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The Economic effects of 10 years of membership of Poland in the EU

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Abstract: *Membership in the EU has brought the Polish economy both benefits and economic costs. The purpose of this study is to examine the main economic effects of 10 year old Polish participation in the EU. With analysis based on the theory of integration and empirical studies suggest that the impact of the integration of the Polish economy with the EU was essential and multi-sector. Effects of integrative formed not only under the influence of free trade and European single market with free movement of capital and workers, but also as a result of EU' aid under the structural policies, namely, regional policy and agricultural policy. The benefits of the integration has prevailed economic costs , therefore, a total of Polish participation in the EU has brought an increase in economic growth of at least 0.5% of GDP per year to 1.75%. Integration marked the beginning of a process of catch-up with better developed the EU member countries, and the assistance from the structural funds to Poland has allowed the avoidance economic crisis.*

The economic effects of participation of 10 years participation of Poland in the European integration process – the biggest economy among the EU' new member states seems to be worth of scientific analysis because it may shed some light on the efficiency of all enlargement processes.

In this paper economic integration is taken in a "negative " sense : to indicate the gradual elimination of economic frontier between Poland and the EU partners as well as in a "positive" meaning as participation by Poland in some the EU' economic policies. Poland was a partner of "negative" integration before and after the EU membership and partner of "positive" integration after accession to the EU.

The main objective of this article is to identify and evaluate the benefits and costs of various stages of Polish integration within the EU. The goal of this paper is to discern and compare the essential economic effects of Poland participation in European integration process. Attempts will be made to evaluate the past, actual and future process of integration in economic terms. Poland has taken part since 1992 in a free trade area and since 2004 in the EU customs union and European single market. The best and typical method of assessment of the economics of integration processes is the comparison the costs and benefits. The paper analyses and compares the economic effects of the most important parts of European integration processes: free trade, four freedoms of the single market, economic union . The paper assumes that integration process has its own logic and next steps of integration might have its sources in benefits of the former stages. The analysis of the successive parts of the participation of Poland in the integration processes serves to find the answers for the following questions: has the introduction of free trade created new exchange between Poland and the EU? Has the accession of Poland to the single market been brought positive impact on Polish economy and what was costs and benefits division among the "four freedoms"? If the realization of the EU economic policies have been involved with higher benefits then adjustment costs for Polish economy? If integration process between Poland and the EU has had in general positive impact on economic growth and finalize Polish economy caching up processes ?

The analysis is done mainly with medium term perspectives, but it may also give clue about the benefits and costs and long-term impact of EU membership upon the Polish economy. It is important to note that the theory of international integration doesn't dispose the precise methods of assessment of the effects of integration processes. Two methods are usually distinguished: the ex ante approach tries to estimate the effects of a planned integration by forecasting what will happen if this process is realized and what if it is not realized. The ex post approach sets out to estimate the effects of integration that has already been realized with so called " antimode situation", what would have happened if integration group had not been formed. Because these two methods have several drawbacks, which produce different output I decided to look at the explanation in the theory of integration, compare detailed statistical data, use the output of different Polish and foreign analysis as well as through its theory of economics to give the most objective picture as possible of all important economic effects of Polish membership in the EU.

Economic integration starts usually with the liberalization and gradual removal of trade barriers between partners. In European integration free trade is treated as the entrance to the single market. Trade liberalization is additionally supplemented by the lifting of restrictions on the flow of productive factors. The European Single Market includes four freedoms: free trade of goods and services, and free migration of capital and people. These freedoms lead to an adjustment of partner countries economies in order to reap the benefits of the international division of labor. The EU also undertakes of economic policies in some fields (agricultural, regional, competition policy, etc.) in which participated Poland after accession in 2004.

The integration processes between Poland and the EU have also started from free trade. The free trade in industrial goods with the EU partners was entrance to the European Single Market. After accession into the EU Poland introduced all four freedoms' acquis communautaire. Free trade included not only industrial products, but also trade in agricultural products. Moreover, Poland also enlarges the liberalization process to free circulation of services, capital and people. It was obliged to abolish not only the last direct barriers to trade and migration of factors of production, but also many so-called indirect barriers, like technical standards, administration rules, harmonization of taxes, and public procurements law. In 2004 Poland joined also the Economic and Monetary Union and the EU common policies contained several sectors of the Polish economy (competition policy, agricultural policy, regional policy). Although Poland has not participated yet in third phase of the EMU, from the legal point of view monetary integration is also part of Polish integration process.

Polish participation in various integration stages of European integration process has had an important influence on the Polish economy. It involved all sectors of the Polish economy, changed public policy, the environment of many firms, and the position of consumers. It opened a market much larger that of Poland to Polish exporters of goods and services. On the other hand, integration process opened the Polish market to foreign competition and new foreign investments. It gave Poles the opportunity to take jobs nearly all around Europe on non-discriminatory conditions. It brought about new institutional and business regulations. Since Poland has entered the European Single Market, the next logical steps were to assume the principles of the EU economic policy. Now Poland is undergoing the process of fulfilling the convergence criteria, an event which have further consequences for Polish economy.

