$. It is a logarithm of overall amount of state promotion sent into a country i in year t that was provided by a corresponding export credit agency. It is a sum of different forms of promotion: guarantees, credits, insurance etc. It is a key variable in our model and we use its coefficient to compare effects of export credit agencies in three different forms on an amount of export. Data were provided by KUKA, CEB and Eximbanka. We assume that state export promotion increases export especially to countries with higher political risk. Hence we expect a positive coefficient of the variable.⁶ Other exogenous explanatory variables are:

$\ln(\textit{GDP}_{it})$ is a logarithm of GDP of a receiving country i in year t . This variable is suggested to be used as a proxy for a size of market in gravity models. Data were obtained from the International Monetary Fund and they are expressed in current USD. We expect a coefficient of this variable to be positive because demand for imported products and services should increase in bigger markets.

$\ln(\textit{distance}_t)$ is a logarithm of geographical distance of capital cities of exporting and importing country i , expressed in kilometres. It is proposed as a proxy for transaction costs and hence for resistance in the gravity model. Transaction costs increase with growing distance of an importer so we expect this coefficient to be negative.⁷

$\ln(\textit{population}_{it})$ is a logarithm of population in receiving country i in year t . With growing population demand for foreign exports increases, therefore we expect the coefficient to have a positive value. Data were obtained from the International Monetary Fund official database.

$\ln(\textit{risk}_{it})$ is a logarithm of a political risk of country i in year t . We used the OECD classification of riskiness of countries that is pe-

⁶Note that a common practice when dealing with transformation of zero values to logarithmical form is to remove those observations. However, in our case there is a large number of zero values and so we can not remove all of them. Thus when running the regression we substituted all zero values of promotion by 1 in order to be able to compute logarithmical form. This approach has been suggested by Janda et al. (2012)

⁷Source: timeanddate.com

riodically updated. The smaller the risk classification is, the less risky the country is. The OECD classification ranges between 0 to 8. Tinberg 1962 pointed political risk to be an important obstacle to international trade flow because it represent an additional transaction cost. Governments try to stimulate exports by granting export credit guarantees against export risks, especially political risks (Moser et al., 2006). This variable was introduced by Moser et al. in gravity model estimation. However, we expect the effect of export promotion to riskier countries to be offset by the volume of export of to less risky countries that are chosen by the majority of exporters. This implies a negative expected sign of the *risk* coefficient.⁸

Table 5: Descriptive statistics of the *bank* model

Variable	Obs	Mean	Std. Dev.	Min	Max
export (USD)	1635	5.88 *10 ⁸	2.95*10 ⁹	0	5.21*10 ¹⁰
promotion (USD)	1635	3617157	2.96*10 ⁷	1	5.99*10 ⁸
population	1542	3.74*10 ⁷	1.38*10 ⁸	25625	1.34*10 ⁹
GDP (USD)	1457	2.35*10 ¹³	1.85*10 ¹⁴	1.15*10 ⁸	3.06*10 ¹⁵
distance (km)	1635	5622.814	3788.947	0	18197
risk	1618	4.850433	2.845627	1	9

Source: Author's calculation

Table 6: Descriptive statistics of the *insurance company* model

Variable	Obs	Mean	Std. Dev.	Min	Max
export (USD)	1682	6.82*10 ⁸	2.88*10 ⁹	18	4.73*10 ¹⁰
promotion	1821	1.4*10 ⁷	5.30*10 ⁷	1	8.66*10 ⁸
population	1711	3.72*10 ⁷	1.37*10 ⁸	23044	1.34*10 ⁹
GDP (USD)	1621	2.20*10 ¹³	1.76*10 ¹⁴	1.15*10 ⁸	3.06*10 ¹⁵
distance (km)	1821	5675.937	3810.224	0	17690
risk	1789	4.921185	2.842617	1	9

Source: Author's calculation

For further information about the structure of datasets, descriptive statistics for all three models are reported in Tables 5 to 7.

⁸Note that in regression we used classification from 1 to 9 instead of 0 to 8 (1 we used equals 0 from original OECD risk classification); this way we could transform values into a logarithmical form without losing a significant number of observation.

