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POLAND'S MEMBERSHIP IN THE EUROPEAN UNION AND THE COHESION POLICY: IF CONVERGENCE IS SUSTAINABLE

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Abstract. On May 1st, 2004, Poland and 9 other countries became members of the European Union. The new economic and institutional conditions resulting from this event had a tremendous impact on Poland's macroeconomic performance. Poland is the biggest beneficiary of the European Cohesion Policy in 2007-2013. This paper aims at evaluating the scope and strength of cohesion policy's impact on the macroeconomic situation of Poland. Authors attempt to assess the economic benefits of Poland's membership in the EU (focusing particularly on those related to impact of the cohesion policy's implementation). Additionally, the article presents the benefits derived by the EU-15 countries from the implementation of the cohesion policy in Poland. Authors focus, inter alia, on assessing the impact of Poland's membership in the European Union on macroeconomic situation of the country. The assessment of the said impact is based both on the analysis of selected studies of the subject and on authors' own research based on available statistical data. Within such a context, authors discuss the results of three research projects – commissioned by the Polish Ministry of Regional Development – which attempt to evaluate the impact of the EU cohesion policy on selected macroeconomic indicators.

Keywords: EU membership, cohesion policy, macroeconomic situation, economic growth, convergence of income levels.

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1. Introduction

This paper covers selected economic developments in Poland, both in the period of seven years after the accession to European Union and in the period of the EU membership to date, by presenting the changes in main macroeconomic indicators in the two respective periods. In addition to the analysis of macroeconomic trends in Poland, authors present comparison of the economic growth in Poland in the post-accession period with the respective figures for the other "new" member states. Subsequently, in an attempt to ascertain the degree of convergence of the Polish economy measured by the average income levels, authors focus on the relative changes in GDP per capita figures in Poland vis-à-vis all the other member states and the EU-27 average GDP per capita between 2003 and 2010. Article starts with the presentation of the main findings of the selected publications on the effects of the EU enlargement, and subsequently presents authors' original observations based on the results of their calculations performed on the data derived from the national and European (Eurostat 2011) statistical bases.

Authors introduce the hypothesis that the sizeable improvement observed in the analyzed indicators in the post-accession period stemmed to a large extent from the financial and strategic benefits of cohesion policy. Following the presentation of the extent of financial inflows received under the framework of the said policy and description of the main catego-

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ries of the said policy's intervention authors support the said hypothesis by presenting the conclusions of three separate econometric research projects aimed at measuring and forecasting the impact of the cohesion policy on the Polish economy. The final part of the article invokes the research related to the attempt at evaluation of the benefits derived by the EU-15 countries ("old member states") from the application of the cohesion policy in Poland and concludes that the said policy involves much more than monetary transfers in direction but brings sizeable benefits also to the net contributors to the EU budget.

2. Impact of the EU enlargement on the new member states and on Poland – introductory remarks

May 1st, 2011, marked the 7th anniversary of the largest EU enlargement to date, one which included Poland and nine other states (another two new member states – Romania and Bulgaria joined the EU in 2007). This momentous occasion should serve as a background for formulating various assessments of the impact of the EU membership on the socio-economic situation of both, "new" (EU 12) and "old" (EU 15) member states.

In our paper we discuss three major prepositions related to the cohesion policy's impact on the Polish economy in the first seven years of the country's membership in the EU.

First, authors test, on the basis of available evaluation research, the hypothesis that Poland proved capable of effectively allocating the cohesion policy funds and benefits from their growing positive impact on the main macroeconomic indicators.

Second, they discuss the preposition that the effects of the cohesion policy proved instrumental – as an important contribution to growth – by allowing Poland to sustain the positive economic growth in the period of the recent economic crisis. Nevertheless, we will also note that cohesion policy wasn't the only factor behind the resilient performance of the national economy.

Third, authors support the assertion that in the coming years the growing inflow of the cohesion policy funds will have pronounced socio-economic impact in the final years of the 2007-2013 financial perspective.

In 2009 – on the fifth anniversary of the Poland's EU membership – governmental agencies and research centers in Poland presented the results of their own research projects attempting to measure the impact of Poland's membership in the EU in general (and of the effects of European Cohesion Policy in particular) on the economic situation and thus on the quality of life in Poland. Such analyses confirmed the expectations expressed in pre-accession period, and attested to a highly positive impact of accession on macroeconomic stability and economic development of the country. These "historical" reports will be discussed in this article. Since such analyses were lacking on the 7th anniversary of Poland's accession, we would like to present our own assessment of Poland's EU membership on the 7th anniversary of the accession, taking into account the period of recent global economic crisis and longer time series (Ministry of Foreign Affairs 2010).

The document "Five years of an enlarged EU – Economic Achievements and challenges", prepared by the European Commission, published in the *European Economy. No. 1/2009* constitutes an example of an in-depth evaluation of the benefits derived from the EU enlargement by both, the "old" and the "new" member states. Even more exhaustive analysis – focused solely on the effects of Poland's EU membership – was presented in the report "5 years of Poland in the European Union" of the Polish Committee for European Integration (published in April of 2009) which summarized the benefits of membership as well as challenges identified, among others, in such areas as:

a) the **economic dimension** – the report covers both overall macroeconomic situation and developments in individual sectors of the economy,

b) the **social dimension** – in this area the report focused on such issues as: labor market and migration, internal security, public health and education, consumer protection as well as Polish society's assessment of the EU membership,

c) the **political dimension** – particular attention given to: relations with Poland's Eastern neighbors, regional cooperation, implementation and enforcement of the EU legislation and effectiveness of the process of upgrading quality of the Polish public administration (The Office of the Committee for European Integration 2009).

Before presenting our own findings, we would like to advert to the two above mentioned comprehensive analyses of the effects of the EU enlargement, starting from the analysis prepared by the European Commission. The Commission's experts concluded that the accession of 12, new dynamic member states, had contributed to expansion of the Union's economic potential and to the improvement of the EU competitive position in global markets (among others, thanks to acceleration of structural reforms in the "new" member states). At the same time the accession expanded the Union's leverage in the sphere of international political and economic relations. Therefore it can be concluded that the enlargement allowed the UE to prepare more effectively to meet the challenges posed by the current phase of globalization (Hubner 2009; Bachtler, Taylor 2006).

The European Commission focused, in its document, on the economic dimension of the EU enlargement, stating that the success of integration process resulted, to a large extent, from a smooth functioning of both legal and institutional system of the EU and from the effectiveness of the Union's policies. At the same time, macroeconomic stability, institution building, regulatory convergence, improving governance quality, trade integration and liberalization of capital movements – taking place within the framework of the accession process – facilitated the manifestation of numerous positive effects of integration, even prior to the actual enlargement. The EU accession increased predictability of the new member states' economic policy and stimulated public sector's investment in human capital and infrastructure. It should be underlined that implementation of such investment projects was profoundly facilitated by the European cohesion policy. Moreover, the above mentioned achievements created more favorable climate for private sector's investment, while labor migration from the new to the old member states significantly alleviated the bottlenecks in the latter states' labor markets (European Commission 2009; Hardt 2008).

The European Commission's report also underlined significant gains in labor productivity in new member states, accompanied by reduction in unemployment and relatively rapid convergence of income levels. According to the Commission's estimates, 3 million new jobs were created in those states between 2003 and 2007. Nevertheless, significant skills mismatches still exist between supply and demand for labor (situation in this aspect deteriorated in few countries, including Poland, due to the negative demographic balance of migration). On the other hand, the Commission's experts indicated that the integration process revealed structural problems which obstruct the development of the new member states. The Commission's evaluation concluded, however, that – regardless of the problems revealed by the crisis – the Stability and Growth Pact constituted a "medium-term anchor" for the credibility of fiscal policy and that the cohesion policy offers an important support for the process of translating the Union's strategic objectives into member states' national and regional convergence strategies (European Commission 2009; HU Presidency 2011).

