

**SELECTED ASPECTS OF FUNCTIONING
OF POLAND IN THE EUROPEAN UNION
THE BALANCE OF TEN YEARS OF MEMBERSHIP**

SELECTED ASPECTS OF FUNCTIONING OF POLAND IN THE EUROPEAN UNION THE BALANCE OF TEN YEARS OF MEMBERSHIP

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Preface

Poland's accession to the European Union (EU) in May 2004 was a very important moment in the economic and social development of the country and brought a lot of changes in the functioning of economy. After a period of ten years of Poland's membership in the EU came appropriate time to attempt an analysis, as well as a preliminary evaluation of the economic consequences of Poland's entrance into the EU structures. The mere presence in the EU is an opportunity for the development of the economy, but the extent to which these opportunities can be exploited depends largely on methods of conduction of economic policy as well as on other external factors. Global financial crisis 2008+ has become a major challenge for the individual EU countries, especially for the southern states, as well as for the Union as a whole. During the crisis, it was found that a number of euro area countries are characterised by a long-term lack of internal and external stability of the economy, which was noticed in the pre-crisis period, but in fact it was not regarded as a threat to the euro area as a whole. The crisis caused that analysis of the advantages and disadvantages arising from the Poland's participation in the process of European integration has become in some way a secondary need in a certain range, and the main problem has become the necessity to modify rules governing the functioning of the EU and the implementation of new regulations (in part only concerning the euro area), and the alignment of the country's economic policy to long-term programmes of the EU (e.g. "Europe 2020").

Studies included in this monograph were implemented within the statutory research entitled: "Poland in the European Union. The Balance of Ten Years of Membership in the EU" conducted by the researchers from Collegium of World Economy of the Warsaw School of Economics and they are the continuation of research on the functioning of the Polish economy in the European Union.

The monograph contains two parts.

In the first part that contains four chapters (studies) one has presented the overall problems of the European Union's functioning. Chapter 1 discusses the mechanisms of the system of economic policy coordination of the EU Member States used in the pre-crisis period (Broad Economic Policy Guidelines, the Stability and Growth

Pact, the European Employment Strategy, macroeconomic dialogue, reform of the market for products, services and capital markets, the Lisbon Strategy), as well as modifications of these mechanisms during the financial crisis and the introduction of new solutions (“Europe 2020” strategy, EFSM mechanism, the Euro Plus Pact, a six-pack, two-pack, ESM mechanism, the Treaty on Stability, Coordination and Managing in EMU – Fiscal Pact). The main emphasis in this part of the study was placed on the problem of fiscal policy coordination and supervision over its exercising by the EU countries.

Chapter 2 discusses some problems of the euro area. The starting point is a brief guide to the main theses of optimum currency area theory and appropriate reference to studies showing that the EU-12 countries do not meet the optimality criteria of the common currency area. Using the comparative method (international comparisons) one indicated that the countries forming the euro zone were developing in the long run slower than the countries that remained with their respective currencies. At the same time the catching-up countries, members of euro area, were becoming gradually less and less competitive in comparison to the most developed economies of countries they were chasing after. On this basis, one formulated the general criteria of real convergence that should be met when deciding on the introduction of the single currency.

Chapter 3 is devoted to the problems of unconventional monetary policy which was applied by Fed and other central banks, including the European Central Bank, in the first phase of the financial crisis. This paper presents a method of using international comparisons of effects of unconventional (quantitative easing, the EU programmes to purchase euro area’s securities) and conventional (currency market interventions using CBS transaction) monetary policy in terms of the impact of the policy on reducing domestic interest rates and the exchange rate of the national currency. The end result of both of these forms of monetary policy is similar.

In Chapter 4 one indicated that the traditional approach to international competitiveness used for example by IMD in The World Competitiveness Report is not sufficient. Modern approach to the problem of competitiveness should take into account the common good and the quality of life. The author outlining the above concept referred in this regard to catholic social teaching, as well as to the Finnish experiments of innovativeness support methods.

In the second part of the monograph one summarised the studies in which selected areas of the Polish economy in the European Union have been discussed.

Chapter 5 indicates the positive impact of Poland’s accession to the European Union not only on the trade turnover of Poland’s foreign trade, but also on the foreign turnover of services. In turn, using the method of measuring the turnover of goods by

the added value, one indicated that the share of the EU countries in Poland's foreign trade has declined in the analysed period to a lesser extent than suggested by the traditional measurement of turnover using the gross value method.

In Chapter 6, one made an attempt to assess the significance of structural and cohesion funds for Poland's economic development in the long term. The study contains a deep analysis of the scope and use of the various funds in the long term perspective, as well as the results of the impact of these funds on the Poland's economic development, estimated using Hermin and Quest models. Chapter 7 has a similar character. One widely describes the use of funds from the EU budget on the development of agriculture and rural areas, the development of Polish foreign trade of agricultural commodities, as well as the effects of the implementation of the Rural Development Programme 2007–2013.

For strategic reasons and political situation in Europe energy security is an important problem and is discussed in Chapter 8. This paper also covered issues of the impact of climate and energy policy on the situation of both the energy industry, as well as the development conditions of the Polish economy, taking into account the objectives outlined in "Europe 2020" strategy.

Chapters 9 and 10 include an examination of the EU's common transport policy for the Polish economy. In chapter 9 one indicated terminological inaccuracies contained in the Lisbon Treaty, because on the one hand, transport policy was included in the area of shared policies and on the other hand, the term "common transport policy" is used, which creates legal uncertainties. Pointing to the balance of benefits and costs from transport policy one emphasised its highly positive effect expressed in the scale of transport investments co-financed from the EU funds, although the highway network system is adapted to a greater extent to the needs of transit, than to the needs of in-country transportation, access to the European market of international road haulage market and simplifying procedures facilitating functioning of the transport companies. In chapter 10 one made mainly analyses of the situation of Polish road and rail freight transport operators indicating the policy of favouring by the European Commission of rail transport at the expense of road transport.

In Chapter 11 the role of tax reliefs granted to companies investing in special economic zones was analysed. Based on a thorough analysis it was demonstrated in the study that the best economic effects are achieved by zones operating in the relatively richer provinces, which entails on the other hand, the amount of budget revenues lost due to granted tax exemptions.

In Chapter 12 an attempt to assess the impact of integration with the EU on urban development in Poland was made. By using econometric analysis one made estimates of the benefits of accession for the development of the largest Polish cities

(taking GDP per capita as a measure of the development). The analysis indicated a highly positive effect of integration on the development of these cities.

The publication is intended for students of economics, European studies, international economic relations, as well as for business practitioners and employees of public administration.

Part I

General Problems of Functioning of the European Union. Lessons for Poland

Małgorzata Znoykowicz-Wierzbicka

Evolution of the EU Member States' Economic Policy Coordination – Lessons for Poland

Introduction

The 10th anniversary of Poland's accession to the European Union is conducive to reflections and assessments regarding the benefits from the first decade of membership. The perspectives of adoption of the common currency are equally important. In this context, it is also worth asking questions concerning the evolution of the EU's most important integration mechanisms and of the EU itself that has been observed during the last decade. As Heraclitus said "everything changes and nothing remains still" (*Panta rhei kai ouden menei*). Taking into account the unprecedented character of the eastern enlargement of the EU, perfunctory assessment might suggest that unlike the dynamic period of 1990s, when the EU completed the project of the common market, as well as created the monetary union, the last decade did not bring such remarkable changes. The evolution of mechanisms of economic integration in the EU indicates that the economic pillar of the EMU was subject to profound changes. Therefore, it is worth considering the dynamics of these changes, their driving forces and last but not least – consequences, interpreted both from the perspective of the functioning of the monetary union, as well as for the countries like Poland still remaining outside the Eurozone. Still in the second half of the 1990s, it was sometimes suggested in the discussions on the perspectives of eastern enlargement of the EU, that the enlargement process excluded the strategy of deepening of integration. As the practice showed, some of the "new" central and eastern European member states have already joined the Eurozone, others – like Poland – despite of remaining outside the monetary union, actively participate in the process of dynamic changes in the construction of the EU. The purpose of this paper is to carry out a review of the most important directions of the evolution of the EU member states' economic policy coordination system, with special emphasis on their importance for Poland.

1. The EU Member States' Economic Policy Coordination System – Fundamental Elements and Rules

In accordance with art. 119 of the Treaty on the functioning of the European Union (TFEU), close coordination is a general rule of the member states' economic policies in this organisation. The EU members are obliged to regard their economic policies as a matter of common concern and to coordinate them within the Council of the EU (art. 121 p. 1 TFEU). Supranational monetary policy for the Eurozone is not subject to coordination as defined in art. 119 TFEU – in accordance with art. 127 TFEU, the responsibility for monetary policy is entrusted with the European System of Central Banks, obliged to preserve priority character of the goal of price stability among other goals of economic policy. The design of the EMU is asymmetric, though: the Eurozone's monetary policy is conducted at supranational level, while economic policies in other fields (including fiscal policy) still to a substantial degree remain at the national level (with the exception of the common policies falling within the EU's exclusive competence). Such division results in problems of dual character: it impedes the process of formulation of the proper *policy mix* (combination of monetary and fiscal policy to ensure internal and external balance) for the currency union as a whole, as well as may lead to the so-called *one-size-fits-all policy problem* (when the supranational monetary policy is not appropriate for heterogeneous economies). In the theory of monetary integration, the solution to such a problem may seem simple: in accordance with the optimum currency area theory, countries selected to adopt the common currency should demonstrate low risk of asymmetric shocks (high level of a real convergence) and possess mechanisms of a macroeconomic stabilisation alternative to monetary and exchange rate policy. If such requirements are met, possible asymmetric shocks in a monetary union will not be absorbed by monetary policy, but by other means (fiscal policy, adjustment of the labour market) [See Mongelli, 2002; Horvath, 2003]. Simultaneously, national macroeconomic stabilisation policies should not generate negative external effects for the stability of the common currency. The above-mentioned basic provisions of the TFEU concerning the member states' economic policy coordination seem to serve the purpose of preserving delicate balance between the Eurozone member states' need to conduct effective stabilisation policy and the requirement to reduce negative influence of actions taken at the national level on the quality of the monetary union's common club goods such as the price level, currency risk, the long-term interest rates, the level and stability of the exchange rate or the stability of the banking sector and the financial markets.

Exclusion of the monetary policy from the direct forms of economic policy coordination system designed by the TFEU, the priority character of price stability among other goals of economic policy in the EU as well as the obligation of the member states to coordinate their economic policy constituted the cornerstone of the EU's "*policy mix*" implementation. Detailed rules and mechanisms of the EU member states' economic policy coordination have been gradually elaborated on the basis of general provisions of the TFEU, numerous secondary law regulations and documents of political character – as the history of the last decade shows, they have undergone significant changes.

Ever since the monetary union was created, the implementation of the general rule of coordination of the EU member states' economic policy has been based on several parallel and interrelated elements:

1. In accordance with art. 121 p. 2 TFEU, the **broad economic policy guidelines** (BEPG) have been considered the basic instrument of coordination. Recommendations issued within the BEPG framework are of rather general character and mainly address conditions necessary for improved economic growth and employment [See: EC, 2003]. The BEPG implementation mechanisms and possible sanctions for non-compliance are factors decisive for the real influence of the guidelines on the member states' economic policies. The most important arguments that could be discussed in this context suggest that the BEPG are rather a political than a legal instrument. The general guidelines adopted by the Council of the EU have the legal status of recommendations – therefore, in accordance with 288 TFEU, they have no binding force. The sanctions for non-compliance are mainly limited to political pressure (where it is established by the European Commission that the economic policies of a member state are not consistent with the BEPG or that they risk jeopardising the proper functioning of EMU, the Commission may address a warning to the member state concerned. The Council, on a recommendation from the Commission, may also address further recommendations to the member state concerned or finally decide to make its recommendations public). Therefore, implementation of the BEPG is to a great extent voluntary and is based on both peer and external pressure from the EU institutions.
2. Fiscal policy coordination instruments aimed at assuring fiscal stability in EMU (the **excessive deficit procedure and the Stability and Growth Pact**). The excessive deficit procedure was regulated in art. 126 TFEU and in additional protocol annexed to the Treaty [EU, 2012a]. Art. 126 p. 1 TFEU establishes general obligation of the EU member states to avoid excessive budgetary deficits. In accordance with art. 126 p. 2 TFEU, the responsibility for monitoring fiscal discipline was

entrusted with the European Commission¹. The subsequent provisions of art. 126 TFEU regulate: the procedure initiated in cases when the Commission states non-compliance with the fiscal discipline criteria by a member state as well as sanctions for non-compliance (starting with political pressure, adopting additional recommendations concerning fiscal policy to a member state concerned, up to financial sanctions – which may be imposed only on Eurozone member states). In 1997, the excessive deficit procedure was supplemented by a programme known as the Stability and Growth Pact (SGP). The SGP comprises three documents:

- Resolution of the European Council of 17 June 1997 on the Stability and Growth Pact [EU, 1997];
- Council regulation no. 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies [EC, 1997a];
- Council regulation no. 1467/97 of 7 July 1997 on speeding up and clarifying the implementation of the excessive deficit procedure [EC, 1997b].

In the literature, the regulations constituting the Stability and Growth Pact are divided into two parts: the preventive one (introducing the rules for multilateral surveillance of fiscal discipline and early warning) and the corrective one (regulating sanctions for non-compliance with fiscal policy coordination rules). In accordance with art. 3 of the Council regulation no. 1466/97, the EU member states are obliged to submit to the Council and the European Commission at regular intervals stability programmes (Eurozone members) or convergence programmes (countries outside the monetary union) providing an essential basis for price stability and for strong sustainable growth conducive to employment creation. These programmes, constituting fundamental element of the preventive arm of the SGP, should encompass i.a. the medium-term objective for the budgetary position and the adjustment path towards this objective, the main assumptions about expected economic developments and important economic variables relevant to the realisation of the stability programme such as government's investment expenditures, real GDP growth, employment and inflation and a description of budgetary and other economic policy measures being

¹ In accordance with art. 126 p. 2 TFEU, the assessment of fiscal discipline is based on two basic criteria. Firstly, the European Commission examines whether the ratio of the planned or actual government deficit to gross domestic product exceeds the reference value of 3% specified in the Protocol on the excessive deficit procedure annexed to the Treaties, unless: either the ratio has declined substantially and continuously and reached a level that comes close to the reference value or, alternatively, the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value. Secondly, the European Commission also examines whether the ratio of government debt to gross domestic product exceeds a reference value (specified at 60% of GDP), unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace.

taken and/or proposed to achieve the objectives of the programme. The Council of the European Union assesses the stability (or convergence) programmes submitted by the member states within the framework of the multilateral surveillance procedure set forth in art. 121 TFEU. In case of identifying significant divergence between declarations included in the stability/convergence programme and real developments in fiscal policy, the Council may – acting on a recommendation from the European Commission – address to a member state concerned a warning or recommendations with respect to fiscal discipline (the legal basis of the so-called “early warning procedure” is art. 121 p. 4 TFEU). The corrective part of the SGP was regulated by the afore-mentioned Council regulation no. 1467/97, which describes the character of sanctions envisaged by art. 126 TFEU, including the financial fines which may be imposed only on Eurozone member states².

3. In connection with the broad economic policy guidelines and on the basis of general treaty provisions, supplementary forms of economic policy coordination were introduced, including:

- **European Employment Strategy (the Luxembourg process)** – the most important goals of the strategy were to increase employment, to reduce unemployment and to increase the workers' adaptability to changing labour market conditions. Since 1998, the guidelines were concentrated on four thematic

² If the Council decides that an excessive deficit exists, it should adopt, on a recommendation from the Commission, recommendations addressed to the member state concerned with a view to bringing that situation to an end within a given period. Initially, these recommendations are not made public. If no effective action is taken in response to these recommendations within the period laid down, the Council may make its recommendations public. In case of the Eurozone member states, further sanctions for non-compliance are possible. If a member state persists in failing to put into practice the recommendations of the Council, the Council may decide to give notice to the member state to take, within a specified time limit, measures for the deficit reduction which is judged necessary by the Council in order to remedy the situation. In such a case, the Council may request the member state concerned to submit reports in accordance with a specific timetable in order to examine the adjustment efforts. Furthermore, as long as a member state fails to comply with the deficit reduction recommendations, the Council may decide to apply or intensify one or more of the following measures:

- to require the Member State concerned to publish additional information, to be specified by the Council, before issuing bonds and securities;
- to invite the European Investment Bank to reconsider its lending policy towards the member state concerned;
- to require the member state concerned to make a non-interest-bearing deposit of an appropriate size with the Union until the excessive deficit has been corrected, from the viewpoint of the Council;
- to impose fines of an appropriate size (In case of financial sanctions for non-compliance with the criterion relating to the government deficit to GDP ratio, the Council regulation 1467/97 regulates that the amount of the first deposit comprises a fixed component equal to 0.2% of GDP, and a variable component equal to one tenth of the difference between the deficit as a percentage of GDP in the preceding year and the reference value of 3% of GDP. Any single deposit cannot exceed the upper limit of 0.5% of GDP. In case when the excessive deficit is not corrected within two years following the decision to require the converted into a fine).

fields called pillars (improving employability, fostering entrepreneurship in order to facilitate job creation, raising adaptability of businesses and their employees to continuous structural change and enabling women and men to participate in the labour market with equal opportunity and responsibility) [EC, 2002, p. 29–30]. The Amsterdam Treaty provided the labour market policy with an independent position in the economic policy coordination process. At present, the legal basis for action in this domain is Title IX of the TFEU – Employment. In accordance with art. 145 TFEU, the EU’s employment strategy should promote increase of skills, ability of workforce to adopt to changing labour markets conditions, and responsiveness to changes in economy of market itself. In accordance with 146 TFEU, the member states’ employment policies should be consistent with the broad economic policy guidelines, remaining the basic tool of economic policy coordination in the EU. The analysis of the regulations of Title IX TFEU indicates that from the legal and procedural point of view, the employment guidelines do not differ substantially from the BEPG.

- **Reform of the goods, services and capital markets (the Cardiff process)** – at the Cardiff summit in June 1998, the European Council decided to establish a new procedure under which the member states and the Commission would produce short yearend reports on product and capital markets reforms [EU, 1998]. The Cardiff process did not envisage additional economic policy recommendations to be issued for the member states – it rather constituted an additional tool of surveillance of structural policies, which may be useful in the process of preparation of country-specific and Union-wide BEPG.
- **The macroeconomic dialogue (the Cologne process)** – in accordance with the European Council conclusions of June 3–4 1999, the macroeconomic dialogue was designed to improve the conditions for a cooperative macro-economic policy mix geared to growth and employment while maintaining price stability [EU, 1999]. The Cologne process was established as another form of economic policy coordination supplementary to the BEPG – like the Luxembourg or the Cardiff processes. The partners in macroeconomic dialogue at the EU level include the governments of the member states (represented in the Council of the EU), the European Commission, the European Central Bank and social partners (institutions representing workers and employers, in particular trade unions and employers’ organisations). Exchange of information and opinions is the main form of cooperation within the macroeconomic dialogue.
- **The Lisbon strategy and Europe 2020 – the programmes to improve EU’s competitiveness** – in March 2000, the European Council decided to adopt

a strategy for the EU for the next decade – a strategy “to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion” [EU, 2000]. Furthermore, in 2001, the scope of the strategy was widened to include environmental issues. In 2005, the European Commission carried out a review of implementation of the Lisbon strategy. The overall assessment was not very optimistic – there were too many detailed goals, the hierarchy of these goals and their synergy potentials were not clear and the achievements of the first five years of implementation were limited³. Therefore, two basic changes were introduced to the Lisbon strategy. Firstly, actions taken under the Lisbon strategy were to be focused on two principal tasks – delivering stronger, lasting growth and more and better jobs. Secondly, the European Council accepted changes in the mechanism of implementation of the Lisbon strategy. In order to achieve coherence of policy actions at the EU's and the member states level, recommendations issued within the Lisbon strategy were integrated with the BEPG, issued by the Council every three years for all the member states (“*Integrated guidelines for growth and jobs*”), constituting a basis for member states' national programmes for growth and jobs. As a counterpart to the national programmes, the European Commission was to prepare a “**Community Lisbon Programme**” covering all actions taken at the Community level. Synergies and complementarities between the Community Programme and the member states' reform programmes were recognised as the key factors to the success of the renewed Lisbon strategy [EC, 2005]. Structural weaknesses of the EU member states' economies, such as unsatisfactory economic growth and productivity changes, low employment ratios in many countries, the necessity to face challenges resulting from aging societies and climate change, as well as (especially after 2008) threats in the financial sector and fragile fiscal stability resulted in a new reform programme. In 2010, the Lisbon strategy was replaced by the Europe 2020 programme [EC, 2010a]. The programme was based on two pillars: the thematic approach (combining priorities and headline targets as a general guidance for economic policy coordination) and country reporting on national reform strategies. Europe 2020 put forward three mutually reinforcing priorities: “*smart growth*” (developing

³ As an anecdote, an illustration of the “red-tape intensiveness” of the Lisbon strategy may be quoted. According to L. Csaba, apart from its general goals, the Lisbon strategy included 28 basic goals, 120 detailed goals and 117 structural indicators that should be monitored and reported. After the EU's eastern enlargement, the number of annual reports intended to assess the progress in implementation of the Lisbon strategy exceeded 300.

an economy based on knowledge and innovation), “*sustainable growth*” (promoting a more resource efficient, greener and more competitive economy) and “*inclusive growth*” (fostering a high-employment economy delivering social and territorial cohesion). The integrated guidelines adopted at the EU level and country-specific recommendations addressed to the member states are the basic tools of economic policy coordination within the Europe 2020 programme. Policy warnings could be issued in case of inadequate response. The programme specified five headline targets for 2020, which should be translated into national targets and trajectories to reflect the current situation of the respective member states⁴.

2. Evolution of the EU Member States’ Economic Policy Coordination System

The general rules and mechanisms of the EU member states’ economic policy coordination system described in the first part of this paper have undergone significant changes already in the first year of functioning of the EMU. Putting aside the above-mentioned integration of the economic policy guidelines, the most important changes concerned the methods and scope of fiscal policy coordination and widening macroeconomic surveillance far behind basic indicators of fiscal discipline defined directly in the TFEU. Moreover, in the last years, the EU observed systemic changes of the role of the European Central Bank, reinterpretation of the so called *no-bailout clause*⁵ and discussion on a banking and possibly – fiscal union.

⁴ The Europe 2020 headline targets include:

- an increase of the employment rate of the population aged 20–64 from 69% to at least 75%;
- an increase of investment in R&D to 3% of the EU’s GDP;
- the “20/20/20” target – reduction of the greenhouse gas emissions by at least 20% compared to 1990 levels (or by 30%, if the conditions are right), an increase of the share of renewable energy sources in final energy consumption to 20% and a 20% increase in energy efficiency;
- reducing the dropout rate to 10% from the current 15%, whilst increasing the share of the population aged 30–34 having completed tertiary education from 31% to at least 40%;
- reducing the number of Europeans living below the national poverty lines by 25%, lifting over 20 million people out of poverty. See: [EC, 2010].

⁵ In accordance with art. 125 TFEU, the Union is not liable for or does not assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any member state, without prejudice to mutual financial guarantees for the joint execution of a specific project. Moreover, any EU member state is not liable for or does not assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another member state, without prejudice to mutual financial guarantees for the joint execution of a specific project.

In the initial period of EMU functioning, the reforms of the fiscal policy coordination rules resulted from a dispute on non-compliance with the agreed rules of cooperation⁶. The credibility of the EU member states' commitment to fiscal policy coordination rules was questioned – disciplining sanctions were not used. The critique of weaknesses of fiscal policy coordination that were revealed in the 2003–2004 period resulted in reforms of the regulations constituting the SGP [Council of the EU, 2005a; 2005b]. First of all, the amended SGP introduced new medium-term budgetary objectives for all the EU member states. The goals for respective member states were differentiated – the requirement of a close to balance or in surplus position of budget in cyclically adjusted terms. The reference to the budgetary positions defined in cyclically adjusted terms was aimed at providing the member states with a necessary room for budgetary manoeuvre (a safety margin with respect to the 3% of GDP government deficit ratio), even in periods of lower GDP growth, when both the automatic stabilisers as well as discretionary policies result in significant worsening of budgetary positions. Moreover, the 2005 SGP reform mitigated the criteria allowing for classification of an excessive deficit as only exceptional and temporary. Among others, assessment of the fiscal discipline by the European Commission should take into account the results of negative annual GDP volume growth rate or of an accumulated loss of output during a protracted period of very low annual GDP volume growth in relation to its potential, the implementation of policies in the context of the Lisbon agenda and policies to foster research and development and innovation or even level of financial contributions to fostering international solidarity and to achieving European policy goals. The assessment of the 2005 SGP reform was not equivocal [See: Morris, Ongena, Schuknecht, 2006]. The supporters of the SGP reform stressed that the mitigation of the criteria of excessive deficit should allow for a better tailoring of the Pact to the needs of the member states in terms of fiscal discretion, which fluctuate over the cycle or in connection with implementation of

⁶ Although the Council of the EU confirmed existence of excessive deficits in Germany and France in January and June 2003 respectively, the sanctions recommended by the European Commission were not imposed due to lack of required majority in the Council voting. Therefore, the Council addressed recommendations to Germany and France to cut the deficit below 3% of GDP till 2005 at the latest, and held the excessive deficit procedure in abeyance. The European Commission considered that the Council's decisions were not in conformity with the EU law and filed a statement of claim with the European Court of Justice. The essence of the case was clear: the European Commission questioned the fact of holding the EDP in abeyance. In the Commission's opinion, the Treaty establishing the European Community did not foresee such a solution, and thus the Council's action was illegal. In its sentence of July 13, 2004 the ECJ ruled that the Council's conclusions adopted in respect of France and Germany respectively had consequently to be annulled in so far as they contained a decision to hold the excessive deficit procedure in abeyance. Since France and Germany took effective action to reduce their budgetary deficits below 3% of GDP, the European Commission decided on December 14, 2004 that no further action was necessary.

costly structural reforms. Since compliance with the amended rules of fiscal policy coordination should be easier, the member states should not refrain from observing their obligations. The opponents of the SGP reform indicated that mitigation of the Pact was rather a result of lack of acceptance for the need to discipline fiscal policies to ensure stability of the common currency. Such opinions were revealed i.a. by the representatives of the European Central Bank [Governing Council of the ECB, 2005, p. 61].

