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Klasyfikacja i analiza danych – teoria i zastosowania

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BALANCE OF PAYMENTS STATISTICS AND EXTERNAL COMPETITIVENESS OF POLAND

Summary: In the last issue of the Global Competiveness Report published in September 2013 by the World Economic Forum, Poland dropped slightly from the 41st to the 42nd position in the ranking of 148 countries, with almost the same value of the Competitiveness Index. In this paper we have shown the main drivers of the external competiveness of the Polish economy and presented the role of the balance of payments as the source of information on the export structure and the destinations of exported goods.

Keywords: competitiveness, balance of payments, CMS methodology.

1. Introduction

The external competitiveness of the Polish economy is an important topic of ongoing economic debate in Poland. In the last issue of the Global Competiveness Report published in September 2013 by the World Economic Forum, Poland dropped slightly from the 41st to 42nd position in the ranking with almost the same value of the Competitiveness Index.

The aim of this paper is to find the main drivers of the external competiveness of the Polish economy and present the role of the balance of payments as the source of information on the export structure and the destinations of exported goods.

2. WEF Competitiveness Report

The World Economic Forum has just released its recent Global Competitiveness Report 2013−2014 [WEF Report, 2013]. It contains the assessment of the competitiveness of 148 economies, providing insight into the drivers of their productivity and prosperity. It also contributes to an understanding of key factors that determine their economic growth.

Poland is ranked 42nd with a fairly even performance across all 12 pillars of competitiveness that form Competitiveness Index (CI). The main strengths include its large market size (20th) and high educational standards (18th). The financial sector is well developed (38th), and banks are assessed as sound (54th in the ranking).

The main weaknesses of Polish economy are: transport infrastructure (ranked 92nd), government inefficiencies (121st position), and in particular the high burden of government regulation (133rd position).

3. Global market share of Poland and CMS analysis

Market share of Poland in the international trade (i.e. the world export) has risen by more than 160 % since 1999 and in 2011 exceeded 1.4 % (see Figure 1). What are the factors responsible for such steady growth? In order to answer the following question we apply the Constant Market Share Analysis (CMSA) which is consistent with the ECB [2005] methodology[1].

The CMS analysis was introduced in 1951 by Tyszyński [1951] and according to this approach, the growth ratio of the export share of an economy is decomposed into four components [Richardson 1971]:

$$g - g^w = \sum_i \sum_j s_{ij}\left(g_{ij} - g_{ij}^w\right) + \sum_i \left(s_i - s_i^w\right) g_i^w + \sum_j \left(s_j - s_j^w\right) g_j^w + MIX \qquad (1)$$

where: g is the growth ratio of export of a country being analyzed, g^w is the growth ratio of the world's export, g_{ij} is the growth ratio of the i-th product exported to the j-th region for a country (g_{ij}^w for the world), g_i^w is the growth ratio of the world's export of the i-th product; g_j^w is the growth ratio of the world's export to the j-th region and s_{ij} is the share of the country's export of the i-th product to the j-th region in the j-th region total export, s_i is the share of the country's export of the i-th product (s_i^w for the world), s_j is the share of the country's export to the j-th region in the j-th region total export (s_j^w for the world).

Therefore the first component in (1) is competitiveness effect (CE); second − product effect (PE), i.e the average competitive market effect if competitive market effects differ across products alone; third – market effect (ME), i.e. the average

[1] The whole CMS analysis is carried out on trade value expressed in current USD. More precisely, the calculations are performed using Comtrade database which includes export-of-goods data for both the world and Poland. The data are disaggregated to the SITC (Standard International Trade Classification) 2-digit level. To avoid distortion caused by highly volatile oil prices, fuels and "other goods not elsewhere specified" are excluded from CMSA.

competitive market effect if competitive market effects differ across regions alone; and finally the fourth component is interaction effect (MIX), i.e. average impact of differential growth in shares across both regions and products. It is disadvantageous if the product/regional effect reinforces the regional/product effect [Jiminez, Martin 2010].