According to estimates provided by the European Commission in the document discussed here, the EU enlargement contributed – by stimulating socio-economic cohesion inside the Union – to significant improvement in the quality of life in the new member states. This assertion is corroborated by the finding that the *per capita* income in new member states increased between 1999 and 2008 from the level of 40% of the "old" EU members average to 51.7% (European Commission 2009). According to the same document, the accession, as well as the pre-accession adjustments on the part of new member states allowed them to post in the period 2000-2008, on average annual GDP growth higher by 1.75% than it would have been the case if they hadn't joined the European Union. At the same time, the structure of these countries' economies became more congruent with that of the old member states (as attested to, among others, by significant increase in the share of services in GDP) while increased level of educational attainment not only points to the rapid pace of the economic modernization but also creates the foundations for rapid economic convergence in the future (European Commission 2009).

Having described the impact of the EU enlargement on the new member states in general, we would like to focus on the effects of EU membership observed in Poland. Before presenting more detailed analysis of that impact it is important to mention that the support of the Polish society for the EU membership remains high – for example the public opinion polls conducted in April of 2010 confirmed that 86% of respondents were satisfied with the country's EU membership[1] (CBOS – Public Opinion Research Center)

[1] The survey was conducted by CBOS (Public Opinion Research Center).

3. The Impact of the EU Enlargement on the Macroeconomic Situation in Poland

The ensuing analysis is based on the subject's literature, authors' critical analysis of selected evaluation studies presented by Polish leading scientific institutes and on the authors own conclusions based on available statistical data.

As the starting point for the analysis of Poland's benefits from the UE membership, particularly those stemming from the implementation of the cohesion policy, we would like to underline that the fundamental premise of the discussed policy is the need to support balanced and sustainable economic growth throughout the entire territory of the European Union. Such an approach to development requires, in turn, bridging the gaps between individual countries and their regions in terms of socio-economic development (Pelkmans 2006; Pietras 2008; Witkowska 2010).

Figure 1 presents comparative data on the economic development of the EU member states, as evidenced by the level of Gross Domestic Product *per capita* (at purchasing power parity) in 2010 Poland occupied the 23rd position among the 27 countries and even this "snapshot" indicates that, despite noticeable progress achieved in the last several years, the distance between Poland's level of development and the EU-27 average is still significant.

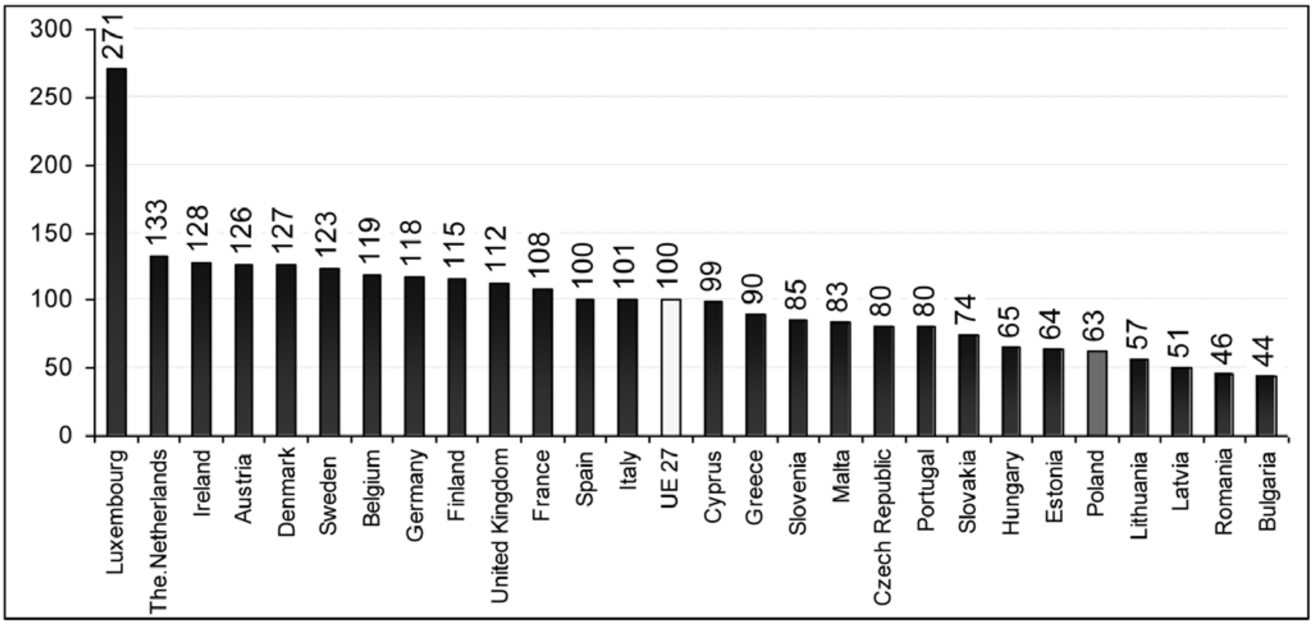

Fig. 1. GDP per capita in the EU-27 countries in 2010 at Purchasing Power Standards (EU-27 = 100)

Source: Eurostat.

However, the excessive preoccupation with the distance to the "average" level of development is misleading, and analyses should focus more on the development distance between Poland and such other "new members" as Czech Republic, Slovenia or Slovakia. In order to "de-couple" our subsequent analysis from the analytical perspective of the "EU-27 average", we have decided to relate Poland's GDP *per capita* (in PPP) to those of all EU-member states and to calculate changes in this sphere in the period 2003 and 2010. The results of the said calculations are presented in the table 1. The comparison of the relations of Poland's GDP *per capita* to both the EU-27 average and to the individual member states indicates that during the first five years of the country's EU membership Poland's GDP per capita rose from 49% of the EU average in 2003 to 63% in 2010[2]. It should be underlined however, that in spite of the simultaneous improvement – from 43% to 57,3% – in the ratio of Polish GDP *per capita* to the average figure for the EU-15 countries the income gap between Poland and the most-developed EU countries remains pronounced (Table 1).

[2] According to Eurostat's data in 1997 Poland's GDP per capita level (at purchasing power parity) amounted to 47% of the EU-27 average. Therefore direct comparison of the degree of convergence observed in the period 1997-2003 and that noted in the period 2003-2010 attests to the beneficial impact of the EU membership on the nation's development.

When we look back at the convergence in average income levels from 1997 (GDP per capita at PPP standing at 47% of the EU-27 average) to 2003 (49%), and compare it with the convergence observed in the period 2003-2010, we arrive at confirmation of the highly beneficial impact of the EU membership on the nation's development.

The main mechanism of the EU cohesion policy's impact on reducing regional development disparities is through allocation of the European Union's funds to investments in widely understood capital (physical capital, including manufacturing sector, transport and municipal infrastructure as well as human capital). This allocation serves to accelerate the real convergence of the recipient countries and of their regions (which represent a basic territorial unit of the cohesion policy) with the more developed economies (Barca 2009; Gorzelak 2011; Begg 2011).

Table 1. Change (in percentage points) of the relation of Poland's GDP per capita (at PPP) to the GDP per capita in the EU in 2004 - 2010

Year	**2010**		**2003**		**2003-2010**
Country (1)	**GDP per capita. EU-27 =100 (2)**	**Poland's GDP per capita % of a given state's level (3)**	**GDP per capita EU-27 =100 (4)**	**Poland's GDP per capita -% of a given state's level (5)**	**Convergence of Poland towards given country's level (percentage points) (6)**
Poland	**63**	**100.0**	**49**	**100.0**	**0.0**
EU -27	100	**63.0**	100	**49.0**	14.0
Hungary	65	**96.9**	63	**77.8**	19.1
Italy	101	**62.4**	111	**44.1**	18.2
Greece	90	**70.0**	93	**52.7**	17.3
Portugal	80	**78.8**	79	**62.0**	16.7
United Kingdom	112	**56.3**	122	**40.2**	16.1
Slovenia	85	**74.1**	84	**58.3**	15.8
Czech Republic	80	**78.8**	77	**63.6**	15.1
Ireland	128	**49.2**	142	**34.5**	14.7
Malta	83	**75.9**	80	**61.3**	14.7
Spain	100	**63.0**	101	**48.5**	14.5
France	108	**58.3**	111	**44.1**	14.2
Belgium	119	**52.9**	124	**39.5**	13.4
Austria	126	**50.0**	128	**38.3**	11.7
Sweden	123	**51.2**	124	**39.5**	11.7
Finland	115	**54.8**	113	**43.4**	11.4
Germany	118	**53.4**	116	**42.2**	11.1
Lithuania	57	**110.5**	49	**100.0**	10.5
Denmark	127	**49.6**	124	**39.5**	10.1
Latvia	51	**123.5**	43	**114.0**	9.6
Netherlands	133	**47.4**	129	**38.0**	9.4
Estonia	64	**98.4**	55	**89.1**	9.3
Cyprus	99	**63.6**	88	**55.7**	8.0
Luxemburg	271	**23.2**	248	**19.8**	3.5
Bulgaria	44	**143.2**	34	**144.1**	-0.9
Slovakia	74	**85.1**	55	**89.1**	-4.0
Romania	46	**137.0**	31	**158.1**	-21.1

Source: authors' calculations, Eurostat.