Table 7: Descriptive statistics of the *combination* model

Variable	Obs	Mean	Std. Dev.	Min	Max
export (USD)	340	4.18*10 ⁸	1.57*10 ⁹	65	1.60*10 ¹⁰
promotion (USD)	372	1.56*10 ⁷	7.69*10 ⁷	1	6.97*10 ⁸
population	338	3.94*10 ⁷	1.42*10 ⁸	29244	1.34*10 ⁹
GDP (USD)	332	3.28*10 ¹³	2.59*10 ¹⁴	1.87*10 ⁸	3.06*10 ¹⁵
distance (km)	372	5622.116	3909.794	0	18100
risk	372	4.596774	2.852868	1	8

Source: Author's calculation

5.3 Empirical Results

We are going to present results of our gravity models in this section. We arranged our datasets into unbalanced panel data and estimated three different models for bank, insurance company and their combination. A common approach with panel data is to estimate both random effect and fixed effect models by GLS regression and then use Hausman test to decide. Under the null hypothesis of Hausman test, both random effect and fixed effect models are effective and consistent; the alternative hypothesis rejects the random effect model. We do expect the fixed effect model to be more consistent with our data because we used a sample of almost all countries in the world; data were not chosen randomly. Data for smaller underdeveloped countries, such as their GDP or export, are usually not available in international databases and hence they were excluded from our regression. Fixed effect estimation outweighs in working papers dealing with the gravity equation. Results of our regressions are reported in Table 8 that follows.

Hausman test rejected the random effect estimation as it was expected. R-squared from the fixed effect models in all three cases ranges between 0.222 to 0.276; this implies that explanatory variables from our models explain only between 22 to 27% of overall variance in *export*. When using the random effect estimation, R-squared was much higher. It could have been caused by omitting the variable *distance* from the later model. This variable probably explained a lot of variance in *export*.

Our key variable, *promotion*, equals 0.01, 0.05 and -0.005 for bank, insurance company and combination model, respectively. Therefore the insurance company is the most effective. The export bank promotion follows and our analysis identifies promotion provided by the institution integrating financing and insurance instruments as the least effective one. Indeed we must interpret those results with caution. Variable *promotion* in bank

Table 8: Static GLS regression

	bank		insurance company		combination	
	RE	FE	RE	FE	RE	FE
promotion	0.013* (0.007)	0.010 (0.007)	0.080*** (0.009)	0.05*** (0.009)	0.014 (0.010)	-0.005 (0.010)
population	0.969*** (0.061)	1.768*** (0.238)	0.732*** (0.062)	2.314*** (0.250)	0.882*** (0.084)	-0.119 (0.376)
GDP	0.047*** (0.012)	0.022* (0.012)	0.064*** (0.013)	0.042*** (0.013)	0.099*** (0.037)	-0.047 (0.042)
distance	-2.027*** (0.117)		-1.710*** (0.128)		-1.815*** (0.140)	
risk	-0.614*** (0.072)	-0.443*** (0.079)	-0.567*** (0.077)	-0.370*** (0.086)	-1.176*** (0.174)	-0.111 (1.007)
constant	17.417*** (1.340)	-11.705*** (3.800)	17.851*** (1.436)	-21.141*** (3.983)	15.624*** (1.800)	19.128*** (6.142)
n	1421	1421	1499	1499	308	308
R ²	0.694	0.276	0.713	0.222	0.726	0.227
Hausman <i>p</i> -value	0.00		0.00		0.00	

Source: Author's calculation

Note that *, **, *** denote significance at 10%, 5%, 1% level, respectively.

and combination model do have higher p-values (around 0.2) and hence they are not significant at required levels. Further, in case of combination model, the variable *promotion* has even a negative effect on exports. Nevertheless, the random effect model gives similar results and hence so far we can conclude that the promotion provided by the ECA in the form of the insurance company, KUKÉ, is the most effective and the only significant in this case of CEB, KUKÉ and Eximbanka SR. Magnitude of all coefficients could be interpreted as usual elasticities because we deal with a log-log model. 1% increase of *promotion* provided by the bank increases *export* by 0.01% *ceteris paribus*, by 0.05% provided by insurance company and it decreases *export* by 0.005% in case of institution providing both insurance and financing products.

Concerning other variables, all variables in models of separate institutions are significant (in the insurance company model they are all significant at even 1% confidence interval). In those 2 models, all variables have expected coefficients. Hence increasing population and GDP cause export to increase. With growing distance export decreases because of higher transaction costs and hence Poland, Slovakia and the Czech Republic choose to export to geographically closer countries (estimates from the random effect models). Exporters also choose countries with lower risk to overcome potential losses. Not all variables in combination model have expected coefficient. This could have been caused by rather small number of observations or by excluding some significant variables from the model. Estimates of variables could be biased.

