

THE TRADE PATTERN IN THE EU COUNTRIES AND ITS IMPACT ON THE ECONOMIC GROWTH

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Abstract: We have approached this paper with the idea of helping to predict the likely effects of the accession of the CEEC's on trade patterns in the enlarged EU and how the trade structure will affect growth. To this end, we examine the factors that account for the major changes that have taken place in trade flows since the CEEC's began their processes of transition and economic opening-up within the framework of the European Association Agreements. Specifically, our purpose is to find evidence that help us to foresee whether the accession of the CEEC's will involve not only increased trading with the new partners -attributable to the effects of trade creation and deviation, acknowledged on a general basis in the literature on the Regional Integration Agreements- but also a geographical restructuring of the trade flows between the members of the area. Due attention has not been attached until recently to this latter aspect in the context of the new geography and trade models, although it is of equal importance. In this respect, it is of particular interest to us to examine whether -as has been postulated in some papers- the integration of the CEEC's may lead to a concentration of the multinationals in these countries with a view to using them as a "exporting platform" in detriment to the exporting possibilities of the current members of the EU, and particularly of the Southern European member states, which have a more similar production and trading capacity to the candidates.

1. Introduction

The enlargement of the European Union (EU), with the accession of many Central and Eastern European Countries (CEEC's): Hungary, Poland, Czech Republic, Slovenia, Estonia, Romania, Bulgaria, Slovak Republic, Latvia and Lithuania, represents a crucial episode in the construction of Europe due to its political and economic implications, not only for the candidates, but also for the older EU members.

Although the formal beginning of negotiations happened later, the CEEC accession process somehow began in the early 90s, therefore shortly after their transition towards the free market system got under way. In fact, since then the candidates have been signing bilateral agreements with the EU -the so-called European Association Agreements- which have represented an advance in the path towards integration through stipulating a progressive liberalization of trade and of direct investment flows.

In this respect, it may be argued that analysis of what has happened during the years while the above-mentioned agreements have been in force, not only as regards trade adjustments but also the trends in direct investment flows and the behavior of the multinationals, is valuable information with a view to predicting what may happen after all these countries became full members of the EU. In turn, there is no doubt that these efforts of prediction were important for setting the process of negotiating the accession of these countries on the right lines, so that it may prove to be as beneficial as possible for both older and new members.

In order to advance in the knowledge of these issues, the paper is structured in the

following way. Section 2 describes the stylized facts of the modifications that have been implemented in trading between the EU and the CEEC's and, in order to have a suitable third area of control, the rest of the OECD countries (which, furthermore, are the ones that absorb practically all the remaining trade both of the current members of the EU and of the applicants). Section 3 outlines some brief considerations in relation to the hypotheses upheld in the models developed -as a result of the appearance of Krugman's influential book (1991)- which attempt to explain the impact of the exports structure on the economic growth, and we then put forward an empirical model which sets out to be compatible with the theoretical hypotheses and with the stylized facts analyzed previously. The paper ends with a section of conclusions, where we summarize the main results obtained.

2. Features of the trade opening-up of the CEECS

One of the essential features denoting the process of transition of the former communist countries now EU member is their swift and intense opening-up to trade and international investment, oriented primarily towards Europe. In fact, shortly after the fall of the Berlin Wall and the collapse of the COMECON, the CEEC's stepped up their trading with the Western economies and particularly with the countries of the EU, which has now become the main supplier and destination of their expanding trading operations. Similarly, since the start of their transition to the free market system most of the CEEC's have been receiving substantial and increasing flows of foreign capital in the form of direct investment, to the extent that foreign direct investment -which has played an active part in the privatization processes in some of the CEEC's - may also be considered to be a factor specific to the economic change that has taken place in these countries.

We can observe, amongst other interesting facts, the big presence, as was foreseen, of the EU in the imports of all the candidates and the increasingly significant importance of the CEEC's in the market of the Fifteen. Finally, the more detailed observation of the bilateral data suggests the existence of a certain direct relationship between the geographical proximity of the countries and the intensity of their reciprocal trade.

For their part, the features of the direct investment made by the fifteen Member States of the EU, the U.S.A., Japan and the other members of the OECD in the candidate countries shows the exceptional concentration of investments in Hungary, Poland and the Czech Republic and the relative coincidence between the leading OECD investor countries in the CEEC's -particularly Germany, Austria and France- and the ones that play a major part in the supply of their imports. This particular aspect stands out more clearly when we analyze the correlation between both variables for the whole period, as this gives rise to a coefficient of 61%. In addition, there are "case studies" (EBRD, 1999; World Bank, 2000) which further support the idea about the essential influence that is exerted by foreign investment in laying down the trading patterns of the CEEC's, not only in the geographical aspect, which is analyzed here, but also as regards the sectorized composition of the trade flows.