Referring to the issue of economic growth in the context of Poland's EU membership, we would like to stress that the dynamics of GDP growth in Poland attests to stimulating impact of accession and post-accession period on the Polish economy. In order to illustrate impact of the EU membership on the economic growth, we have subdivided the period of 1997-2010, into two, seven-year long sub-periods. The first one encompasses the pre-accession period and the latter the first seven years of the EU membership. When we compare the range (minimum to maximum) of rates of economic growth in these two periods, it's difficult to prove the stimulating impact of the EU membership on the Polish economy, as the annual rate of economic growth in Poland in the period 1997-2003 oscillated between 1.2% and 7.1%, while in the period 2004-2010 it ranged from

1.6% (in the "crisis" year of 2009) to 6.8%.

However, the comparison of cumulative economic growth appears to prove the hypothesis of the positive impact of accession on the economic growth in the country. Between 1997 and 2009 the GDP in Poland increased, in real terms, by slightly over 79.4%. The cumulative GDP growth in the period of 1997-2003 amounted to almost 30,7% while in the period of 2004-2010 it reached almost 37.3%. Simultaneously, the average real GDP of the EU-27 countries increased in the period of 1997-2010 by 28.8% (with the total cumulative growth in the period 1997-2003 amounting, respectively, to 18.8% in the period 1997-2003, and to 8,4% in the years 2004-2010. The average annual GDP growth in the EU-27 countries in the years 1997-2010 amounted to 1.8% (2.5% in the years 1997-2003 and slightly below 1.2% in the period of 2004-2010). Between 1997 and 2010 the Polish economy grew annually on average by 4.3% (3.9% in the period of 1997-2003 and 4.6% in the period of 2004-2010).

Consequently, the difference in the level of economic development between Poland and the average EU level has narrowed slightly. According to the Eurostat, in 1996 Poland's GDP *per capita* (at purchasing power parity), stood at 45% of the EU-27 average. In 2003 it reached 49% and in 2010 – 63% of the mentioned average. In other words Poland's GDP per capita "converged" in the period of 14 years by 18 p.p. towards the EU-27 average. Therefore, the average annual convergence was slightly higher than 1 percentage point (approximately 1.29 p.p.). These calculations can be interpreted in two ways. On one hand they can attest to the success of the hitherto convergence of the Polish economy, while on the other can serve as the inducement to accelerate the process of convergence. An oversimplified – though on the other hand sobering – interpretation of the above mentioned figures – assuming that the average pace of convergence will be the same as the one observed in the last 14 years – indicates that Poland will reach the EU-27 average GDP per capita around the year 2038. Such a scenario should alert the authorities to the possibility of almost next two generations reaching adulthood in a country with GDP per capita below EU-average.

On the other hand, much more optimistic conclusions can be drawn from the fact that during the first 7 years (2004-2010) of the EU membership the average annual pace of country's convergence towards the EU-27 average amounted to 2 percentage points of GDP *per capita*. Assuming that this latter rate of convergence is maintained, we can conclude that Poland will achieve the desired level of the EU-27 average around the year of 2030.

As it has been already mentioned, in order not to get excessively preoccupied with the "average" values, we are going to present our own calculations which relate the GDP *per capita* level in Poland to the respective values for other EU countries (results of these calculations are presented in table 1). For example, it is visible that in 2010 the level of per capita GDP in Poland equaled 23.2% of the respective value for Luxembourg, 49.2% of the figure for Ireland, or 78.8% of that for the Czech Republic (compared to respectively 19.8%, 34.5% and 63.6% in 2003). It has to be underlined that Polish GDP per capita is still very modest in comparison with major Western countries, although over the period analyzed, gap between Poland and these countries has slightly narrowed (see Table 1).

The interpretation of data presented in the above mentioned table requires methodological explanation. The ratio of each member state's GDP *per capita* (at PPP) to the EU-27 average is presented in the columns 2 (for 2009) and 4 (for 2003). The columns 3 and 5 represent the results of authors' calculations of the ratio of Poland's GDP *per capita* to that of individual member states (respectively, in the year 2010 and 2003), while column number 6 denotes the "convergence rate" (expressed in percentage points), calculated by comparing the values presented in columns 3 and 5. Positive values in the column 6 indicate Poland's convergence to the GDP *per capita* level of a given country (or Poland "gaining" on the countries with initially lower GDP *per capita*). On the other hand it should be emphasized that values with the minus sign (-) are more difficult to interpret[3]), because the can signify either that Poland falls further behind a given country (as is the case in relation to, for example, Slovakia) or that other countries - with the initially lower GDP *per capita* – are converging – though to a varying degree- towards Poland's level (Romania, Bulgaria).

[3] a) Poland pulled away from Lithuania, as the Polish GDP per capita amounted to 110.5% of the Lithuanian one in 2010 compared to 100.0% in 2003 b) Poland's position vis-à-vis Slovakia deteriorated as the ratio of Polish GDP per capita to that of Slovakia's decreased from 89.1% in 2003 to 85.1% in 2010. c) Poland's GDP per capita was still significantly higher than that of Romania's and Bulgaria but between 2003 and 2010 the "advantage" of Poland was reduced (e.g. Poland's GDP per capita stood at 158.1% of the Romanian level in 2003 and "only" at 137.0% in 2010).

The results in question indicate that in the period 2004-2010, Poland bridged the GDP per capita gap vis-à-vis wide majority (22) of the EU-27 countries, gained distance on 2 countries (Latvia and Lithuania) and lost part of the "advantage" over 2 other countries (Romania, Bulgaria) and lost distance to Slovakia (by 4.0 p.p.). It should be also underlined that the most visible progress was observed in reducing the GDP per capita gap vis-à-vis Hungary (19.1 p.p.), Italy (18.2 p.p.), and Greece (17.3 p.p.).

4. Poland's economic growth in the period 2004-2010 at the background of other EU "new" member states

The data presented in Table 2 and Table 3 indicate that in the period 2004-2008 Polish economy was growing at a slower pace than the economies of the seven "new" EU member states (Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Romania and Slovakia). However, the calculations for the period of 2004-2010 reveal that the global economic crisis had much stronger impact on the other new member states than on the Polish economy. Consequently, in 2009 Poland was the only one of the "new" member states to record a positive economic growth. Therefore, in the period 2004-2009 (as well as in the period 2004-2010) the cumulative GDP growth (and annual average rate of growth) in Poland was the second highest (following Slovakia) in the analyzed countries, attesting to the more balanced nature of growth in Poland than in majority of the new member countries.

Table 2. GDP growth in Poland and other „new" member states of the EU in 2004-2010 (%)

Country (1)	2004 (2)	2005 (3)	2006 (4)	2007 (5)	2008 (6)	2009 (7)	2010 (8)
Poland	**5.3**	**3.6**	**6.2**	**6.8**	**5.1**	**1.6**	**3.9**
Bulgaria	6.7	6.4	6.5	6.4	6.2	-5.5	0.2
Czech Republic	4.7	6.8	7	5.7	3.1	-4.7	2.7
Estonia	6.3	8.9	10.1	7.5	-3.7	-14.3	2.3
Cyprus	4.2	3.9	4.1	5.1	3.6	-1.9	1.1
Latvia	8.9	10.1	11.2	9.6	-3.3	-17.7	-0.3
Lithuania	7.4	7.8	7.8	9.8	2.9	-14.8	1.4
Hungary	4.3	4	3.9	0.1	0.9	-6.8	1.3
Malta	-0.5	3.7	2.8	4.3	4.3	-2.6	2.9
Romania	8.5	4.2	7.9	6.3	7.3	-6.6	-1.9
Slovenia	4.4	4	5.8	6.9	3.6	-8	1.4
Slovakia	5.1	6.7	8.3	10.5	5.9	-4.9	4.2

Source: Eurostat.