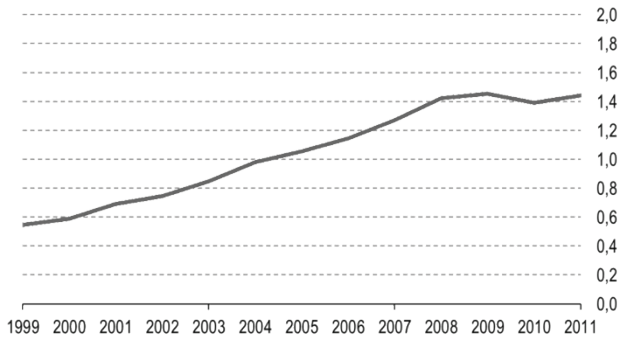
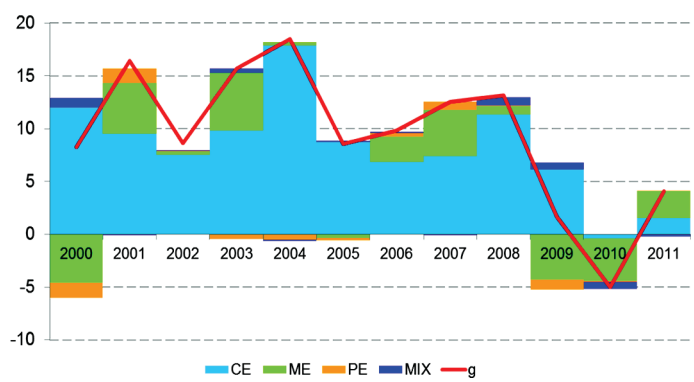


Figure 1. Market share of export of Poland

Source: NBP Institute of Economics.

As it is presented in Figure 2, the major determinant responsible for the growth of market share of Poland in the period 1999−2011 was competitiveness effect which for given economy illustrates the aggregated impact of changes in market shares of each product and each destination market. The influence of that factor was positive and the contribution of the competitiveness effect in the cumulative growth of export market share exceeded 83% in the following period.



Notation: g – growth rate of the international trade share (%; y/y), CE – competitiveness effect, ME – market effect, PE – product effect, MIX – mixed effect.

Figure 2. The decomposition of Polish export share growth rate based on CMSA

Source: NBP Institute of Economics.

The second significant factor – market effect − has strongly depended on both the global and regional (especially euro area and CEEC's with Russia) demand and its overall impact on export dynamics was positive in the period 1999−2011 (total contribution to the growth of cumulative market share exceeded 4%). More precisely, geographical effect decreased strongly the dynamics of Polish global market share in the periods after the financial crisis in 2008 or Russian crisis in 1998. On the other hand, after the EU accession market effect was a crucial driver of export market share growth in the period 2005−2006.

The product and mixed effects seem to be irrelevant determinants of market share of Poland in the analyzed period. To conclude this section, the structural changes in Polish export (and also the world export) do not seem to influence export market share. The most important finding coming from this part is the fact that competitiveness, in terms of CMSA framework, played a crucial role in gaining global market share.

4. Price and cost competitiveness of Polish economy in the period 2000−2012

EU accession in 2004, which increased Poland's international confidence and encouraged larger foreign capital inflow, resulted in both Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER) appreciation.

In the following two years (2005−2006) a period of relatively stable exchange rates was observed. In 2007 NEER and REER again started to appreciate, this time mostly due to large interest rate differentials compared with the advanced economies and strong macroeconomic fundamentals of the Polish economy. In the aggregate, since the beginning of 2004 till mid-2008 NEER appreciated by 50%. A decline in a relative price deflators growth rate slowed the REERs appreciation in that period. REER CPI was strengthened by 48% and REER PPI by 44%.

The outburst of global financial crisis in mid-2008 caused a rapid depreciation of nominal exchange rates. NEER was depreciated by 25% in the second half of 2008. Similar depreciation was seen in case of REER CPI and REER PPI. Such a large depreciation, both nominal and real, gave a boost in competitiveness, which helped Poland to avoid recession in 2009 and 2010.

In 2009 and 2010 NEER, CPI and PPI deflated REERs regained some loses. However, the zloty effective exchange rates remained much weaker than at the dawn of the global financial crisis.

Since 2000 till the first half of 2012 changes in the REERs had been mainly determined by the changes in NEER, as their fluctuations in that period were very similar. Only REER ULC noticed a marked depreciation during that period (by over 25%), while NEER, CPI and PPI deflated REERs levels in the first half of 2012 were very close to those observed in 2000. REER ULC stronger depreciation

or weaker appreciation, compared to other measures of REER, were noticeable in the whole above-mentioned period. The most marked deviations of REER ULC from the NEER path were observed in 2002−2004 and 2009−2012, when the decline in nominal ULC took place (Figure 3).