Moreover, there is evidence that - besides the afore-mentioned association between direct investment and importing- there is a positive relationship between the receipt of foreign capital by the CEEC's and their exporting capacity, as an outcome of the strategy apparently being applied by the multinationals of using these countries as production centres and exporting platforms (See Lankes and Venables, 1997).

In short, the features found in the trading patterns of the CEEC's with the OECD

countries suggest that the attempts that are made to explain them should include amongst the explanatory variables: distance, direct investment and ones that enable us to approach the existence of different trading regimens.

The results obtained in this study may be interpreted in two ways. Thus, on the one hand, it provides additional evidence that enables us to improve our knowledge of the factors that are determining the trading patterns between the member countries of the OECD. In this respect, besides corroborating the importance of distance (transport costs) and of economies of scale, fresh evidence is supplied on the influence of foreign investment in the importing and exporting activity of the recipient countries. These results suggest, therefore, how advisable it is that not only the efforts that are made in the field of research to understand the nature of international trade, but also those devoted to the design and application of policies in this area, should take trade and the activity of the multinationals into joint consideration.

In addition, the results of this study, however, primarily offer valuable information with a view to predicting the trade impact of enlargement of the EU with the accession of the CEEC's. In this respect, there are several lessons that may be drawn from what we have learnt about the trade adjustments that have taken place during these years of validity of Association Agreements, which have meant practical elimination of the barriers to trade and of controls on direct investment between the EU-15 and the new members.

The Association Agreements have given rise to a strengthening of the trade relations between the CEEC's and the EU, greater than that recorded with the rest of the OECD. Secondly, the liberalization of trade that has taken place as a result of the aforementioned Agreements has also brought about a reorientation of trading between the members and the candidates, that implies a larger increase in imports than in exports by the latter, and, consequently, a worsening of its balance of trade with the EU. Finally, the last but not least lesson to be drawn when trying to evaluate the subsequent trade adjustments that may take place when the integration of all CEEC's is put into effect is that these will largely be determined by the strategies of the multinationals settled in them.

The relationship between export and economic growth has been extensively discussed in economic literature. The structure of trade and its relevance for growth has not to the same extent caught the interest of researchers.

The relationship between export growth and economic growth has been extensively discussed in economic literature. Most studies show a strong correlation between the two variables. This study elaborates on the connection between exports and economic growth by looking at the composition of exports. The purpose is to see whether some of the exported products are more important for growth than others. Product groups are divided into three categories, Low, Middle and High income elastic products. Income elasticity of export demand is said to capture non-price competitive factors.

The empirical study is based on data from the OECD. Results indicate that countries should structure their exports away from the low income elastic category and that the remaining two categories appear to contribute to growth.

This study elaborates on the connection between exports and economic growth by looking at the composition of exports. Does it matter what type of products a country exports? In the world economy we have seen the NIC-countries succeeding in altering their exports towards products that have a high demand and expanding markets. In doing this they have managed to compete with developed countries.

Studies have also shown that price is no longer the most essential factor when countries are competing for market shares (Fagerberg, 1988, McCombie and Thirlwall, 1994). This applies especially to the rich countries. When income grows customers can afford to be more particular in their demands and request higher quality, superior technology and better services. If countries can develop competitiveness in such non-price characteristics there should be market shares to gain and improved growth potential. The non-price competitiveness of countries is captured by the income elasticity of export demand.

This paper puts a focus on the relevance of demand when considering growth potential of a country. After the World War II, economists searched for reasons to why growth rates in industrialized countries diverged to the extent that they did. Neoclassical growth theory referred these variations to differences in factor supplies.

Other researchers found demand for a country's products to be essential for improving its growth potential (Beckerman 1962, Lamfalussy 1963, Thirlwall 1979). Lederman and Maloney (2003) study how the structure of trade can affect growth. In their paper they focus on factors such as natural resources, export concentration and intra-industry trade. They apply these variables to the usual growth regression. The results show that natural resources surprisingly has a positive effect on growth, export concentration a negative effect and intra-industry trade is positive for growth. This study we will categorize product groups according to their income elasticity. The purpose of the paper is to see if exports of products with different income elasticity's have different effects on growth.