Table 3. Estimates of GDP growth (cumulative and annual averages) in Poland and other "new" EU member states in 2004-2010 (%)

Country (1)	Cumulative growth (%) 2004-2008 (2)	Annual average growth rate 2004-2008 (3)	Cumulative growth 2004-2009 (4)	Annual average growth 2004-2009 (5)	Cumulative growth 2004-2010 (4)	Annual average growth 2004-2010 (5)
Poland	**30.0**	**5.4**	**32.1**	**4.8**	**37.3**	**4.6**
Bulgaria	36.6	6.4	29.1	4.3	29.4	3.7
Czech Republic	30.4	5.5	24.3	3.7	27.6	3.5
Estonia	31.9	5.7	13.1	2.1	15.7	2.1
Cyprus	22.7	4.2	20.4	3.1	21.7	2.8
Latvia	41.3	7.2	16.3	2.5	15.9	2.1
Lithuania	41.0	7.1	20.1	3.1	21.8	2.9
Hungary	13.8	2.6	6.1	1.0	7.5	1.0
Malta	15.4	2.9	12.4	2.1	15.6	2.1
Romania	39.1	6.8	30.0	4.5	27.5	3.5
Slovenia	27.2	4.9	17.0	2.7	18.7	2.5
Slovakia	42.1	7.2	35.2	5.1	40.8	5.0

Source: authors' calculations, Eurostat.

When we "decompose" the economic growth in Poland, it turns out that in the period of 2004-2008 – that is before the full impact of the crisis was revealed, with the slowdown (which started in Q4 2008) in the national economy – the growth was underpinned (particularly in the period 2005-2006) mostly by the investment demand and by consumer demand. The high dynamics of outlays on gross fixed capital formation can be attributed to significant inflows of foreign direct investments, which in turn resulted from improved confidence on the part of foreign investors due to the country's EU membership. Moreover, exports had – despite their declining rate of growth in the period of 2004-2007 resulting from the strengthening exchange rate of the zloty vis-à-vis major currencies – an important contribution to economic growth.

According to the authors' calculations, in the period 1997-2010 the expenditures on fixed capital formation grew cumulatively by 110.9% (with average annual growth of about 5.5%)[4]. It should be underlined that in the pre-accession period of 1997-2003 their cumulative growth amounted to mere 29.6% (annual average of nearly 3.8%), while in the period 2004-2010 the cumulative growth in these expenditures reached 64.1% (average annual growth of 7.3%). These attests to the enormous surge in investments observed after the EU accession. To a certain extent the latter investment growth was stimulated by the inflow of the EU funds. However, as it will be shown later, the really pronounced impact of the EU funds has only become visible as late as the period 2009-2010, when the funds available within the framework of the cohesion policy allowed to counteract the economic slowdown caused by the exogenous factors.

Simultaneously, the cumulative growth in consumption in the period 1997-2010 amounted to 70.8% (annual average of 3.9%). The cumulative growth in the years 1997-2003 reached 29.6% (annual average of nearly 3.8%), while in the period of 2004-2010 individual consumption expanded overall by 31.8% (at the annual average rate of approximately 4.0%). Therefore, it can be concluded that the impact of the EU accession on the consumption growth was much lower than on the gross fixed capital formation, which may attest to the fact, that Poland uses the opportunities gained from the EU membership chiefly to strengthen the foundations of development.

Analysis of the foreign trade data reveals that the values of exports and imports were increasing in almost every year between 1997 and 2010 (excluding the year 1999 and the "crisis" year of 2009). *Visible growth occurred after the Polish accession to the European Union in 2004* (Table 4, Table 5) – while table 5 illustrates the dynamics of the analyzed indicators. Although the value of both exports and imports increased significantly over the years 1997-2010 (respectively by over 456% and 360%), the significant increase in the difference between the nominal value of imports and that of exports (Table 4) merits particular attention. Moreover, it should be underlined that while in 1997 value of exports accounted for approximately 75.8% of the value of imports, in 2010, the respective ratio exceeded 95.3%.

Table 4. Current account statistics. Trade in 1998-2010 (in millions EUR)

Year	Exports f.o.b.	Imports f.o.b.	Balance of trade in goods
1996	22 005	27 823	-5 818
1997	27 194	35 885	-8 691
1998	28 951	40 397	-11 446
1999	28 215	42 361	-14 146
2000	39 022	52 349	-13 327
2001	46 537	55 094	-8 557
2002	49 338	57 039	-7 701
2003	53 836	58 913	-5 077
2004	65 847	70 399	-4 552
2005	77 562	79 804	-2 242
2006	93 406	98 945	-5 539
2007	105 893	118 262	-12 369
2008	120 890	138 614	-17 724
2009	101 760	104 862	-3 102
2010	122 411	128 413	-6 002

Source: National Bank of Poland 2011.

It should also merit attention that in the period 2000-2005 there was a continual decrease in the trade deficit, while in the years 2006-2008 there were significant increases observed in this category, followed by a substantial reduction in 2009 and by almost doubling of the deficit in 2010.

[4] It should be stressed out than in the year 2009 the said expenditures declined by 1.1% and in 2010 by another 2%.

Table 5. Changes in the balance of trade in goods in 1997-2010 (in EUR)

Year	Exports – cumulative percentage change 1996=100	Imports Cumulative percentage change 1996=100	Balance of trade Cumulative percentage change 1996 =100	Exports – percentage change, previous year =100	Imports percentage change, previous year =100	Balance of trade percentage change, previous year =100	Ratio of the value of exports to the value of imports (%)
1997	123.6	129.0	149.4	123.6	129.0	149.4	75.8
1998	131.6	145.2	196.7	106.5	112.6	131.7	71.7
1999	128.2	152.3	243.1	97.5	104.9	123.6	66.6
2000	177.3	188.2	229.1	138.3	123.6	94.2	74.5
2001	211.5	198.0	147.1	119.3	105.2	64.2	84.5
2002	224.2	205.0	132.4	106.0	103.5	90.0	86.5
2003	244.7	211.7	87.3	109.1	103.3	65.9	91.4
2004	299.2	253.0	78.2	122.3	119.5	89.7	93.5
2005	352.5	286.8	38.5	117.8	113.4	49.3	97.2
2006	424.5	355.6	95.2	120.4	124.0	247.1	94.4
2007	481.2	425.1	212.6	113.4	119.5	223.3	89.5
2008	549.4	498.2	304.6	114.2	117.2	143.3	87.2
2009	462.4	376.9	53.3	84.2	75.7	17.5	97.0
2010	556.3	461.5	103.2	120.3	122.5	193.5	95.3

Source: authors' calculations, National Bank of Poland 2011.

Two other factors contributed also to the significant growth of GDP *per capita* in Poland in the period 2004-2010. The first one was the growth of labour productivity - measured as the output per worker. In the analyzed period it grew from about 61% of the EU average in 2004 to slightly over 65.6% in 2010. The second factor was the noticeable growth in employment following Poland's accession to the EU. In 2010 employment rate for persons aged 15-64 reached 59.2%, as against 51.2% in 2004. Nevertheless, Poland's employment rate for the working age population is one of the lowest in the EU.

In the last few years the sectoral structure of the Polish economy has been undergoing systematic transformation. The structure of employment and – to a lesser extent – that of the gross value added indicates that agriculture is losing economic weight, while the role of services is becoming more pronounced. However, the shift of economic activity towards modern sectors is progressing relatively slowly, with the low productivity sector of agriculture still employing over 13% of the workforce (almost thrice the EU average) (Karpiński 2008).

In 2004-2010 the public finance sector in Poland remained unbalanced. Although the dynamic economic growth of the years 2004-2007 allowed to reduce the debt-to-GDP ratio, budgets of national and local government institutions were in the red even with the GDP growth rate approaching 7% (as it was the case in 2007) as the public finances deficit in Poland is mainly structural. Consequently, the economic slowdown caused by the financial crisis has in recent years contributed to significant growth of the debt levels of all segments of the public finance sectors.