Each integration process is characterized by economic benefits and costs of adjustment. Sometimes these benefits and costs may be unevenly distributed among the partner countries. Some countries may draw mostly benefits from the single market, while the others may bear the main costs of adapting to the new environment. The benefits and cost may be also unevenly distributed among particular economic sectors. Moreover, different integration initiative may bring different economic effects between partners and their regions. To avoid the uneven distribution of costs and benefits, the liberalization process should be supplemented by some corrective mechanism. In the EU the function of the corrective mechanism is provided by the two structural policies: the Regional policy and the Common Agricultural Policy. The other the EU' economic policies are also characterized by economic costs and benefits of early adjustment and further functioning.

The benefits derived from European economic integration have been widespread and substantial to all member states. The customs union created the biggest trade block in the world economy. Establishment of customs union together with common market was accompanied by "golden decade of growth" in Europe. Later liberalization of non-tariffs barriers in the single market enlarged (according to European Commission) the earlier benefits to overall 800 billion euro income, increased income in member states by 4.25%-6.5% and created 2.5 million new jobs (Emerson M. 1991: 193-218). The access to a large market increased efficiencies of scale, productivity of the firm and gave business new investments opportunities, affected migration of capital and people. The economic integration increased competition, structural adjustment and improved allocation of economic resources. The common economic policy brings about more stable framework for public policies and business cooperation. The EU structural policies recompensed market failures and helped less developed partner countries and their regions in convergence processes. However, despite much success today crisis in euro area indicates that are also a lot of hurdles on the way to a final goals as the common European economy.

Membership in the European Union has brought also many profits to the Polish economy coming from different sources. One of the most evident is that Poland drew a lot of benefits from division of labor and trade expansion with the EU members countries .The dynamic growth of exchange between Poland and the EU accompanied the whole process of trade liberalization. The Association Agreement abolished the direct impediments to trade in industrial goods and Poland became the fourth biggest EU external export market. In the single market Poland eliminated barriers in agricultural trade, lifted technical obstacles, liquidated boarder checks with Schengen partners, adjusted indirect taxation, and introduced European law concerning public procurement. Since Poland has become part of the EU, it has shown the highest dynamics of growth of trade among the partners. In 2004- 2005 the export of goods from Poland grew by 31% and 19.6% to 55.1 billion euro in 2005, to 67.6 billion euro in 2006 , to 80.3 billion in 2007 euro, to 90.4 billion euro in 2008 . Even in the time of crisis Polish export reached 95.6 billion euro in 2010 and 105.6 billion euro in 2011. In 2012 the foreign trade increased in comparison to 2011, but has weakened their dynamics. Imports grew more slowly than exports, resulting in a negative balance improvements. Turnover in euro increased in the export side by 4.9% to 143,5 billion, and import side by 1.0% to 154,0 billion. Negative balance amounted to EUR 10.5 billion (in 2011, minus 15.9 billion). Trade with EU countries the volume of exports increased by 1.4% to 90.8 billion euro and the turnover with the countries of Central and Eastern Europe by 9.6% to 13.8 billion euro. The volume of goods imported from the EU countries decreased by 2.1% to 88.5 billion euro but from Central and Eastern Europe increased by about 5.8% to 24.5 billion euro.

Tab.no 1 Polish foreign trade turnover in total and by countries in 2012

EKSPORT	in million. Euro	in %
	143456,1	100,0
Developed countries..............	117973,5	82,3
of which EU	109080,0	76,1
of which euro-zone	74445,2	51,9
Developing countries...........	11640.1	8,1

Countries of Central and Eastern Europe	13842,5	9,6
IMPORT	154040,2	100,0
Developed countries	99434,5	64,6
of which EU	88580,8	57,5
of which euro- zone.........	69489,8	45,1
Developing countries	30080,9	19,5
Countries of Central and Eastern Europe	24524,8	15,9
SALDO	-10584,1	
Developed countries	18539,0	
of which EU	20499,2	
of which euro -zone	4955.4	
Developing countries	-18440,8	
Countries of Central and Eastern Europe	-10682,3	

GUS, Główny Urząd Statystyczny, Statistical; Yearbook 2013, Warszawa 29.07.2013

Poland became also more important market for the EU producers with import worth nearly 89 billion euro and 57%.5 % of all global import. There were common opinion expressed by economists that the growth of import from the EU would exceed Polish export mainly due to trade liberalisation and more aggressive market selling strategies of multinational firms at home market. The forecast on the temporary deterioration of Polish trade balance after accession to the EU didn't come true. In 2005 for the first time Polish trade balance showed small surplus with the EU countries, in 2008 +4,5 billion euro, in 2011 Poland obtained even bigger surplus in trade with the EU countries + 16.4 billion euro and in 2012 + 20.4 billion euro . The trade deficit between Poland and the EU in the agricultural sector reached 677.8 million euro in 2003, but in 2004 there was surplus of 850 million and this trend continued since the start of the post accession period. The growth rate of agricultural exports to the EU-27 states was almost twice as much as the imports growth rate in the entire post accession period and he expansion of Polish export from 4 billion to 11.3 billion euro. The most important importers of agricultural products from Poland were: Germany , the United Kingdom , the Czech Republic, and the Netherlands. The highest growth of export developed in meat and milk products. In the 1990s only 18% of Polish beef production was exported, after accession beef export grew to 50%. One fourth of Polish poultry was exported to the EU partner countries, and the export of pork outweighed pork import from the EU. Poland continued to be mainly an exporter of meat products (25%), dairy products (12%) and fruit and vegetables (over 20%), tobacco and manufactured tobacco substitutes (6.4%), sugar and sugar confectionery (3.4%), and beverages, spirits and vinegar

(3.1%). The positive trade balance with the EU partner countries showed, that Polish economy was able to withstand the competition forces of the single market.