The level of desegregation of export statistics used in this study is the two-digit level of the SITC-classification, resulting in 69 product groups to categories. Ideally, the best way to estimate these income elasticity's would be to use world data. However, accessibility to and handling that large amount of data would be difficult. In this study, data from the OECD countries is used. By only selecting these 30 countries there is a possible selection bias in the estimations of the income elasticity's. On the other hand, OECD countries account for around 70 per cent of world trade.

After identify the elasticity's, the product groups are ranked and categorized into classes of High, Middle and Low income elastic products. In the second step, values for these categories are identified for each OECD-country for the time period 1980-2003. The second regression aims at finding a relationship between growth and the three product classes.

In the following section 3, the theoretical framework draws up support for the approach taken in this study. It elaborates on the relation between exports and growth and continues with a discussion on the relevance of including demand in models and how income elasticity's are used to carry the analyses of exports and growth. Section three lay out the method applied in this study. In section four the results of the study are presented and analyzed followed by the conclusions.

3. Economic growth and non-price competition in export markets

The theoretical section in this paper reflects on the relevance of demand for a country's growth potential. This section is divided into two subsections where the first one aims at providing insights into the effect of exports on economic growth. The second subsection depicts the role of demand in economic theory and finally the concept of non-price competitiveness is reviewed.

The effects of exports on economic growth

How do exports affect economic growth? There are a number of reasons of which three will be mentioned in this section. One is that export is part of national income. Gross domestic product is made up of consumption, investment, government spending and exports less of imports. Thus an increase in exports, keeping all other variables constant, would have a positive effect on national income. Additionally, studies have shown that firms with an extensive export share of production are more productive (Lundin and Hansson 2003). This is evident since these firms must be able to compete on a larger and more competitive market. Exports contribute to economic growth via higher productivity and also through more efficient reallocation of resources. A third contribution of export is to finance imports. For a country, developed or developing, imports bring new technology, new ideas, and higher efficiency to the economy that it may not be able to develop on its own. Here, exports play a significant role in enabling the country to acquire these imports.

The Role of Demand in Trade and Economic Growth

Countries have different growth rates. In neoclassical growth theory these differences are explained by differences in factor supplies. In the Post-Keynesian tradition, researchers look for a possible explanation these differences by considering the demand for a country's products. External demand for products in a country is reflected by exports.

If a country produces products for which there is an increasing demand this will have a positive impact on income. However, as mentioned before, the revenues from exporting can be used for the purchase of imports so the outcome on growth depends on the change in imports as well. This is generally referred to as the balance of payment constrained growth.

On the world market today it is not only price that matters in the competition between firms. With rising world income consumers require products to be more sophisticated and there is also an increase in product differentiation to accommodate particular demands. This is especially the case for rich countries like the OECD-countries. Countries with a well functioning innovation system and adaptive production structure that can respond to consumers demand for complexity should benefit by increasing growth rates. There are other non-price competitive factors that affect the success of countries. McCombie and Thirlwall (1994) discuss a number of these factors. For example a country with a well established network and solid links between nodes can more easily acknowledge and supply customers according to their demands, among other things this implies the importance of good infrastructure. It is also important to have a sound financial system with export credits and guarantees available to smoothen the exchange of goods. The income elasticity of export demand is said to capture many of the different factors, other than price, that affect a consumers' decision to buy a product.

The ambition of this paper is to see the importance of export composition on economic growth. This section will present and discuss the empirical findings of the different steps. It starts with the estimated income elasticity's and the division into the three categories, High-, Middle- and Low-income elastic products. Then, we comment on the interesting developments of the export shares in these categories for the OECD-countries. Finally the results of step 2 are discussed, whether the different export shares have had diverging influence on growth.

The income elasticity's were estimated for each product group, exporting country

and year by plain OLS. When categorizing the product groups into the three categories, the 33rd and 67th percentile were calculated for each country. These these percentiles are displayed in table 1.