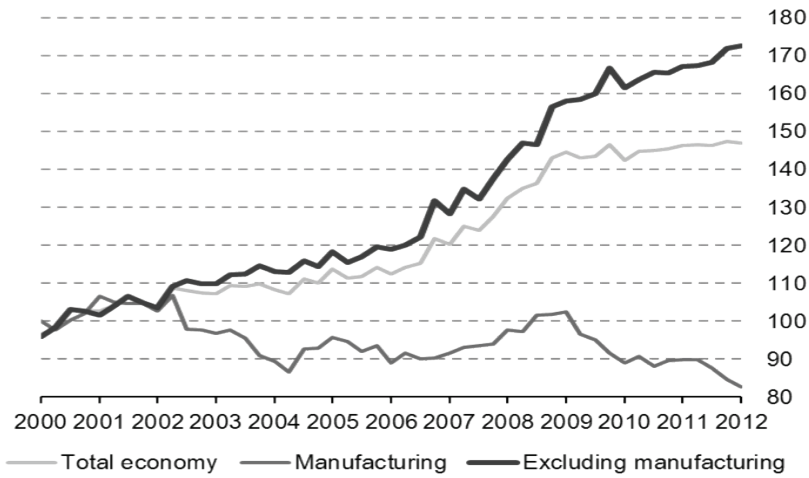


Figure 3. Unit labor costs in Poland, index 2000 =100

Source: Eurostat, IE NBP calculations.

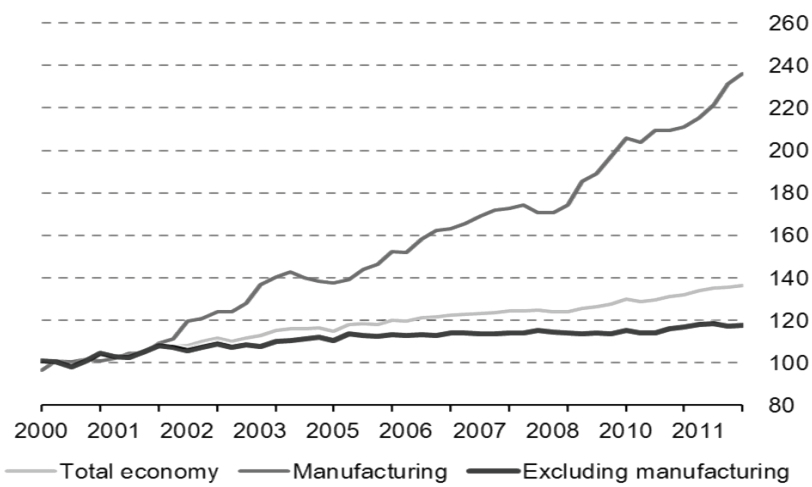


Figure 4. Productivity in Poland, index 2000 =100

Source: Eurostat, IE NBP calculations.

A divergence of REER ULC from other effective exchange rate measures path can be explained by a significant, almost 20% decline in the ULC in manufacturing, i.e. most export oriented sector, in 2000−2012 period. Such a decline, especially compared to over 70% increase in ULC in the other sector of Polish economy, was attributable to a steady and very fast growth in labor productivity. Between 2000 and 2012 it grew almost 2.5 times, i.e. over six times more than in the other sectors of the economy on the average (Figure 4). Such growth in productivity in Polish manufacturing sector was attributable to a large FDI inflow. In 1996−2009 the inflow of EUR 33 bln into the manufacturing sector had been recorded, which constituted for almost 30% of total FDI inflow to Poland.

5. Changes in Polish exports structure

There are four main drivers of the external competitiveness of Polish economy: strong FDI's inflow to Poland, steady productivity growth in the Polish manufacturing sector, regional aspects, i.e. EU membership and the proximity of crucial markets and high mobility and flexibility of Polish enterprises.

The nature of Polish goods exports has changed profoundly over the last decade as a result of a shift from "traditional" to new booming sectors. Indeed, in the end of the 90s Polish exports were still skewed towards traditional industries such as textiles, basic metals, wood and extraction activities, and the following decade saw a striking change in export specialization. Vehicles, machinery and mechanical appliances and electrical and electronic equipment, the 3 largest among the 100 two-digit sectors in terms of exports, represented almost 40% of Polish exports in 2011, against 29% in 2000. In contrast, the share of textiles declined substantially, as, for example, the share of apparel and accessories alone fell from 8.7% to 3.2% of total goods exports. The share of mineral fuels and that of basic metals (copper, iron and steel) was reduced by half.

We can also decompose the current account balance by Broad Economic Categories as shown in Figure 5. We observe the increase of export of consumer goods and the increase of import of commodities and fuels, which resulted in Current Account deficit of 16 bln Euro in 2011.

The geographical pattern of exports highlights the poor capacity of Polish producers to export over long distances, even if Polish products might eventually reach remote markets, perhaps as parts of German finished goods.

Since 2005 Poland is recording a positive balance of trade with the European Union, which has steadily been increasing. The deficit in trade with Russia is resulted from the import of petroleum and gas (Figure 6).