Poland began the liberalization process with the EU with highly concentrated export specialization. Before accession to the EU Poland' place in the division of labor with members countries was defined rather by cost and price factors then factors related to technological development. In the free trade area Poland showed stable and well defined comparative advantage in relation to the EU partners countries in heavy industries and agricultural goods. This strong entrenched comparative advantages in trade between Poland and the EU partners induced the development of trade according to the rules of comparative costs advantages. Strong development of inter- industry specialization had been shown especially in chemical industry, pharmaceutical industry, resource industry, metal and paper industry . After accession to the EU Poland developed more intensive and diversified intra-industry specialization within single market, although the level of intra- industry coefficient is still less than in more advanced EU. In the EU Polish producers developed of intra-industry specialization in trade of capital- intensive industries (machinery), labor –intensive (textiles) and resource- intensive (building materials). The intra-industry specialization in some branches of industry, like textiles, home appliances apparatus, cars, were connected with development of two-way trade inside foreign companies acting in Poland. The single market helped to change in the structure of mutual trade with the growing importance in Polish export capital intensive goods (machinery, cars), labor intensive goods (furniture, agricultural products), technological intensive products (difficult to imitate) and import more technologically advanced goods (machines and mechanical appliances, electrical equipment).

For 2008 the Grubel–Lloyd index calculated for trade of industrial products classified under SITC level 3 had the value of 0.634775. The same coefficient calculated for all Polish trade with the EU at SITC level 5 (SITC 0–9) had the value of 0.505027 The Grubel and Lloyd index increased from 10% in 1988 in trade with 12 EEC members state, to 36% in 2006 in trade with 25 EU members states and to 50.5% in 2008). The growth of this index by 0.191458 in the period 1998–2008 signifies further intensive development of intra-industry specialization in trade between Poland and the EU (Kundera 2010: 72,73). This progress strongly suggests that there is more convergence of the economic structure of Poland and the EU partner's countries. Growth of exports and imports between Poland and the EU in the transport equipment's sector is typical example of how intra-branch specialization develops. The highest growth of intra-industry specialization was detected in such group of products as parts of electrical machinery, chassis fitted with engines for the motor vehicles, iron or non- alloy steel, central heating boilers. However it should be emphasized that the level of intra industry trade between Poland and the EU was still lower than in trade between 15 member states. Before crisis in 2008 year Polish intra-industry trade was still 50% than intra- industry trade in France, Germany, Belgium – Luxemburg, and 20% lower than intra industry trade in Spain or Ireland. Moreover, the intra- industry trade between Poland and the EU member states mainly had the form of vertical intra-industry trade: export of low-quality intermediate/ final goods and the import of high-quality intermediate and final goods than horizontal intra-industry trade: exchange of varieties of goods with similar qualities (Poland competitiveness Report 2008:29).

In order to gain more profits from the international division of labor, the structure of Polish exports has to change continuously towards production of goods with high value added. Thus far Poland has accomplished some evolution to improve structure of exchange on the single market (selling more machines, and fewer textiles). However in the long term Poland needs to produce and export more goods there are technologically advanced. Because these kinds of goods show the highest dynamic of demand, Poland must do more, thought than just compete on the basis of lower labour costs. Poland must also strive to increase productivity (now at the level of about 60% of EU-27 average) and technological development. It is necessary to spend a lot of resources on Research and Development (R + D) to invent new products and methods of production. Just after accession to the EU Poland spent over 1 billion euro yearly on R+ D. In 2012 Poland spend on R+ D two times more - about 2 billion euro, but still much less then France- 50 billion euro or Germany – 70 billion euro. In relation to the GDP R+D spending amounts to a small amount of 0.7% in comparison with EU -27 – 1.85% (Les echos de Pologne 2010: 12). In Poland the government is main provider of funds for R+D – 63%, business enterprise invests only 33% of all research spending. Most R + D efforts are directed towards engineering and technology, natural sciences, medical sciences and agricultural sciences. Universities and other higher education institutions have the key role in technological progress. The percentage of companies carrying out innovation activities was less than half. Among private enterprises more than 60% of total innovation expenditures was spent on machinery and technological instruments, about 15% on physical infrastructure and only 11% on proper R + D. It is worth adding that the number of patent application to the European

Patent Organization per one million inhabitants reveals huge gap in innovation activity between Poland and the better developed EU countries. While Germany registered 269.3 applications, Finland – 223.2, France – 115.2, the Netherlands – 165, Belgium – 124.6, Italy – 71.8, Spain – 26.4%, Ireland – 57.7, Poland registered only 2.3 applications (Annual Innovation Policy Trends and Appraisal Report: 204-205). Therefore in the long run to participate profitable in the division of labor on the European Single Market Poland must develop specialization in more technologically intensive production. To achieve this goal Poland must spend more resources on R + D and do so by increasing the participation of Polish enterprises in innovation processes, in the introduction of new methods of production and the creation of new products.