Notwithstanding the changes introduced in 2005, the current design of the SGP was fundamentally influenced by the financial and economic crisis, which began in 2008–2009. The experience of the crisis influenced both worsening fiscal discipline in many EU member states, as well as the perception of the role of the fiscal policy coordination rules should play in the institutional architecture of EMU. Due to the scale of unfavourable conditions, many EU member states were confronted with a conflict of economic policy goals: on the one hand, the existing coordination rules required restrictive fiscal policies, on the other hand – the need to conduct anti-cyclical national stabilisation policies called for expansionary fiscal policies. As a result, many EU members observed deterioration of their budgetary positions and increases in the debt to GDP ratios, caused by both growing budgetary expenditures as well as the operation of automatic stabilisers. Significant worsening of fiscal discipline in the EU and also negative external effects of the crisis were catalysts of another debate on the reform of the economic policy coordination system [See: Znoykowicz-Wierzbicka, 2012, p. 62 and next]. Apart from the need to strengthen the effectiveness of the SGP implementation mechanisms, the debate also encompassed several issues of fundamental importance for the EMU architecture: the need to equip the EU with anti-crisis policy tools (not only *ad hoc*, but also – of systemic character), to reinterpret the *no-bailout* clause or to redefine the role of the European Central Bank.

Introduction of the rules allowing for financial support for the Eurozone member states was *de facto* forced by the risk resulting from the negative external effects of the crisis. On May 10, 2010 the European Commission submitted to the Council of the EU a proposal to establish a European Financial Stabilisation Mechanism (EFSM) and the European Financial Stability Facility (EFSF) [Council of the EU, 2010]. Under EFSM, the European Commission is allowed to borrow on financial markets on behalf of the Union under an implicit EU budget guarantee and to lend on the proceeds to the beneficiary member state. In order to reduce the moral hazard, financial assistance (in the form of a loan or credit line) should be based on strict conditionality principle, with a view to re-establishing a sound economic situation in the member state concerned and to restoring its capacity to finance itself on the financial markets. All interest and loan principal are to be repaid by the beneficiary member state.

The EFSM was based on TFEU provisions: in accordance with art. 122 p. 2 of the Treaty, the EU member states in difficulties or seriously threatened with severe difficulties caused by natural disasters or exceptional occurrences beyond their control, could be granted financial assistance by the Council, on a proposal from the Commission. Functional interpretation of the above-mentioned provision does not seem to leave any room for interpretation with respect to the circumstances, in which such assistance may be granted: the Treaty refers to natural disasters or exceptional occurrences beyond the control of the member states. Therefore, it is not clear whether risks for financial stability caused by too expansionary fiscal policies could fit in this definition. Moreover, art. 122 p. 2 does not regulate form or specific conditions for such assistance. Taking into account the “contagion effect” and the spread of crisis to consecutive countries colloquially – although not necessarily elegantly – referred to as PIGS (Portugal, Ireland, Greece, Spain), it was decided to move from ad hoc assistance to a permanent crisis management mechanism. On December 16, 2010 the European Council agreed on an amendment to TFEU, which would enable creation of the new European Stabilisation Mechanism (ESM). The ESM was to replace the EFSF and the EFSM and put an end to assistance questionably based on the provisions of art. 122 p. 2 TFEU. The decision establishing the ESM was made on February 2, 2012 [EU, 2012c]. Introduction of a new financial assistance mechanism also required a modification of TFEU. A new paragraph 3 was added to art. 136 TFEU (regulating measures specific to those member states whose currency is the euro with respect to economic policy coordination): the amendment allowed the members of the monetary union to establish a separate stability mechanism to be activated if indispensable to safeguard the stability of the euro area as a whole [Council of the EU, 2011a].

The European Stabilisation mechanism was created in the form of a separate international organisation, opened to all the Eurozone member states. The ESM is entitled to raise funds by issuing its own financial instruments or by entering into financial or other agreements or arrangements with ESM Members, financial institutions or other third parties. According to art. 13 p. 3 of the Treaty establishing the ESM, assistance should be based on a memorandum of understanding negotiated by the member state concerned with the ESM, detailing the conditionality attached to the financial assistance facility. Such memorandum of understanding should be fully consistent with the measures of economic policy coordination provided in the TFEU, in particular with any act of European Union law, including any opinion, warning, recommendation or decision addressed to the concerned ESM member. The forms of financial assistance within the ESM framework include: loans, loans for the specific purpose of re-capitalising the financial institutions and the purchase of bonds of an ESM member state on the primary and secondary market. The ESM

is empowered to borrow on the capital markets from banks, financial institutions or other persons or institutions for the performance of its purposes.

The above-mentioned amendment of art. 136 TFEU and resulting creation of the ESM reduced the credibility of the no-bailout clause. Although neither the amended art. 136 TFEU, nor the ESM rules of operation foresee a direct takeover of member states' liabilities by the EU or the ESM itself, this may be interpreted as a significant change of systemic character. The need to prevent negative external effects of the debt crisis in the Eurozone as a whole and for the respective member states proved to be more important than the need to reduce moral hazard. Notwithstanding the action aimed at providing financial assistance to the Eurozone countries that already had to face the debt crisis, the EU consequently worked on deepening fiscal policy coordination, which was supposed to limit the risk of future crises of this type.

The initial proposal of reform of the EU's economic policy coordination system was submitted by the European Commission in May 2010 [EC, 2010b]. The Commission suggested reinforcing both the preventive as well as repressive arm of the SGP, giving more prominence to public debt and fiscal sustainability, using the EU budget expenditure as an incentive for compliance with fiscal policy coordination rules and substantial increase of macroeconomic surveillance by introduction of a new macroeconomic imbalances procedure. Moreover, in order to achieve a more integrated surveillance of economic policies, the European Commission proposed synchronisation of the assessment of fiscal and structural policies of the EU Member States within an integrated surveillance cycle called "the European Semester", which came into force already in 2011⁷.

- On March 11, 2011 the Eurozone member states joined by Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania, decided to further strengthen their economic policy coordination to foster competitiveness and employment, contribute further to the sustainability of public finances and reinforce financial stability, adopting a new agreement known as the Euro plus pact. The pact was based on four guiding rules: it should be ***in line with and strengthen the existing economic governance*** in the EU (Europe 2020, European semester, integrated guidelines, Stability and Growth Pact and new macroeconomic surveillance framework);

⁷ The European semester was to align the timing of submission of stability/convergence programmes and national reform programmes, prepared within the Europe 2020 strategy to allow the growth and fiscal impact of reforms to be reflected in the national budgetary strategies and targets. The European semester was first implemented in spring 2011 – and since then, the stability and convergence programmes and national reform programmes have prepared by mid-April, which enables publication of the broad economic policy guidelines and employment guidelines still in late spring. Therefore, the member states may take into account the conclusions from economic policy assessment at the EU level while preparing their budgetary laws for the next year or planning economic reforms.

- it should be focused, action oriented, and cover ***priority policy areas that are essential for fostering competitiveness and convergence***;
- concrete national commitments should be undertaken every year, taking into account best practices and benchmarking against the best performers, within Europe and against other strategic partners. The implementation of commitments and progress towards the common policy objectives will be ***monitored politically by the Heads of State or Government*** of the euro area and participating countries on a yearly basis, on the basis of a report by the Commission;
- ***the Pact will fully respect the integrity of the Single Market*** [Council of the EU, 2011b].

Pursuant to the above-mentioned proposals of the European Commission of May 2010, substantial reform of the fiscal policy coordination system was introduced in November 2011 within the framework of the “six pack” – a package of 6 legal acts (5 Council regulations and one directive)⁸, assuming:

1. Enhancing the multilateral surveillance of macroeconomic policies i.a. by new rules of assessment of sufficient progress towards the medium-term budgetary objective (the progress should be evaluated with the structural balance as a reference, including an analysis of expenditure, in conjunction with the effect of measures being taken or planned on the revenue side. In case of countries, where the medium-term budgetary objective is not achieved, the growth rate of government expenditure should not exceed a reference medium-term rate of potential GDP growth, with increases in excess of that norm being matched by discretionary increases in government revenues and discretionary revenue reductions being compensated by reductions in expenditure. For the member states that have achieved their medium-term budgetary objectives, the annual expenditure growth should not exceed a reference medium-term rate of potential GDP growth, unless the excess is matched by discretionary revenue measures).

⁸ The six-pack included: Regulation (EU) No. 1173/2011 of the European Parliament and of the Council of 16 November 2011 on the effective enforcement of budgetary surveillance in the euro area; Regulation (EU) No. 1174/2011 of the European Parliament and of the Council of 16 November 2011 on enforcement measures to correct excessive macroeconomic imbalances in the euro area, Regulation (EU) No. 1175/2011 of the European Parliament and of the Council of 16 November 2011 amending Council Regulation (EC) No. 1466/97 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies, Regulation (EU) No. 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic imbalances, Council Regulation (EU) No. 1177/2011 of 8 November 2011 amending Regulation (EC) No. 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure and Council Directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States, (Official Journal of the European Union, L 306 from 23.11.2011).

2. Introduction of financial fines not only in case of the member states making insufficient progress with budgetary consolidation to achieve the medium-term budgetary objective, but also in case of manipulation of statistics concerning the level of budgetary deficit and public debt. (It is also worth stressing here that the six-pack also changed the decision –making procedure applied in case of imposing financial fines within the corrective arm of the SGP. A new reversed qualified majority voting procedure was introduced: the decision imposing a fine is adopted by the Council unless it decides by a qualified majority to reject the Commission’s recommendation within 10 days of the Commission’s adoption thereof).
3. Strengthening the rules of budgetary discipline by giving a more prominent role to the level and evolution of debt and to overall fiscal sustainability – the excessive deficit procedure should be launched not only on the basis of non-compliance with the deficit criterion, but also – the debt criterion. In case of the member states, where the government debt to GDP ratio exceeds 60%, the application of the debt criterion was enabled by introduction of a numerical benchmark taking into account the phase of the business cycle, against which it should be assessed whether the ratio of debt to GDP is sufficiently diminishing and approaching the reference value at a satisfactory pace.
4. Introducing minimum requirements for conducting fiscal policy into the national legal frameworks of the EU member states by December 31, 2013. These requirements related to: medium-term budgetary frameworks as a specific set of national budgetary procedures that extend the horizon for fiscal policy-making beyond the annual budgetary calendar, including the setting of policy priorities and of medium-term budgetary objectives; country-specific numerical fiscal rules, expressed in terms of a summary indicator of budgetary performance, such as the government budget deficit, borrowing, debt, or a major component thereof and budgetary procedures comprising procedural rules to underpin the budget process at all stages. As a result, the new minimum requirements for budgetary frameworks changed the legal basis of fiscal policy coordination rules – some of them were transferred directly to national legal systems⁹. Introduction of a new macroeconomic imbalances procedure (MIP)¹⁰ – the procedure was designed to

⁹ In case of Poland, the implementation of the Council directive 2011/85/EU of 8 November 2011 on requirements for budgetary frameworks of the Member States was based on the so-called stabilising expenditure rule and the mechanisms of multi-annual financial planning in accordance with the Parliamentary Act of 8 November 2013 amending the Parliamentary act on public finance and some other acts (Journal of Laws from 2013 Item 885).

¹⁰ In accordance with art. 2 p. 1 and 2 of the Regulation (EU) No. 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic

establish an alert mechanism for the early detection of emerging macroeconomic imbalances, basing on the use of a 'scoreboard' comprising indicative thresholds, combined with economic judgement. This judgement should take into account, among others, nominal and real convergence inside and outside the euro area. The scoreboard includes a set of economic, financial and structural indicators useful for early identification of internal imbalances (the level of public and private indebtedness, financial and asset market developments, including housing, the evolution of private sector's credit flow and the evolution of unemployment) and external imbalances (evolution of current account and net investment positions of the member states, real effective exchange rates, export market shares, changes in price and cost developments and non-price competitiveness, taking into account the different components of productivity). The scoreboard also includes upper and lower alert thresholds for the above-mentioned indicators. As it is in the case of the SGP, the MIP includes both the preventive (economic analysis of scoreboard's indicators to identify potential threats of macroeconomic imbalances) and the corrective arm.

5. The Council, on a recommendation from the Commission, may adopt a recommendation establishing the existence of an excessive imbalance and recommending that the member state concerned takes corrective action (setting out the nature and implications of the imbalances and specifying a set of policy recommendations to be followed and a deadline within which the member state should submit a corrective action plan). In case of the Eurozone member states, the enforcement of the MIP was strengthened by establishing interest-bearing deposits (equal to 0.1% of the GDP of the member state concerned in the preceding year) in case of non-compliance with the recommendation to take corrective action. In case of continued non-compliance with the recommendation, such deposits can be converted into a fine.

On March 2, 2012 the EU member states (with the exception of the United Kingdom and the Czech Republic) agreed on strengthening the economic pillar of the economic and monetary union by adopting a set of rules intended to foster budgetary discipline through a fiscal compact, strengthening the coordination of their economic policies and improving the governance of the euro area, by signing the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union

imbalances, 'imbalances' are defined as any trend giving rise to macroeconomic developments which are adversely affecting, or have the potential of adversely affecting, the proper functioning of the economy of a member state or of the EMU, or of the EU as a whole; and 'excessive imbalances' means severe imbalances, including imbalances that jeopardise or risks jeopardising the proper functioning of the economic and monetary union.

[EU, 2012b]. Although the treaty had a legal form of a separate international agreement, the contracting parties decided to apply and interpret it in conformity with the EU law and to incorporate the substance of the treaty into the legal framework of the European Union within five years of the date of its entry into force. The crucial part of the treaty concerns strengthening of fiscal policy coordination (so-called fiscal compact). In accordance with the provisions of the fiscal compact, the contracting parties committed themselves – among others – to:

1. Apply the rule of the budgetary position of the general government to be balanced or in surplus (the rule is respected if the annual structural balance of the general government is at its country-specific medium-term objective, as defined in the SGP, with a lower limit of a structural deficit of 0.5% of the GDP at market prices. For countries where the ratio of the general government debt to GDP is significantly below 60% and where risks in terms of long-term sustainability of public finances are low, the lower limit of the medium-term objective can reach a structural deficit of at most 1% of the GDP at market prices). The general rules of the fiscal compact should be introduced to the national legal systems of the contracting parties at the latest one year after the entry into force of the Treaty, through provisions of binding force and permanent character, preferably constitutional, or otherwise guaranteed to be fully respected and adhered to throughout the national budgetary processes. Moreover, the contracting parties agreed to introduce correction mechanism at national level to be applied in case of observed significant deviations from the medium-term budgetary objective.
2. Enhance multilateral macroeconomic surveillance – contracting parties that are subject to the excessive deficit procedure are obliged to submit to the European Commission and the Council of the European Union budgetary and economic partnership programmes, including detailed description of the structural reforms which must be put in place and implemented to ensure effective and durable correction of their excessive deficits. Such programmes will be included in the existing procedures of macroeconomic surveillance under the SGP.
3. Report ex-ante on their public debt issuance plans to the Council of the European Union and to the European Commission.
4. Tighten sanctions for non-compliance with fiscal policy coordination rules.

In November 2011 the European Commission suggested adoption of two additional legal acts aimed at further strengthening of surveillance of the Eurozone members fiscal policies (the proposal finally adopted on May 21, 2013 is known as “two-pack”) [EP, Council of the EU, 2013a; 2013b]. The solutions of the “two-pack” were directly based on the provisions of art. 136 p. 1 of the TFEU, envisaging adoption of measures specific to the Eurozone member states, including strengthening the

coordination and surveillance of their budgetary discipline. Therefore, the “two-pack” does not apply to countries with derogation.

Pursuant to the Regulation (EU) No. 473/2013, the SGP rules were supplemented by the adoption of common budgetary timeline for the Eurozone member states to better synchronise the key steps in the preparation of national budgets as well as common rules with respect to the budgetary law:

- national medium-term fiscal plans and the stability programmes should be published preferably by 15 April and no later than by 30 April each year and should include indications on how the reforms and measures set out are expected to contribute to the achievement of the targets and national commitments established within the framework of the Union's strategy for growth and jobs for the next 12 months (in accordance with the European semester);
- national medium-term fiscal plans and draft budgets should be based on independent macroeconomic forecasts, that should be produced or endorsed by an independent body;
- the draft budget for the forthcoming year should be made public annually not later than by 15 October (the two-pack introduced another novelty: the European Commission is obliged to adopt an opinion on the draft budgetary plan by 30 November at the latest. If the Commission identifies particularly serious non-compliance with the SGP's obligations, it should request the member state concerned to submit a revised draft budgetary plan;
- the budgets for the central governments should be adopted annually not later than by 31 December.

The second act of the “two-pack” – Regulation No. 472/2013 of May 21, 2013 strengthened economic and budgetary surveillance of the member states in the euro area experiencing or threatened with serious difficulties with respect to their financial stability. Such surveillance should not only ensure correction of fiscal imbalances in the member state concerned, but also protect the other members of the Eurozone against potential adverse spill-over effects. Pursuant to art. 1 p. 1 of the regulation, its provisions should automatically apply to all the euro area members requesting or receiving financial assistance from other member states or third countries, the EFSM, the ESM, the EFSE, or another international financial institution such as the International Monetary Fund.

In comparison with the original shape of the EU member states' fiscal policy coordination system, changes introduced in the recent years seem promising from the point of view of strengthening effectiveness of actions undertaken to ensure stability of the Eurozone. Arguments supporting such opinion include both changes with respect to tightening sanctions for non-compliance with fiscal discipline rules

and the broadening of the scope of macroeconomic surveillance far beyond the narrow sphere of fiscal policy (the MIP), as well as establishment of permanent forms of financial support to the euro area member states threatened with fiscal instability or threatening the stability of the Eurozone as a whole.

Changes within the economic pillar of the EMU were also accompanied by a discussion on the place and tasks of the European Central Bank in economic governance of the monetary union. Apart from the basic obligations of the ECB to preserve the goal of price stability and conduct monetary policy, one discussed during the financial crisis period the ECB as a possible lender of last resort or – already formalised – proposal of a banking union¹¹. Therefore, it is worth covering these elements of discussion on the EMU evolution as well.

One of the crucial problems, and also – a source of inspiring empirical and theoretical research projects, is the fact that the EMU in many aspects escapes orderly classifications and models offered by the theory of economic integration. Among the Eurozone members, there are countries that neither form an optimum currency area, nor possess flexible labour markets or enough “room for manoeuvre” in fiscal policy, to enable discretionary stabilisation. Moreover as it has been pointed out by many critics of the EU fiscal policy coordination rules – rigorous compliance with the SGP may lead to pro-rather than anti-cyclical fiscal policy in case of asymmetric macroeconomic shocks. From the point of view of the monetary union’s central bank, the heterogeneity of the economies of the EMU precludes it from assuming existence of a single interest rate to be controlled to achieve the goal of price stability, and eventual stabilisation of average inflation in a monetary union as a whole is not tantamount to achieving assumed inflation in all the respective member states.

Several examples of this problem may be discussed here: it is believed that too low interest rates contributed to the speculative bubbles at the housing markets in some of the Eurozone member states, and differentiated national inflation rates resulted in appreciation of the real effective exchange rates of some member states against the other (especially to the German one). As a consequence, some Eurozone member states experienced reduced competitiveness and significant current account deficits. Moreover, despite of the many far-reaching declarative commitments in the sphere of economic policy coordination, some of the Eurozone member states assumed suboptimal strategies of monetary integration: the efforts to meet the nominal

¹¹ The project of the banking union included three legal, organisational and financial solutions at the EU level: single supervisory mechanism, single resolution mechanism and single deposit guarantee scheme. See: [Polański, 2014b, p. 215–224].

convergence criteria undertaken in late 1990s were not followed by consequent structural reforms in the next decades.

Thus, it was not accidental that countries such as Greece, Spain, Portugal or Ireland experienced particularly severe downturns after 2008 [Polański, 2014a, p. 68]. In the period of the financial crisis, that was subsequently transformed into crisis in the real economy and public finance sector, the weaknesses of the EMU construction were sharply revealed: the monetary union lacked tools of active macroeconomic stabilisation on the EU level (both because of the absence of a common fiscal policy as well as limited scale of resources at the disposal of the EU's central budget), and legitimacy (and feasibility) of stabilisation by the EBC became a subject of legal and economic debate. Moreover, in the sphere of financial markets stability, there were no common supervisory mechanisms in the banking sector. In the initial phase of the crisis – from August 2007 to October 2009 – the ECB increased liquidity at the inter-bank market, refraining from interest rate reduction (the interest rates were even increased in July 2008). Only in October 2008, the EBC initiated a series of interest rate reductions. When the crisis was transformed into the second phase of the sovereign debt crisis in several Eurozone member states, the European Central Bank in practice took part in stabilisation programmes within the framework of the EFSF, deciding in May 2010 to begin the operation of sterilised interventions in public and private debt securities markets in the euro area (the so-called Securities Markets Programme – SMP). These operations raised concerns both with respect to their character (whether they were only aimed at restoring appropriate monetary policy transmission mechanism, or rather at helping specific member states), as well as possible consequences (despite of sterilisation of SMP operations, their possible influence on inflation was discussed). In September 2012 the Securities Market Programme was replaced by the outright monetary transactions (OMT) programme, covering ECB transactions on markets of secondary sovereign bonds with a maturity of between one and three years. In accordance with 123 TFEU, direct purchases of debt instruments issued by the governments of the member states are prohibited. Although the OMT programme assumed purchases on the secondary market, some of the researchers believe that the ECB in practice assumed another function of a national central bank – the function of the lender of last resort [Polański, 2014a, p. 113–132].

It is also worth stressing that the introduction of the above-mentioned European Stabilisation mechanism raised concerns with respect to its compliance with the Treaty on the functioning of the EU – as it is illustrated by the judgement of the Court of Justice of the European Union of November 27, 2012 in preliminary ruling in case *Thomas Pringle vs. Government of Ireland* [CJEU, 2012]. According to

T. Pringle, the ESM Treaty undertook obligations which were in contravention of provisions of the EU and FEU Treaties concerning economic and monetary policy and directly encroached on the exclusive competence of the Union in relation to monetary policy in the Eurozone (granting financial assistance to the member states of the Eurozone or assistance for recapitalisation of their financial institutions would lead to an increase in money supply). Moreover, The Court of Justice also examined whether establishing the ESM did not serve the objective of circumventing the prohibitions and restrictions laid down by the provisions of the FEU Treaty in relation to economic and monetary policy.

The Court of Justice of the European Union rejected the above reservations. As it was stressed in the preliminary ruling, in regard to art. 4 p. 1 TEU and art. 5 p. 2 TEU (according to which competences not conferred upon the Union in the Treaties remain with the member states), the Eurozone countries are entitled to conclude an agreement between themselves for the establishment of a stability mechanism of the ESM kind. Financial assistance granted by the EU member states (and not the EU institutions) is not covered by the provisions of art. 123 TFEU (prohibiting the ECB and the central banks of the member states from granting overdraft facilities or any other type of credit facility to public authorities and bodies of the Union and of member states and from purchasing directly from them their debt instruments). The Court of Justice also ruled that an agreement such as the ESM Treaty was not in breach of the 'no bail-out clause' set forth in Article 125 TFEU. As it was argued, the European Stabilisation Mechanism would not act as guarantor of the debts of the recipient Eurozone member states, which will remain responsible to their creditors for their financial commitments, and any financial assistance granted by ESM must be repaid by the recipient. Taking into account the above considerations, it may be assessed that the elaboration of financial assistance forms for the Eurozone member states that from the legal point of view remain outside the framework of the TEU and TFEU, is another aspect of deepening of the process of European integration, aimed at safeguarding stability of the Eurozone.

This general reflection may also be referred to other initiatives of deepening of economic policy coordination in the EU that have been discussed in this paper. The significant part of these solutions was aimed at improving the effectiveness of mechanisms of crisis prevention in the euro area and crisis management. By their nature, these mechanisms are primarily addressed to the member states of the Eurozone. Therefore, any further steps in the direction of deepening of integration in the monetary union, increase the degree of differences in the level of integration existing between the euro area and the less and less numerous countries with derogation. The process of creation of the banking union may also be interpreted in this context.

The afore-mentioned changes will substantially influence the architecture of EMU, and, thus the scope of obligations to be assumed by the countries adopting the euro in the future. They will also influence the future process of Poland's preparation to adopt the common currency. Significant strengthening of the EU member states' economic policy coordination that was observed in the first decade of Polish membership in the Union will definitely increase the burden of adjustment to monetary integration. To the greatest extent the increased adjustment effort will be necessary in the sphere of fiscal policy coordination, extended macroeconomic surveillance and fostering structural reforms. The evolution of the rules of economic policy coordination in the EU reveals strong tendency of departure from soft coordination methods such as non-binding recommendations, exchange of best practices and information, benchmarking or system of sanctions for non-compliance mainly based on political pressure. The increasing degree of application of financial sanctions or the obligation to introduce fundamental fiscal policy coordination rules to the national legal systems of the member states are indicators of strong reinforcement of the economic pillar of the EMU. This process may substantially influence the benefits from Poland's membership in the EU, and in particular – from future monetary integration. As it was stressed in both reports on the costs and benefits of adoption of the common currency by Poland that were published by the National Bank of Poland in 2004 and 2009, long-term benefits from monetary integration are not automatic – they are rather opportunities for the Polish economy, which may be seized depending on, among others, economic policy conducted by Poland both in the period of preparation to adoption of the euro, as well as in the post-accession period [NBP, 2009; NBP, 2004]. It is obviously an argument in favour of Poland's active participation in the economic policy coordination process, including possible influence on its future evolution¹². Strengthening of economic policy coordination is aimed at removing the structural weaknesses of the Eurozone: as it became apparent, countries that did not form an optimum currency area prior to the adoption of the euro, did not manage to create sufficient mechanisms to allow for at least adjustment of their fiscal policies to the needs of the stability of the common currency or achieving the proper degree of structural reforms. Strengthened economic policy coordination may still prove to be an important tool supporting verification of the endogeneity of optimum currency

¹² It is worth mentioning here that according to art. 12 p. 3 of the afore-mentioned Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, the Heads of State or Government of the contracting parties other than those whose currency is the euro, which have ratified this Treaty, may participate in discussions of Euro Summit meetings concerning competitiveness, the modification of the global architecture of the euro area and the fundamental rules that will apply to it in the future.

area hypothesis¹³. Due to improved functioning of the Eurozone, the benefits of monetary integration may be higher in the long-run perspective.

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¹³ The hypothesis of endogeneity of optimum currency area is defined in the literature as possible influence of membership in a monetary union on fulfilment by a member state of the optimum currency area criteria *ex post* (after the adoption of the common currency), even if the criteria were not met *ex ante* (prior to the adoption of the common currency). See: [Grauwe de, Mongelii, 2005].