5. The Cohesion Policy - Transfers and the Direction of Intervention

With the country's accession to the European Union the process of achieving the objectives of the cohesion policy was initiated. Poland's accession to the EU brought about the implementation of the cohesion policy's instruments. This development translated in turn into both the strong influx of EU funds and the simultaneous spending of national funds dedicated to co-financing of the cohesion policy's projects (Kawecka-Wyrzykowska 2010). In recent years, EU transfers have been systematically growing both in absolute terms (to over 9 billion euro in 2010) and in relation to Polish GDP (2.60% in 2010 and over 1.77% on average in the period 2004-2010). On average, in the period of 2004-2010, the EU transfers for the implementation of the European cohesion policy amounted to 4.45% of general government's revenues and to 11.55% of total investment expenditures in the national economy (Table 6, 7) (Ministry of Regional Development 2010)

Table 6. Transfers from the EU budget for the implementation of the Cohesion Policy in Poland, in the period of 2004-2010 (millions of Euro)

Indicator	2004	2005	2006	2007	2008	2009	2010
Total EU transfers (million EUR)	1 820	2 339	3 518	6 292	6 051	7 193	9 222
Total EU transfers (million PLN)	8 251.9	9 415.4	13 703.0	23 802.0	21 278.9	31 124.1	36 841.9
GDP (million PLN. current prices)	924 538	983 302	1 060 031	1 176 737	1 275 432	1 343 366	1 415 385
GDP (million EUR. current prices)	203 912	244 274	272 145	311 067	362 689	310 461	354 289
% of GDP	0.89	0.96	1.29	2.02	1.67	2.32	2.60
Total revenues of the public finance sector (million PLN)	345 933.7	382 496.8	420 411.1	484 853.3	515 204.6	539 890.2	551 098.5
Total revenues of the public finance sector (million EUR)	76 297.7	95 020.8	107 933.3	128 169.7	146 506.5	124 772.4	137 947.1
% of the public finance sector's revenues	2.39	2.46	3.26	4.91	4.13	5.76	6.69
Total Investment Expenditures (million PLN. current prices)	120 467	131 055	154 880	191 714	217 260	218 581	215 997
Total Investment Expenditures (million EUR. current prices)	26 569.7	32 557.0	39 762.8	50 679.1	61 781.3	50 515.6	54 066.8
EU funds as a percentage of total investment expenditures	6.85	7.18	8.85	12.42	9.79	14.24	17.06

Source: authors' calculations, Ministry of Regional Development, Ministry of Finance and of Central Statistical Office.

It should be underlined that a significant acceleration of implementation of development projects in Poland was observed in the period 2007-2010. During that period, the public finance sector institutions more then doubled their structural expenditures[5] (from both national and EU sources) over the expenditures incurred in the period 2003-2006. In 2009 the total structural expenditures amounted to 5.6% of the GDP, and – according to estimates – to approximately 6.5% in 2010 – this increase stemmed chiefly from increased expenditures from the EU sources.

In the case of 2004-2006 financial perspective the direction of spending of the available European funds was determined in the National Development Plan for 2004-2006 (NDP 2004-2006). This document sanctioned the implementation of seven operational programmes financed with EU structural funds (with the total amount of 8.2 billion euro) and co-financing of two Community Initiatives (0.4 billion euro), as well as the implementation of the Cohesion Fund (4.2 billion euro). Operational programmes and community initiatives were continued in the period 2007-2009, while the implementation of a remaining part of projects co-financed by the Cohesion Fund will continue until 2012.

Eighty eight thousand projects have been carried out under the NDP 2004-2006. The vast majority of funds were allocated for investments in basic infrastructure (transportation, energy and environmental protection). The reminder of the funds was earmarked for projects supporting the development of both the production sector (R&D, innovations, private enterprise) and human resources (labour market policy, training, social integration).

[5] Structural expenditures encompass all public expenditures incurred on developmental tasks, which may be subject to financing from the European Union's Structural Funds and the Cohesion Fund. In order for the given expenditure to be classified as a structural one, it is not important whether it is given task is financed from the EU sources or is fully financed by national funds – what really matters is the admissibility of using the EU funds allocated to structural policy for such an expenditure. Therefore, structural expenditures encompass both expenditures on tasks fully financed from national funds and spending on tasks co-financed from national funds and the EU funds budgeted for the Structural Funds and the Cohesion Fund.

Table 7. Value and structure of the NDP 2004-2006 projects by main categories of structural expenditures (in zloty)

	Value of projects (PLN million)	Value of the EU co-financing	% of the EU co-financing/ total value of projects	Structure of projects - by value	Structure of the EU support
Productive sector	30 530.7	10 700.9	35.05	29.90%	18.38%
Human resources	11 342.0	8 098.4	71.40	11.11%	13.91%
Technical infrastructure	58 947.9	38 519.5	65.34	57.74%	66.16%
Others – technical assistance	1 274.9	899.1	70.53	1.25%	1.54%
Total	102 095. 5	58 217.9	57.02	100.00%	100.00%

Source: authors' calculations, Ministry's of Regional Development database.

Principles of the cohesion policy implementation in Poland for the 2007-2013 financial perspective are determined in the document called the National Strategic Reference Framework 2007-2013 (NSRF 2007-2013). This program (known also as The National Cohesion Strategy) will be carried out through 5 national and 16 regional operational programmes. In the 2007-2013 programming period Poland is the biggest beneficiary of the European cohesion policy, since more than 67 billion euro from the EU budget (or about 20% of the entire cohesion policy's budget for that period) were allocated to the implementation of the NSFR 2007-2013.

The initial requirement for the implementation of the NSFR 2007-2013 involved the establishment of the appropriate institutional framework. It was necessary to elaborate operational programmes as well as to prepare attendant documents instrumental in the implementation of the said programmes. Because of this strenuous requirement Polish beneficiaries of the cohesion policy for the period of 2007-2013 received their first payments as late as in the second half of 2008. As of December 26, 2010, contracts have been signed for 48,946 projects, with the total value of 217.7 billion zloty of eligible expenditures (including the EU co-financing of the 150.5 billion zloty)[6].

The structure of projects (as far as total funding is concerned) differs significantly from categories of intervention indicated in the NDP 2004-2006. It needs to be emphasized that this was a result of a quicker release of subsidy payments for certain types of measures, e.g. those supporting human resources. Such a swift implementation was not possible; however, in case of infrastructural investments for which the preparation stage is much longer. Ultimately, relatively more resources will be allocated for development of human resources under the NSRF 2007-2013 than it was the case under the NDP 2004-2006, and less support will be granted for development of basic infrastructure, which nevertheless will remain the main category of intervention.

Looking at the accession process through the prism of financial flows, we can distinguish three categories of flows that may occur, or intensify in the process of the EU integration. The first group pertains to the flow of assistance from the EU's income redistribution schemes from richer countries to poorer ones. The second group encompasses flows of resources stemming from a stronger integration of product markets (increased flows of trade in goods and transfers from migrant workers resulting from the job market's opening). Finally, the third group of resources relates to investments, which can be further divided into separate categories of capital flows (namely those of foreign direct investments and portfolio investments). The first of the above mentioned categories of financial flows affects the economy directly by stimulating investment demand on the part of firms which implement investment projects co-financed from public sources, and by stimulating consumer demand of the direct and indirect beneficiaries of the EU assistance. Moreover, the legal requirements related to use of the EU funds play a stabilizing role as far as the presence of a predictable legal and economic environment is concerned, and therefore help to improve business conditions for other economic units.

[6] In the period 2007-2010 the average exchange rate of the Polish zloty was about 3.9 zloty per 1 euro.

Actions envisioned in the National Development Plan 2004-2006 and in the National Strategic Reference Framework 2007-2013, can be assigned – according to the character of their impact on the economy – Into three main categories:
-actions relevant to the expansion of the economy's productive potential,
-actions which generate additional demand,
-actions which affect the prices of certain products.

Impact of the EU funds on the supply-side of the economy is highly important, as among the objectives of economic policy there is one which pertains to bringing about lasting and beneficial changes in the economy, which is possible only by influencing the economy's productive potential. Effects on the demand side, albeit relatively immediate, are largely transitory in nature and play a much smaller role in the attainment of strategic objectives. Therefore, the authors of available evaluation research on the EU co-financed intervention reduced the said flows to three dimensions, which cover, respectively: support for companies, development of human capital and development of infrastructure.