As a result of accession to the customs union Poland has also adopted the EU external customs tariff. In the case of industrial goods an average customs tariff had been significantly reduced. It is estimated that lowering of customs tariffs for industrial goods from third countries have had limited impact upon the level of market protection in Poland. Over the all period of trade liberalization, the exchange between Poland and the EU has been developing much faster than with the thirds countries. The growth of trade has been then more likely due to the effects of trade creation than trade diversion influencing on positive allocation of Polish and the EU economic resources. However, in the time of crisis in euro area trade relation between Poland and third countries (outside the EU) developed more dynamic then with EU partners.

Continued ability to attract foreign direct investment (FDI) occurred to be one of the basic factor of successful integration between Poland and the EU. After 2004 the Polish economy received a lot of FDI and Poland continued to lead in attracting such investments in Central European region. FDI inflow was motivated by such the factors as search for new markets, rapid growth of GPD and export development based on the using the cheap Polish labor force. Each year after accession to the EU annual flow of FDI grew from 7.8 billion USD in 2004, to 7.72 billion euro in 2005, to 11.6 billion euro in 2006 up to 16.8 billion euro in 2007, 9.8 billion euro in 2008 and 9.863 in 2009 year. In the time of crisis in euro area the foreign capital activites concentrated mainly to reinvest profits. In 2010 FDI inflow to Poland fell to 7.53 billion euro, but rose again in 2011 to 10.9 billion euro. In 2012, the Polish received direct investments with a value of 4 716 million. Reinvested profits were 4 440 million. The flow of the rest of the capital, i.e. the various debt instruments amounted to 2 913 million. The influx of net equity withdrawal fell to-2 637 million. Since only the third year of Poland accession to the EU there has been double growth of foreign direct investment: the inflow of FDI was two and a half times larger than before accession. Before crisis in euro area Poland became the largest recipient of FDI among the EU 10 new member countries with about one quarter of all investment undertaken in the region. At the end of the year at the end of 2012. liability for foreign direct investment were 178 257 million Euro. The EU partners were the biggest foreign investors (9 out 10) in Poland. The highest foreign direct investment were reported to investors from Germany -26.8 billion euro, the Netherlands -26.2 billion euro, France - 12.6 billion euro, Luxembourg 18.2 billion Euros (NBP 2012). Capital originating from the EU partners was invested in a number of sectors (car industry, telecommunication, textile, business services, and real estate).

Tab. no 3. Total FDI in Poland at 2011 in billion euro and %

Country	Germany	Netherlands	Luxembourg	France	Italy
.	26. 8	26.2	18.2	13.1	10. 5
	17.8%	13.5%	12.42%	8.73%	7%

Source; Polska w liczbach. Inwestycje Zagraniczne Polska Agencja Informacji i Inwestycji Zagranicznych (PAIZ), Warszawa, 15.01.2012.

Continued ability to attract FDI occurred to be one of the basic factors of Poland' successful transformation and integration with the EU. Given that there have already been important trade creation effects between Poland and the EU, there are investment which hold the key to the future economic growth in Poland. The main Polish traits to attract foreign investors were: access to the European Single Market, growth of the economy and the availability of a cheap labor force. Polish experiences showed that FDI stimulated not only capital accumulation, but also global and local production, productivity and export. Privatized firms acquired by foreign investors had higher productivity gains than domestically privatized enterprises and other locally owned firms due to the transfer of knowledge and technology. The positive impact of FDI on Polish export had two dimensions: one quantitative (increased volume) and the other qualitative (superior quality). The increase in FDI in Poland has been paralleled by significant increase in growth of trade on the European Single Market. There were synergistic effects of capital and trade flows, when trade liberalization induced capital inflow but, on the other hand, FDI had positive impact on growth of export. Contrary to the expectations, Poland has not experienced any dramatic concentration of FDI in some regions and branches of productions. The use of special zone with corporate income tax reductions proved to be as an effective method of shaping the geographic pattern of FDI in Poland and counteract their possible excessive concentration. However, in times of economic uncertainty, firms tend to be more cautious with investments. There have been less new foreign direct investments in industry, services and real estates. A slump in the inflow of FDI would be painful for the Polish economy, considering their importance in the economic growth and modernization of Polish economy. In the time of crisis in euro area the EU partners occurred to be still the biggest investors in the Polish economy, mainly due to reinvested profits of the firms already acted in Poland. After crisis the flows of new FDI to Poland are expected to return to its at least previous level.

After 2004, there was a strong wave of emigration of Polish workers to the EU: the Polish emigration rose from about 1 000 000 before accession to a peak 2.2–2.5 million emigrants. The EU partner countries were among the most important destinations for the Polish emigrants and included: the United Kingdom (690 thousand), Germany (490 thousand), Ireland (200 thousand), and the Netherlands (98 thousand) (see table 4). Polish migration comprised mainly young, energetic and well-educated people. The main reasons for emigration were economic one; lower wages in Poland than in the EU-15 member states, and a lack of job in Poland. Although this emigration brought about some negative consequences due to the decrease of labor force on the local market, the significant yearly transfer of money the emigrants (more than 2 billion euro each year) benefited Polish economy. Like in the other new accession countries the macroeconomic effects of migration of Poles seemed to have rather limited impact on the Polish economy, taking into consideration remittances to families, growth of productivity, reduction of unemployment, the pushing up wages and adding to skill shortages. Remittances from abroad constituted at their highest only 4.5% of income from Polish export. Emigration was only a partial labor marker relief in terms of unemployment. In the case of Poland the reduction due to emigration of the population of working age as a whole depressed GDP in 2005 by 0.16% , in 2006 by 0.25%, in 2007 by 0.24% , in 2008 by 0.23% , and in 2009 by 0.31% . It also decreased unemployment by 0.29% in 2005, 0.45% in 2006, 0.41% in