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Henryk Bąk

Selected Problems of the Euro Zone Functioning. Lessons for Poland

Introduction

The aim of the study is to look at the euro zone from the perspective of the theory of optimum currency area. In the traditional approach to this theory, one puts the accent on the factors that determine the real convergence criteria of economies. Numbers of analyses suggest that the European Union (EU-15) as a whole does not form an optimum currency area. In the conditions of deepening integration of financial markets, in the period before the crisis, individual countries could seamlessly finance their external imbalances (current account deficit of the balance of payments) that gradually increased as a result of the weakening international competitiveness of these economies. Practice shows that the common monetary-exchange rate policy adjusted to the requirements of countries representing the core of the euro zone, did not contribute to the competitiveness of catching-up economies (mainly from the southern Europe).

Western European countries taught by the negative experience from the currency chaos that prevailed in these countries during the Great Depression in 1930s, immediately after the war have taken the first steps towards the introduction of the currency governance through the use of multilateral compensation agreements. One can perceive the establishment of European Payments Union in 1950 as a form of monetary integration in which one maintained relative mutual payment equilibrium with fixed exchange rates against the US dollar, which was the unit of account of this mechanism in the absence of external convertibility of currencies¹. The Treaty of Rome, that established the European Economic Community, however, did not provide the relevant provisions for the establishment of the monetary union. Nevertheless,

¹ Functioning of the European Payment Union was presented by S. Rączkowski [1972, p. 263–268]. Broader discussion on this system is included in the work of B. Tew [1960, p. 102–115].

in the art. 104–108 of the Treaty one has adopted mutual exchange rate policy coordination rules, maintaining the stability of exchange rates and balance of payments equilibrium, as well as providing mutual assistance in this regard. Compliance with these rules was mainly watched by the EEC Monetary Committee [Zabielski, 1997, p. 102–105]. If monetary integration was brought only to the exchange rate union (the use of fixed exchange rates), then the above treaty rules would be sufficient [Ciamaga, 1977, p. 149]. The long-term goal of the EU politicians, however, was ultimately the creation of a single currency area, where one would be using common currency as the primary official means of payment.

The idea of creating a single currency area covering a variety of countries is by no means a new concept, which was brought into life in the framework of the European Union. Already in the nineteenth century German states created single currency area, and the full monetary union was established in 1871 after the unification of German states under the leadership of Prussia. Latin Monetary Union (formally established by the Treaty of 1865) also functioned in the second half of the nineteenth century in Europe and included France, Belgium, Switzerland, Italy, Greece and Bulgaria. Its key currency was gold French franc, but the monetary system in the Union was based on bimetallism, and each country could issue, next to gold coins, also silver coins. In the period 1873–1875 one created Scandinavian Monetary Union which included Sweden, Denmark and Norway, in which one accepted gold coins from these countries, as well as the crown that was introduced as a common currency [See: Bukowski, 2003, p. 71–86; Borowiec, 2001, p. 13–23]. The above currency areas operating in Europe and the US currency area were based on gold standard. During this period, monetary gold was the basis of the international monetary system.

International monetary system negotiated in 1944 at the international conference in Bretton Woods was based on fixed (customizable) exchange rates against the US dollar with the possibility of the exchange of the official dollar reserves to monetary gold since 1960. While in the 1950s, this system functioned relatively well, in a subsequent period, a basic flaw in the mechanism, related to the way of the creation of the official foreign reserves of individual countries, became more and more visible. Increase of international financial liquidity and accumulation of foreign exchange reserves has taken place mainly through the deepening US balance of payments deficit (Triffin dilemma) [See: Bilski, 2006, p. 110–142]. Gradual weakness of the Bretton Woods system was accompanied by the theoretical discussion of supporters of floating exchange rates with purposefulness of stiffening exchange rates within the single currency area.

1. Conditions Resulting from the Theory of Optimum Currency Area

The concept of optimum currency area proposed in 1961 by R.A. Mundell [1961, p. 657–665; Bień, 1988, p. 22–27; Bukowski, 2003, p. 24–27; Zawislińska, 2008, p. 20–30] refers to a single area (region), in which a common fiat money would be used (single currency area) or in which a pegged mutual rigid exchange rates would be applied (in conditions of full convertibility of currencies and the lack of any currency exchange restrictions, currencies could be used in the single currency area as a legitimate means of payment).

R.A. Mundell analysed the effects of asymmetric demand shocks transmitted between the two regions through foreign trade, which lead to the occurrence of internal and external imbalances in the absence of wage flexibility. One can overcome the effects of such shocks and restore economic stability by adopting a common currency (as an alternative solution through the use of pegged exchange rates), if the criterion of labour mobility within the common currency area is met. R.A. Mundell formulated thus a fundamental condition for the optimality of a currency area, i.e. a requirement of flexibility of labour markets within the common area, meaning the spatial mobility of labour or wage flexibility (wage flexibility is, however, severely limited due to the attitude of the trade unions). In the case of the smooth operation of at least one of these two mechanisms one can achieve external balance (trade balance) which was disturbed as a result of asymmetric demand shock, and internal balance (elimination of unemployment) without the need for devaluation or revaluation of the currency of each of these regions.

It is to R.A. Mundell merit that he initiated a broader discussion on the optimality of the single currency area. R.A. Mundell, however, based his arguments on an extremely simplified model consisting of two regions producing one commodity, between which there is a spatial mobility of the workforce and it lacks in relation to other regions. One points in the literature to the weaknesses and limitations of the analysis of R.A. Mundell [Bień, 1988, p. 27–30]. Nevertheless, it is generally recognised that the mobility of factors of production (labour and capital) is essential for the smooth functioning of the single currency area. But this is not a sufficient condition. Additional requirements of optimum currency area, inter alia, have been formulated by the R.I. McKinnon [1963, p. 717–725] and P.B. Kenen [1969, p. 41–60].

R.I. McKinnon introduced the factor of diversified range of economies' openness into the analysis of the effectiveness of restoring internal and external balance within the currency area (with a single currency or different currencies with pegged

exchange rates within the area and floating exchange rates in relation to other countries). R.I. McKinnon defined the scope of openness of the economy as the relation of the production volume of foreign tradable goods (tradables) in relation to production that is not subject to exchange (non-tradables). As the degree openness of economy's, increases the floating exchange rate policy is becoming less effective in restoring internal and external balance, while fiscal and monetary policy focused on regulating domestic spending become more effective. In this case, it will be effective to apply single currency in the common area or to introduce pegged exchange rates. R.I. McKinnon also pointed out that spatial mobility of factors of production is not sufficient for the optimality of currency area but one also needs internal. R.I. McKinnon also stressed that the creation of a single currency area would be more beneficial for many small economies with lower levels of development than for large countries with a high degree of economic development. Capital movements are especially important in this respect.

Contribution of P.B. Kenen, which in particular has proved the importance of diversification of production and exports for the effectiveness of pegged exchange rates in restoring economic balance, is further extension of the theory of optimum currency areas. Diversified production and export structure is conducive to the restoration of disturbed economic balance, which is difficult in the case of countries with monoculture. This conclusion stems from the fact that with substantial export diversification, terms of trade are shaped in a more stable way than in countries with a one-sided structure of production and exports. P.B. Kenen also stressed the importance of the common monetary and fiscal policy, aimed at the attainment of economic goals of common currency area. D.A. Snider [1967, p. 13–17] and H.G. Grubel [1970, p. 318–324] analysed further the problem of the importance of centralisation of monetary and fiscal policies on supranational level for the effective functioning of the optimum currency area.

The discussion on the problem of optimum currency areas carried out in the 1960s was accompanied by the deepening crisis of the system of fixed (but customizable) exchange rates from Bretton Woods. As part of this discussion, one pointed out that, in theory, one can keep internal and external balance of economies that form common currency area (using fixed exchange rates or a common currency), provided that the above conditions are met. The list of these conditions was then further expanded. So J.C. Ingram dealt with the importance of the degree of financial integration for restoring the balance of payments with fixed exchange rates, while G. Haberler and M.J. Fleming raised the problem of maintaining the convergence of inflation rates as a factor stabilising common currency area [See: Zawiślińska, 2008, p. 41–52].

The broader problem of the analysis of optimum currency area in terms of costs and benefits of creating a common area for the growth of the welfare of individual countries that make up the area, appeared in 1970s and was particularly studied by H.G. Grubel, W.M. Corden, R. Heller and Y. Ishiyama [Zawiślińska, 2008, p. 55–72]. When analysing this problem H.G. Grubel pointed to the issue of asymmetry of benefits and costs of a common economic policy conducted from the point of view of the common area as a whole, rather than individual countries. To conclude this stage of the research on the theory of optimum currency area G.S. Tavlas [1993] distinguished 10 factors that can be considered as a potential characteristics of member countries of the optimum area, i.e. similar level of inflation rates, high mobility of factors of production, open economy, a diversified production structure, flexible prices and wages, integrated commodity markets (similar structures of production), fiscal integration, the need for the real exchange rate volatility and the factors of political character conducive to monetary integration. The fulfilment of all these optimum currency area criteria is practically impossible. With this aspect in mind Y. Ishiyama [1975, p. 378] said, that the discussion on the problem of optimality of the common currency area is in fact purely academic. P. De Grauwe [2003b, p. 20] found that sufficient wage flexibility (downward flexibility of wages and deflation in the country) or sufficient mobility of the workforce, with the possible support of sufficient fiscal transfers between members of the monetary union, is the basic factor of optimality of currency area. P. De Grauwe basically treated failure to comply with other requirements of optimality as costs of monetary union. Main emphasis in the further discussions and analyses of issues of optimum currency area was put on the effects (cost) of cushioning asymmetric supply and demand shocks.

In this latest study one analyses on the one hand, the question whether, in the context of the common currency area, one observes coincidence of structures of economies of countries that create it, or whether there are discrepancies (divergences) in these economies², and on the other hand, the effects of fiscal policy [von Hagen, 2000, p. 272–294], as well as how to use international financial markets instruments in order to mitigate the effects of idiosyncratic (asymmetric) shocks [Sorensen, Yosha, 1998, p. 211–238]. The European Commission already in 1990 expressed the view that after the creation of a monetary union economies forming it will tend to standardise (converge) their structures. P. De Grauwe found that the dynamic development of the service sector that is subject to international trade in a much lesser

² The problem of divergence and convergence of economic structures in the framework of the monetary union is broadly discussed by T. Bayoumi and B. Eichengreen in the paper *Shocking Aspects of European Monetary Integration*, in: *Adjustment and Growth in the European Monetary Union*, F. Torres, F. Giavazzi (ed.), Cambridge University Press and CEPR, Cambridge 1992, p. 193–229.

extent than products, will foster convergence of economic structures, which should help to mitigate the effects of asymmetric shocks. The aspect of deepening the scope of convergence of economies that form common currency area is the essence of the monetary union endogeneity theory. In the 1990s J.A. Frankel and A.K. Rose [1996] formulated hypothesis that countries that did not meet the criteria for an optimum currency area *ex ante* could also create a monetary union, because when a country deals with a common currency its economic structures converge successively. Common area optimality criteria would be thus met *ex post*. According to J. Frankel and A. Rose [2000] accelerated growth of mutual trade exchange as a result of the elimination of transaction costs and the elimination of exchange rate fluctuations after the introduction of the single currency should be the main factor that will encourage the gradual convergence of structures of integrating economies.

The impact of fiscal policy, transfers from the EU budget, and international capital flows is determined in the recent literature as an international risk sharing. The problem of coordination of fiscal policies of individual members of the monetary union, the issue of fiscal union and the size of the EU budget are by no means a new subject. The accession of new countries to the EU which is at a lower level of economic development compared to the old EU countries was accompanied by lowering the level of risk for investors, which contributed to the movement of capital both direct and of portfolio type. One thought then that the development of credit derivatives will allow to protect the movement of portfolio capital, which should help to reduce the risk of shocks connected with the sudden outflow of portfolio capital (speculative one).

One can conclude from the above brief review of the mainstream optimum currency area trends, that in theory the emphasis has been put to determine the conditions for the effectiveness of cushioning economic shocks, i.e. on the functioning of such microeconomic factors as:

- mobility of factors of production, especially workforce;
- flexibility of the labour market, wage and price flexibility;
- diversification of production and export structure;
- the scope of the openness of economies that form common currency area;
- convergence of business cycles;
- development of financial markets;
- the scale of the EU funding flows etc.

With the development of the different trends in the new classical economics, major emphasis has been put on the convergence of economic cycles, because with a significant convergence of these cycles demand and supply shocks will have mostly symmetrical character. At the same time in the new classical economics one negated

the long-term effectiveness of monetary policy and the effectiveness of exchange rate policy in the adaptation process of the economy. In this way one negated the existence of the basic types of costs of the common currency area. The “new” approach to the optimum currency area was based on a number of assumptions like: the rational expectations of business entities, Ricardian equivalence, the long-term economic policy inconsistency, the importance of low inflation (close to zero), and low interest rates for the economic growth and elimination of unemployment [Mongelli, 2002, p. 14–16]. With some simplification one can say that this approach was presented in the report of the European Commission *One market, one money. An evaluation of the potential benefit and costs of forming an economic and monetary union* [1990, p. 347]. The authors of the report did not attempt to assess the planned monetary union in terms of meeting criteria for an optimum currency area. They limited themselves to a brief critique of the traditional approach, pointing out that it is not useful for the assessment of the benefits and costs of setting up the monetary union [EC, 1990, p. 46]. The main emphasis in the report was placed on the issue of maintaining macroeconomic stability of the monetary union. Nominal convergence criteria introduced by the Treaty of Maastricht are also of macroeconomic character. These relate primarily to the assessment of the impact of fiscal and monetary policy on macroeconomic stability of the Member States with a derogation of the countries announcing their willingness to introduce a single currency (euro). The evaluation of meeting the nominal criteria made by the European Commission and the European Central Bank therefore focuses on the ex-post study (mainly for the period of one year):

- price stability;
- stability of long-term interest rates;
- stability of public finances (exclusion of the country from excessive deficit procedure), which means generally not exceeding 3% of GDP threshold for the deficit and 60% of GDP for public finance debt sector and
- exchange rate stability (participation in the exchange-rate mechanism (ERM/ERM II) under the European Monetary System (EMS) for two consecutive years is expected)³.

All of these criteria are treated equally but the central exchange rate stabilised within the ERM II mechanism has long term effects because at this level the conversion rate of the national currency to the euro is determined⁴.

³ Expanded interpretation of nominal convergence criteria was made in studies: [Bąk, 2008, p. 15–27].

⁴ Only in the case of the Greek drachma and the Slovak crown one made a revaluation of the central rate during the period under the assessment of exchange rate stability, so in other words the starting level

The above-mentioned nominal convergence criteria are the basis for the assessment of the willingness of the state to repeal the derogation and replace the national currency with the euro. The fulfilment of these criteria in a short period prior to the assessment gives no warranty that introducing the euro will ensure stable economic growth and will protect the economy from the occurrence of asymmetric shocks. Securing economy against the occurrence of asymmetric shocks is an important indicator pointing to the optimality of the currency area.

2. Euro Zone in Comparison to Optimum Currency Area

There is no doubt that the European Union does not meet the basic criterion of the common currency area indicated in the approach of R. Mundell⁵. Spatial mobility of the workforce in the European Union for a number of reasons (linguistic, ethnical, cultural etc.) is low and in no way contributes to equalisation of unemployment rates in the different Member States. Mobility is also limited in an intersectoral and professional dimension, as pointed by R.I. McKinnon and P.B. Kenen. P. De Grauwe pointed out that flexibility of wages, especially from the bottom, is important in the absence of workforce mobility, which allows one to reduce labour costs in order to restore the competitiveness of the economy. Also in this respect, the flexibility in the EU is small. The literature on the subject emphasises that there is an asymmetry in terms of the flexibility of the labour markets between countries that form the core of the monetary union and the euro zone's peripheral countries [Andersen, Seneca, 2008]. One should also have in mind, that during the stage prior to the creation of the euro zone and after its creation one has undertaken structural reforms of labour market in various countries, e.g. in Germany [See: Budnikowski, 2008, p. 215–228; Albiński, 2014, p. 215–226]. The creation of the euro zone also forced, to some extent, reforms of labour markets, which found an appropriate expression in the Lisbon Strategy. P. De Grauwe and F.P. Mongelli [2005] analysed endogenous nature of some of the optimum currency area criteria. These authors found that despite the fact that the theory does not point to the fact that monetary union has created incentives to start the labour market reforms, but in practice they recognised some actions towards greater flexibility of this market in the euro zone.

of the central rate was higher than the conversion rate. The exchange rate stability problem has been widely discussed in: [Bąk, 2013b, p. 97–124].

⁵ The importance of labour market analysis in the theory of optimum currency area, as well as the impact of the creation of a monetary union on the development of this market was discussed in a broad range by R.W. Włodarczyk [2012, p. 45–56].

While in the traditional optimum currency area theory one starts the analysis of optimality of criteria from the consideration of the flexibility of labour markets, the R. Baldwin and Ch. Wyplosz proposed some hierarchy of the OCA criteria. Following criteria are the starting point:

- openness of the economy proposed by R. McKinnon and
- the level of diversification of production proposed by P. Kenen.

In the case of significant diversification of production and exports (but also the convergence of these structures) as well as a strong correlation of economies through mutual exchange of goods and services, a likelihood of asymmetric shocks will be relatively low. In this case the currency area can be considered as optimal. When these conditions are not met, then there is a high probability of asymmetric shocks and with the inability to adjust the exchange rate the competitiveness of the economy can be restored by an appropriate reduction in wages and prices that is through internal devaluation. It is necessary in this situation to have satisfactory wage and price flexibility. When this criterion is not met, then the sufficient level of workforce mobility is required, in order to, according to R. Baldwin and Ch. Wyplosz [2012, p. 410–431], to perceive common currency area at optimal. In order to maintain monetary union in the absence of mobility of the labour force, one needs political support in the form of fiscal transfers, compliance in terms of objectives and social solidarity. If the EU set out common fiscal targets, it would arouse international social solidarity (consent of societies to substantial fiscal transfers), and the common EU budget would be sufficiently high, then one would see fiscal integration (fiscal federalism). These authors found that Europe is not exactly optimum currency area. It should be emphasised that in the traditional approach optimality of the area means that one will maintain both the external and internal balance (price stability and full employment). Meanwhile, the adjustment through price and wage flexibility means in fact their reduction, that is the occurrence of deflation and as a consequence a negative effect on the economic growth and the unemployment. The internal balance would be thus disturbed [Baldwin, Wyplosz, 2012, p. 427–430]. The EU is not fiscally integrated. A common EU budget is too small and the euro zone does not have a separate budget, from which it could make fiscal transfers in order to avoid the negative effects of asymmetric shocks.

The European Union as a whole, however, is not considered in the literature as an optimum currency area, especially among American economists. P. De Grauwe said simply – summarising the various own examinations, as well as other research performed in the period 1990–1997 – that in the European Union of 15 Member States (EU-15) labour market flexibility is low, while the divergence of production structure is high. Thus, the costs of establishing a monetary union for the countries of the EU-15 would be higher than the benefits. In contrast, in the EU-5 covering the Benelux

countries and Germany and France, these benefits would be far greater than the costs. Also for the EU-11 (the euro area from 1999) these benefits would outweigh the costs [De Grauwe, 2003b, p. 93–94]. In the literature one often cites work of T. Bayoumi and B. Eichengreen [1993, p. 193–229] in which they examined the shock aspects of European monetary union. Based on the survey authors pointed out that the core of the EU with relatively symmetric shocks is represented by Germany, France, Belgium, the Netherlands and Denmark, and the remaining six studied countries were characterised by significantly lower rates of correlation of shocks, while the supply shocks were more strongly correlated than demand shocks⁶. The analyses carried out by the experts of the ECB on 11 optimum currency area criteria indicators covering the period from 1957 to 2001 show that, in general, countries that have established the EEC (EU-6), were characterised by a higher degree of mutual adjustment in comparison with the Economic and Monetary Union (EMU). However, a key indicator of business cycle synchronisation in the period 1993–2001 in the EU-6 amounted to just over 50%, and for EMU to approx. 37%. One fails to see, in particular, progress in this area in the long term, and in the 1970s the correlation of these cycles stood at a much higher level compared to the situation in the 1990s. At the same time the share of internal EU trade for the analysed groups of countries decreased from approx. 70% for years 1988–1992 to a level of 60.5% in the period of 1999–2001 [Dorrucci, Firpo, Fratzchler, Mongelli, 2002, p. 12–15]. The lack of progress in the deepening of business cycle synchronisation in the EMU is also indicated in the studies by M. Artis [2005]. After analysing the studies on the various aspects of monetary integration in Europe I. Zawiślińska [2007, p. 69] also formulated a clear conclusion that “Economic and Monetary Union is an example of monetary integration of countries that do not fulfil to a satisfactory degree both real and nominal OCA criteria. Thus, in accordance with the previously presented studies the euro zone should either not be created, or the costs of monetary integration should be much greater than those that actually occurred”. In light of the above it can be concluded that economic criteria related to the creation of the euro area were not the most important ones. Political aspects proved to be most important in this case. P. Temperton [2001, p. 5] stated explicitly that “France stressed that monetary union should be created, because it is “the price” for the unification of Germany”. Pressure towards the introduction of the common currency occurred mainly from French politicians who on the one hand sought to break the hegemony of German mark in the EU, and on the other hand, believed that the single European currency will be a counterweight to the US dollar on the international markets. It was a typical monetarist position. Opposite position was occupied by economists (for the

⁶ In the study, authors have skipped Luxembourg. Austria, Sweden and Finland did not belong to the EU in the considered period [See: Bayoumi, Eichengreen, 1993, p. 211 and next].

most part German economists), who thought that the progress in the convergence of real economies is the key issue before the introduction of monetary union. Attitudes, which emerged in the early 1970s, resurfaced again in the early 1990s. The idea of a common currency was in Germany relatively strongly criticised by the economists, but the ruling political power was the most crucial in this respect⁷. Many German economists were aware that the euro is a strong currency (like German mark) and the introduction of such currency in some countries of Southern Europe, accustomed to functioning in the conditions of weaker currencies, will result in a gradual reduction in the competitiveness of these economies. Safety valve, such as the possibility of devaluation of their own currency, will be abolished. In the second half of the 1990s, when a relatively good economic situation prevailed in Western Europe, individual countries have made significant progress in macroeconomic stabilisation of their economies. With the introduction of the euro one expected to significantly accelerate economic growth and overcome the syndrome of Eurosclerosis [See: Temperton, 2001, p. 6–9].

3. Experiences of the First Years of the Euro's Functioning

The decision on the introduction of the euro and qualifying 11 countries to the zone was taken on 2 May 1998. 10 years later, the European Commission and the European Central Bank made an assessment of the euro zone functioning during this period. The first period was announced by the European Commission as an obvious success. Common monetary policy along with national, but coordinated fiscal policies ensured macroeconomic stability and prevented shocks caused by periodic adjustments in exchange rates. In particular, the following achievements were considered to be a success:

- anchoring long-term inflation expectations at a low level;
- support of the macroeconomic stability by fiscal policy;
- deepening of economic integration and product markets;
- financial market integration;
- strengthening the flexibility of euro zone in relation to external shocks;
- benefits for the countries during catching up phase;
- establishing the euro as the second international currency after US dollar;

as well as a stabilising effect on the European and the world economy.

The European Commission has also noticed some challenges for the euro zone. Not using the growth potential compared to the US economy was particularly noticeable.

⁷ The process of defending German mark and actions of the authorities towards the introduction of the common currency were broadly presented by B. Bandulet [2011, p. 35–62].

Since the early 1970s, the European Union (EU-15) grew slower than the US economy. The introduction of the common currency was supposed to boost foreign trade and contribute to the acceleration of economic growth by eliminating the exchange rate risk and reducing transaction costs. In addition, the EC believed that one can notice excessive variation in the inflation rates and labour costs in individual EU countries [2008, p. 3–7].

Until 2008 the euro zone has not been affected by serious shock. Therefore, the evaluation of the first years of functioning of this zone was extremely positive. The new member states have made also an effort to meet the legislative and nominal convergence criteria as soon as possible in order to introduce the euro. When the financial crisis embraced also European countries, it seemed that the euro will remain an anchor of stability. The euro was very strong against the US dollar in 2009, which in turn contributed to the deepening problems with maintaining economic balance by countries, which gradually were losing competitiveness of their economies.

Table 1. Indicators of Real Changes in GDP, Private Consumption and Gross Expenditures on Fixed Assets of the EU Member States (EU-15) and the USA (in %)

	GDP				Individual consumption				Expenditures on fixed assets			
	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010
Greece	1.2	3.4	4.0	0.1	1.9	2.6	4.3	0.8	–0.4	9.0	3.8	–2.4
Portugal	1.9	4.2	0.8	0.5	3.0	4.2	1.3	1.1	1.5	8.2	–2.1	–2.2
Ireland	4.7	10.3	4.9	0.1	3.1	8.3	4.4	1.6	2.6	13.0	6.6	–11.3
Finland	–0.6	4.8	2.6	0.8	–0.9	3.3	3.3	2.0	–7.4	8.1	2.1	–0.2
The Netherlands	2.3	4.0	1.3	1.4	1.8	4.4	0.9	0.2	1.8	6.6	–0.8	–0.7
Germany	2.0	1.9	0.6	1.3	2.3	1.5	0.3	0.9	1.9	2.3	–2.0	1.4
Belgium	1.6	2.9	1.6	1.2	1.7	2.2	1.1	1.7	–0.4	3.7	2.1	0.1
Austria	2.2	3.2	1.7	1.3	1.9	2.0	1.6	1.3	2.5	2.9	0.1	–0.9
Spain	1.5	4.1	3.3	0.8	1.2	4.1	3.5	0.6	–0.5	7.2	5.3	–3.7
Italy	1.3	1.9	1.0	–0.3	0.9	2.6	0.7	0.3	–0.9	3.5	1.6	–1.2
France	1.2	2.7	1.6	0.6	0.9	2.5	2.0	1.3	–1.0	4.7	2.0	0.1
Luxemburg	4.0	6.1	3.6	1.6	2.5	4.2	1.8	1.4	3.2	7.4	5.1	0.9
Denmark	2.3	2.9	1.3	–0.1	2.3	1.5	2.2	0.8	2.5	6.3	1.4	–1.9
Sweden	0.7	3.5	2.7	1.6	–0.2	3.4	2.2	2.0	–4.4	5.7	2.9	1.8
Great Britain	2.4	3.7	3.0	0.3	2.0	4.9	3.4	0.2	1.0	6.5	2.6	–2.0
EA-12	1.6	2.7	1.5	0.8	1.5	2.5	1.4	0.8	0.1	4.2	1.0	–1.0
The USA	2.6	4.3	2.5	0.8	2.9	4.6	3.1	1.0	3.2	7.7	2.6	–3.3

Explanations:

Average yearly values for 5 – year periods;

Changes compared to the previous year.