The measures intended to support companies should not be perceived solely as a direct financial injection which allows to expand – to the extent equal to the size of transferred funds – the financial resources. It should be underlined that the said financial flows constitute an incentive for business investment. Such resources increase the profitability of investment projects, and consequently have positive impact on the companies' propensity to invest. Growth in the stock of physical capital stems also from higher rate of return on the entrepreneur's own investment. On the other hand it should be also stressed that the injection of public funds (similarly as that of the private funds) doesn't fully translate into increase in the capital stock as certain part of resources has to be earmarked for the installation of new equipment or for training the employees in the use of the said equipment.

However, while the first of the two above mentioned streams of resources (those earmarked for direct support of enterprises and those designed to assist the development of the human capital) directly increase the availability of production factors, the funds earmarked for the development of basic infrastructure do not directly involve the creation of a production factor (such flows are designed to increase the productivity of other factors). In other words, the funds earmarked for infrastructure do increase the productive capacity of the economy by raising the efficiency of production factors. It should be also added, that all three of the above defined financial flows from the EU coffers create additional demand in the economy.

Though the main objectives and priorities for the expenditure of Structural Funds and of the Cohesion Fund resources in Poland in the 2007-2013 financial perspective were already defined in the National Strategic Reference Framework and in individual operational programs, it continues to be important to allocate these resources in a manner consistent with achieving the objectives set out in the NSRF 2007-2013 and in National Development Strategy 2007-2015. The experience related to the EU co-financed intervention within the framework the National Development Plan 2004-2006 points out to an excessive fragmentation of projects in terms of their value. From the perspective of the national economy as a whole, there is an evident need to intensify efforts to modernize its potential, by expanding actions aimed at building the knowledge-based economy and the information society. In order to achieve these objectives, it is necessary to improve conditions for more effective support of cooperation between enterprises and the world of science, as well as to enhance conditions for stimulating growth opportunities on the regional level (with simultaneous support offered to the main fields of development). Particular attention should also be paid to improving conditions of the absorption of the EU funds in the sphere of infrastructure, since the said infrastructure is indispensable – together with the required improvement in the regulatory sphere – to attract private investors to given regions.

6. Impact of the EU Cohesion Policy on the Main Macroeconomic Indicators

Having presented the above mentioned explanatory notes, we would like to underline that the econometric estimates commissioned by the Ministry of Regional Development indicate that in the initial period of Polish membership in the EU (2004-2006) impact of the EU funds on the economy wasn't significant. However, starting from 2007 there has been a visible growth in terms of the EU co-financed projects' (financed by the Structural Funds and Cohesion Fund) impact on the main macroeconomic indicators. Based on the results of the estimates provided by the Institute for Structural Research it can be concluded that the profound impact of the EU funds on the economic growth was already observed in the years 2009-2011 and that the said impact will be also sizeable the period 2011-2012 and subsequently in the year 2015. On the other hand, the estimates presented by the Gdansk Institute for Market Economy/Prevision indicate that the biggest impact on GDP growth will be evident in the years 2011-2013, while the Wroclaw Agency for Regional Development estimates that the said impact was the strongest in 2009 and will become quite significant in the years 2012-2013. These figures corroborate the assertion that the implementation of the cohesion policy allowed Poland to avoid the economic crisis in 2009 and to return on the path of higher growth in 2010.

Accumulated European funds for the implementation of the cohesion policy in Poland in the period 2004-2015 will have amounted to over 80 billion euro. Such a significant influx of funding will have profound impact on the main macroeconomic aggregates. Two factors determine the direction of this impact: division into main categories of intervention (e.g. dominant role of the basic infrastructure expenditure) and allocation of funding over time (e.g. significant increase in the expenditures of NSRF 2007-2013 resources in 2009). Although the value of funding allocated in 2004-2009 was considerable, the largest share of resources will flow into the Polish economy in the forthcoming years, with the highest actual payments expected in 2013, when the strongest macroeconomic impact of the cohesion policy will become evident (Table 8).

Table 8. Impact of the cohesion Policy on the GDP rate of growth in Poland

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gdansk Institute for Market Economics/ Prevision	0.1	0.1	0.2	0.4	0.4	0.3	0.5	0.6	0.6	0.6	0.5	0.5
Institute for Structural Research	0.1	0.4	0.8	0.4	-0.3	1.8	1.5	0.8	0.6	0.5	0.0	0.7
Wroclaw Agency of Regional Development	0.1	0.3	0.8	0.5	-0.1	1.1	0.7	0.7	0.8	0.9	0.1	-0.2

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

We have asserted at the beginning of this paper that cohesion policy played an important role in Poland's relatively successful economic performance in the period of the global economic crisis. We have also discussed the differences in economic growth observed in the group of new member states in the period 2004-2010. The results of econometric research quoted in the table 8 attest to the significant positive impact of cohesion policy on this indicator becoming evident from the year 2009. In 2009 Poland was the only economy, not only in the group of the new member states but also in the entire European Union, to record positive economic growth. The economy expanded by 1.6%, and the estimated impact of the cohesion policy on the rate of GDP growth reached from the "conservative" 0.3 p.p. (according to Gdansk Institute for Market Economics) to 1.1 p.p. (Wroclaw Agency of Regional Development 2010) and to 1.8 p.p. (Institute for Structural Research 2010) respectively. When we compare the actual economic growth observed in 2009 with estimates of the Institute for Structural Research the conclusion is that without the cohesion policy's intervention Polish economy would have shrunk (by 0.2%) instead of growing by 1.6%. The sizeable impact of cohesion policy on economic growth recorded in 2009 becomes also evident when we refer to the research conducted by the Wroclaw Agency of Regional Development, while the estimates presented by the Gdańsk Institute for Market Economics indicate that the economy would have grown by over 1% even in the absence of the cohesion policy funds.

In our opinion, the cohesion policy had an important contribution to economic growth in the crisis year of 2009, however there were also other factors which stabilized the economy and allowed it to avoid recession in that year:

relatively low openness of the national economy[7] (as evidenced by the share of foreign trade in the Gross Domestic Product) and relatively stable domestic market which proved capable of "amortizing" the weakened external demand, national currency, whose

[7] According to authors calculations based on the Eurostat data, exports amounted in the period 2004-2010, on average, to 39.6% and imports to 41.5% of the Polish GDP, while in the Czech Republic these figures reached 64.9% and 62.3% and in Slovenia to 63.9% and 64.6%, respectively (Eurostat data base, access on October 10, 2011).

depreciation resulted in increased price competitiveness of exports, relatively low indebtedness of households and enterprises stemming from the reasonable monetary policy on the part of the National Bank of Poland, and the limited exposure of enterprises to derivatives (stemming from their low expertise in using such financial instruments) (International Monetary Fund 2011, European Commission 2011).

The period of 2008-2009 witnessed also the emergence of the far-reaching impact of the EU financial support on the convergence of the level of GDP *per capita* between Poland and the EU-27 average. In the opinion of the research institutes, involved in respective econometric research, as of 2009 Poland was able – because of the direct impact of the projects co-financed by the European Union – to bridge the gap in this category by 0.9-1.9 p.p. (Table 9). The impact on the analyzed category is predicted to grow in subsequent years along with increased inflow of the EU funds. Consequently the dynamic development of the Polish economy will allow to improve the ratio of per capita GDP to the EU average by the year 2015 to about 68.6% (Institute for Market Economics) or even close to 70.1% (Institute for Structural Research 2010).

Table 9. Impact of the Cohesion Policy on the relation of GDP per capita at purchasing Power parity (EU-27 =100)

	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Gdansk Institute for Market Economy/ Prevision	0.0	0.0	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.7	3.1
Institute for Structural Research	0.1	0.3	0.6	0.9	0.8	1.9	2.8	3.4	3.8	4.2	4.3	4.8
Wroclaw Agency of Regional Development	0.1	0.2	0.6	0.8	0.8	1.5	1.9	2.4	2.9	3.5	3.6	3.6

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

The EU funds are also contributing to increased employment rates and to reduction in unemployment rate. In 2010 the employment rate was higher than the one implied by baseline scenario (which assumes lack of the cohesion policy's intervention) from 0.6 percentage points (Gdansk Institute for Market Economy/Prevision) to 1.2 p.p. (according to Wroclaw Agency of Regional Development), while the unemployment rate was lower, by between 0.8 p.p. and 1.8 p.p., respectively (Fig. 2).