2007, 0.32% in 2008, 0.21% in 2009. The substitution of labor by capital, building the capital stock and stepping up of investment led to productivity increases of Polish workers by 0.16% in 2005, 0.33% in 2006, 0.47% in 2007, 0.58% in 2008, and 0.63% in 2009. Overall the increased mobility of Polish labour force within the single market, especially with regard young well educated has had a positive influence on the Polish economy and partly resolved the painful unemployment problems during transformation period. Since 2004 to 2011 Poland received totally 26.3 billion euro remittances. Consumption together with growing productivity tended to offset the downward effect of emigration on GDP in Poland with positive impact net on per capita growth by 0.28% in 2005, 0.51% in 2006, 0.58% in 2007, 0.58% in 2008, and 0.51% in 2009 (Barrell P., Fitzgerald J.F., Riley R. 2007). However, the remittances that have been enjoyed over the past few years as emigrant workers repatriated their savings would dry up. Crisis in euro area weaken the attractiveness of some partners and their firms as a potential employer, but economic slowdown in Poland may also influence the volume and direction of Polish emigration.

Tab. no 4 . Temporary Migration from Poland in 2007 - 2009 (in thousands, end –of year stock)

	2007	2008	2009	2010	2011	2012
1. United Kingdom	690	650			587	635*
2. Germany	490	490	415			470 *

3. Ireland	200	180	140		125	120 *
4. Netherlands	98	108	84		89	
5. Spain	80	83	84	50		
6. Italy	87	88	85			
7.France	55	56	47			60*
8. Austria	39	40	38			
9.Belgium	31	33	34			
10. Sweden	27	29	31			
11. Greece	20	20	16			
12. Denmark	17	19	20			
Overall	2270	2210	1870		1940	
EU	1860	1820	1570			

Source: EU 10 October 2008. In Focus: An Update on Labor Migration from Poland, page 18., Główny Urząd Statystyczny. Departament Badań Demograficznych, 2009, 2010, Warszawa. Gospodarczo –społeczne efekty członkostwa w Unii Europejskiej, z uwzględnieniem wpływu rozszerzenia na UE- 15, Warszawa 2012, p. 11.12, * prevision

The accession of Poland to the EU is to be positive in the terms of the balance of structural aids. The Structural Funds for Poland stimulated catching up processes and helped the Polish economy to avoid negative consequences of crisis in euro area. The structural aids net from the EU budget to Poland rose year by year: from 1.1 billion euro net in the first year of accession to 1.61 billion euro in 2005, to 2.49 billion in 2006, to 4.79 billion in 2007, to 3.99 billion in 2008, to 6.01 in 2009, to 7.73 billion euro in 2010, to 10.49 billion net in 2011 and 1.96 in the first quarter of 2012 (see table no 5). The prognosis, which had indicated Poland would have difficulty in absorbing the structural aids, now seems exaggerated. In assessing the impact of Structural Funds it is used to distinguish between the short – term demand effects and long term supply effects. Direct aids, investments in infrastructure or in human capital, which create additional demand increase production and employment in short run. In the long run investments act for increase productivity of factors of production and structural change, hence bring long term growth.

Tab.no 5 Balance of payments between Polish and the EU budget in billion euro in 2004–2012

Total Years
2004 2005 2006 2007 2008 2009 2010 2011 2012*
Structural aids from EU 2.42 4.01 5.05 7.62 7.39 9.25 11.22 14.27 3.54 64.77
Polish contribution to the EU
Budget 1.31 2.38 2.55 2.78 3.40 3.23 3.48 3.73 1.58 24.44
EU Structural Funds net transfer
to Poland 1.10 1.62 2.49 4.79 3.99 6.01 7.73

10.49 1.96 40.18

Ministerstwo Finansów. Skumulowane przepływy finansowe między RP a UE w latach 2004- 2012

*Since January - March

In the first years of accession the Structural Funds have financed thousands different projects in Poland. The EU funds generally contributed positively to economic growth, improved many sectors of Polish economy (for example transport, environmental protection, education, small and medium-sized enterprises) and convergence among regions. The majority of the EU supports was spent on the upgrading of the Polish road transport system: in 2013 is brought into use 1 326 km of new motorways, approximately 535 km of express roads and dual carriageways around 230 km of expressways carriageway. The roads built with the help of structural funds were much longer than the roads built by license holders and with the help of the national budget only. After accession to the EU Polish government supported by only budgetary resources has built: 20 km highways, 28 km express ways and 230 circuit roads. In addition, thanks to the co-financing of structural funds Poland modernized of 1 594 km railway lines, paid for 42 651 km broadband Internet, took an 408 investment in renewable energy, built 506 new research centres and 1 649 new laboratories, 1764 innovative ideas were supported, 2701 new technology were implemented, 25 791 small medium enterprises received investment support (see table no.6).