Source: Own research based on: [EC, 2014].

Synthetic data presented in the Table 1 shows that the countries of the euro area (EA-12) have not reached higher rates of growth after the introduction of the common currency both compared to the 1990s, and compared to the countries (Denmark, Sweden and the UK), which decided not to enter the zone. The expectation that one will reduce the gap in relation to the US economy has also not come true. It is also significant that the catching up countries, that were rapidly developing after the currency crisis of the early 1990s (Ireland, Greece, Portugal and Spain), recorded the strongest economic collapse during the crisis 2008+. Earlier economic successes have been, to a large extent, nullified as a result of an economic collapse.

Table 2. Indicators of Real Changes in Exports and Imports of Goods and Services and the Current Account Balance of the EU countries (EU – 15) and the US in relation to GDP (in %)

	Export of goods and services				Import of goods and services				Current turnover/GDP			
	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010
Greece	4.3	12.0	2.5	-0.8	3.5	12.1	1.4	-0.8	-0.5	-4.9	-11.5	-15.3
Portugal	6.1	7.0	2.5	3.3	7.5	9.0	1.9	2.4	-6.1	-7.5	-8.9	-10.9
Ireland	12.8	17.9	5.2	2.9	9.9	18.0	5.0	0.9	1.8	1.2	-0.6	-3.2
Finland	7.8	11.4	3.6	1.7	1.5	9.7	5.3	1.9	-1.3	5.6	6.4	3.1
The Netherlands	6.3	8.8	3.6	3.7	5.7	9.5	3.1	3.8	4.2	4.8	6.7	6.1
Germany	3.6	8.9	6.3	4.7	4.4	8.3	3.9	4.8	-1.2	-1.0	2.7	6.5
Belgium	3.9	6.9	2.8	1.9	3.7	6.7	2.5	2.2	3.9	4.5	4.7	2.3
Austria	2.9	8.8	5.8	1.9	3.5	6.5	6.1	1.2	-2.4	-1.8	1.6	3.7
Spain	9.9	10.2	3.3	2.5	6.7	12.3	6.3	0.4	-2.1	-1.6	-5.1	-7.5
Italy	7.2	3.9	1.6	0.6	2.8	6.3	2.5	1.4	0.0	1.7	-0.4	-2.2
France	5.6	8.3	2.1	0.6	3.4	8.6	3.2	1.9	0.0	2.0	0.5	-1.5
Luxemburg	5.8	10.3	5.7	3.7	4.4	11.0	5.9	4.3	13.0	10.5	10.2	8.2
Denmark	3.9	7.4	3.4	1.5	4.4	7.5	6.2	2.1	1.7	0.9	3.3	3.3
Sweden	6.4	9.2	4.7	2.4	2.6	8.7	2.8	3.4	0.3	4.5	6.1	7.8
Great Britain	5.5	6.1	4.2	1.6	3.4	9.2	5.3	0.5	-1.1	-1.3	-2.0	-2.0
EA-12	5.6	8.3	3.9	2.7	4.3	8.7	3.7	2.7	-0.4	0.5	0.6	0.2
The USA	7.2	7.0	1.8	4.9	7.0	11.6	4.3	0.6	-0.9	-2.4	-4.6	-4.2

Explanations:

Average yearly values for 5 – year periods;

Export and import – changes compared to the previous year.

Source: Own research based on [EC, 2014].

After 2000 the growth dynamics of exports of goods and services in all of the analyzed countries, especially in Greece, Ireland, Spain, Portugal, but also in Finland, the Netherlands, France and Belgium broke down. However, while Finland, the Netherlands and Belgium had constantly surplus in current account balance of payments, and France almost had it balanced, the catching up states were characterised by a growing imbalance in this area. In the pre-crisis period, there was no problem of financing these deficits, memberships in the euro area with the far advanced integration of European financial markets was a guarantee for the safety of investments for the portfolio capital in these countries. Slightly higher value of long-term interest rates in these countries compared with the interest rates in Germany or the Netherlands were sufficient incentive in this regard. When the 2008+ crisis began, the spread of interest rates in southern European countries compared to the northern countries of the euro zone began to grow, gradually increasing the cost of public debt servicing [See: Polański, 2014, p. 121–122]. TARGET2 system of mutual balance settlement (Trans-European Automated Real-time Gross Settlement Express Transfer) enabled short-term financing of these deficits. Until 2009 this balances were not excessive, but since that period they began to grow reaching in mid-2012 more than 1 trillion EUR (approx. 10% of euro area GDP) [Polański, 2014, p. 132–135]. The Bundesbank was the largest creditor in this respect. At the end of 2006 net claims of the Bundesbank amounted to 18.3 billion EUR, in 2008–128.7 billion and in 2012 already to 668.6 billion EUR [Deutsche Bundesbank, 2014]. Of course, these balances compensate each other within the zone.

Table 3. Unemployment Rate, Individual Consumer Price Deflator's Indices and Real Unit Labour Costs in the Economy of the EU-15 Countries (in %)

	Unemployment rate				Consumer prices deflator				Real unit labour costs			
	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010
Greece	8.3	10.7	10.2	9.7	13.8	5.6	3.0	3.1	-2.2	-0.1	0.1	-0.3
Portugal	5.6	5.8	6.7	9.7	7.0	2.8	2.9	1.5	1.2	0.3	0.0	-0.3
Ireland	14.5	7.8	4.4	8.3	2.7	3.5	3.4	-0.5	-1.2	-2.9	0.2	1.8
Finland	13.3	11.7	8.9	7.5	2.8	2.1	1.0	2.1	-2.0	-1.3	0.6	1.2
The Netherlands	5.7	4.6	4.0	3.9	2.7	2.4	2.6	1.2	-0.2	-0.5	-0.4	0.7
Germany	7.4	8.9	9.6	8.3	3.0	0.8	1.5	1.2	-0.1	-0.2	-0.9	-0.2
Belgium	8.3	8.7	7.8	7.8	2.2	1.4	1.9	2.1	0.3	-0.4	-0.4	0.4
Austria	3.7	4.1	4.4	4.4	2.8	1.4	1.7	1.8	0.0	-0.6	-1.0	0.3

	Unemployment rate				Consumer prices deflator				Real unit labour costs			
	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010
Spain	18.4	15.5	10.7	13.2	5.6	2.8	3.3	2.2	-0.2	-0.6	-1.2	0.6
Italy	9.8	10.9	8.3	7.2	5.7	2.7	2.6	1.9	-1.7	-1.1	0.3	0.7
France	10.0	10.4	8.6	8.6	1.9	1.0	1.8	1.5	-0.4	-0.3	0.1	0.4
Luxemburg	2.5	2.6	3.6	4.7	3.2	2.2	2.0	2.1	-0.1	-0.6	-0.2	0.6
Denmark	8.1	5.2	5.0	4.9	1.9	1.9	1.6	2.0	-1.0	0.0	0.2	0.9
Sweden	7.2	8.0	6.7	7.3	4.7	1.0	1.4	1.8	-1.8	0.8	-0.4	-0.4
Great Britain	9.3	6.4	4.9	6.3	3.7	1.6	1.5	2.9	-1.7	0.5	-0.2	-0.5
EA-12	9.6	10.0	8.6	8.6	3.8	1.7	2.1	1.6	-0.6	-0.6	-0.5	0.3
The USA	6.5	4.6	5.4	6.8	2.5	1.7	2.1	2.0	-0.4	0.5	-1.0	-0.4

Explanations:

average yearly values for 5 – year periods;

consumer prices deflator and real wages per one employee – changes compared to the previous year.

Source: Own research based on [EC, 2014].

The introduction of the euro common monetary policy focused on maintaining long-term inflation at a level close to 2% actually proved to be successful. In most countries, inflation remained at a level similar to the intended objective. In the peripheral countries (catching up ones) inflation measured by the consumer price deflator was maintained in the period until the crisis generally at a slightly higher level (approx. by 1 percentage point) than the average for the euro zone, which gradually strengthened the real exchange rate of the euro in these countries, with resulted in reducing the competitiveness of exports. With the coming of the crisis inflation rate has decreased also in these countries and in 2009 one noticed a decline in prices (in Ireland up to 7% in 2009 and by 2.1% in the following year). Only in Greece one reported a higher level of inflation (4% in 2010 and in 3.4% 2011), and the deflation of 1.5% was recorded not before 2013. The economic growth recorded in the pre-crisis period in the catching up countries translated into gradual decline of the unemployment rate, however, the crisis has increased the unemployment again. Thus, in Ireland, the unemployment rate rose from 4.4% in 2005 to 14.7% in the period of 2011/12. In Portugal, this rate has been increasing steadily since 2000 from 4.5%, reaching 16.5% in 2013. In Spain this rate increased from 8.3% in 2007 to 26.4% in 2013 and in Greece from 8.3% to 27.3%.

Table 4. The Public Finance Sector (GG) of the EU-15 Member States and in the US: GG Sector Spending, Current Incomes of the Sector and the Structural Balance of the GG Sector (in Relation to Nominal GDP in %)

	Sector expenditures/GDP				Sector incomes/GDP				Structural balance/GDP			
	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010	1991–1995	1996–2000	2001–2005	2006–2010
Greece	44.9	45.3	45.4	49.6	34.8	40.6	39.7	39.9	-10.6	-5.1	-5.6	-9.8
Portugal	42.4	41.7	44.5	47.1	36.2	37.9	40.1	40.8	-6.6	-4.5	-4.8	-6.0
Ireland	43.3	35.2	33.6	45.6	40.8	37.3	34.3	35.8	-2.0	1.4	0.4	-9.8
Finland	61.9	53.9	49.5	51.4	56.4	55.1	52.9	53.2	-3.0	1.0	3.6	1.5
The Netherlands	55.3	46.8	45.9	48.0	50.8	46.4	44.4	46.1	-4.5	-0.7	-0.8	-1.9
Germany	48.9	47.7	47.6	45.8	44.9	45.9	44.0	44.1	-4.7	-1.8	-3.2	-1.5
Belgium	53.3	50.6	50.1	50.6	46.8	49.0	49.6	48.5	-6.4	-1.8	-0.7	-2.4
Austria	54.9	53.5	51.3	50.4	50.9	51.1	49.6	48.0	-3.9	-2.5	-1.4	-2.4
Spain	44.4	41.0	38.6	42.3	38.9	38.1	38.7	38.1	-5.5	-2.9	-1.0	-3.9
Italy	54.0	48.9	47.6	49.5	44.4	45.8	44.1	45.9	-9.7	-3.4	-4.3	-3.8
France	53.2	53.1	52.9	54.4	48.2	50.5	49.8	49.8	-4.6	-2.6	-4.2	-5.0
Luxemburg	39.4	39.9	41.1	40.3	40.7	43.4	42.6	41.6	1.2	3.4	1.0	1.1
Denmark	58.6	56.2	54.1	53.9	55.4	56.4	55.9	55.5	-1.9	-0.6	1.3	1.5
Sweden	62.4	59.1	54.6	52.4	55.2	59.2	55.0	53.9	-5.8	0.3	0.6	1.7
Great Britain	43.5	39.0	41.7	46.9	37.6	38.6	39.3	40.5	-5.4	-0.8	-2.5	-6.0
EA-12	49.4	49.9	47.5	48.5	44.5	44.9	44.9	45.2	-5.0	-4.6	-2.9	-3.4
The USA	37.8	34.8	36.0	39.5	32.5	33.9	31.7	31.9	-4.5	-0.1	-3.4	-6.9

Source: Own research based on [EC, 2014].

Fiscal situation of many countries, and particularly the high public debt, are primary challenges for the euro zone. Countries in the EU-15 are characterised by relatively high public expenditures as calculated in relation to GDP, significantly higher when compared to the US and Japanese economies. On the other hand, Denmark and Sweden – despite the high expenditures – have control over its fiscal situation, since they have relatively high budget revenues.

Table 5. Gross Debt of GG Sector of the EU-15 Countries and of the USA (in Relation to Nominal GDP in %)

	1993	1995	1997	2000	2003	2005	2007	2008	2009	2010	2011	2012	2013
Greece	99.2	97.9	97.5	104.4	98.3	110.0	107.3	112.9	129.7	148.3	170.3	157.2	175.1
Portugal	54.6	59.2	55.5	50.7	59.4	67.7	68.4	71.7	83.7	94.0	108.2	124.1	129.0
Ireland	92.9	80.1	63.6	37.0	31.0	27.2	24.9	44.2	64.4	91.2	104.1	117.4	123.7
Finland	55.3	56.6	53.9	43.8	44.5	41.7	35.2	33.9	43.5	48.8	49.3	53.6	57.0
The Netherlands	78.5	76.1	68.2	53.8	52.0	51.8	45.3	58.5	60.8	63.4	65.7	71.3	73.5
Germany	45.8	55.6	59.8	60.2	64.4	68.6	65.2	66.8	74.5	82.5	80.0	81.0	78.4
Belgium	134.1	130.2	122.5	107.8	98.4	92.0	84.0	89.2	95.7	96.6	99.2	101.1	101.5
Austria	60.9	68.2	64.1	66.2	65.3	64.2	60.2	63.8	69.2	72.5	73.1	74.4	74.5
Spain	57.2	63.3	66.2	59.4	48.8	43.2	36.3	40.2	54.0	61.7	70.5	86.0	93.9
Italy	115.1	120.9	117.5	108.6	104.1	105.7	103.3	106.1	116.4	119.3	120.7	127.0	132.6
France	46.0	55.4	59.4	57.5	63.3	66.8	64.2	68.2	79.2	82.7	86.2	90.6	93.5
Luxemburg	6.0	7.4	7.4	6.2	6.2	6.1	6.7	14.4	15.5	19.5	18.7	21.7	23.1
Denmark	80.1	72.6	65.4	52.4	47.2	37.8	27.1	33.4	40.7	42.8	46.4	45.4	44.5
Sweden	70.0	72.8	71.2	53.9	51.7	50.4	40.2	38.8	42.6	39.4	38.6	38.3	40.6
Great Britain	43.6	49.6	48.7	40.5	38.7	41.7	43.7	51.9	67.1	78.4	84.3	89.1	90.6
EA-12	65.0	72.4	73.6	69.6	69.6	71.0	66.9	70.9	80.7	86.5	88.9	93.5	95.7
The USA	70.2	68.8	65.6	53.0	58.5	64.9	64.4	73.3	86.3	95.2	99.5	102.9	104.5

Source: Own research based on [EC, 2014].

From the 1970s advocates of the new directions in macroeconomics argued for the reduction of state functions (and public sector spending) in favour of the free market, that is, in practice, in favour of multinational companies. After the outbreak of the financial crisis, it turned out that in order to prevent the rapid spread of the crisis, it was necessary to rescue corporations, especially banking-finance conglomerates, from public funds. The necessity of rescuing the banking sector (bursting of the bubble caused by credit boom) has become a major cause of the collapse of public finances in Ireland. Until 2007 this country for several years has recorded the public finance sector surpluses and debt decreased to 24.9% of GDP. In 2008 one noticed a deficit (7.4% of GDP), which quickly grew, reaching in 2010 zenith in the amount of 30.6% of GDP. Public debt grew rapidly rising to 123.7% of GDP in 2013. The excessive boom in the housing loan market has also appeared in other catching up countries, especially in Spain, where due to the crisis, public finance deficit in 2009 amounted to 11.1% of GDP (although the consolidation of public sector spending made before 2007) and is reduced very slowly. Credit action was also excessive in relation to the potential of economy in Portugal and Greece. The main reason for the collapse of

public finances in these countries was, however, low level of competitiveness of their economies⁸. The euro has proved to be too strong for the international competitiveness of these countries. Public debt has become too high, not only in the peripheral countries. It amounted to 95.7 of GDP in the countries that originally created euro zone (EA-12) and it is expected that in the medium term it may increase. In order for the EU countries to cut public debt, assuming the primary budget balance, one would have to record excess GDP growth over the real interests' rate level. The scope of debt reduction with a given level of the interest rate is dependent on the possibility to generate the primary surplus (surplus of income over current expenditures), the scale of economic growth and the amount of inflation (reducing the real interest rate). Suitable occurrence of these factors can, in practice, for various reasons (mostly for political reasons) be difficult. This applies in particular to generating sector's relevant primary surplus, which requires tightening of fiscal policy, which in turn may contribute to the reduction of economic growth.

Summary. Conclusions for Poland

The crisis of public finance sector – apart from the relatively weak economic growth of euro zone countries and the relatively low competitiveness of peripheral economies – is treated as the basic cause of the crisis of the euro area. A mismatch of the economic structures of peripheral countries to structures of economies that are the core of the euro area, i.e. the divergence of production and export, is the main cause of these problems, what was pointed by P. Kenen.

P. Kenen also stressed that in addition to this one also needs appropriate policy mix, or in other words monetary policy coordinated with fiscal policy. A comparison of euro zone to the ship without a rudder on the high seas, made by P. Samuelson, is relevant in this regard [Samuelson, 2004]. When the sea is calm, the ship is self-controllable. However, when the storm starts, it is necessary to have a good rudder in order to steer the ship. The economy that has not undergone shocks operates by the power of its momentum. When the crisis starts, it is necessary to adjust the appropriate monetary policy, exchange rate policy and fiscal policy. Based on the Mundell-Fleming model one may theoretically indicate a certain level of interest rate, at which occurs external and internal balance. It is the natural rate, which in

⁸ An extensive discussion on the growing crisis of the public finance sector in Greece has been presented in a following work: H. Bąk [2013a, p. 175–208]. The causes of the crisis in Spain and Portugal were discussed briefly by J. Borowski [2011, p. 205–211].

practice is difficult to estimate, but one should consider this aspect, according to A.S. Blinder [2001, p. 55], when determining monetary policy. Without a doubt, ECB interest rates were adjusted to the realities of the key countries of the zone, and not to the realities of peripheral economies.

Euro area countries have not undergone stage of the exchange rate union, or in other words did not operate for a longer period with fixed exchange rates. Exchange rate mechanism ERM did not meet this requirements, because a significant exchange rate fluctuations were possible, one could adjust exchange rates, as well as it was enough to maintain currency in this mechanism for only two years. From the experiences of the European Monetary System, treated as incomplete monetary union [De Grauwe, 2003b, p. 107], it results that every few years (every 5–6 years) exchange rate adjustments were necessary. In the absence of the adjustment of the exchange rate, as it is in full monetary union, the country gradually loses ability to compete internationally.

Based on the experiences from the functioning of the euro area one can draw some conclusions for Polish economy which is EMU Member State with a derogation.

Before entering the euro zone it is necessary to reform the public finance sector, in particular to reduce fixed expenditures and to increase spending on education, research and development in order to improve innovativeness of economy.

One should developed rules of tripartite wage negotiating and inflation control, following the examples of Austrian or German solutions.

The economy should be put to the long term test of maintaining international competitiveness (maintaining external balance) at a fixed exchange rate against the euro.

The euro area should demonstrate its superiority in terms of economic growth and macroeconomic stability in comparison with the results of countries (Denmark, Sweden and the United Kingdom) that maintain their own currencies.

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Unconventional Monetary Policy

Introduction

Unconventional monetary policy affects the depreciation of the exchange rate and the decrease of interest rates in the country conducting this type of policy. The use by major central banks of unconventional monetary policy tools improves the competitiveness of the economies of these countries and weakens the competitiveness of the economies of other countries (e.g. Poland's economy that is not conducting unconventional monetary policy).

Effects of currency interventions involving the purchase of foreign currency (e.g. USD or EUR) are similar to the effects of unconventional monetary policy conduction. They improve the competitiveness of countries using this type of interventions and weaken the competitiveness of other countries.

In this chapter a study aimed to discuss conventional monetary policy instruments used by the ECB and the NBP is shown.

Unconventional monetary policy was compared with currency interventions, involving a purchase of foreign currency by the state to weaken the local currency exchange rate of a country that applies interventions (theoretical aspects). Then unconventional monetary policy pursued by major central banks (from the United States, the United Kingdom, and Japan) was presented. Unconventional monetary policy tools used by the ECB were described. In addition, foreign exchange interventions of selected central banks (from Japan, Switzerland and the Czech Republic) were presented. Economic effects of currency interventions involving buying foreign currency are quite similar to the effects of unconventional monetary policy.

The effects of unconventional monetary policy and of currency interventions were presented on the basis of CBS transactions.

1. Conventional Monetary Policy Tools Used by the European Central Bank and the National Bank of Poland

Conventional monetary policy tools used by the Polish National Bank (NBP) and the European Central Bank (ECB) are quite similar. It should of course be remembered that in Poland there is a structural excess liquidity in the banking sector and the NBP must absorb this excess liquidity through open market operations.

The European Central Bank must supply the euro area with money because a structural liquidity shortage occurs there. Of course, once through unconventional operations (e.g. a three-year LTRO) a significant supply of money takes place, a liquidity surplus in the banking sector is created. It is absorbed through bank deposits at the ECB.

The ECB publishes reports on the so-called **nominal liquidity**. Nominal liquidity is the difference between the level of commercial banks' deposits at the ECB (including deposits resulting from the reserve requirement) and overnight deposits (*deposit facility*) and the level of deposits resulting from reserve requirement. This level of deposits exceeds the reserve requirement.

Basic tools of ECB conventional monetary policy include activities such as:

1. Determining the interest rate on the main refinancing rate for main refinancing operations (7-day MROs) and corridor (two marginal rates) for standing facilities.
2. Carrying out other open market operations (longer than seven days, fine-tuning and structural) and the use of swaps.
3. Setting the rules and the level of the reserve requirement.

On 23 August 2014 base rate level (the interest rate on the main refinancing operations – MRO) amounted to 0.15%, the level of deposit rate (the interest rate on the deposit facility) was set at –0.1%, while the lending rate (the interest rate on the marginal lending facility) was 0.4%. MRO operations (7-day) are the main conventional operations that supply the market with money, conducted through reverse repo transactions¹. Standing facilities are overnight operations.

Other operations include mainly regular reverse repo transactions for a period of three months or longer. These operations are also called LTRO (longer term refinancing operations), such as those carried out in 2011 and 2012 three-year LTRO operations.

The reserve requirement amounts currently to 1% of deposits in commercial banks, and the interest rate is equal to the main refinancing rate.

¹ ECB buys securities (supplies market with money) under agreements to resell them at a specified price on a specified future date.

Basic tools of NBP's conventional monetary policy include activities such as²:

1. Determining main interest rate for basic open market operations (7-day) and corridor (two marginal rates) for standing facilities.
2. Carrying out other open market operations (longer than 7 days, fine-tuning and structural) and the use of swaps.
3. Setting the rules and the level of the reserve requirement.

On 23 August 2014 the interest rate on the main refinancing operations, called the reference rate, was set at 2.5%, the interest rate on the deposit facility was set at 1%, while the interest rate on the marginal lending facility, called the lombard rate, was 4%. Operations of 7-day NBP money bills issue are the basic, conventional operations used to absorb liquidity. They may be called repo operations, as the NBP sells money bills, absorbing excess liquidity in the banking sector³.

The NBP currently conducts also fine-tuning operations, absorbing excess liquidity. In 2013 the NBP did not make any structural or swap operations. Standing facilities are overnight operations.

The reserve requirement now stands at 3.5% of deposits in commercial banks and its interest rate is equal to 9/10 of the basic rate of the NBP. Deposits of commercial banks exceeding the reserve requirement and the amount of the purchase of the NBP bills are not remunerated.

2. Comparison of Unconventional Monetary Policy with Currency Interventions

Unconventional monetary policy involves the so-called quantitative easing (QE), as well as unconventional tools used by the European Central Bank (long-term liquidity-providing operations⁴, the purchase of government bonds and covered bonds).

The use of unconventional monetary policy by central bank as well as currency interventions, involving the purchase of foreign currency, cause a decrease of interest rates of the national currency and the depreciation of a given country's currency. It increases the competitiveness of the economy of a country in relation to economies of other countries. Conduction of unconventional monetary policy by major central banks leads to a weakening of the competitive position of all other countries.

² A detailed description of the NBP monetary policy instruments used in 2013, see: [NBP, 2013].

³ For the bank that is buying NBP's bills, it is a reverse repo.

⁴ I include LTRO to nonconventional monetary policy measures as they have the similar effects as purchases of financial securities.

The central bank's currency interventions involving the purchase of foreign currency are sometimes called – and rightly so – beggar-thy-neighbour.

All effects of unconventional monetary policy discussed later in this chapter, aimed at increasing GDP and inflation, proved to be moderately effective. The results of researches on the impact of QE on economic growth and inflation are extremely mixed.

2.1. Quantitative Easing

During the crisis, central banks (CBs) of the United States, Great Britain, and later Japan, have begun to use **quantitative easing** (QE). The essence of this policy, called unconventional monetary policy is to purchase by the central bank securities issued by governments, government agencies, and corporations. This policy is used when the base rate of the central bank is close to zero, so if the bank does not have ability to influence the economy by further lowering the main rate. There is also the term “**qualitative easing**”, covering the purchase by the central bank of securities with lower credibility.

Instead of QE, the terms “money printing” or “printing empty money” are also used. These two terms are not appropriate, since the created money really has an electronic form. Correspondingly increases central bank's balance sheet, including the monetary base (high powered money)⁵, while QE does not at all affect the amount of money that is in circulation (printed banknotes and minted coins). The amount of money in circulation depends on the demand of the households, enterprises and other entities for this kind of money.

2.1.1. Impact of QE on Interest Rates and Exchange Rate

It is worth noting that the declarations of the introduction or increasing the scale of QE immediately result in a decrease of interest rates on the secondary market and the depreciation of the currency. Declarations of restricting QE (tapering) result in increase of interest rates and the appreciation of the currency.

Conducting the QE policy, the central bank mainly affects the short-term interest rates, but also **long-term interest rates**. The central bank has therefore impact on the entire curve of the term structure of interest rates. By buying long-term government securities, central bank helps to **reduce the country's cost of debt service**. This effect is visible and extremely effective. Through buying agency securities, central

⁵ Monetary base includes cash in circulation and deposits of commercial banks in the central bank. QE will obviously increase the deposits of commercial banks in the central bank.

bank lowers the cost of financing the securitisation of mortgages. When buying commercial papers, central bank lowers the cost of capital for companies, which should encourage companies to increase the number and value of investments⁶.