Table no. 1

Boarder elasticity's for the 33rd and 66th percentile

Country	33rd	67th	Country	33rd	67th
Australia	0.29	0.51	Korea	0.56	0.89
Austria	0.56	0.85	Mexico	0.26	0.48
Belgium-Luxembourg	0.41	0.74	Netherlands	0.42	0.72
Canada	0.70	0.93	New Zealand	0.69	1.02
Czech Republic	0.66	1.06	Norway	0.41	0.75
Denmark	0.36	0.66	Poland	0.60	0.99
Finland	0.70	1.02	Portugal	0.28	0.64
France	0.60	0.87	Slovak Republic	0.72	1.04
Germany	0.72	0.91	Spain	0.35	0.61
Greece	0.33	0.82	Sweden	0.68	0.94
Hungary	0.59	0.92	Switzerland	0.64	0.92
Iceland	0.13	0.88	Turkey	0.60	0.98
Ireland	0.32	0.64	United Kingdom	0.53	0.79
Italy	0.57	0.84	United States	0.70	0.90
Japan	0.69	0.92			

In table 1 the differences in export composition of the OECD-countries are quite apparent. The border elasticity's between the three categories differ extensively. The boundary between Low and Middle income elastic products ranges between 0.13 (Iceland) and 0.72 (Slovak Republic) and the boundary between Middle and High stretches between 0.48 (Mexico) and 1.06 (Czech Republic). There is also a difference in concentration of production in the countries. If we consider countries like Germany and United States their exported products are in a narrow range of income elasticity's at the same time as they have high income elasticity's. Mexico and Australia also have a narrow range of elasticity's but at the lower end of the spectrum. Next consider countries like Greece and Iceland with a wider range of income elasticity's in exports.

The categorization of products into the three classes shows some interesting developments when looking at the share development of the categories. Two-thirds of the OECD countries display a clear restructuring of trade. 19 of the OECD-countries (indicated in bold in table 2) have had decreasing trends in the share of low-income elastic products at the same time as the share of high-income elastic products have increased. For most of these countries the developments of the Middle income elastic class have also been negative but the decline has not been as extensive as for the low income elastic product groups.

Table no.2

Time trend for export shares in the different classes

	High inc. elast.	Middle inc. elast.	Low inc. elast.
Australia	1.32*** (13.09)	-1.11*** (-5.95)	-0.66*** (-4.26)
Austria	1.21*** (6.68)	-0.77*** (-5.20)	-0.43*** (10.98)
Belgium-Luxembourg	4.78*** (7.69)	-1.63*** (-5.67)	-3.15*** (-5.32)
Canada	-0.46 (-0.99)	1.46*** (4.63)	-0.79* (-1.90)
Czech Republic	5.33*** (3.17)	-1.58 (-0.65)	-2.98* (1.95)
Denmark	4.37*** (9.36)	-2.58*** (-6.05)	-1.87*** (-6.83)
Finland	2.44*** (6.92)	0.01 (0.01)	-2.22*** (-7.74)
France	1.88*** (6.25)	-0.60** (-2.26)	-1.24*** (-8.13)
Germany	-0.13 (-0.37)	1.90** (2.73)	-2.44*** (-4.15)
Greece	4.31*** (7.58)	-1.81*** (7.00)	-2.49*** (-5.69)
Hungary	4.43*** (3.60)	-3.02** (-2.63)	-1.51*** (-3.03)
Iceland	-0.27 (-0.25)	-0.26 (-0.23)	0.53 (0.88)
Ireland	3.94*** (15.75)	-2.36*** (-4.82)	-1.45*** (-4.26)
Italy	2.71*** (9.72)	-0.80*** (3.02)	-1.84*** (-8.78)
Japan	-0.57 (-0.96)	1.05*** (2.82)	-0.46 (-1.12)
Korea	0.59 (0.54)	-0.61 (-0.54)	0.27*** (3.00)
Mexico	-0.03 (-0.03)	-0.79 (-0.85)	0.94 (0.58)
The Netherlands	4.27*** (9.64)	-1.71*** (-6.04)	-2.18*** (-6.87)
New Zealand	0.98*** (3.92)	-1.04*** (-2.81)	-0.05 (-0.16)
Norway	3.97*** (7.98)	-2.39*** (-5.02)	-0.99** (-2.56)
Poland	1.67** (2.41)	-0.01 (-0.01)	-1.57** (-2.85)
Portugal	4.72*** (9.86)	-2.19*** (-4.30)	-2.53*** (-12.23)
Slovak Republic	-3.32 (-1.28)	6.15* (2.75)	-3.04*** (-6.82)
Spain	4.01*** (8.21)	-2.25*** (-4.45)	-1.85*** (-4.86)
Sweden	1.18*** (3.38)	-0.03 (-0.10)	-0.98*** (-4.57)
Switzerland	0.25 (0.47)	-0.21 (-0.49)	-0.02 (-0.18)
Turkey	0.83** (2.13)	1.13** (2.45)	-1.92*** (-5.46)
United Kingdom	4.71*** (12.75)	-2.68*** (8.32)	-2.02*** (-9.73)
USA	0.17 (0.47)	0.17 (0.58)	-0.46* (-1.79)