Tab no 6. Effects of the structural funds in Poland for the period 2007-2013

1 326 km of new highways
1 594 km built or upgraded railway lines
398 wastewater
408 investment in the renewable energy
318 717 new jobs
42 651 km broadband network
506 new research centers
1 649 new laboratories
1764 innovative ideas supported
2701 implemented new technology
25 791 supported investments in enterprises
233 supported institution in business environment
Source: Portal Funduszy Strukturalnych, Warszawa 1.11.2013

wwwhttp://www.funduszestrukturalne.gov.pl/

According to HERMIN demand model European Commission assesses increase of GDP in Poland yearly by 0.4%- 0.5% over the course of spending period. More significant are the supply side effects of Structural Funds 2007-2013 in polish regions estimated in the range from 8% to 12% of GDP (Report on Economic, Social and Territorial Cohesion 2010: 249 -254).The structural aids for Poland are not evenly distributed among regions. The most beneficial regions in this respect were Mazowieckie voivodeship, Śląskie, Dolnośląskie, Zachodniopomorskie, Warmińsko-Mazurskie, the medium aids were regions : Wielkopolskie, Kujawsko-Pomorskie, Pomorskie, Lubuskie, Łódzkie, Podlaskie, Opolskie; and the value of aids per one inhabitant was the least in such regions as: Lubelskie, Podkarpackie, Świętokrzyskie and Małopolskie. It is assessed by the help of three macroeconomic models (HERMIN, MaMoR2, CGE-type model) that with the aids of the EU funds spent in the period 2007–2013, Poland will be able to reach almost 70% of the EU-25 GDP in 2020 and without the Structural Funds – about 3 points less. About 1/6 of the rate of development in Poland in 2020 will be a contribution rate of the resources coming from the Structural Funds. Infrastructure investments and the Environment Operational Program will have the most important, positive impact on Polish economy. The EU funds will generally positively contribute also to the regional convergence among Polish voivodeships. In 2020

Mazowieckie voivodeship will be still considered as the richest region in Poland, but the poorest regions will upgrade significantly crossing the threshold of 80% of the country average. Only one Operational Program– Development of Eastern Poland is expected – according to the macroeconomic modeling – to deliver additional GDP of 1.38% and up to 13 610 new jobs annually in five the least developed Polish voivodeships (Piech K.2008: 1 -37).

The Common Agriculture Policy has also brought positive changes to the Polish agricultural sector. The rise of exports to the single market has increased farmers' income and profitability from agricultural production. The farms outputs especially that of the biggest have been growing at a fast rate and restructuring and modernization of farms have been accelerated. Polish farmers were the only social group to receive direct aids and 1.4 million of them applied for the Structural Funds. In the first six years since accession Polish farmers have received from the EU about 12 billion euro. Contrary to what critics said would happen, the Polish agricultural information system (IACS) proved to be efficient and effectively supported many small Polish farms. However, these aids for Polish small farms often helped to increase their consumption rather than investment and there has been with little effect in turning them into a more productive sector of economy. Although Polish agriculture received only part of direct aids, they have had positive effects on the income situation in all sectors. The European Commission opposed assigning the same direct aids, that the old member states received to the new members states, because it feared that doing so it would provoke a redistribution of resources at the expenses of the 15 member states. It was agreed in the Accession Treaty that Polish farmers would receive direct payments in the amount of 25%, 30% and 35% in the period 2004 and 2006 and these payments would increase progressively to reach full quota in 2013. While in the last four years before Polish accession to CAP the annual average level of subsidies to agricultural production was 863 million złoty, in the five years following accession their average annual value was 9866 billion zloty, more than an eleven- fold increase (Piotrowska M., Kurowski L., 2009: 384). The overall value of the support for this sector in Poland has grown from year to year: in 2005 Polish farmers obtained aids that was close to the previewed payments (preview payments in parentheses) amounting to 702 million euro (755.8). In 2006 the aid amounted to 811 million euro (881), 935 million euro (1140.8) in 2007, 1037 million euro (1425.9) in 2008, 1 446 million euro in 2009, 1827 million euro in 2010 , 2504 in 2012 million euro and about 3.5 billion euro in 2013 (see table no 7). As a result direct aids to Polish agriculture was higher than previously suggested, but still less than what was given to farmers in EU – 15 members states. For example in 2010 French farmers received 8420.8 million euro, German farmers 5772 million euro and Spanish farmers 5091 million euro.

Table no 7. Direct payments transfers for Polish agriculture in million euro in the period 2005- 2012 in brackets the preview payments

Years	Direct payments in million euro
2005	702 (755.8)
2006	811 (881.7)
2007	935 (1140.8)
2008	1037 (1425.9)
2009	1446 (1711)
2010	1 827 (1996.1)
2011	(2281.1)
2012	2504 (2566.2)
2013	3 500 (2851.3)

Source: 5 Years in the EU, Warszawa 2009,p.207, Rzeczpospolita 132 Października 20011

The result of the final agreement on direct payments is that Polish farmers have not been covered by all CAP regulations since the day of membership (100% direct payments). They had to operate under different, and worse competition conditions than did the farmers of the old 15 EU member states. In the EU average direct payments are 271 euro in the budgetary period in 2013. While Polish farmers obtained 214 euro per one ha, the direct payments in Holland and Belgium reached the level of 406 euro.