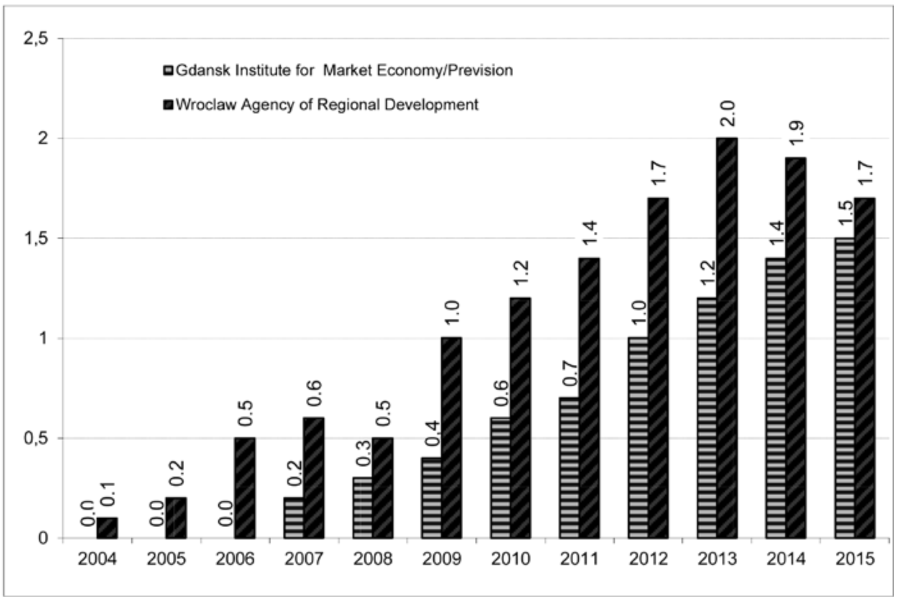

Fig. 2. Impact of the Cohesion Policy on the employment rate in the 15-64 age bracket in Poland (p.p.)

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

The most pronounced impact of the Cohesion Policy on the labour market is forecasted for the period 2013-2015 when the employment rate will be higher by 1.3-1.6 p.p. thanks to the EU funds, and the number of employed will be higher by 395 thousand people – 523 thousand people.

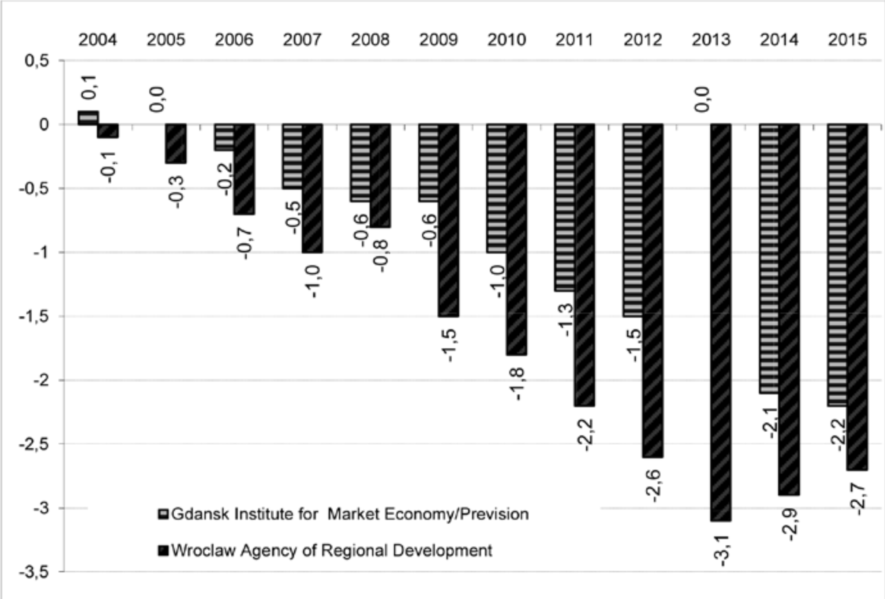

Fig. 3. Impact of the Cohesion Policy on the unemployment rate in the 15-64 age bracket in Poland (p.p.).

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

Since the EU funds finance large investment projects in the field of infrastructure and offer direct support to enterprises, the seriously contribute to the revival of investment activity in Poland, leading to an acceleration of growth in gross fixed capital formation and to an increase in the investment rate. Econometric estimates commissioned by the Ministry of Regional Development indicate that in 2010 the implementation of Cohesion Policy have caused the investment rate (ratio of expenditures on gross fixed capital formation to the GDP) to be between 2.4 – 3.6 p.p. higher than it would have been in the absence of the EU financing. The maximum impact of the EU resources on the investment rate is forecasted to occur in the period 2013-2014 where the incremental growth resulting from the Cohesion Policy interventions will contribute 3.0-5.9 p.p. to its value (Table 10, Table 11).

Table 10. Impact of the Cohesion Policy on the growth in gross fixed capital formation (p.p.)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gdansk Institute for Market Economy/Prevision	5.1	1.1	2.8	1.4	-0,4	3.4	1.4	0.7	0.5	0.3	-0.1	0.1
Institute for Structural Research	0.7	3.1	4.2	2.5	-2.3	9.6	6.8	3.6	1.5	0.9	-1.8	1.7
Wroclaw Agency of Regional Development	0.4	0.8	1.9	2.4	1.5	3.0	3.9	4.0	4.6	5.2	4.5	3.5

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

During the first few years of Poland's membership in the EU the cohesion policy's interventions did not profoundly affect the growth of labor productivity – chiefly due to the fact that EU resources were allocated towards creation of new jobs. However, in subsequent years, increased investment in human and physical capital will lead to more pronounced improvement in the analyzed category. For example the Gdansk Institute for

Market Economy projects that in 2015, the ratio of labor productivity in Poland to the average labor productivity in the EU will be improved by 1.4 p.p., thanks to impact of the cohesion policy, and will reach 71.6% of the average level for the EU-27 (in 2010 the respective figures stood at 66.5% of the EU-27 average, with the impact of EU funds quantified as 0.7 p.p.).

Table 11. Impact of the Cohesion Policy on the ratio of public finance sector's deficit to GDP (p.p.)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gdansk Institute for Market Economy/Prevision	0.2	0.2	0.1	0.1	0.1	0.1	-0.1	0.2	0.3	0.4	0.4	0.4
Institute for Structural Research	0.0	0.1	0.2	0.3	0.3	0.4	0.7	0.9	1.0	1.0	0.9	0.8
Wroclaw Agency of Regional Development	0.0	0.0	0.0	0.1	0.3	0.6	0.8	1.1	1.4	1.7	1.7	1.6

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

In the long run the European Funds bring about lasting and significant improvement in the stability and sustainability of public finances, as measured by the ratio of general government deficit to the GDP. However, in the shorter period the projects co-financed from those funds may cause the worsening of the indicator's values.

This character of the said impact stems from the mechanisms via which EU funds act upon the ratio of the general government deficit to GDP, which involves three channels: 1) positive impact on the volume of the GDP makes given level of deficit lower in relation to the size of the economy, 2) growth in the GDP and other economic flows (e.g. revenues of companies and households, consumption) causes the tax base to rise and – consequently higher revenues of the general government and lower deficit, 3) the need of assuring co-financing from the domestic sources causes the deficit to increase. (Kaczor *et al.* 2011).

Authors of the MaMoR 3 (Gdańsk Institute for Market Economy/Prevision) model forecast that the mutual interactions of the three above mentioned "channels" cause the impact of the EU funds on the public finance sector to be moderate and – with the exception of the year 2010 – positive. After the year 2010 the positive impact of the funds on the general government's deficit will become slightly more pronounced – and in the period 2013 -2015 their presence causes the deficit to GDP ratio to be 0.4 p.p. lower (with the simultaneous reduction in the public debt to GDP ratio by 3.6 p.p. in 2015) (Table 12).