To further improve our models and since Hausman test decided in favour of the fixed effect estimation, we estimated the gravity equation by using Least Squared Dummy Variable (hereinafter:LSDV) approach. It is a special kind of fixed effect estimation.⁹ This model does not omit variables constant over time, therefore the explanatory variable *distance* is not going to be excluded from our analysis. (Potacelova, 2009) Results are reported in Table 9.

Table 9: Static LSDV OLS regression

	bank	insurance company	combination
promotion	0.009 (0.006)	0.025*** (0.008)	-0.003 (0.010)
population	0.200 (0.224)	0.207 (0.227)	-0.054 (0.372)
GDP	0.001 (0.010)	0.016 (0.011)	-0.051 (0.041)
distance	-3.096*** (0.214)	-0.776*** (0.224)	-2.694*** (0.476)
risk	-0.165** (0.070)	0.027 (0.074)	0.022 (0.996)
constant	35.235*** 4.526	20.830*** 4.528	35.702*** (7.116)
n	1421	1499	308
R ²	0.955	0.947	0.971

Source: Author's calculation

Note that *, **, *** denote significance at 10%, 5%, 1% level, respectively.

R-squared from LSDV models increased significantly in comparison with previous fixed and random effect models. They explain around 95% of variance of export. We must add that new country and time dummy variables from LSDV (not reported in the Table 9) were estimated as very significant in spite of their quantity (more than 200 dummy variables). Hence we can conclude that the LSDV model fits well our regression. When comparing magnitude of coefficients of the variable *promotion* and its significance, the LSDV model confirmed our previous analysis. 1% increase

⁹We included full set of dummy variables for each year and country; the country dummy variable C_j equals 1 for country i when $i = j$ otherwise C_j . Analogically for the time dummy variable Y_s . We used OLS to estimate the model

$$\log(\text{export}_{it}) = \beta X_{it} + \sum_{j=1}^n \gamma_j C_j + \sum_{s=1}^t \delta_s Y_s + \epsilon_{it}$$

where X_{it} denotes full set of explanatory variables described above.

of state promotion causes export to increase by 0.025% in case of the insurance company, by 0.009% in case of the bank. The same amount of promotion from the institution integrating insurance and bank activities decreases export from the country by 0.003%. As mentioned above, this result is probably biased because of relatively small number of observations during a short time period. We could also expect that the export promotion increases export in a longer time period. The only significant variable on 1% significance level is *distance* which is the main explanatory variable in gravity model and hence we also confirmed that the gravity equation works and it is a useful tool to estimate trade flows among countries. Another significant variable in LSDV models is *risk* but only in the bank model so we can not make any general conclusion about the effect of political risk of the country on the amount of export.

We conclude that the state promotion of export, provided in the form of the insurance company (KUKÉ), is the most effective from observed forms. At the same time it showed up to be the only type of promotion with significant statistical as well as economical effect on export from observed country.

6 Conclusion

Improving country's competitiveness on foreign markets by boosting quantity of exports is a target of each government. This is especially true for Central and Eastern European countries that went through a very turbulent transition period and they had to implement an enormous amount of reforms in last decades that we analyzed in this thesis. Visegrad Four countries are all small economies with relatively high degree of openness, hence high quality state export plans are particularly crucial for countries' future development. A common practice for governments worldwide is to establish state-owned export agencies to accomplish their own targets in the field of export promotion to enhance country's welfare.

Export credit agencies are organizations providing either financing or insurance mainly to exports that otherwise could not be realized due to their risky potential. They form a complement to commercial financing and insurance. A typical model of export credit agencies in Europe is to have a separate institution providing credits and guarantees, hence operation in a form of a bank, and an insurance company providing different types of export insurance, usually with state guarantees. This model is used in the Czech Republic, Poland and Hungary; there is just one organization integrating financing and insurance facilities in Slovakia. All three models of ECAs have their advantages and disadvantages: their combina-

tion offers wider range of products and shares know-how, on the other side, separate institutions are less risky for the state and they are usually able to operate on their own budget. We used collected data and tested effectivity of three forms of export credit agencies. We estimated random effect, fixed effect and LSDV model and all of them determined export credit agency in the form of the insurance company to be the most effective; that means that 1% increase of export promotion provided by tested insurance company had the highest effect on percentage growth of exports.