Estimated bilateral trade flows by Bosquet and Boulhol [2009], which take into account the characteristics of countries throughout the world, and such determinants as distances, borders, colonial linkages and free trade agreements, suggest that Polish exports to China, Japan and the United States, for example, should be about five times larger than their actual values. Although true as well for

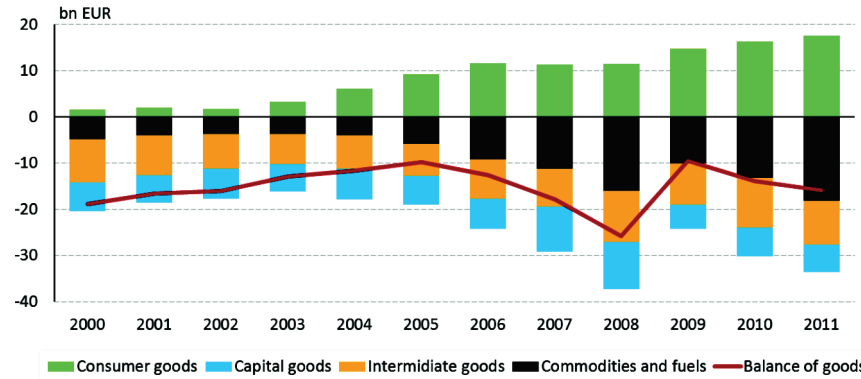


Figure 5. Balance of goods of Poland

Source: NBP Department of Statistics.

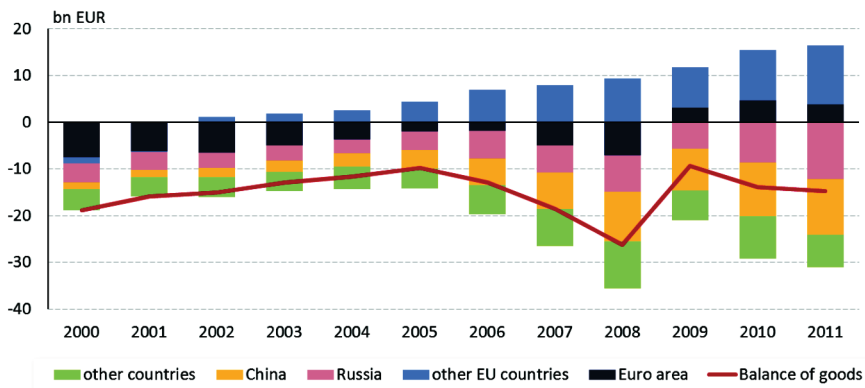


Figure 6. Balance of goods of Poland by main group of countries

Source: NBP Department of Statistics.

other CEEC countries, this feature is more pronounced for Poland. These three large distant countries accounted for only 3.2% of Polish exports in 2011, compared to 3.4% of Czech, 4.2% of Hungarian and 4.5% of Slovak exports. The size structure of exporting firms might contribute importantly to the weakness of overseas exports.

6. Conclusions

Poland has already experienced many benefits of increasing international integration, most obviously in significant convergence. Strong performance of merchandise exports was largely driven by the integration process with the European Union and

the inflow of foreign direct investments. The share of Poland in the world exports increased more than twice from 2000 to 2011 (from 0.49% to 1.4%).

The technological content of manufacturing exports has shifted markedly from low-technology, and to a lesser extent from medium-low technology, to medium-high technology products since the late 90s. Thought the export share of low-tech products decreased from 38% to 25% between 2000 and 2010, that of medium-high tech increased from 26% to 41%. The decline of textiles and the development of the automobile industry explain most of this overall increase in technological intensity. At the same time, very little progress has been made in the high-tech sectors, which represent only about 7% of exports.

Under the influence of foreign investments, Poland has become the major center for the production of consumer goods. This largely contributed to the improvement of trade balance, offsetting a negative impact of rising petroleum prices and other raw materials.

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STATYSTYKA BILANSU PŁATNICZEGO A KONKURENCYJNOŚĆ GOSPODARKI POLSKI

Streszczenie: Opublikowany przez *World Economic Forum* we wrześniu 2013 roku raport o globalnej konkurencyjności pokazuje, że Polska spadła z 41 na 42 miejsce w rankingu 148 krajów świata, przy tym samym poziomie wskaźnika konkurencyjności (*Competitiveness Index*). W artykule została pokazana ocena stopnia konkurencyjności gospodarki Polski, która wynika z danych o bezpośrednich inwestycjach zagranicznych oraz ze statystyki bilansu płatniczego. Wykorzystano w nim także metodologię dekompozycji polskiego udziału w handlu światowym (*Constant Market Share*).

Słowa kluczowe: konkurencyjność gospodarki, bilans płatniczy, metodologia CMS.