Unconventional monetary policy therefore affects the entire curve of term structure of interest rates, and thus affects the term structure of interest rates for different entities (government, government agencies, and enterprises). In other words, central bank buys on the secondary market (mainly from commercial banks) securities issued by different entities, with different maturities. For example, the purchase of bonds raises their prices and decreases yields.

This policy is different from conventional monetary policy, which significantly affects only short term interest rates of government securities with short maturities, or short-term interest rates on the interbank market, and to a lesser extent and indirectly on long-term interest rates. Conventional Fed policy was based on the purchase or sale of government securities with short maturities. Conventional ECB and the NBP policy consists of determining the level of the base rate and two marginal rates for main open market operations, the level of which has an impact on short-term **interbank rates**.

The use of QE leads to the depreciation of the currency of the country. This is because the lower interest rates cause an outflow of capital overseas.

Table 1. Significant and Insignificant QE Effects

Activity – purchase by the CB of government, agency, corporate securities in local currency	Significant effects:
	<ul style="list-style-type: none"> • decrease of interest rates in local currency • depreciation of local currency
	Insignificant effects:
	<ul style="list-style-type: none"> • impact on stimulating economic growth • impact on inflation growth

Source: Own research.

2.1.2. Impact on Economic Growth and Inflation

The main declared objective of QE is to stimulate economic growth (GDP), in consequence increasing the level of inflation. In times of deflation prevention of deflation or the return of inflation to the inflation target is declared as the main

⁶ Lower interest rates for companies lead to lowering the weighted average cost of capital (WACC – weighted average cost of capital), which at the same cost of equity results in the greater NPV (net present value) of investment projects. Of course, it may be that in the context of the crisis, expected rate of return for the owners grows and does not compensate decline in the weighted average cost of financial capital.

objective of QE. Many economists in 2008–2009 foresaw that the rapid growth of the monetary base, according to the traditional monetary theory, will generate a huge inflation. That did not happen.

Reduction of interest rates across the whole curve of term structure and the improvement of the competitiveness of the economy by the depreciation of a local currency should lead to an increase in **corporate demand for investment products and the demand for consumer goods, the growth of export, production and employment and the increased demand for loans in commercial banks**. These effects should be much stronger than the effect of a short-term reduction of the main interest rate in the context of a conventional monetary policy, since QE also reduces long-term interest rates. Commercial banks that sell government securities to the central bank should use the received money to increase credit creation to enterprises and individuals.

But the crisis has shown that lowering short-term and (within QE) long-term interest rates do not automatically and quickly lead to an increase in demand of enterprises and households for goods, services and loans. In the further part of this chapter the analysis of the effects of QE is shown.

Effect of Lower Interest Rates

Lower interest rates mean that the value of the assets (**individual items of property, capital and indebtedness**) grows. The prices of stocks, bonds and other securities are also increased. Central banks using QE assume that the growth of “wealth” will have an impact on the growth of expenditures.

The effect of expenditure growth may not occur. Higher value of business assets and rising stock prices can satisfy corporate managers and the owners and don't have to stimulate them to take on new projects. This may happen despite the higher NPV for new investment projects, due to a reduction in the weighted average cost of capital. In the conditions of crisis or prolonged low economic growth, enterprises may be fearful of prolonged or another crisis in the future and the lack of demand for products that would be the result of new investment projects.

Households may behave in a similar manner. In the conditions of a crisis or a prolonged low economic growth, households can be afraid of a recurrence of the crisis, and thus it increases savings rather than spending. Households expecting deflation may believe that in the future it will be able to buy cheaper investment products and consumer goods. Long-term low interest rates might also obviously satisfy the richer segments of households due to the increase of the value of their assets and they might increase their willingness to postpone purchases.

Effect of a Weaker Exchange Rate

Depreciation of local currency should contribute to the growth of export, and thus also the demand across the economy, and the increase of prices. As a result of weakening of local currency (the original impulse of QE) the competitiveness of exporters improves. Export brings the higher profits for them.

This effect may not occur if other countries do not increase import due to the crisis. But if this effect occurs, it will worsen the trade balance of other countries, which means that the exchange rate of these countries (if it is a liquid rate) will also weaken (secondary effect comes quite fast).

2.1.3. Other QE effects

The Signalling Effect

The signalling effect includes all central bank's information concerning the future monetary policy, particularly the level of future interest rates. Purchases of securities have an impact on the expectations associated with maintaining low interest rates over a longer period of time and with the increase of inflation to the inflation target. Lack of decision to purchase securities with low nominal interest rates and in conditions of deflation increases the real interest rates. Purchase of securities by the central bank should lead to higher inflation and reducing real interest rates, which in turn should lead to an increase in demand.

The effect of expenditure growth may not occur if in spite of a large scale of QE the GDP growth rate and the inflation rates remain for a long period relatively low and real interest rates remain high. Business entities witness then just a little QE effects and still do not increase demand.

Portfolio Effect (Portfolio Balance)

Commercial banks sell securities (e.g. governmental bonds) to the central bank to get money that they can spend not only to increase lending, but also to purchase other securities, available on the market, in order to balance the previous state of the securities portfolio (portfolio rebalance) and risks associated with it. The increased demand for these securities will increase their prices and decrease yields. Purchase of such securities may, through multiplier effect, cause an increase in the demand for further securities of entities that are selling and generally rise in prices and a decrease of yields of these securities. Purchase of securities with lower credit standing can cause a decrease in credit spreads, i.e. the difference between yields of securities with higher risk and yields of government securities.

It is worth noting that even if such a multiplier mechanism works, ultimately the money put into the banks by the central bank will come back to it in the form of bank deposits. Purchase of domestic or foreign securities (as a result of currency interventions) causes a corresponding increase in the monetary base (excess liquidity in the banking sector).

The Effect of Reducing the Liquidity Risk Premium

Purchase of securities by the central bank increases the excess money, which is at the disposal of entities selling the securities, increases the scale of transactions, especially on the interbank market and reduces the so called liquidity risk premium. Reduction of this premium in turn results in a reduction of yields.

Portfolio effect or the effect of reducing the liquidity risk premium may not occur if, for example commercial bank that sells the securities to the central bank will simply increase the deposit in the central bank. If the commercial bank buys securities from another commercial bank, then the deposit of the second commercial bank in the central bank may be increased. Assuming that both commercial banks have accounts in the central bank, one should not expect any multiplier effects or decreasing liquidity premiums.

2.1.4. Negative QE Effects

Reduction of yields of government securities affects the willingness of governments to increase the “cheap” borrowing. If interest rates for government securities significantly increased (the price of these securities fell), the government could buy cheaper bonds. Then the central bank that uses QE would suffer losses.

Unconventional monetary policy (announcement, increase or decrease of the scale, withdrawal) causes a significant increase in volatility on the financial markets.

2.2. Currency Interventions

Unconventional monetary policy and currency interventions involving the purchase of foreign currency have similar results. As part of the QE, securities are purchased in local currency, while in the case of currency interventions securities are purchased in foreign currency.

Each of these instruments will supply the economy in local currency and lower domestic interest rates.

QE primarily affects the interest rates, and currency interventions primarily affect the exchange rate. QE affects the whole term structure curve of interest rates, also for

different entities (government, government agencies, and enterprises). The decline in interest rates leads to a depreciation of the exchange rate of a given country’s currency.

Purchase of foreign currency by the central bank of the country mainly causes the depreciation of its currency. Supplying the economy with the local currency also affects a decrease of interest rates over the entire term structure curve, but mainly the short-term rates.

Table 2. Significant and Insignificant Currency Interventions Effects

Activity – purchase by the CB of government, agency, corporate securities in foreign currency	Significant effects:
	<ul style="list-style-type: none"> • decrease of interest rates in local currency • depreciation of local currency
	Insignificant effects:
	<ul style="list-style-type: none"> • impact on stimulating economic growth • impact on inflation growth

Source: Own research.

3. Unconventional Monetary Policy Conducted by Main Central Banks

3.1. The Fed (U.S. Federal Reserve)

It is worth noting that the Fed began to conduct unconventional monetary policy in December 2008, more than three months after the collapse of Lehman Brothers. Of course, the central bank cannot save commercial banks from bankruptcy. In this case, it can, however, be argued that, if presented in the next section first steps in the field of unconventional monetary policy had been taken three months earlier, Lehman Brothers might not have collapsed and there would have been no such deep banking crisis in 2008. At the same time, without such spectacular bankruptcy it would be difficult to justify the introduction of these unconventional monetary operations.

On November 25, 2008 Fed announced a plan to purchase:

- GSE (government sponsored enterprises) debt in the amount of 100 billion USD and
- MBS (mortgage backed securities) in the amount of 500 billion USD.

This plan did not achieved the expected results. On March 18, 2009 Fed announced a plan to purchase:

- long-term government bonds for an amount of 300 billion USD,
- GSE debt to the amount of 200 billion USD and
- MBS to the amount of 1,250 billion USD.

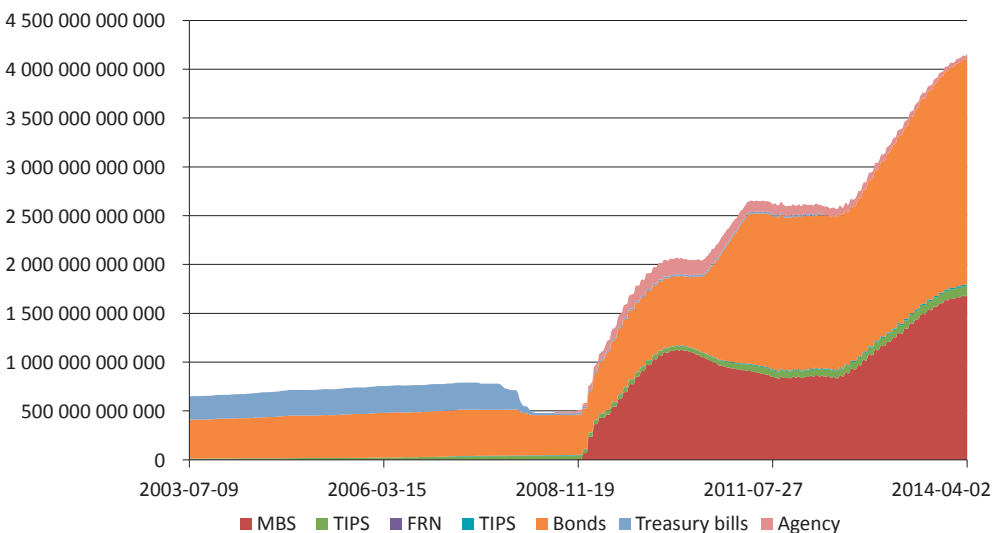
The effects of this plan also proved unsatisfactory. Ben Bernanke on 27 August 2010 announced the implementation of the second phase of the programme (QE2). During this stage since November 2010 to June 2011 Fed has bought government bonds worth 600 billion USD.

On 13 September 2012 Fed launched the third phase of the programme (QE3). The plan was to increase the purchase of securities by 85 billion USD per month (including government securities by 45 billion USD and MBS by 40 billion USD). This programme did not include the end date for increasing the purchase of securities. Hence the term *QE Infinity* had arisen.

On December 18, 2013 Fed announced a reduction of purchases (tapering). It announced that from January 2014 purchases would amount to \$ 75 billion USD per month (40 billion USD allocated for government securities and 35 billion USD for MBS). After further reductions in the value of monthly purchases in August 2014 they amounted to 45 billion USD.

Cumulated purchases of securities by Fed are shown on Figure 1. On August 13, 2014 structure of the securities held by the Fed was as follows: 55.9% – government bonds, 40.8% – MBS, 2.4% – FRN (Floating Rate Notes), 1% – agency securities, and 0.4% – TIPS (Treasury Inflation Protected Securities). In total they amounted to 4141 billion USD.

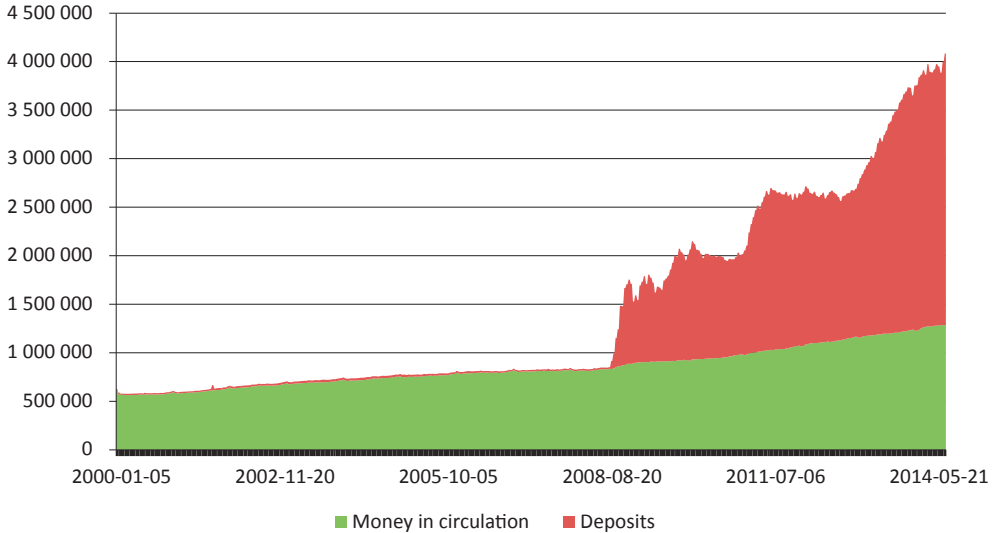
Figure 1. The Cumulative Amount of Purchases of Securities by the Fed



Source: Own research based on: [Fed, 2014b].

Monetary base on 6 August 2014 amounted to 4085 billion USD (the value of money in circulation was 1285 billion USD, while deposits – 2799 billion USD).

Figure 2. Fed’s Monetary Base in Billion USD



Source: Own research based on: [Fed, 2014a].

3.2. BoE – Bank of England

On 5 March 2009 Monetary Policy Committee of the Bank of England announced the launch of QE. In March, it was agreed that the amount of purchases would be 75 billion GBP, while in May it was raised to 125 billion GBP. By the end of January 2010 the total sum of the Asset Purchase Facility amounted to 200 billion GBP. The Bank of England has bought mainly government securities with medium and long maturities. Purchases of government securities covered approx. 30% of the securities held by the private sector and at the same time constituted approx. 14% of Great Britain’s GDP.

The Bank of England has been authorised by the government to buy commercial papers and corporate bonds. The size of these purchases was not as significant as purchases of government securities [BoE, 2011].

In October 2011 authorities increased the amount of purchases by 75 billion GBP. In February 2012 it was increased by 50 billion GBP and in July 2012 by an additional 50 billion GBP. The total sum of the purchases of securities by the Bank of England amounted to 375 billion GBP.

3.3. BoJ – Bank of Japan

The Bank of Japan [2010] announced the launch of QE (Comprehensive Monetary Easing) on 5 October 2010. *Asset Purchase Programme* assumed the purchase of government securities, commercial papers, corporate bonds, shares of publicly traded investment funds (ETFs – *exchange traded funds*), J-REITs (*Japan real estate investment trusts*) and funds of fixed rate that were financing pooled collateral. The purchases of the securities were successfully increased. For the purchase of government securities by the end of 2012 the Bank of Japan has spent 89 trillion JPY, it spent 3.3 trillion JPY to finance loans, buying corporate bonds cost him 2 trillion JPY, and commercial papers 2.1 trillion JPY.

On 4 April 2013 the Bank of Japan [2013] announced the introduction of unconventional monetary policy in the form of qualitative and quantitative easing. The programme included mainly the purchase of government securities. The monetary base was planned to be doubled within two years (an increase of the monetary base by approx. 60–70 trillion JPY per year) and average maturity of the purchased securities to be doubled. Purchases of government securities with a maturity of up to 40 years also were announced.

3.4. ECB – European Central Bank

Unconventional monetary policy conducted by the ECB is different from the policy pursued by the Fed or the BoE. First of all, the ECB for many years tried to avoid the term “QE” for unconventional operations. **All listed in the following section unconventional ECB’s monetary policy operations show results similar to the effects of QE policies pursued by the Fed or the Bank of England.**

Tools of unconventional monetary policy applied by the European Central Bank, and not used by the NBP, include:

1. The purchase of covered bonds.
2. The purchase of government bonds of PIIGS countries (Greece, Portugal, Ireland, Italy, Spain) within the SMP.
3. Long-term liquidity operations (LTRO – *long term refinancing operations*).
4. OMT Programme (Outright Monetary Transactions), announced on 6 September 2012.
5. TLTRO Programme (Targeted Longer-Term Refinancing Operation), announced on 6 June 2014.

6. Asset-Backed Securities Purchase Programme. On 21 November 2014, the Eurosystem started buying asset-backed securities (ABS) in the context of the Asset Backed Securities Purchase Programme (ABS PP) that will last for at least two years.
7. Expanded Asset Purchase Programme, announced on 22 January 2015. Under this expanded programme, the combined monthly purchases of public and private sector securities will amount to 60 billion EUR. They are intended to be carried out until end-September 2016.

3.4.1. Covered Bonds

On 9 May 2009 it has been established that the ECB will buy covered bonds⁷. Limit on purchases was set at 60 billion EUR. Buying period was to last from the end of July 2009 until the end of June 2010. Under this programme, the ECB purchased 422 bonds with maturities from 3 to 7 years. 27% of the bonds were purchased on the primary market and 73% on the secondary market [ECB, 2010].

On 6 October 2011 the ECB announced the launch of CBPP2 (Covered Bond Purchase Programme 2). Its limit was set at 40 billion EUR. Buying period was to last from the end of November 2011 until the end of October 2012. On August 22, 2014 the sum of purchased covered bonds amounted to 32.9 billion EUR under CBPP1 and to 13.8 billion EUR under CBPP2.

On 20 October 2014, the Eurosystem started purchases of covered bonds under a third Covered Bond Purchase Programme (CBPP3), which will last for at least two years.

3.4.2. Securities Market Programme

The European Central Bank started buying government bonds in May 2010 (based on the decision of the Governing Council of 10 May 2010). Governing Council decided in each case about the scale of the intervention. There were no limits for these interventions. ECB's stated goal was to restore liquidity in the securities market segments, it meant also to restore the functioning of the monetary policy transmission mechanism. It seemed that the main goal was a rapid and significant reduction of the yields in the countries most affected by the financial crisis.

⁷ The difference in relation to securitisation securities, for example MBS or ABS, lies in the fact that the purchase of covered bonds does not carry credit risk.

Purchase of securities (by the central banks of the euro area) could include securities issued by commercial banks and government bonds. In fact, it was limited only to government securities. SMP (Securities Market Programme) was based on purchase on the secondary market of government bonds of selected five countries (initially, from 14 May 2010 until 25 March 2011, they bought government bonds of Greece, Portugal and Ireland – SMP1, and later, from August 12 2011 until 13 February 2012, mainly bonds of Italy and Spain – SMP2).

By the end of March 2011 the ECB bought government bonds of Greece, Ireland and Portugal for 78 billion EUR and redeemed bonds with a total value of nearly 5 billion EUR, so the net purchases amounted to 73 billion EUR.

Sterilisation of liquidity generated by the purchase of securities was made in the form of deposit auctions⁸ with a maturity of 7 days, at auctions with variable interest at the maximum rate equal to the base rate of the ECB (in May 2010 this rate was equal to 1%).

The amounts of deposits took into account not only the actual amounts of the purchase of bonds, but also the revaluation of purchased bonds. The amount of deposits approximately corresponded with the amounts of purchased bonds. The ECB did not report on the prices of purchased bonds (or about national structure of purchases), but on the amounts of accepted weekly deposits, which were approximately equal to the amounts of purchased bonds.

The second phase of the programme, called the SMP2, started in August 2011. In this month, the level of yields of PIIGS countries began to grow rapidly. On the 4th of August 2011 the ECB started buying government bonds of Italy and Spain. The aim was to inhibit a sudden increase in the level of government bond yields, especially in those two countries. The increase in government bond yields on the secondary market results in an increase of the cost of debt financing for governments, because yields for the newly issued bonds are close to the current level of yields on the secondary market.

The amount of the purchases in the first week, i.e. during 8–12 August 2011, amounted to 22 billion EUR, while in the second week, i.e. during 15–19 August of the same year – to 14.3 billion EUR. From the beginning of August to the end of December 2011 net value of purchased government bonds, mainly Italy's and Spain's ones, amounted to nearly 147 billion EUR. Thus, in the period of just six

⁸ The exact amounts of the purchases of the bonds were not initially provided by the ECB. One did not also know a structure of purchases i.e. whether ECB bought bonds of Greece, Ireland or Portugal. Information on the weekly amounts of deposits, see: [ECB, 2011a; 2011b].

months, the value of purchased bonds in order to reduce the level of bond yields in Italy and Spain far exceeded the value of the bonds of Greece, Portugal and Ireland, purchased from May 2010 until the end of March 2011 (i.e. through 9 months). The highest level of net purchases under the SMP in February 2012 amounted to 219.5 billion EUR.

More detailed information on the status and structure of the purchased bonds were given by the ECB in February 2013 and in February 2014. These data are presented in Tables 3 and 4.

Table 3. Government Bonds Purchased by the ECB (as at 31 December 2012)

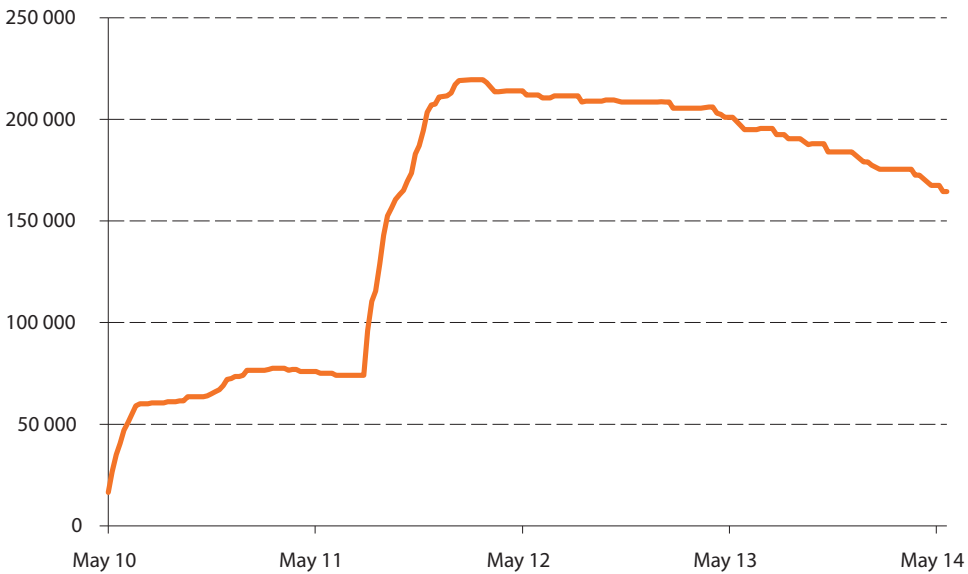
Country of issue	Value of purchased bonds		Average maturity (in years)
	Nominal value (in bln EUR)	Book value (in bln EUR)	
Ireland	14.2	13.6	4.6
Greece	33.9	30.8	3.6
Spain	44.3	43.7	4.1
Italy	102.8	99.0	4.5
Portugal	22.8	21.6	3.9
In total	218.0	208.7	4.3

Source: [EBC, 2013].

Table 4. Government Bonds Purchased by the ECB (as at 31 December 2013)

Country of issue	Value of purchased bonds		Average maturity (in years)
	Nominal value (in bln EUR)	Nominal value (in bln EUR)	
Ireland	9.7	9.2	5.3
Greece	27.7	25.4	3.4
Spain	38.8	38.4	3.6
Italy	89.7	86.8	4.1
Portugal	19.8	19.0	3.4
In total	185.7	178.8	3.9

Source: [EBC, 2014]

Figure 3. The Cumulative Amount of Purchases of Government Bonds by the ECB

Source: Own research based on information from the ECB.

Effectiveness of SMP

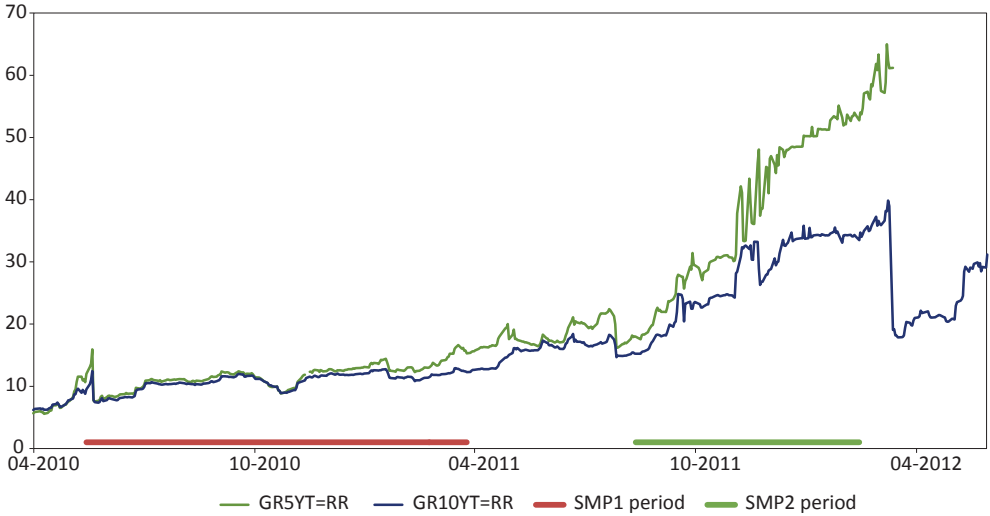
The ECB interventions have proven to be very effective in terms of their impact on the reduction of yields of government securities of PIIGS countries, in the first and second week of introduction of these operations. Later the effect of decrease of government bond yields has stopped. In the longer term, there was an increase in interest of government bonds and there has been a reduction in the scale of intervention. In the period between the implementation of SMP1 and SMP2 even more dramatic increase of yields was observed. Generally, SMP programme was very effective when it came to preventing a significant increase of yields of PIIGS countries' government securities. Insufficient amounts spent on the purchase of bonds were the reason for the lack of effectiveness of this programme. In the next section of the chapter the impact of the SMP programme on the bond yields of PIIGS countries is analysed.