Since our empirical models did not find significant effects of official export promotion, future examination in this field is possibly needed. We estimated only static econometrical models, dynamic model with lag variables estimated by more sophisticated econometrical tools could be more precise. System GMM analysis could be applied on data from Visegrad countries as in Janda et al. (2012) working paper. Another option is to use Mundlak corrected random effect estimation (Moser et al., 2009). Other explanatory variables could alternatively be added into the regression. It is also necessary to include longer time period for future estimations in case of Slovak Eximbanka when more data will be available.

References

- [1] BALTENSBERGER, E. and HERGER, N. Exporting against risk? Theory and evidence from public export insurance schemes in OECD countries. *Open Economies Review*. September 2009, 20(4). 545-563.
- [2] BANK GOSPODARSTWA KRAJOWEGO. *Government Program for Export Support*. <http://www.bgk.com.pl/export-support-government-program-en>. [July 24, 2012]
- [3] BERGSTRAND, J.H. The Gravity Equation in International Trade: Some Microeconomic Foundations and Empirical Evidence. *The Review of Economics and Statistics*. August 1985, Vol. 67, No. 3. 474-481.
- [4] BERNE UNION. *About the Berne Union*. <http://www.berneunion.org.uk/value-statement.html>. [July 24, 2012]
- [5] CENTRAL STATISTICAL OFFICE OF POLAND. *Yearbook of Foreign Trade Statistics*. Warsaw: 2007.
- [6] CENTRAL STATISTICAL OFFICE OF POLAND. *Yearbook of Foreign Trade Statistics*. Warsaw: 2010.
- [7] CHRISTIE, E. *Potential Trade in Southeast Europe: a Gravity Model Approach*. Vienna: WIIW, March 2002.
- [8] CZECH EXPORT BANK. *Seznam hlavnich produktu podporeneho financovani CEB*. <http://www.ceb.cz/content/view/54/25/>. [July 24, 2012]
- [9] CZECHTRADE. *Nase sluzby*. <http://www.czechtrade.cz/sluzby/>. [July 24, 2012]
- [10] CZECHTRADE. *Zahranicni obchod Ceske republiky v letech 1993-2007*. Praha: 2008.
- [11] EEIP. *Hodnoceni dopadu regulace (RIA) k navrhru zmen legislativy souvisejici s navyšenim financnich prostredku pro Exportni garancni a pojistovaci spolecnost, a.s.* Praha: July 2011.
- [12] EGGER, P. and URL, T. Public export credit guarantees and foreign trade structure: Evidence from Austria. *The World Economy*. April 2006, 29(4). 399-418.
- [13] EXIMBANK HUNGARY. *Product range*. <http://www.eximbank.hu/en/termekpaletta/>. [July 24, 2012]

- [14] EXIMBANKA SR. *Bankove produkty*.
http://www.eximbanka.sk/sk/nase-produkty/bankove-produkty.html?page_id=96. [July 24, 2012]
- [15] EXPORT CREDIT INSURANCE CORPORATION. *Products*.
http://www.kuke.com.pl/small_business.php. [July 24, 2012]
- [16] EXPORT GUARANTEE AND INSURANCE CORPORATION. *Insurance products*. <http://www.egap.cz/pojistne-produkty/index.php>. [July 24, 2012]
- [17] GIANTURCO, D.E. *Export Credit Agencies: The Unsung Giants of International Trade and Finance*. Westport: Greenwood Publishing Group, 2001.
- [18] HERGER, N. and LOBSIGER, M. *How do Export Risk Guarantees affect Exports? The Case of Switzerland*. Zürich: Rüegger, 2010, 65(3). 297–319.
- [19] HUNYA, G. and RICHTER, S. Mutual trade and investment of the Visegrad countries before and after their EU accession. *Eastern journal of European studies*. December 2011, 2(2). 77-91.
- [20] HUNGARIAN STATISTICAL OFFICE, various time series annual datas
- [21] JAKOBY, M. Zahranicny obchod. In: MARCINCIN, A., BEBLAVY, M. *Hospodarska politika na Slovensku 1990-1999*. Bratislava: INEK0, 2000. 139-160.
- [22] JAKOBY, M. Zahranicny obchod a zahranicne investicie. In: MARCINCIN, A. *Hospodarska politika na Slovensku 2000-2001*. Bratislava: Slovenska spolocnost pre zahranicnu politiku, 2002. 159-182.
- [23] JANDA, K., MICHALIKOVA, E., and SKUHROVEC, J. *Credit Support for Export: Robust Evidence from the Czech Republic*. Prague: Cerge-EI Working Paper Series No.461, May 2012.
- [24] KAMINSKI, B. *The collapse of state socialism: the case of Poland*. Princeton: Princeton University Press, 1991.
- [25] LYNCH, D.A. *Trade and globalization: an introduction to regional trade agreements*. Lanham: Rowman & Littlefield, 2010.
- [26] MANKIW, G. *Macroeconomics*. New York: Worth Publishers, 2003.