*** significant at the 1 per cent level, ** significant on the 5 per cent level, and * significant at the 10 per cent level

Canada, Germany and Japan experienced a significant positive share development of the Middle category, while the other two categories declined in their share of total exports. Neither Mexico, Switzerland nor Iceland receive any significant time trends in either of the three categories. In the Mexican case the shares have been fluctuating around the same level. Switzerland had a positive development of the high income elastic products in the 1980's. This positive trend came to a stop in the early 1990's when it dropped down to the level it had in the beginning of the time period studied. The shares in Iceland have been fluctuating extensively and it is difficult to infer anything from them (Table no.3).

Table no.3

Regression results

Growth (dep.)	Coefficient	Standard Error	P-value	Confidence Interval	
				(95%)	
Share Middle	0.04	0.03	0.17	-0.02	0.11
Share High	0.01	0.02	0.59	-0.03	0.06
constant	0.72	1.89	0.71	-3.16	4.60

R-squared = 0,009

The result indicates that there is a positive effect of both High- and Middle-income elastic goods on growth, although not significant. The share of Middle income elastic products has a larger effect on growth than the share of high income elastic products.

However, the result is strongly influenced by heteroscedasticity due to outliers. Countries that stand out in particular are Korea, Ireland and Poland. All three countries have high positive residuals. These countries have had exceptional average annual growth rates during this time period. In contemplating excluding additional countries plots of Growth with Share High and Share Middle were studied and two more countries, Australia and Austria, will be excluded. Both of these countries have had very high shares of high income elastic products in their exports and thus very low shares of the other two categories. Australia has had on average 71 per cent of its export in the high income elastic category and Austria has had on average 87 per cent of its export in the same category. Australia has a fairly high positive residual while Austria ends up on the negative side, although not so very low. Thus, when excluding these five countries the following result is received.

The positive effect of the share of Middle income elastic products on growth is maintained and the significance level is improved. On the other hand the coefficient for Share High has changed sign and become negative, still not significant but the p-value is improved. The extent of heteroscedasticity has decreased considerably and the R-squared is improved.

When some countries are excluded (Austria, Australia, Poland, Korea, Ireland) the results indicate that as long as countries structure their exports away from the low income elastic products there is good potential for exports to contribute to growth. It is especially product groups in the Middle category that contribute to growth (Table no.4).

Table no. 4

Regression results when excluding Korea, Ireland, Austria, Australia, Poland

Growth (dep.)	Coefficient	Standard Error	P-value	Confidence Interval	
				(95%)	
Share Middle	0.028	0.017	0.13	-0.01	0.06
Share High	-0.02	0.014	0.22	-0.05	0.01
constant	2.21	1.01	0.04	0.11	4.31

R-squared = 0,2324

The contribution of high income elastic products to growth is more dependent on the country in question. For nine of the OECD-countries (Hungary, Ireland, Korea, Mexico, Poland, Portugal, Slovak Republic, Spain and Turkey) exports of high income elastic products seem to have had a positive effect on growth.

4. Conclusions

The empirical results show that there exist extensive differences in the composition of exports in the OECD countries. When categorizing the product groups into High-, Middle- and Low-income elastic products, the border elasticity's differ widely between the countries. There is also a clear tendency in the development of high and low income elastic products. During the time period 1980-2003, two-thirds of the OECD countries have had an increase in the share of high income elastic products and a decrease in the share of low income elastic products. The regression results on the contributions of the different categories to growth should be interpreted with some caution. However, results indicate that countries should stay away from the low income elastic products and that the remaining product groups exported appear to contribute to growth.

REFERENCES

1. Buch, C.M. and Piazzolo, D. (2000), "Capital and Trade in Europe and the Impact of Enlargement", *Kiel Working Paper*, 1001, Kiel Institute of World Economics, Germany;
2. Lederman, L and Maloney, W, (2003), "Trade Structure and Growth", *Policy Research Working Paper*, no. 3025, World Bank;
3. Lewer and Van den Berg, (2003), "Does trade composition influence economic growth? Time series evidence for 28 OECD and developing countries" *Journal of International trade & Economic Development*, No.12;
4. Désirée Nilsson (2005) – "Export Composition and Economic Growth", Jönköping International Business School, September;
5. Carmela Martín, Jaime Turrión (2003) - "The trade impact of the integration of the Central and Eastern European Countries on the European Union", *European Economy Group, Working Paper* no. 11.