Greece

During the period of use of SMP1 yields on Greek government securities generally tended to increase. After completion of the SMP1 yields on the five-year government securities were significantly higher than on the ten-year securities. It was a clear signal that Greece has huge problems with financing current budget needs. SMP2 did not include securities of Greece. During the implementation of SMP2 yield on

Greek government securities rose strongly. The ECB was preparing “controlled” bankruptcy of Greece.

Figure 4. Yields on Greece in the Period from 1 April 2010 to 28 May 2012



Source: Own research based on Thomson-Reuters data.

Portugal

During the period of SMP1 functioning yields on government securities of Portugal usually showed a rising trend. After completion of the SMP1, yields on two-year government securities were significantly higher than on the ten-year securities. This meant that Portugal, like Greece, had big problems with financing its current budget needs.

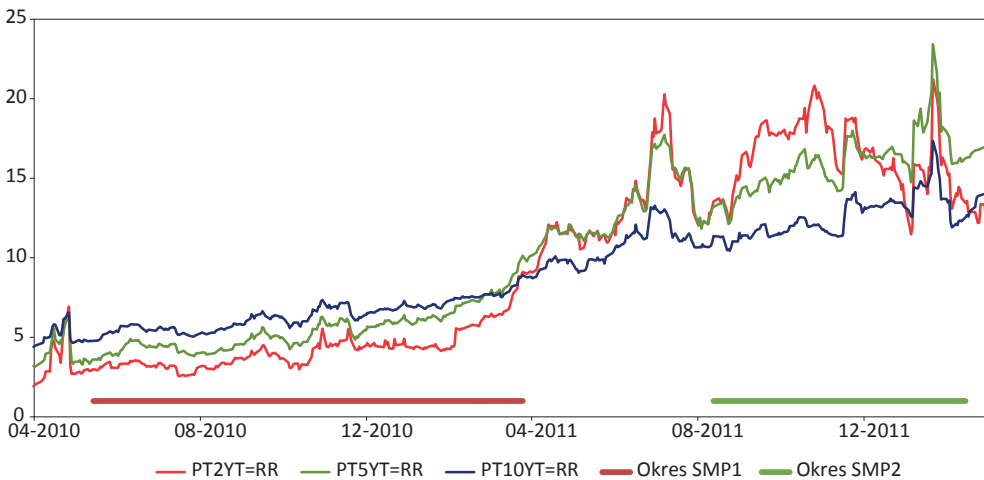
SMP2 did not include securities of Portugal. During the implementation of SMP2 yields on Portugal’s government securities were significantly higher than in the period of the SMP1 implementation.

The ECB monetary policy was inconsistent. It reacted with relatively small changes of yields in 2010, while it ruled out Portugal from SMP2 in 2011 when yields on government securities of the country were significantly higher, and when the state had much more difficulties with financing the current budgetary needs (short-term interest yields were significantly higher than long-term yields) than in the previous year.

Ireland

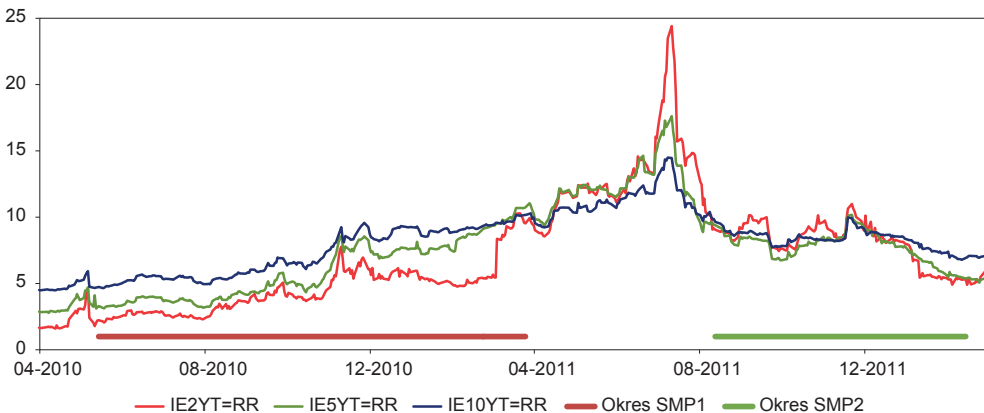
Conclusions resulting from the implementation of the mentioned programmes both in the case of Ireland, and in the case of Portugal, are similar. During the period of SMP1 yields on Ireland's government securities also showed a rising trend. After completion of the SMP1 yields on two-year government securities, as in the case of Portugal, were significantly higher than on the ten-year securities. SMP2 did not include securities of Ireland. At the end of the implementation period of SMP2 yields on the country began to significantly fall. This was the result of a sound fiscal policy of the Irish government.

Figure 5. Yields on Portugal in the Period from 1 April 2010 to 28 February 2012



Source: Own research based on Thomson-Reuters data.

Figure 6. Yields on Ireland in the Period from 1 April 2010 to 28 February 2012



Source: Own research based on Thomson-Reuters data.

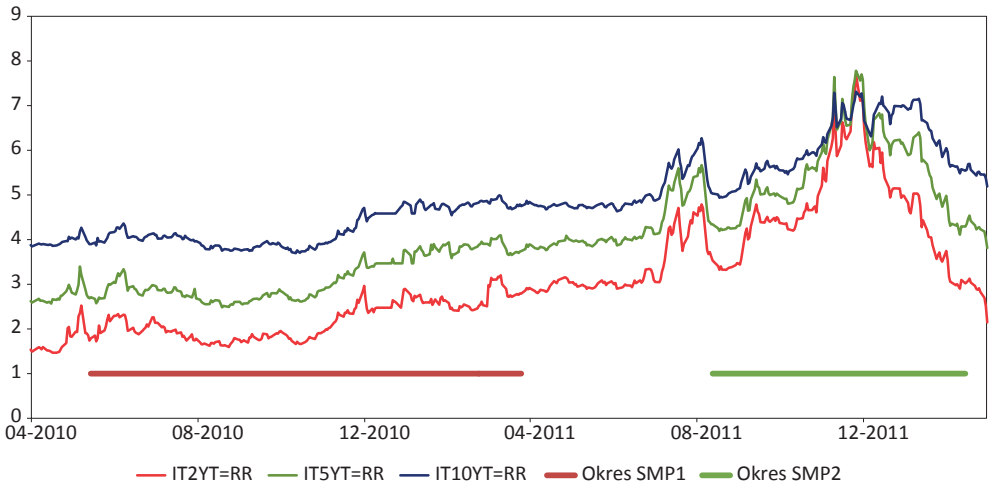
Italy and Spain

SMP2 included the purchase of government securities of Italy and Spain. The first purchase took place on August 8, 2011. In July and in the beginning of August 2011 yields on government securities of those countries increased significantly. Data presented in Figures 7 and 8 show that the launch of SMP2 was an ECB’s reaction to a significant increase of yields. It is clear that the purchase of securities in the first two weeks resulted in a significant reduction of yields. In the coming weeks yields increased significantly, and even exceeded the levels recorded in July 2011. The highest yields were recorded by the end of November 2011. Yields on two-year and five-year securities were higher than the yields on ten-year securities, which indicated the difficulties that these countries had with the financing of the current budgetary needs.

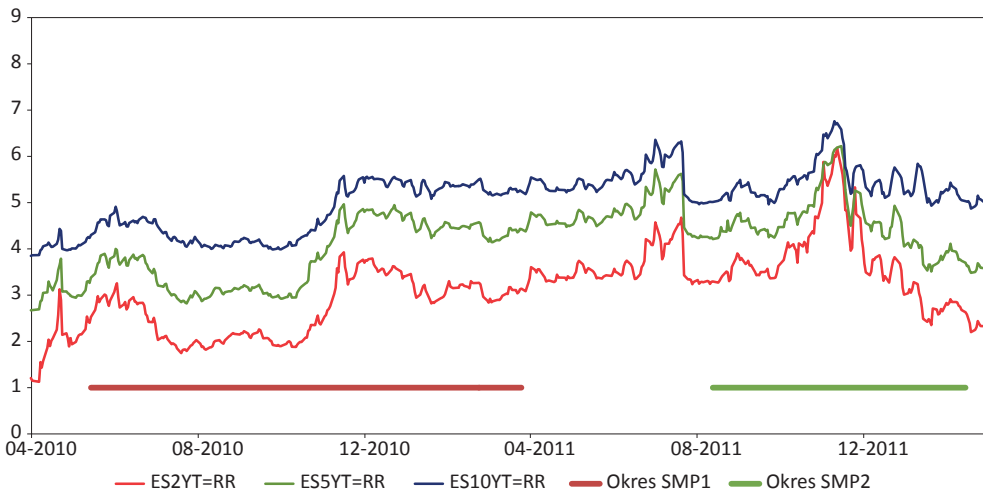
Since the beginning of December 2011 yields have started to fall. The purchases of government securities of Italy and Spain had been continued. The decrease of yields, however, was the result of changes in fiscal policy in these countries.

Figures 7 and 8 show yields on government securities of Italy and Spain. It is worth noting the similarity (high correlation) concerning behaviour of the yields in these two countries.

Figure 7. Yields on Italy in the Period from 1 April 2010 to 28 February 2012



Source: Own research based on Thomson-Reuters data.

Figure 8. Yields on Spain in the period from 1 April 2010 to 28 February 2012

Source: Own research based on Thomson-Reuters data.

Critics of SMP Programme

Purchase of bonds of PIIGS countries by the ECB has been criticised by Germany. Christian Wulff, President of Germany, described the ECB's actions as "legally questionable" [Atkins, 2011]. The EU treaties prohibit the direct purchase of government bonds. Of course, the ECB was buying bonds not on the primary market (we are talking about direct issues of government bonds), but purchases on the secondary market. President of Germany stated that these activities were using a loophole in the law. These statements are consistent with other German politicians and economists, including Jens Weidmann, president of the Bundesbank, who was opposed to purchases of government bonds by the central bank.

Under the clear influence of the Bundesbank in December 2011 Mario Draghi, the ECB president, spoke against the extension of the SMP programme and introduced, as a substitute, long-term (three-year) operations supplying euro area banks with money.

3.4.3. Three-Year LTRO

On 22 December 2011 the ECB conducted the first three-year operation, which is maturing on January 29, 2015, supplying banks with 480 billion EUR. On 1 March 2012 the ECB conducted a second three-year operation, which is maturing on 26 February 2015, supplying banks with 530 billion EUR.

3.4.4. OMT

On 6 September 2012 the ECB announced the launch of OMT programme (Outright Monetary Transactions) and the end of the SMP [ECB, 2012]. OMT programme is similar to the SMP, but is more restrictive. Launch of purchases of government securities has been conditioned by the submission by the government of the country concerned of the recovery programme, using the aid of the EFSF/ESM, and possibly the IMF. OMT programme provided that any purchase of securities will cover securities with shorter maturities. It was decided, that the created, as a result of purchase of government securities, liquidity will be fully sterilised.

After the decision to start OMT there was quite a long period of relative ease in the financial markets, which lasted almost until the end of May 2013 (until tapering was announcement by the Fed). European Central Bank has not purchased any securities within the OMT programme.

Easing of financial markets resulted not from the announcement of OMT, but from a clear statement of the President of ECB, Mario Draghi, that the European Central Bank will not allow the collapse of the euro zone. Earlier, numerous discussions on the various options of disintegration of the euro area (one of them was expelling Greece) lasted for several months.

3.4.5. TLTRO

On 5 June 2014 the ECB announced the launch of two TLTRO (targeted LTRO) programmes and the purchase of ABS. Prior to the announcement of these programmes one also intensively discussed on QE (buying government securities). It was also decided to discontinue the SMP sterilisation.

TLTRO programmes were supposed to get started in September and December 2014. Both TLTRO programmes, with a limit of 400 billion EUR, are to be finished in September 2018. Initially, the banks will be able to obtain a loan in the amount of 7% of loans granted to the entities from non-financial sector, excluding mortgages. In addition, from March to June 2015 they will be able to obtain a loan in the amount of three times of the amount of loans they have granted.

The programme has a chance of success with the increasing demand for loans offered by banks to businesses and consumers.

4. Currency Interventions

In September 2010 Brazil's Finance Minister Guido Mantego, introduced the concept of "currency wars". Currency interventions in many countries in 2010 and 2011 confirm that a large number of countries decided to thereby respond to the unconventional policy of QE, led in particular by the Fed and the BoE.

Since 2010 currency interventions have been carried out by the central banks of many countries. The most important currency interventions were conducted in 2011 by the Bank of Japan and the Swiss National Bank. In the same year, similar actions were taken by countries, such as Brazil, Mexico, Poland, Turkey, South Korea, India and Indonesia. Currency wars were the main topic of monetary policy discussions.

4.1. Japan

After a longer break, on 15 September 2010 the Bank of Japan has again decided on currency interventions (previously it intervened in March 2004). He bought about 20–25 billion USD. In March 2011, after the earthquake and nuclear crisis in Japan, the G7 countries, together with the Bank of Japan, have taken a coordinated currency intervention to weaken the yen (common purchases were equal to approx. 9 billion USD).

For the same purpose the Bank of Japan conducted currency interventions in early August 2011 and at the end of October 2011.

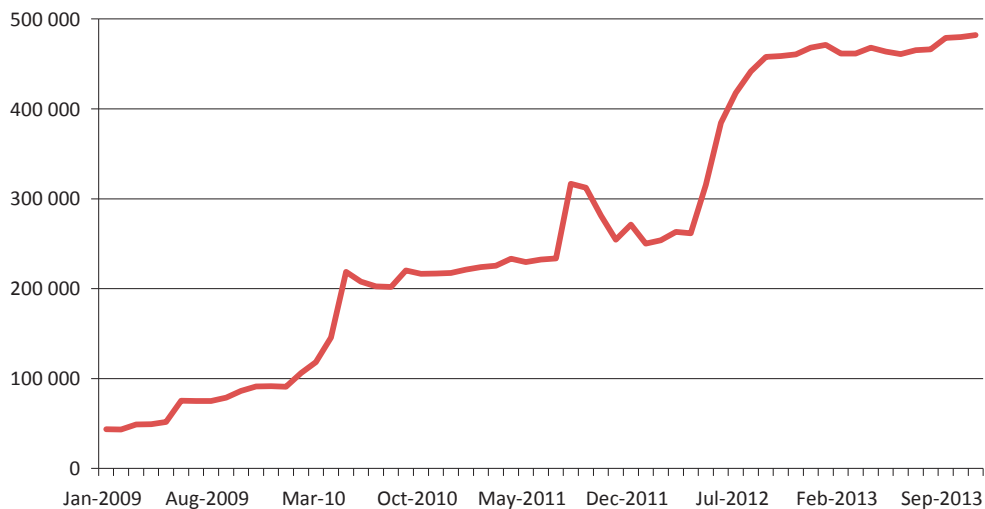
4.2. Switzerland

Swiss National Bank conducted successively currency interventions from March to the end of 2009. The main objective of the interventions was to prevent the appreciation of the Swiss franc and deflation. In December 2009 SNB decided that not too high appreciation is allowed. Interventions were, however, still held until June 2010 in order to prevent too strong appreciation of the Swiss franc [Danthine, 2011], and later also in 2011 and 2012.

On 6 September 2011 the SNB decided it would conduct currency interventions to prevent the strengthening of Swiss franc. The minimum threshold of 1.2 EUR/CHF (EUR price should be higher than 1.2 EUR/CHF) has been decided. On this day, one reported approx. 10-percent increase of the euro against the Swiss franc (franc's price declined). This fact was considered to be the **largest change in the history of**

the floating exchange rate in an intra-day trading. Figure 9 shows the size of the SNB's foreign currency reserves. From January 2009 until November 2013 foreign currency reserves increased from 43.5 billion USD to 482 billion USD. The largest increases in reserves occurred in the periods of April–June 2009, January–May 2010, July–August 2011 and April–August 2012.

Figure 9. Foreign Currency Reserves of Switzerland since the Beginning of 2009 until September 2013 (in Million USD)



Source: Own research based on SNB data.

4.3. The Czech Republic

In November 2013 within few days the Czech National Bank sold 200 billion of Czech koruna (9.91 billion USD). The main stated goal of this intervention was to avoid deflation. Intervention has been prepared for a few months and consulted with the IMF. It proved to be very effective when it comes to hold the exchange rate of the euro against the koruna on a new level and the stabilisation of the expected volatility of the exchange rate. It seems that the goal to avoid deflation has also been achieved, because the inflation rate remains above zero (the rate of inflation in Poland is negative).

5. The Effects of QE and Currency Interventions with the Use of CBS Transactions

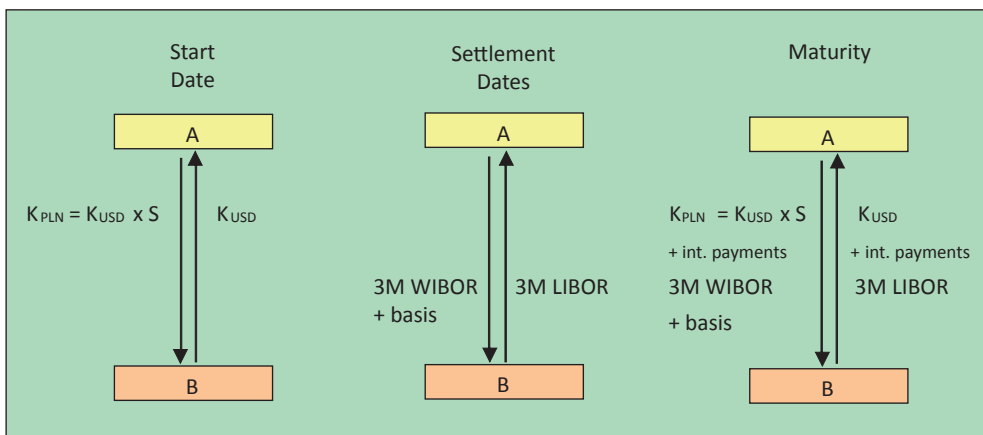
In this section the impact of unconventional monetary policy and currency interventions e.g. the purchase of foreign currency will be presented. It involves impact on the exchange rate and interest rates on the interbank market in the country engaged in this kind of monetary policy.

Of course, there are many factors influencing the exchange rate and interest rates. These factors may affect the impact of unconventional monetary policy and of interventions. Currency interventions conducted by other countries, that are trying to maintain its competitiveness at an appropriate level, are important factors influencing especially exchange rates.

5.1. CBS Transactions

Currency basis swap – CBS, is a special kind of CIRS (currency interest rate swap), in which both interest rates are floating rates. 3M LIBOR or EURIBOR 3M are a floating rate for foreign currency, while 3M WIBOR + basis is the floating rate for the national currency.

Picture 1. Currency Basis Swap



Source: Own research.

In order to better describe CBS transactions quotations for CBS EUR/PLN transactions on 21 August 2014 are shown in Table 5.

Table 5. CBS Quotations for EUR/PLN

Name	Maturity	Date	Hour	Currency	Rate	Bid	Ask
PL3WEU3E1Y=ICAP	1Y	2014-08-21	9:52:48	PLNEUR		-15.00	5.00
PL3WEU3E2Y=ICAP	2Y	2014-08-21	9:52:47	PLNEUR	3M WBOR/3M EUBOR	-17.00	3.00
PL3WEU3E3Y=ICAP	3Y	2014-08-21	9:52:48	PLNEUR	3M WBOR/3M EUBOR	-19.00	1.00
PL3WEU3E4Y=ICAP	4Y	2014-08-21	9:52:47	PLNEUR	3M WBOR/3M EUBOR	-23.00	-3.00
PL3WEU3E5Y=ICAP	5Y	2014-08-21	9:52:48	PLNEUR	3M WBOR/3M EUBOR	-27.00	-7.00
PL3WEU3E6Y=ICAP	6Y	2014-08-21	9:52:47	PLNEUR	3M WBOR/3M EUBOR	-30.00	-10.00
PL3WEU3E7Y=ICAP	7Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-32.00	-12.00
PL3WEU3E8Y=ICAP	8Y	2014-08-21	14:21:48	PLNEUR	3M WBOR/3M EUBOR	-33.00	-13.00
PL3WEU3E9Y=ICAP	9Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-34.00	-14.00
PL3WEU3E10Y=ICAP	10Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-34.00	-14.00
PL3WEU3E12Y=ICAP	12Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-31.00	-11.00
PL3WEU3E15Y=ICAP	15Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-27.00	-7.00
PL3WEU3E20Y=ICAP	20Y	2014-08-21	10:13:11	PLNEUR	3M WBOR/3M EUBOR	-22.00	-2.00

Source: Own research based on Thomson-Reuters data.

Suppose that a bank in Poland concludes a five-year CBS transaction. It receives capital in EUR and provides capital in PLN. The bank will pay interests every three months according to 3M EURIBOR and receive interests according to the current rate of 3M WIBOR, minus the basis, i.e. 27/100. For example, if the 3M WIBOR rate is 3%, the bank will receive interests of $3\% - 27/100$, i.e. 2.73%.

Negative basis means that for a bank in Poland, the cost of acquiring foreign currency is approx. 0.27% higher than the rate for foreign currency depo (slight differences may result from different conventions used to calculate interest payments, for example for WIBOR a/365 convention is used, while for EURIBOR – a/360 convention is used).

Receiving interests according to a lower local rate, means that the effective exchange rate (true exchange rate for this transaction) is lower than the current market exchange rate. For example, if the market EUR/PLN rate is 4.19, then the effective rate, with local interest rates reduced by basis may be, for example 4.16.

The presence of a different basis for the different terms results in the occurrence of multiple curves of term structure of interest rates and the term structure of the effective exchange rates, which depend on the maturity of CBS transactions.

A large part of capital flows is done by FX swap, CIRS and CBS, and the effective exchange rate in these transactions is different than the actual market spot rate.

Basis depends mainly on the level of liquidity (excess or shortage of money in two currencies!). Since there are two currencies in the transaction, the negative basis occurs in conditions of excess of domestic currency liquidity, as well as in the

case of foreign currency liquidity shortage. A positive basis occurs in the case of domestic currency liquidity shortage or excess of liquidity in foreign currency.

Unconventional monetary policy used by the Fed, BoE, BoJ and the ECB or currency interventions involving the purchase of foreign currency, used by the BoJ, SNB or CNB, are contributing to a reduction of basis in the currencies of these countries, thus lowering interest rates in the currencies of these countries, and also are contributing to the depreciation of the spot market exchange rates of these countries.

The flow of capital through the CBS creates the negligible effect of the depreciation of the local currency and for a negative basis the effective local currency exchange rates in CBS transactions are lower than spot market exchange rates.

CBS quotations indicate what is the rate of ideal equilibrium exchange rate [a term introduced by the author], i.e. the level of the exchange rate at which supply and demand on the CBS market would be equal to demand and supply on the spot market. Such an equilibrium exchange rate is the exchange rate for which mid basis market quotations are equal to zero. For example, the EUR/USD exchange rate, at approx. 1.39, was recorded in the months of May–August 2014. EUR/USD exchange rate of 1.33, in accordance with this concept, is too low (the euro is undervalued).

The term structure of basis has also certain forecasting values. Observing CBS quotes for different currencies, it can be seen that for a very long maturities market expects the return of the exchange rate to the ideal equilibrium exchange rate.

Table 6 shows the quotations of CBS for USD/EUR. It is worth noting that very long maturities (50Y) of such transactions exist.

Table 6. CBS Quotations for USD/EUR

Name	Maturity	Date	Hour	Currency	Rate	Bid	Ask
EURCBS3M=ICAP	3M	2014-08-22	11:31:11	EUR	3MEURIBO/3MLIBOR	-17.50	-7.50
EURCBS6M=ICAP	6M	2014-08-22	11:31:09	EUR	3MEURIBO/3MLIBOR	-17.25	-7.25
EURCBS9M=ICAP	9M	2014-08-22	11:31:09	EUR	3MEURIBO/3MLIBOR	-17.25	-7.25
EURCBS18M=ICAP	18M	2014-08-22	11:13:48	EUR	3MEURIBO/3MLIBOR	-16.75	-6.75
EURCBS1Y=ICAP	1Y	2014-08-22	11:30:53	EUR	3MEURIBO/3MLIBOR	-14.25	-9.25
EURCBS2Y=ICAP	2Y	2014-08-22	11:30:53	EUR	3MEURIBO/3MLIBOR	-14.00	-9.00
EURCBS3Y=ICAP	3Y	2014-08-21	12:16:01	EUR	3MEURIBO/3MLIBOR	-13.50	-8.50
EURCBS4Y=ICAP	4Y	2014-08-21	12:16:02	EUR	3MEURIBO/3MLIBOR	-12.75	-7.75
EURCBS5Y=ICAP	5Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-11.75	-6.75
EURCBS7Y=ICAP	7Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-9.75	-4.75
EURCBS10Y=ICAP	10Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-7.50	-2.50
EURCBS15Y=ICAP	15Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-5.75	-0.75
EURCBS20Y=ICAP	20Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-5.00	0.00

Name	Maturity	Date	Hour	Currency	Rate	Bid	Ask
EURCBS25Y=ICAP	25Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-4.75	0.25
EURCBS30Y=ICAP	30Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-4.75	0.25
EURCBS40Y=ICAP	40Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-5.25	-0.25
EURCBS50Y=ICAP	50Y	2014-08-21	17:02:09	EUR	3MEURIBO/3MLIBOR	-5.25	-0.25

Source: Own research based on Thomson-Reuters data.

CBS transaction can be compared with a series of FX transactions. On the basis of the FX swap a domestic implied rate can be estimated. The difference between the implied rate based on the FX swap and the current depo rate on the market is a counterpart of basis in CBS transaction⁹. It can be described by the following formula:

$$i_d^{imp} - i_d^N = \frac{SP + S_0(1 + i_f^N T) - 1}{S_0 T} - i_d^N \quad (1)$$

where:

S_0 – spot rate;

SP – swap points;

i_d^N – annual nominal interest rate in domestic currency;

i_f^N – annual nominal interest rate in foreign currency;

T – period described as a fraction of a year (number of days divided by 360 for foreign rate or by 365 for domestic rate).