- [27] MINISTERSTVO HOSPODARSTVA SLOVENSKEJ REPUBLIKY. *Proexportna politika Slovenskej republiky na roky 2007 - 2013*
- [28] MINISTERSTVO HOSPODARSTVA SLOVENSKEJ REPUBLIKY. *Zahranicny obchod*, various years
- [29] MINISTERSTVO PRUMYSLU A OBCHODU. *Exportni strategie Ceske republiky pro obdobi 2012 – 2020*
- [30] MINISTRY OF FINANCE OF THE REPUBLIC OF POLAND. *Wspieranie polskiego eksportu poprzez udzielanie przez Bank Gospodarstwa Krajowego kredytow dla zagranicznych nabywcow polskich towarow i uslug lub ich bankow z ochrona ubezpieczeniowa Korporacji Ubezpieczen Kredytow Eksportowych S.A.*. July 2009
- [31] MINISTRY OF NATIONAL ECONOMY HUNGARY. *New Szechenyi Plan*. 2010.
- [32] MEHIB. *Products*.
<http://www.mehib.hu/Default.aspx?menuid=401&block=4>. [July 24, 2012]
- [33] MESAROS, O. *Vyvoj a hlavni strukturalni zmeny v zahranicnim obchode Ceske republiky a vybranych transformujicich se ekonomik; Zapojeni ceske ekonomiky do EU*. Praha: VSE, 2001 .
- [34] MOSER, C., NESTMANN, T., and WEDOW, M. Political risk and export promotion: evidence from Germany. *World Economy*. June 2008, 31(6). 781-803.
- [35] ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT. *Arrangement on guidelines for officially supported export credits*. Paris: OECD, 2011.
- [36] ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT. *Export Credit Financing System in OECD Member Countries and Non-member Economies*. Paris: OECD, 2001.
- [37] POTACELOVA, V. *Analyza uverove podpory poskytovane CEB*. Praha: 2009. Diplomova prace. Vysoka skola ekonomicka, Fakulta financi a ucetnictvi. Vedouci prace Karel Janda.
- [38] POYHONEN, P. A tentative model for the volume of trade between countries. *Weltwirtschaftliches Archiv*. 1963, 90(1). 93-100.
- [39] POZNANSKI, K.Z. *Poland's Protracted Transition*. Cambridge: Cambridge University Press, 1996.

- [40] REALDEAL. *State takes direct control of Eximbank, Mehib.*
<http://www.realdeal.hu/20120509/state-takes-direct-control-of-eximbank-mehib/>. [July 24, 2012]
- [41] RODIK, D. *Foreign Trade in Eastern Europe's Transition: Early Results* The Transition in Eastern Europe. University of Chicago Press, January 1994, Volume 2. 319-356.
- [42] SARJO. *Podpora exportu.*
<http://www.sario.sk/?medzinarodne-podnikanie>. [July 24, 2012]
- [43] SVEJNAR, J. and UVALIC, M. *The Czech Transition*, Research Paper No 2009/17, United Nation University, March 2009
- [44] TINBERG, J. *Shaping the World Economy: Suggestions for an International Economic Policy.* New York: The Twentieth Century Fund, 1962.
- [45] WACH, K., UBREZIOVA, I. and HORSKA, E. *A Gravity Model Approach to Estimating Prospective Trade Gains in the EU Accession and Associated Countries.* Cluj-Napoca: 2008.
- [46] WINIECKI, J. *Transition Economies and Foreign Trade.* Routledge, 2002.
- [47] WORLD TRADE ORGANIZATION *Agreement on Subsidies and Countervailing Measures.* WTO, 1994.