Table 12. Impact of the Cohesion Policy on the ratio of public debt to GDP (p.p.)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gdansk Institute for Market Economy/Prevision	-0.5	-0.8	-1.0	-1.2	-1.4	-1.6	-1.7	-2.0	-2.4	-2.9	-3.2	-3.6
Institute for Structural Research	0.0	-0.2	-0.6	-0.7	-0.7	-1.7	-2.7	-3.2	-3.6	-3.8	-3.7	-4.0
Wroclaw Agency of Regional Development	-0.1	-0.3	-0.8	-1.4	-1.6	-2.1	-2.6	-3.1	-3.6	-4.2	-4.3	-4.1

Source: Gdansk Institute for Market Economics/Prevision, Institute for Structural Research, Wroclaw Agency of Regional Development.

According to the forecast presented on the basis of the EU Impact model (Institute for Structural Research) the impact of the EU funds on the situation of the public finance sector remains limited in the entire period of analysis, as the authors of this model assume lack of the structural shifts in the budgetary expenditures due to the Cohesion Policy. However the instrument of the said policy contribute somehow to the improvement in the fiscal parameters, reducing the ratio of general government's deficit to GDP by between 0.7 p.p. and 1.0 p.p. per year in the period 2010-2015. According to the presented model the highest positive impact of the EU funds on the public finance sector will occur in the period 2012-2013 when the general government to GDP ratio will be reduced by 1.0 p.p. and the ratio of public debt to GDP will by 3.6-3.8 p.p. lower compared to the scenario without the access to the EU financing.

As it has been already mentioned, the EU funds contribute to reduction in interregional differences in the level of economic development. On average, the most pronounced inflow of funds and their impact on the regional convergence is observed in the case of poorer regions of Eastern Poland. The funds' impact on the analyzed indicators, particularly in the longer time horizon, is confirmed by the said evaluation studies. The scale of available cohesion policy financing constitutes the main factor which determines the influence of the policy's intervention – though there are numerous exceptions to this "rule of thumb" (for example resulting from the different structure of funds' division among the main economic categories of intervention). To sum up, it has to be reiterated that available evaluation studies unequivocally confirm the positive impact of these funds on the attainment of the cohesion policy's objectives in Poland.

7. Benefits of the EU-15 Countries from the Implementation of the Cohesion Policy in Poland

The issue of the cohesion policy's benefits for the EU-15 countries (the richest, "old" member states), also merits attention in this study. Impact of the cohesion policy on the economic situation of the EU old member states was extensively analyzed by the Institute for Structural Research in the research paper commissioned by the Ministry of Regional Development. Though authors of the said paper acknowledge that their research didn't cover the full impact of Poland's EU accession on the economic situation in these countries (which is probably much larger than the effects of the implementation of cohesion policy alone), their assessment constitutes an interesting attempt at evaluating the first five years of Poland's EU membership from the perspective of "old" member states' benefits. Authors divide the said benefits into two separate categories – direct and indirect. The first group encompasses situations in which firms from the "Old Union" profit from the EU co-financed projects pursued by them in Poland – consequently certain part of the contributions of the net-paying countries returns to them in the form of payments for goods and services sold in Poland. According to the Institute of Structural Research, in the period 2000-2008 the said payments amounted to approximately 5% of the value of the EU cohesion funds sent to Poland, which signifies that the direct benefits derived by the EU-15 countries from the implementation of cohesion policy in Poland within the framework of the National Development Plan 2004-2006 amounted to PLN 4.6 billion (or approximately EUR 1.18 billion). As far as the direct benefits of the EU-15 countries are concerned it should be underlined that approximately half of those accrued to Germany,12% to Denmark and 11% to Austria (Bukowski, Wierus 2010).

However, the Institute estimates also, the indirect benefits associated with an increased – on the account of the implementation of EU cohesion policy in Poland - demand of the Polish economy for imported goods and services (imports of: supply goods, consumer goods and investment goods). That increased demand derives from both the fact that the interventions co-financed from the EU funds require not only the execution of the subcontracting work or the delivery of supplies of goods and services necessary to complete the projects - both these flows are reflected in the direct benefits of the EU-15 countries), but also bring about long-term modernization of the Polish economy. The said modernization increases the economy's productive potential, and thus produces higher demand for various goods and services.

According to the evaluation of the Institute for Structural Research total benefits (direct and indirect) of the cohesion policy's implementation in Poland which accrued in the period 2004-2009 to the EU-15 countries amounted to 17.8 billion zloty (4.5 billion Euros - at current prices from to 2008) or to 27.0% of the total value of financial inflows received by Poland in that period (IBS - Institute for Structural Research 2010).

The experts from the Institute for Structural Research point out to the non-uniform distribution of the above mentioned benefits – resources allocated for Poland for the period 2004-2006 were in fact much lower than the allocation for the period 2007 -

2013. The experts quoted here, also indicate that the indirect effects of this policy (especially those that are associated with increased demand on the part of the country's economy) are slightly delayed in time. IBS has estimated that in the period 2004-2015 the benefits derived by the EU-15 countries will have amounted to a total of about PLN 151 billion (EUR 37.8 billion) - at constant prices of the year 2008. These calculations strongly attest to noticeable benefits of the EU cohesion policy accruing not only to the net beneficiaries of the said policy, but also to the net contributors to the European Union's budget (Institute for Structural Research 2010).

Conclusions

The first seven years of Poland's membership in the European Union brought about favorable changes in the country's socio-economic situation, as evidenced by the acceleration of economic growth compared to the situation observed in the period 1998-2003 (prior to the EU accession). This "post-accession transformation" resulted in acceleration of the convergence process – attested to by a catching up with the EU-27 GDP per capita level. However, in case of Poland, the said process did not proceed faster than in the case of the majority of countries which joined the European Union on May 1, 2004 or afterwards. The above observation indicates the enormous need to undertake actions aimed at improving the effectiveness and upgrading the competitiveness of the Polish economy. The EU cohesion policy can constitute an important inducement and support for the actions required on both the national and regional levels. It should be also reiterated that the said policy brings various direct and indirect benefits to these countries which are a net contributors to the EU budget.

The hitherto implementation of the cohesion policy allowed Poland to record additional improvement in the number of key macroeconomic parameters, attesting to the policy's significant impact on the national economy and confirming our first assumption. The results of the available evaluation studies corroborate our second assumption, namely the importance of the said funds for the ability of the Polish economy to avoid the recession in the year 2009. Moreover, the available evaluation studies support our assertion that the largest positive impact of the policy will grow over time to become the most pronounced in the period 2012-2014. Due to the low level of innovativeness of the Polish economy, it is important to allocate significant part of the cohesion policy resources to innovative projects, as such an allocation will, in turn, lead to the economic modernization and – via multipliers effects – to an increased demand for goods and services produced in the country. At the same time, economic policy should aim at the necessary structural reforms and create favorable climate for the business sector. (OECD 2009 OECD 2009, 2010).

It should also be noted that, to date, implementation of cohesion policy contributed decidedly to the modernization of transport infrastructure in Poland. The available econometric research indicates that, in the period 2004-2006 the presence of the EU funds (and the requirement to apply stringent procedures in the implementation of projects in particular), allowed to identify a number of barriers to the development of infrastructure in Poland (such as: inadequacies of the spatial planning system, the inefficiencies of a legal system or the low effectiveness of management of state-owned transport companies). The removal of these barriers should facilitate significant improvement in the implementation of large transport projects within the framework of the 2007-2013 financial perspective.

The success (or lack thereof) of Poland in using, in the forthcoming years, the opportunities stemming from the free access to the markets of other EU countries, as well as of substantial financial resources allotted for Poland within the framework of the cohesion policy will, to a large extent, define the scale of benefits of the EU membership.

Deeper economic integration of the new member states and the convergence of income levels require them to finish the implementation of the Single Market rules and will depend of further integration of markets for goods and services. Integration of the EU financial sector should be also deepened (particularly taking into account the regulatory shortcomings revealed by the economic crisis). The specter of the adverse impact of the crisis on the internal convergence within the European Union should be overcome. At the same time the actions taken by the EU (such as the elaboration of the EU 2020 Strategy) indicate that the crisis may become an important "stimulus" for reforms, that will, after counteracting the recessionary trends, bring about profound structural transformation necessary to improve the foundations of economic growth in the European Union in the mid-term perspective (Commission on Growth and Development 2008; European Commission 2010).

The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Ministry of Regional Development and/or of the Polish Information and Foreign Investment Agency.

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