5.2. Unconventional Monetary Policy

5.2.1. Fed

QE1

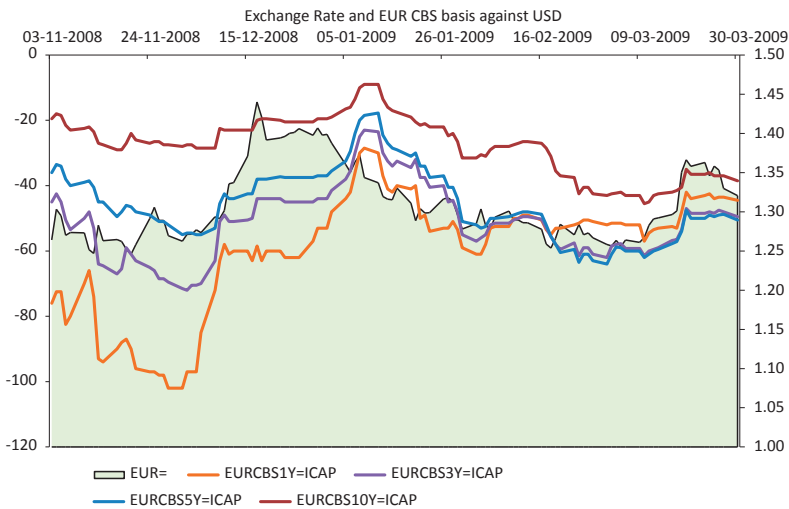
On 15 September 2008 Lehman Brothers filed for bankruptcy. Basis for 1Y USD/EUR amounted to -24.5. On September 30 it was already -93 and on 9 October 2008 -115. What did it mean? For a bank in Europe, that was acquiring a secured loan in dollars for a year's period through CBS, the cost of acquiring dollar was higher by 1.15% (respectively for the bank in the United States the cost of acquiring euro was lower by 1.15%) in relation to the depo rates on the market.

⁹ It is a transformation of a well-known Fisher's formula to forward rate.

On November 25 2008 Fed announced a plan to purchase securities (QE1). Basis for CBS 1Y transactions rose to -30 in the first half of January 2009. This meant a decline of interest rates in the currency of the United States and an increase of interest rates in the currency of the euro area countries. Over the first two weeks of December 2008 euro exchange rate increased from 1.26 EUR/USD to the 1.44 EUR/USD (dollar weakened against the euro).

The effects of the Fed's announcement on 18 March 2009 about additional, much larger purchases of securities were much smaller, but also had an impact on a reduction of interest rates in the USA and the depreciation of the dollar.

Figure 10. QE1. Exchange Rate of EUR/USD and CBS Basis for EUR/USD from 1 November 2008 to 31 March 2009



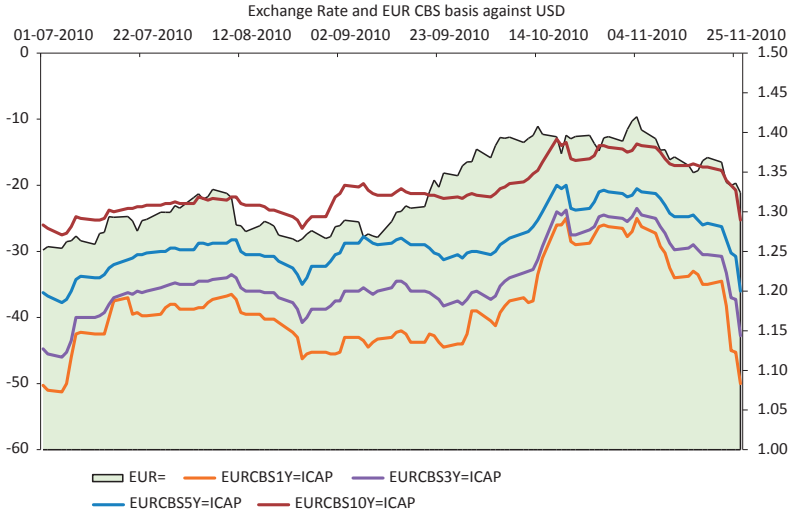
Source: Own research based on Thomson-Reuters data.

QE2

On 27 August 2010 QE2 programme began. The dollar clearly weakened (euro price increased) and interest rates of the dollar decreased (euro interest rates increased). Basis for CBS 1Y transactions increased from -45 on 27 August 2010 to -24.5 on 10 October 2010. This meant a drop in interest rates in the currency of the United States and an increase of interest rates in the currency of the euro area countries.

Since the end of August 2010 until 4 November of this year, the euro rose from 1.27 EUR/USD to the 1.42 EUR/USD (dollar weakened against the euro).

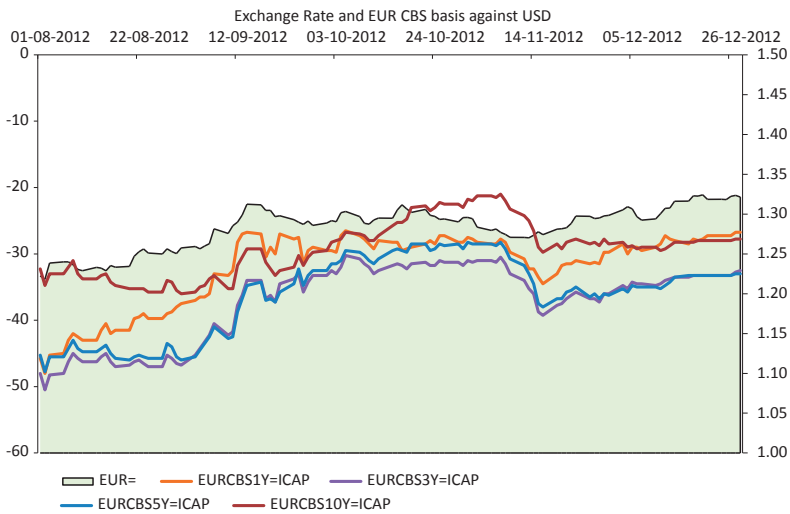
Figure 11. QE2. EUR/USD Exchange Rate and CBS EUR/USD Basis from 1 July to 30 November 2010



Source: Own research based on Thomson-Reuters data.

QE3

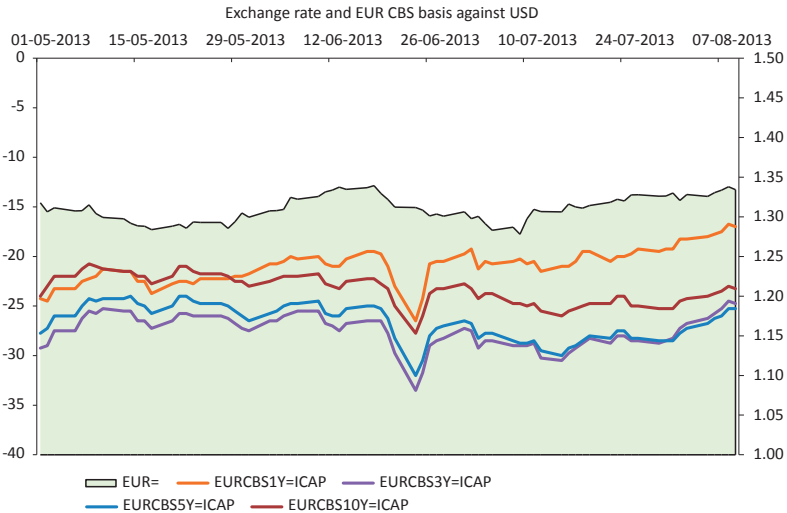
Figure 12. QE3. EUR/USD Exchange Rate and CBS EUR/USD Basis from 1 August to 31 December 2012



Source: Own research based on Thomson-Reuters data.

On 13 September 2012 Fed launched the third phase of the programme (QE3). Its effects were much weaker than the effects of QE1 and QE2 programmes, although in general, also this time dollar weakened and the domestic interest rates declined. It should be emphasised that the market usually reacts in advance to decisions of the central bank.

Figure 13. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 May to 9 August 2013



Source: Own research based on Thomson-Reuters data.

Tapering

Fed began explicitly restrict purchases of securities in the third week of May 2013. As a result a significant increase of interest rates and the appreciation of the dollar occurred.

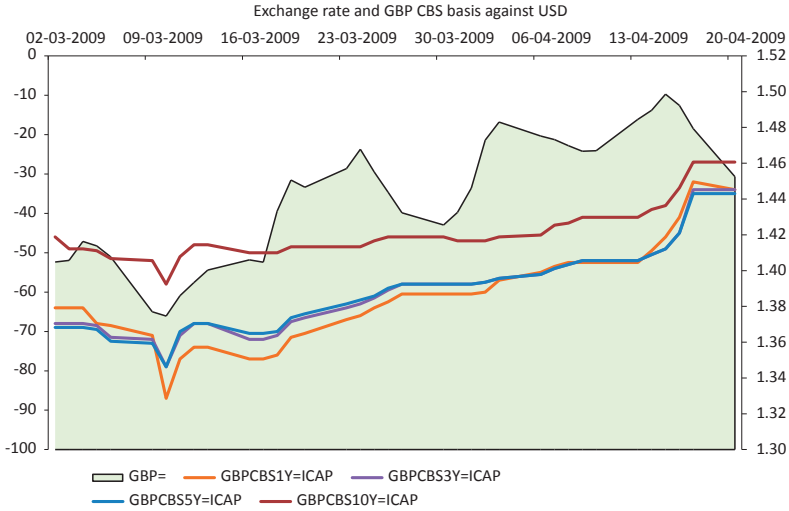
5.2.2. Bank of England

The Bank of England announced the launch of QE programme on 5 March 2009. On 4 March of GBP/USD exchange rate amounted to 1.4163, and few days later, on March 10, it stood at 1.3746 (the pound has depreciated). Basis for 1Y CBS amounted on 4 March 2009 to -64, and on 10 March it dropped to -87. Thus, interest rates in the British currency fell. The reaction of the exchange rate and of interest rates was fairly short-lived. Why? From 18 March 2009 Fed has significantly

increased its QE programme. These two banks at the same time conducted a similar unconventional monetary policy. From the data presented in the Figure 14, it is clear, that Fed won this competition (dollar and US interest rates declined).

Increase of purchases in October 2011, and in February 2012 brought similar, but also short-term effects.

Figure 14. GBP/USD Exchange Rate and GBP/USD CBS Basis from 1 March to 20 April 2009

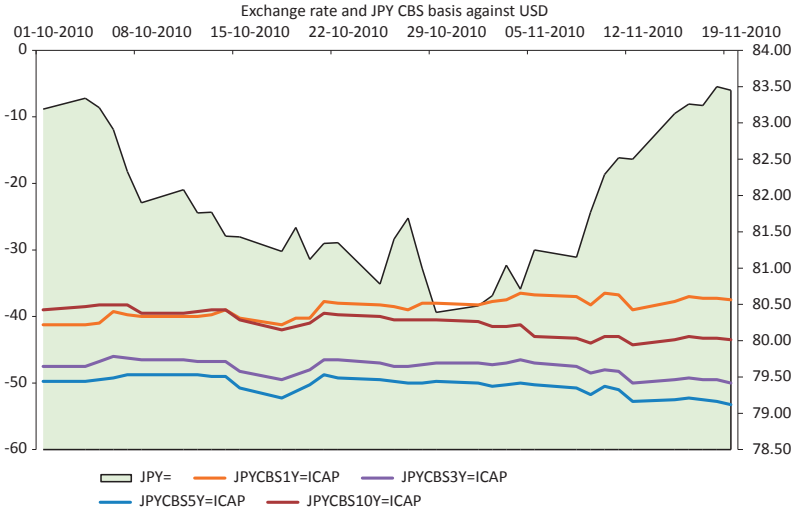


Source: Own research based on Thomson-Reuters data.

5.2.3. Bank of Japan

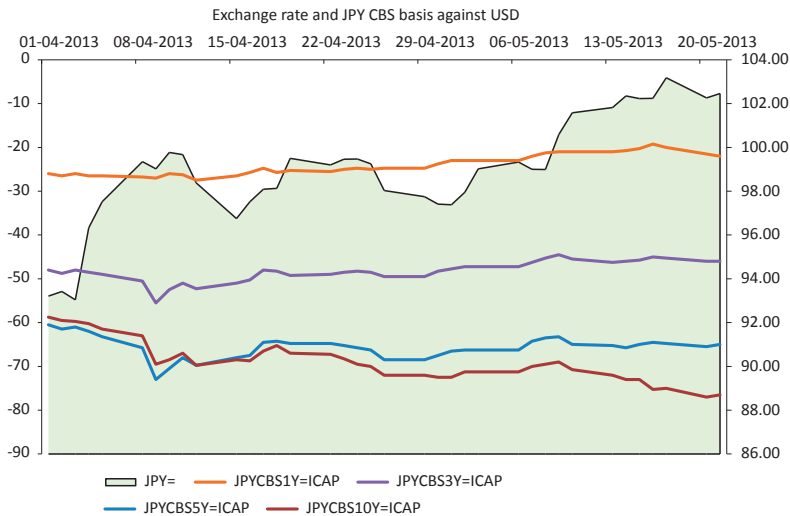
QE programme, started by the BoJ in early October 2010 brought slight effects (the amounts proposed were quite modest). But it is worth noting that the USD/JPY exchange rate rose from 80.39 on 29 October 2010 to the level of 83.50 on 18 November 2010 (amounts for purchase of securities have been increased, and it resulted in the depreciation of yen).

Figure 15. USD/JPY Exchange Rate and USD/JPY CBS Basis from 1 October to 20 November 2010



Source: Own research based on Thomson-Reuters data.

Figure 16. USD/JPY Exchange Rate and USD/JPY CBS Basis from 1 April to 21 May 2013



Source: Own research based on Thomson-Reuters data.

A significant increase of QE, which started on April 4 2013, resulted in the appreciation of yen and the relatively slight reduction of interest rates.

5.2.4. European Central Bank

Covered Bonds

On 9 May 2009 it was established that the ECB will buy covered bonds. The effects of the programme in terms of decrease of interest rates and of the exchange rate, due to the small amounts of purchases, were small.

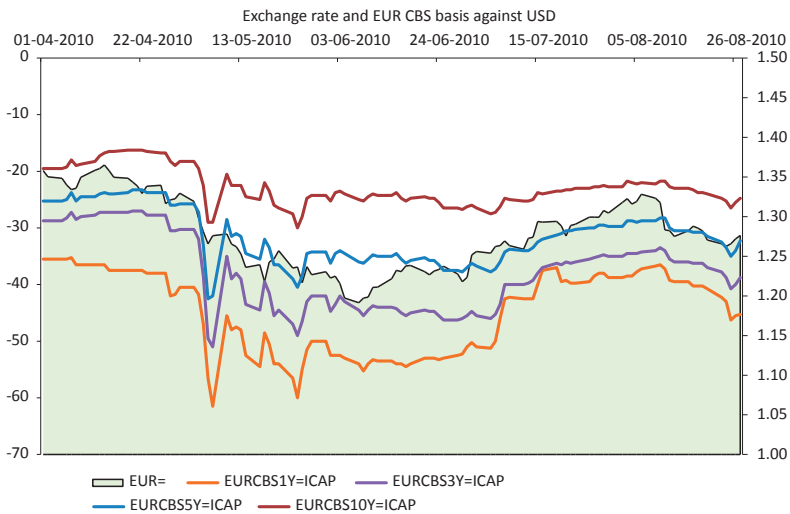
SMP1

The European Central Bank started buying government bonds in May 2010 (based on the decision of the Governing Council of 10 May 2010). As already mentioned, by the end of March 2011, the ECB bought government bonds of Greece, Ireland and Portugal to the net amount of 73 billion EUR.

Basis for CBS 1Y transactions fell sharply (from -40.5 level on 3 May 2010 to -61.5 level on 7 May of the same year. This meant a decrease of interest rates in the currency of the euro zone countries and the increase of interest rates in the US dollar.

Since the beginning of May 2010 until 7 June of the same year, euro depreciated from 1.32 USD/EUR to 1.20 USD/EUR (dollar has strengthened).

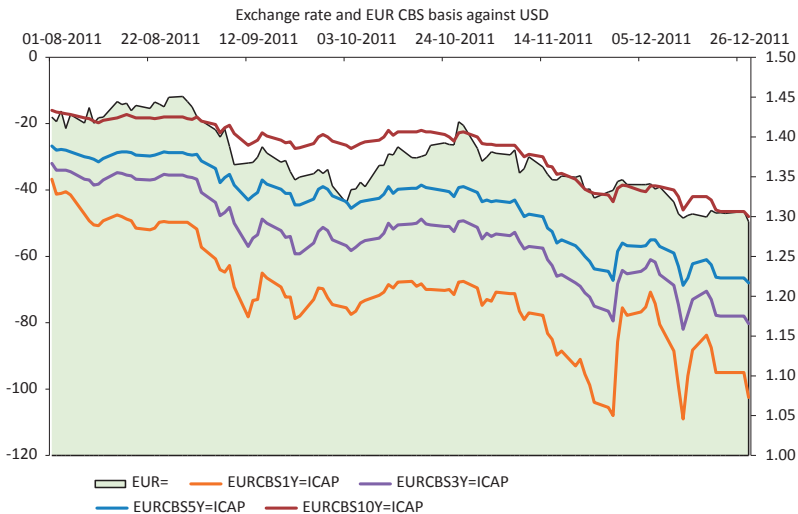
Figure 17. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 April to 28 August 2010



Source: Own research based on Thomson-Reuters data.

SMP2

Figure 18. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 August to 28 December 2011



Source: Own research based on Thomson-Reuters data.

The second stage of SMP began in early August 2011. Basis for 1Y CBS transactions fell sharply (from -37 on 1 August 2011 to -108 on 29 November 2011). This meant a decrease of interest rates in EUR and the increase of interest rates in USD.

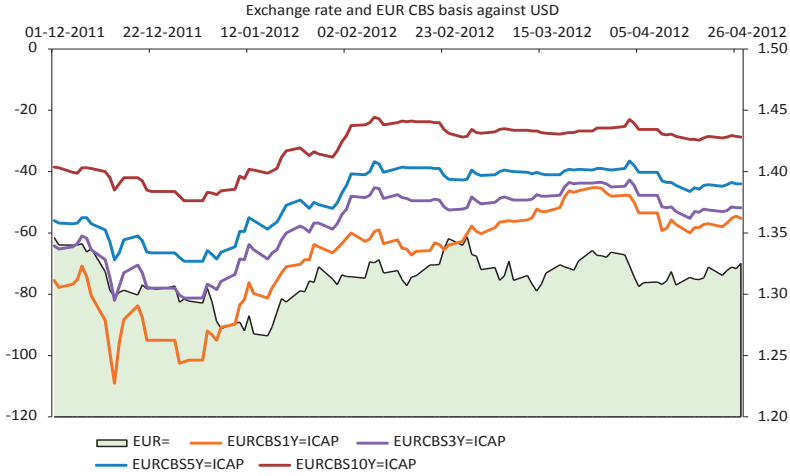
From the beginning of August 2011 to the end of December of the same year, the euro depreciated from 1.43 USD/EUR to 1.29 USD/EUR (dollar strengthened).

LTRO

As mentioned earlier, on 22 December 2011 the ECB conducted the first three-year operation, supplying banks with the amount of 480 billion EUR. Its maturity is on January 29 2015. On 1 March 2012 the ECB conducted a second three-year operation, supplying banks with the amount of 530 billion EUR, of which maturity date is 26 February 2015.

Each of these operations resulted in a decrease of interest rates and euro's depreciation. Of course, the first of these operations has brought greater effects than the second one.

Figure 19. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 December 2011 to 27 April 2012

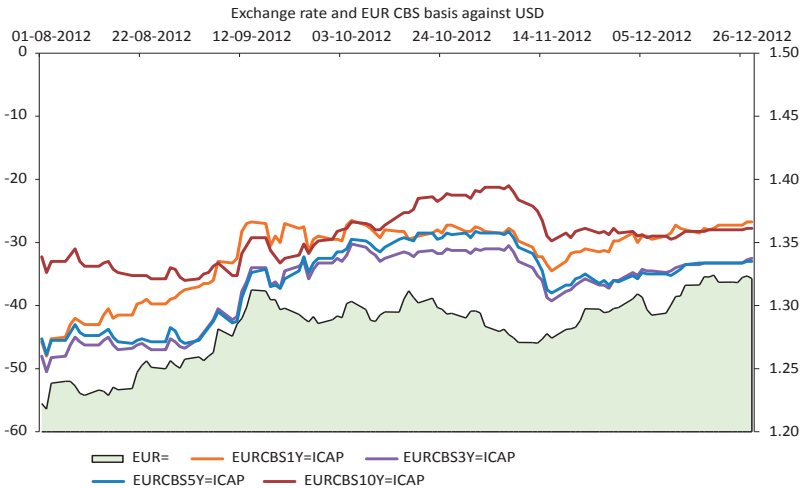


Source: Own research based on Thomson-Reuters data.

OMT

On 6 September 2012 the ECB announced the launch of the OMT programme (Outright Monetary Transactions), which, as already mentioned, did not differ much from SMP. The programme resulted in a slight weakening of the euro. The response of interest rates was low. The ECB has not made any purchases of government securities under this programme.

Figure 20. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 August to 28 December 2012

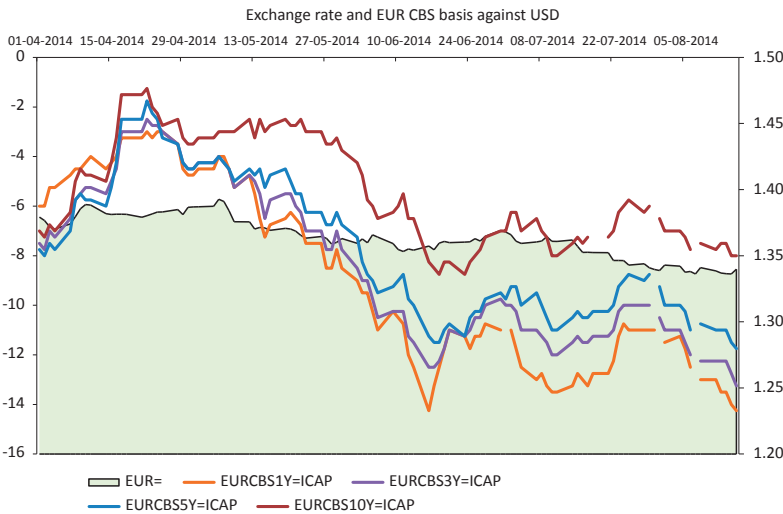


Source: Own research based on Thomson-Reuters data.

TLTRO

On 5 June 2014 the ECB announced the launch of the TLTRO programme and ABS purchases (it did not rule out the purchase of bonds under QE). Interest rates in euro and its exchange rate dropped. Euro’s exchange rate also weakened due to the good economic data from the US economy.

Figure 21. EUR/USD Exchange Rate and EUR/USD CBS Basis from 1 April to 15 August 2014



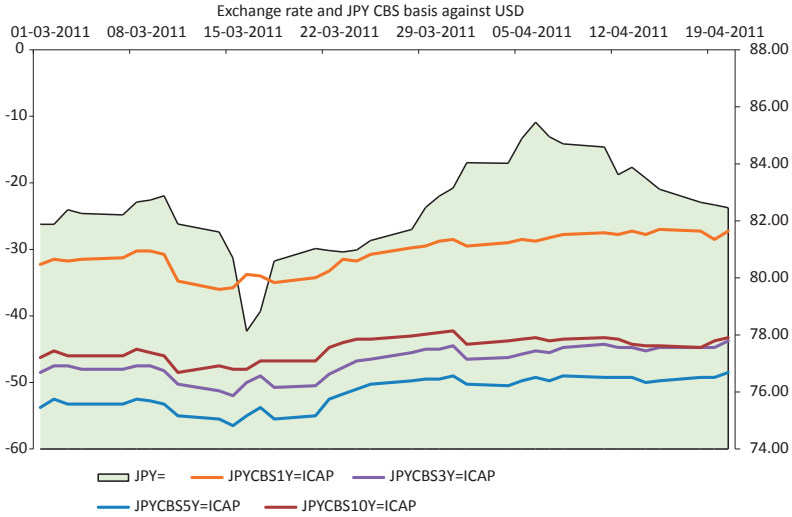
Source: Own research based on Thomson-Reuters data.

5.3. Currency Interventions

5.3.1. Japan

Figure 22 shows the effects of coordinated intervention of G7 central banks, conducted in order to weaken the yen. The exchange rate of USD/JPY rose in the period from 16 March 2011 to April 6 2011 from 78.13 to 85.46. The response of interest rates was very weak. They decreased by only two basis points.

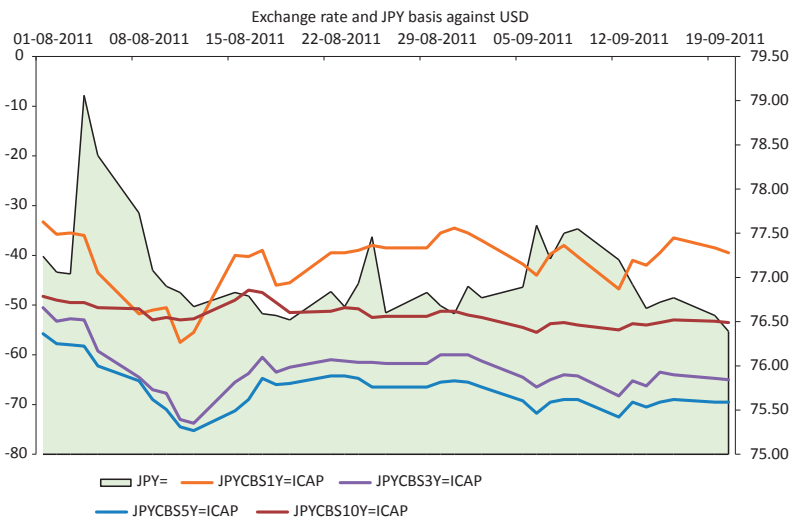
Figure 22. USD/JPY Exchange Rate and USD/JPY CBS Basis from 1 March to 20 April 2011



Source: Own research based on Thomson-Reuters data.

On the Figure 23 one has shown the effects of interventions from the beginning of August 2011. Exchange rate of USD/ PY rose from 77.04 on 3 August to 79.06 level on 4 August. Basis for 1Y CBS decreased from -35.5 on 3 August to -57.5 on 11 August.