Partial direct payments, and the consequence the lack of uniform competitive conditions in the whole single market provided for two separate agricultural policies operating for a temporary period, one within the area of old 15 member states and one within the new member states. As a result in the first years after accession benefits for the Polish agriculture were only minimal. The full integration of Polish agriculture will take place in the next budgetary period in 2013- 2020. It should be added that Poland has accepted the so-called “simplified system” of direct payments. That system means that all the types of agricultural area were supported by direct payments. The argument for introducing a “simplified system” instead of the standard system was that the standard system used in the EU-15 member states was too complicated to be used in the new member states. The simplified system significantly decreased the cost of its current agricultural administration in Poland. It is worth adding that due to introducing a different, temporary system of CAP in new member states, helped the EU-15 to economize on the cost of enlargement. It has been calculated that as Poland was gradually covered with direct payments between 2004 and 2013, EU budget funds would amount to EUR 16.3 billion. The potential EU budget “savings” resulting from not covering Polish agriculture in 2007–2013 with full direct payments might approximately have been as much as 10.6 billion euro (Centrum Europesjkie Natolin 2003: 11).

The lack of uniform competitive conditions between Poland and the EU in agriculture did not mean a lack of possibilities to compete. Positive effects upon income in Polish agriculture started from first years of accession. benefits for the Polish agricultural sector arose from several sources. Firstly, direct payments to polish farmers (in Polish zloty) rose year by year: from 442zloty per ha for crop production in 2004, these payments grew to 483 zloty in 2005, 523 zloty in 2006, 562.09 zloty in 2010 and 710.57 zloty in 2011, 731.72 zloty in 2012 and 830.3 zloty in 2013 They were supplemented by 274.23 zloty per ha for basic crops. In 2010 Polish farmers received 346.43 zloty per one cow , 410.89 zloty in 2011 and 584.79 in 2012. Per one sheep Polish farmers received 105.91 zloty in 2010 and 123.11 in 2012 (Agencja Restrukturyzacji I Modernizacji Rolnictwa 2011). During the first five years after accession Polish farmers received 10 billion euro of direct aids while transfers from Polish budget were two times less at 22 milliard zloty. Growth of direct payments from the EU for small Polish farmers made up the main part of their agricultural income. For some small farms (those up to one or two hectare) direct aids accounted for 90% of their average agricultural income, while for medium-size farms from 8.2–16.5 ha direct payments accounted for between 31% to 84% of agriculture income (Urząd Komitetu Integracji Europejskiej 2008: 184–186). Secondly, contrary to critics the Polish Agricultural Information System (IACS) proved to be efficient in managing the direct aids to polish farmers. In 2010 this system transferred direct payments 12.8 billion zloty to 1.2 million polish farmers - 92% from 1.375 million Polish farmers. Thirdly, due to UE accession Poland was also covered by the other instruments of the Common Agricultural Policy. The Common intervention regime encompassed cereals, sugar and butter markets. CAP instruments aimed at guaranteeing minimum sale prices to farmers included such Polish crops as cereals, meat, milk, potato, starch, sugar, dried fodder, tobacco and fruit and vegetables. In 2012 outlays from the Agricultural Market Agency amounted to PLN 52.44 zloty for one ton of sugar, 2 785.45 zloty for one hectare of soft fruits, 162.1 zloty for one ton of vegetables. Fourthly, farmers became more interested in buying more land, thereby influencing the price for agricultural land. Before the financial crisis the price of one hectare of arable land rose by 140% in comparison with 2003, and the price of land sold by the Agricultural Property Agency increased 2.3 times (Polityka 2009).

The cost of the adaptation of the CAP rules for the Polish agriculture was also important. It increased production cost due to the VAT increases on agricultural machines, construction materials, and higher prices for fertilizers. Polish farmers had to make necessary investments to modernize cowshed and milk storage, and to install modern ventilation, and lighting systems; these investments were required so that farms adhered to standards of environmental protection. Farms specializing in animal production required greater environmental investment such as building storage structures for waste. Farms producing eggs obtained a transitional period , in which to modernize or replace of cages for laying hens. All farmers were obliged to store adequately and safely all substance that could be dangerous to groundwater. The total investment outlays related to upgrading Polish agricultural production to meet EU sanitary, health, veterinary requirements were assessed at 1.709 billion euro .Capital expenditure on agriculture increased by about 70%. The largest part of this financing was used to modernize and upgrade method of milk production (MRIRW 2004).

After 2004 Poland observed temporary and limited negative impact of the EU on Polish economy. The most visible was the growth of prices on some agricultural products (especially sugar) as well as building materials, alcohol, cigarettes, connected with changes in indirect taxation. Although the level of inflation gradually decreasing in the following years, in 2008- 2012 the inflation rate in Poland was still higher than in euro area. The fears that Polish enterprises would start to wind on mass scale after accession to the EU did not materialize. Up to the crisis Polish firms developed their sale to the single market and improved their profitability. Accession to the EU of new member country is as usual connected with differentiation process of regional development. It is argued that some regions in Poland gained more on the integration processes then others that: capital Warsaw seemed to receive the most profit from accession into the EU as the city attracting a lot of foreign capital, the greatest benefits from integration processes fall also to large agglomeration (Poznań, Cracow, Wrocław Tri- city – Gdańsk, Sopot, Gdynia), integration benefited some regions like Mazowieckie voievoidship, Śląskie, Wielkopolskie, Dolnośląskie voievodships, places localized near modern communication links, but most disillusioned regions were located in the east part of Poland facing external EU tariffs barriers, personal control, losing business connections with eastern partners, and regions dependent on heavy industry, shipbuilding sector and states farming. The present crisis in euro area has gradually decreased development of Polish trade and new investments. The influence of these negative effects on the Polish economy will depend on the ability of EU to overcome crisis.

Overall after accession to the EU Poland showed robust economic growth for a couple of years (5% in 2004, 3,2% in 2005, 5,8% in 2006, 6,4% in 2007, 5% in 2008). In the time of crisis in euro area Polish GDP grew at 3.9%

in 2010, 4.3% in 2011. Poland remained on a path of economic growth even in times of crisis for many EU' member countries. In 2012, the pace of growth pact Polish economy slipped to 1.9% of GDP, but it was still positive. For the period 2007-2011 the Polish economy to grow at a high pace, generating the highest compounded annual growth rate in the European Union as a whole (4.3% to 0.5% in the EU-27). Additional growth due to the accession to the EU is assessed by different analysis from 0,5% -1% to 1,75 % of the Polish GDP. The positive economic effects of the first years of accession was shown by dropping of Polish unemployment statistics from nearly 20% unemployment of total labor force in 2004, to 17,6% in 2006, 14% in 2007, and even 8% in the middle of 2008. However, crisis in euro area influenced negatively economic growth in Poland and unemployment rose again to above 13% at 2013. The EU structural funds helped Poland to avoid a recession at this time . We estimate that, on average 0.5 -1 percentage points of annual growth over the period was the result of investments co-financed by the EU. Because of the fast economic growth after accession to the EU Poland showed strong convergence process within the single market. During the crisis in euro area this real convergence has been additionally intensified by the GDP increase in Poland and its decrease in many partner countries. The distance between Poland and the EU-27 average GDP per capita measured clearly decreased after accession to the EU by more than 13 percentage points. Polish GDP constituted in 2004 approximately 41% of the average GDP of EU at purchasing power parity, in 2008 about 50% of the average GDP 27 members states, in 2013 about 64%. It is worth noting that, in the period 2014-2020 Poland will receive another huge potential of 73 billion euro of structural funds. According to the convergence program real GDP growth in Poland in 2013 is expected to be 1.5%, 2014-2.5% in 2015 – 3.8%, and in 2016-4.3 percent.

The current crisis in euro area poses also new challenges for integration of Poland in the EU by declining dynamics of trade exchange, investment and services circulation, pressure to reform structural policies in the EU. The excessive debt and deteriorating confidence exposed Polish economy for slower production and growth of unemployment, an excess borrowing, lower capital inflow. In the view of crises in euro area the question arise what will be the future position of Poland in the EU and which efforts should be undertaken to safeguard the achievement from Polish accession? Firstly, the gains from accession to the EU can be further exploited by deepening the integration of markets of goods and services with the EU partners. Polish integration process with the EU has shown a synergistic effect of capital and trade flows, in that trade liberalization has induced capital inflow, and FDI has had positive impact on growth of exports. However in the long run Poland's economy should not only compete on the basis of lower labour costs and production of capital intensive goods, but also strive to increase productivity, and technological development to export more technologically intensive products and services. Because there is clear evidence that market integration in services has advanced at slower pace than in goods Poland should also act to ease barriers to cross-border services trade and improving the operation of network sectors. Polish SME in service sector should take an opportunity to develop export specialization and expansion on the European Single Market. Further liberalization of the public sectors could lead to large increase in cross border trade and significant price decline. There are also considerable gains to be realized in easing of restriction in professional services (accounting, architecture, legal and business services). Secondly, the strong financial interdependence between Poland and the EU partners underscores the importance of strengthening the EU- wide cooperation in financial sector and supervision. The EU countries and Poland ought to do the best to restore stability, transparency and confidence in the financial sector and to undertake profound reform under the banking union with common banking guarantee funds and regulatory and supervisory system. Creating a true the single market for retail banking, mortgage lending, insurance, debts and long term savings may bring further benefits, because these markets are still fragmented between Poland and the EU. Thirdly, Poland in the EU should increase the effectiveness of the public administration to substantially cut red tape, and improve functioning of its judiciary system. Simulation made by the European Commission shows that output and consumption could increase, if a reduction in administrative burdens were achieved. Fourthly, overall today' debt crisis demonstrates that the economic costs of a single currency have been underestimated, and that the economic benefits were overestimated. Crises in euro area have exposed the EU member countries vulnerabilities of budgetary equilibrium and fiscal system. Meanwhile sound fiscal policy is essential to maintaining macro-financial stability and one main condition of economic growth. Because crisis in euro area is influencing negatively Polish economy the resolving of debt problems in EMU is an important asset for the promotion of growth in the EU as well as in Poland. In spite of the logic one money for one market the EMU has not been shown to increase profits for less competitive countries in significant ways than the European Single Market. In the time of crisis in euro area Polish national authorities can effectively protect Poland against economic recession. However, an eventual breakup of the EMU may cost all the countries more than their further integration. Reformed euro area with efficient institutional arrangement that is able to spur economic growth and to resolve the public debt crisis is a euro area that Poland deserves to join. The time of the eventual accession should be decided after an analysis of the costs and benefits entry. Profits derived from European integration are conditioned on the possibilities to accomplish the necessary structural changes as in the EU as is in Poland. In the long run remaining outside of the euro area Poland may be in danger of losing influence on economic policy and becoming a second class European partner. Poland should decide then to join a more integrated and better governed EMU; otherwise Poland should limit its integration to the single market.

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