Figure 23. USD/JPY Exchange Rate and USD/JPY CBS Basis from 1 August to 19 September 2011

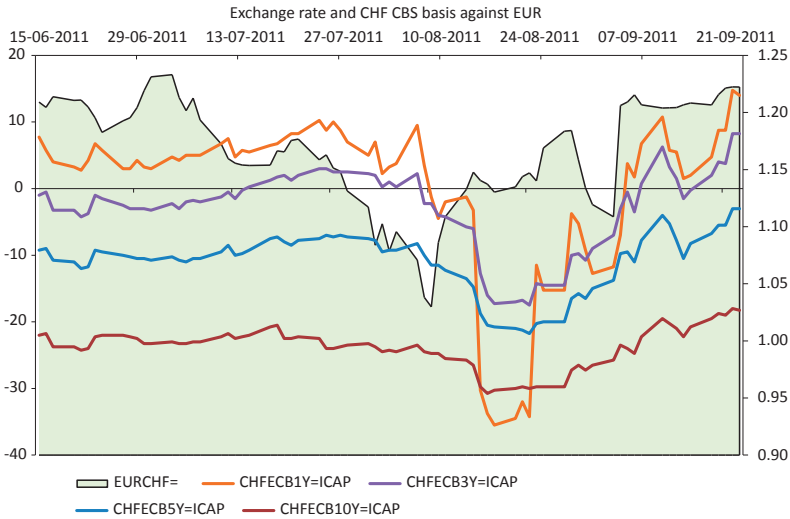


Source: Own research based on Thomson-Reuters data.

5.3.2. Switzerland

The Swiss National Bank successively conducted currency interventions, whose aim was, as already mentioned, to fight against the Swiss franc appreciation and deflation. Large-scale interventions were carried out especially in August 2011.

Figure 24. EUR/CHF Exchange Rate and EUR/CHF CBS Basis from 15 June to 23 September 2011



Source: Own research based on Thomson-Reuters data.

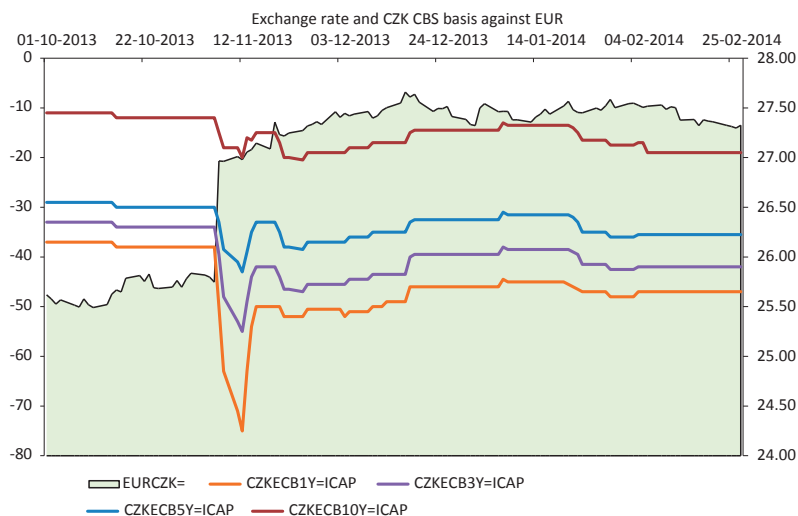
On 6 September 2011 SNB said it would continue its currency interventions in order to prevent excessive strengthening of the franc. The effects of these interventions (especially related to fixing the EUR/CHF exchange rate at 1.2, which was mentioned earlier) can be clearly seen in Figure 24.

5.3.3. The Czech Republic

On 7 November 2013 and in the next few days, the Czech National Bank sold 200 billion korunas (9.91 billion USD). At 5 p.m. on 7 November, the EUR/CZK exchange rate amounted to 26.957, while the closing price of the previous day stood at 25.788. At 12 a.m. on 7 November (for a moment before the intervention) it amounted to 25.767. Koruna depreciated by 4.5%.

CBS quotations for all maturities of up to 20 years, but especially transactions with a maturity of one year, reacted strongly on interventions. Basis for CBS with a maturity of one year began to fall from 4 November (before the intervention). It amounted then to -38 . On 7 November, at 12 a.m. it dropped to -45 . The next day at 9.00 a.m. it amounted to -63 and on November 11 it dropped to -81 .

Figure 25. EUR/CZK Exchange Rate and EUR/CZK CBS Basis from 1 October 2013 to 27 February 2014



Source: Own research based on Thomson-Reuters data.

6. Should NBP Use Unconventional Monetary Policy Tools?

Let us quote the statement of the President of the NBP of 23 July 2014: “Neither the president of the NBP nor MPC are not enthusiastic about the unconventional monetary policy (...). The use of it carries threats whose scale and nature we do not precisely know” [Belka, 2014].

Unconventional monetary policy is conducted when the level of the base rate is close to zero. Thus, the NBP may, in the first place, continue to improve the competitiveness of the Polish economy by lowering the reference rate. The NBP’s reasonable monetary policy in August and subsequent months of 2014 consisted of successive lowering of the basic interest rate.

The NBP may also use currency interventions involving the purchase of foreign currency, achieving effects similar to the effects of unconventional monetary policy.

Subsequently, the need for long-term liquidity supply operations can be considered. As a last resort, the purchase of government or other securities can be also considered. It is worth noting that just signalling the start of the unconventional monetary policy can have a big impact on the depreciation of PLN and on reducing domestic interest rates.

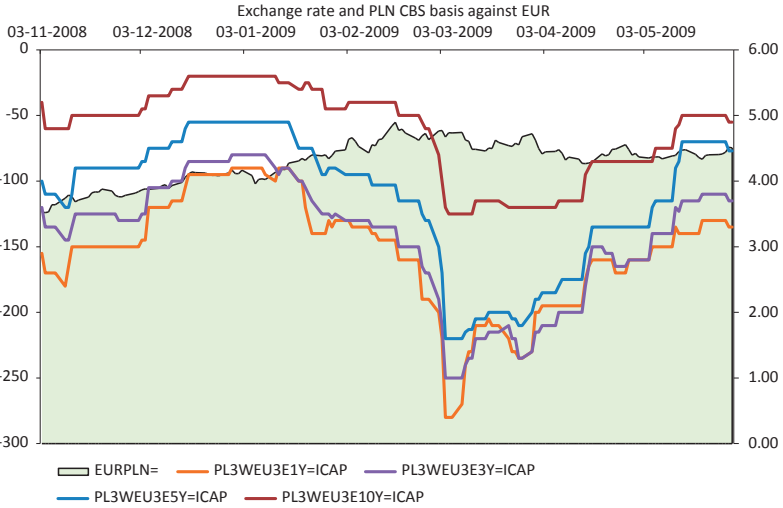
The use of the discussed monetary policy instruments, including instruments of unconventional monetary policy, will be necessary in the conditions of deflation and negative GDP growth rates. It should not, therefore, be excluded that the NBP will use unconventional monetary policy in the future.

One should consider the effects for Poland of applying by some countries of QE selected instruments and conducting foreign exchange interventions. Figure 26 shows the response of the EUR/PLN and PLN CBS basis for interest rates in the Polish currency to QE instruments used by the Fed, and to introduction of QE by the BoE. After the announcement of QE1 EUR/PLN exchange rate, however, continued to rise and on 18 February 2009, it reached the level of 4.8795. Only from that day began the tendency of strengthening PLN, which lasted for two years. Basis for CBS rose from the second half of November 2008 until mid-January 2009 (it was the effect of QE1). From mid-January to 4 March 2009, 1Y CBS basis decreased to -280 (there was a sharp decline of interest rates in PLN). This meant that the cost of acquiring foreign currency (euro) by the bank in Poland was almost 3 percentage points higher than the corresponding depo rates on the interbank euro market. It was the most adverse change for banks in Poland, which took place during the crisis.

From mid-January to early March 2009 euro behaved similarly, (there was a gradual appreciation of the euro and a decrease of interest rates in this currency).

The situation began to change radically from March 4, 2009. The Bank of England announced its QE programme and in the same month, Fed announced a significant increase in the scale of QE1. Polish zloty began to strengthen and CBS basis in PLN increased (interest rates in PLN increased).

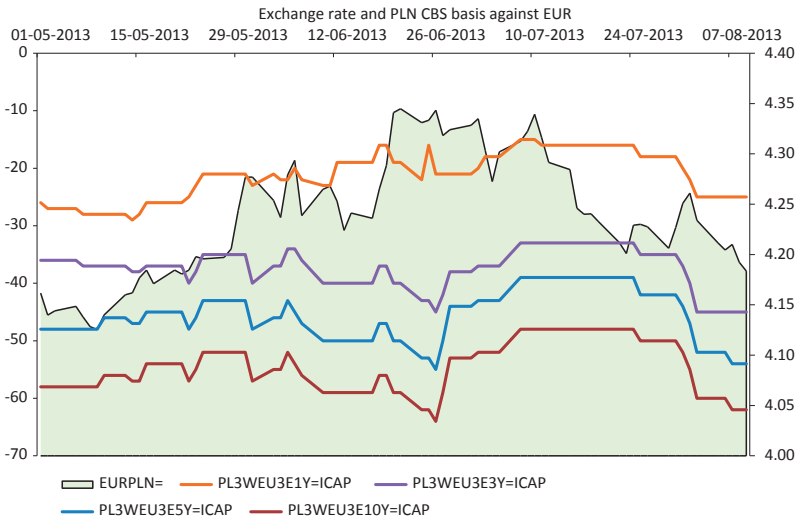
Figure 26. EUR/PLN Exchange Rate and EUR/PLN CBS Basis from 1 November 2008 to 31 May 2009



Source: Own research based on Thomson-Reuters data.

Figure 27 presents the reaction on tapering programme. PLN’s exchange rate has weakened; interest rates in PLN have fallen.

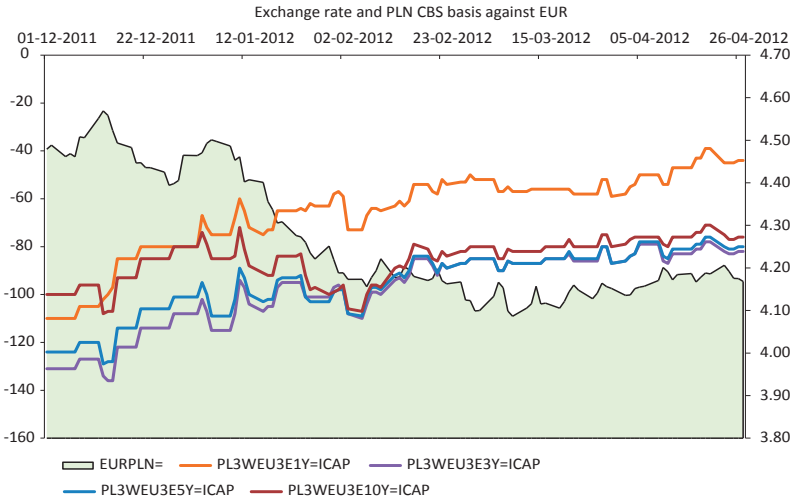
Figure 27. EUR/PLN Exchange Rate and PLN/EUR CBS Basis from 1 May to 9 August 2013



Source: Own research based on Thomson-Reuters data.

Figure 28 presents the reaction on LTRO programme. PLN's exchange rate has strengthened; interest rates in PLN have increased.

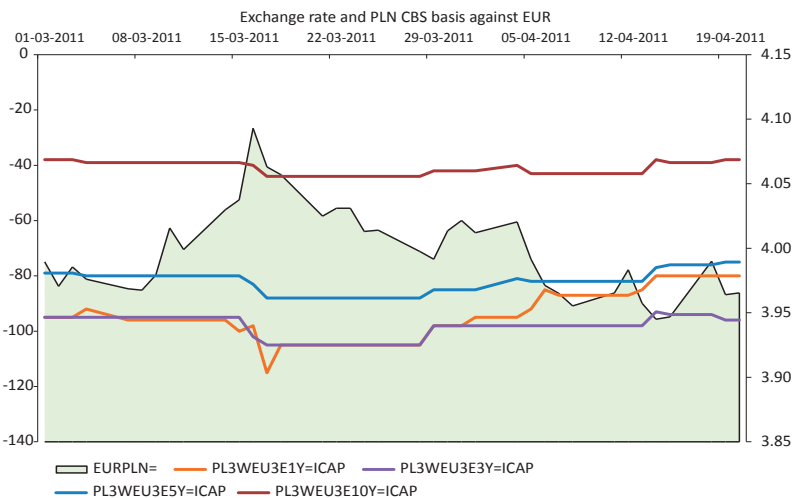
Figure 28. EUR/PLN Exchange Rate and PLN/EUR CBS Basis from 1 December 2011 to 27 April 2012



Source: Own research based on Thomson-Reuters data.

Figure 29 shows the response to the coordinated G7 currency intervention in the form of LTRO, carried out in order to weaken yen in March 2011. PLN has strengthened, interest in PLN increased slightly.

Figure 29. EUR/PLN Exchange Rate and PLN/USD CBS Basis from 1 March to 20 April 2011



Source: Own research based on Thomson-Reuters data.

Summary

The objectives of the study carried out for the purposes of this chapter are:

1. Presentation of the conventional tools of monetary policy of the European Central Bank (ECB) and the Polish National Bank (NBP).
2. Comparison of QE (quantitative easing) unconventional monetary policy with currency interventions (theoretical aspects).
3. Presentation of the mechanisms and effects of unconventional monetary policy conducted by major central banks in the world (Fed, Bank of England, Bank of Japan, European Central Bank).
4. Presentation of the mechanisms and effects of currency interventions (an alternative to QE), conducted by selected central banks (Bank of Japan, Swiss National Bank, National Bank of the Czech Republic).
5. Presentation of the effects of QE and currency interventions with a use CBS transaction (currency basis swap).
6. The answer to the question whether the NBP should use unconventional monetary policy tools.

The conclusions of research presented in this chapter focus on the possibility for the NBP of introducing QE unconventional monetary policy or currency interventions. General conclusion is that currently there is no need to use unconventional monetary policy instruments by the NBP. The NBP has a great number of options for defence against QE or currency interventions of other countries in the form of at least a substantial reduction of the basic interest rate. However, we cannot exclude the possibility of the use of such instruments in the future.

Key achievements (creative contribution of the author) are:

1. Comparison of the effects of unconventional monetary policy instruments with currency interventions involving the purchase of foreign currencies by the central bank.
2. Presentation of the effects of unconventional monetary policy and the effects of central bank's currency interventions with a use of CBS transactions (currency basis swap).
3. Presentation of the proposal of use by the NBP of monetary policy tools in response to the unconventional monetary policies of major central banks, including the ECB.

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Tomasz Dołęgowski

Poland in the European Union. Dilemmas and Visions of Competitiveness

Introduction

After 10 years of the legacy of Polish membership in the European Union, an important and interesting aspect of reflection on its implications for international competitiveness appears. It should be considered in the context of the position and competitiveness of Poland (obtained through the integration processes) and the prospects for the European Union's competitiveness in the world. According to the author, however, it should not be confined to a simplified view of the competitiveness. On the contrary, the same time one should at take into account the modern approach to competitiveness, as well as an interest in the relationship between competitiveness and the concept of the common good and the quality of life. One should also analyze the experience of selected countries and learn about the latest concepts in this field. According to the author, it is necessary and justified to take a fresh look at the integration processes happening in Europe and the Polish participation in these processes, combining a modern approach to competitiveness and the concept of the common good. In this context, concepts of the authors linked to catholic social teaching (S. Zamagni), the experience of Finland and the thoughts of theoretical professionals associated with the Finnish Innovation Fund (SITRA) may be an interesting source of inspiration.

1. The Concept of Competitiveness and Its Evolution

Traditionally, competitiveness is considered to be an ability to compete and to create long-term, stable and sustainable growth and development.

According to the authors of *The World Competitiveness Report 1994* [UN, 1994, p. 18] international competitiveness is the ability of a country or company to create

(proportionally) greater wealth than that which is created by the competitors in the global markets. Competitiveness is a combination of resources (natural or man-made), processes (involving the processing resources in the economic effects) and the internationalization of economic activity.

In *The World Competitiveness Yearbook*, international competitiveness is defined as a country's ability to create added value and thus to increase the national wealth through proper management of resources and processes, attractiveness and aggressiveness, taking into account the global and local dimension, as well as to integrate it all into a single, coherent economic and social model [IMD, 2000, p. 6]. It seems that such a notion of competitiveness is quite broad and does not exclude taking into account the social and community values, but rather assumes including them to a greater or lesser extent, what the author will try to show later in this chapter.

Competitiveness is recognized today as one of the most important objects of reflection in economics, political science and management. It is one of the paradigms of modern scientific thought. At the same time, it raises a number of controversies, doubts and contributes to the formation of many conflicting opinions. It is typical that the experts, alongside traditional factors (generally related to the amount of resources) of the international competitiveness of countries and companies, are increasingly interested in the so-called soft factors, relating specifically to the institutional environment: the cultural, ethical and religious. Not without reason, some researchers introduce the concept of literature institutional competitiveness.

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The international competitiveness is generally considered in the micro- and macro-economic dimension, and therefore as the competitiveness of the company or a country (the national economy). Some also highlight the mezzo- (regions and industries and sectors of the economy) and mega-level competitiveness (competitiveness of large economic areas, such as the European Union). Nowadays, the interrelationship of all these dimensions of competitiveness is more and more clearly recognized.

Increasingly, attention is drawn to the fact that excessive and one-sided focus on narrowly considered competition and competitiveness may be harmful and cause

dangerous and negative side effects associated with economic development. P. Krugman [1994] pointed it out to in the article *Competitiveness: a Dangerous Obsession*, criticizing an excessive and inadequate, in his opinion, focus on competitiveness at the macro level¹. Among the many authors who draw attention to the dilemmas of competitiveness, researchers such as S. Ghoshal and L. Zsolnai should be mentioned, together with those associated with the so-called Lisbon group. An interesting document, composed by representatives of that group among other works was *The Limits to Competition*, written under the direction of R. Petrila [1996]. Similar views are presented in its collective work *The Collaborative Enterprise* by A. Tencati and L. Zsolnai. They strongly criticize the one-sided focus on competition and the resulting competitiveness as the harmful and dangerous tendency from the point of view of the concept of sustainable development [Tencati, Zsolnai, 2010, p. 3].

L. Zsolnai and A. Tencati [2010, p. 9] argue that the strength of the company and its sustainable development depends on adaptation of the company and its functions to the environmental, cultural and social context. By creating value for all people strongly interested in developing business, enterprise may also achieve its business goals and success.

According to the report, the Lisbon Group concern about competition and competitiveness should be balanced by placing similar emphasis on collaboration and co-operation, because only in this way, the expectations and needs of all stakeholder groups can be met [Petrela, "Lisbon Group", 1996].

On the other hand, many specialists interested in the idea of competitiveness are increasingly turning attention to the fact that the modern understanding of competitiveness is different from the traditional, and that today's discussion about competitiveness, it is also enriched by the social, ethical and environmental dimension. Contemporary international competitiveness rankings, such as *the World Competitiveness Yearbook*, *The Global Competitiveness Report*, *Index of Economic Freedom*, *Corruption Transparency International Perceptions Index*, also take into account institutional, ethical, social and environmental aspects of competitiveness.

Currently, the authors are focusing on a simplified approach to the concept of competitiveness is still insufficient and limited.

¹ According to P. Krugman competitiveness should be analyzed primarily at micro and mezzo level. J. Dunning and M. Porter presented critique of the Krugman's views by noting the importance of the institutional environment for the development of the competitiveness of enterprises.

2. The Lisbon 2020 Strategy and Poland

The European Union agreed at the Lisbon summit in 2000 that its ambition and goal to achieve by 2010 is to become the most competitive economy in the world, based on knowledge and on the concept of growth and sustainable development. The project is described as the Lisbon Strategy. Despite the large ambitions, it cannot, unfortunately, be described as the success. As a result, the European Union has decided to continue its program under the name of “Europe 2020”.

The principles implementation of the Lisbon strategy has proved to be a difficult task and only partially finished successfully. Sometimes critics point out that one of the causes of mediocre results of this concept was taking too many priorities at the stage of creating the basis of this strategy. Other sources of problems are simultaneous accession to the EU of the Central European countries, and a significantly different level of competitiveness of European countries, as well as the simultaneous implementation of these countries quite different concepts of development. Critics highlighted that the concept of sustainable development and corporate social responsibility, recognized by the European Union as a priority, have been prioritized by national governments and by companies in different countries across the continent on a various level. Most often, these issues were considered important by the Nordic countries, to a certain extent by Germany, the United Kingdom and the Netherlands, in the slightest degree by the countries of Southern Europe and the new member states as a rule.

Currently, modified and improved (simplified) Lisbon Strategy was transformed into a project “Europe 2020”. This project also envisages taking into account in its implementation social values, including the concept of corporate social responsibility and sustainable development.

In the world competitiveness rankings, Poland takes a high place on a global scale, but in comparison to the most EU member states it is a rather distant position². It remains an open question what vision of supporting the competitiveness is the best from our point of view. It seems that for Poland, as well as for other Central European countries, it is particularly important to merge strategy of promoting the competitiveness with the policy of social and territorial cohesion.

² According to *The World Competitiveness Yearbook 2013* Poland occupies 37th place in the world, according to *The Global Competitiveness Report 2013*, our country is ranked 42nd position among 132 countries surveyed, according to *the Index of Economic Freedom* Poland is on the 50th place, while *the Corruption Perceptions of Transparency International index* reports that Poland takes the 38th place out of 178 countries surveyed.

Analyzing the way of thinking on the European and Polish model of competitiveness in terms of integration, attention should be paid to two groups of inspiration. On the one hand, I mean writers associated with personalism, ordoliberalism and Catholic social teaching. The second interesting source of inspiration is the Nordic experience and theoretical works of Scandinavian authors, especially in Finland, related to Finnish innovation fund SITRA.

3. Personalistic Orientation in the Reflection on Competitiveness

In the beginning of the twenty-first century, a particular environment centered on Stefano Zamagni represents an interesting trend in considerations of competitiveness. He is one of Italy's leading economists, a professor at the University of Bologna. He is also one of the advisors and consultants of the Vatican City. It is believed that he was consulted in preparation of Benedict XVI's encyclical *Caritas in Veritate*. He is considered a prominent expert on the issue of Catholic social teaching, social responsibility, methodology and philosophy of science (especially the relationship between ethics and economics). He is known for his studies on the economic analysis of the phenomenon of altruism, the so-called social economy, history of economic thought and social and economic history, the history of the cooperative movement and its workers, an alternative to the dominant paradigm concept of business organizations and the market economy and the methods for measuring the quality of life, social well-being and happiness [Bruni, Zamagni, 2007].

He is primarily a major authority on the NGO sector and its role in the modern economy and society [Bruni, Zamagni, 2014]. According to him, one of the ways to overcome the crisis is also, and perhaps above all, the return of political and economic elites, especially in the European context, to thinking in terms of personalism, solidarity and subsidiarity. As a historian of economic thought, S. Zamagni also drew attention to a little-known Italian approach to classical thought of the eighteenth century, which in his opinion in a much deeper way than the English enlightenment thought on the role of trust and social capital building prosperity (the concept of relational goods).

Currently Stefano Zamagni sees the coexistence of at least three models of capitalism and the market economy. In his opinion, one can distinguish the typical neo-liberal model for the US and partly also for the United Kingdom, the social market economy, typical especially for Germany and most European Union countries, and

finally the resurgent civil model economy, which is present in Europe (especially in Italy) until the end of the eighteenth century and now.

These economic models are accompanied by three different ways of control: the free market (the price mechanism and competition), the government (state-hierarchical model) and governance, which includes various forms of cooperation. The last one is especially representative for the cooperative sector, but not exclusively. It can be observed in the case of companies operating within the social economy, “economy of communion” (creation of joint ventures by people inspired by similar ethics) and many others. According to S. Zamagni, the neo-liberal model form corresponds most with competitive social market economy, strong position of the state and civil model – a spirit of cooperation.

In fact, none of the models is present in pure form. Most economic systems are to lesser or greater degree a mixture (synthesis and coexistence) of abovementioned models and methods of adjustment. Healthy economic and social system should promote such a situation. In his opinion, it is advisable to increase the number of entities of the civil economy model. According to S. Zamagni, civil economy can be an antidote to the contemporary challenges of globalization and European economic integration.

4. Finnish Vision of Competitiveness. Inspiration for Poland and the Baltic Republics

While Stefano Zamagni represents the catholic and Italian influences, on the other hand, the experience of Finland may be interesting for Poland. This is due to the fact that in recent decades, this country has become a leader in the field of building a competitive knowledge-based economy, as well as implementing corporate social responsibility and sustainable development.

For the centuries, the territory of today’s Finland was regarded as a clearly peripheral area. Until the beginning of the nineteenth century, the country belonged to the Kingdom of Sweden, and then it was an autonomous part of the Russian Empire. As a consequence, there are some analogies to Poland. The final result of the independence trends (initially quite limited) was a revolution in Russia. The dramatic experience of the Winter War with the Soviet Union at the turn of the year 1939–1940 and the World War II show that the country was in the Soviet sphere of influence, but saved its independence, democracy and the market economy model. Finnish economy then relied heavily on Soviet receptive market. The collapse of the USSR in the early 90s

caused a serious economic crisis, as a result of which the country introduced a major reorientation and modernization. This resulted in the accession to the European Union and the construction of a modern knowledge-based economy. From a relatively peripheral country Finland became one of the leaders of modernization.

It can be stated that Finland is today one of the countries with a particularly high level of competitiveness and significant achievements in the field of social innovation. It occupies a high position in the majority of indices analyzing economic competitiveness and quality of life; it is also among the world leaders in building competitive advantage. In addition, it is characterized by a high level of social capital and low level of corruption, high level of education and investment in research and development and, finally, innovation, information society and the welfare state [Castells, Himanen, 2009].

Rankings show that the success of Finland is based on a combination of positive change in macroeconomic indicators, care for the infrastructure (telecommunications, transport) and the environment (growth and sustainable development). Finland introduces the principles adopted in the framework of the Lisbon Strategy and the Europe 2020 strategy in this context – synthesis of a highly competitive knowledge-based economy and sustainable development, which means a strong orientation towards eco-development and the implementation of corporate strategies principles of Corporate Social Responsibility.

The high quality of public institutions on a macro level (the quality of the state), as well as on microeconomic level is also Finland's success. The advanced social dialogue in the country is, among others, an indicator of high-quality institutions. Dialogue and cooperation is an important element of the governance of public life but also a corporate culture of many companies. It seems as one of the most important experiences of Finland and Scandinavia in general, which should inspire the countries from Central and Eastern Europe.

5. The National Fund for Research and Development (SITRA)

An important role in the formation of the Finnish socio-economic model in recent years was played by a variety of public institutions, especially SITRA. SITRA is a state agency dedicated to promoting the competitiveness of the economy of Finland and studies of its future development. It is an organization with the status of a foundation but appointed by the Finnish authorities. SITRA president is appointed by and

reporting to the parliament, which gives it a high and relatively independent status and further demonstrates the unusual nature of the agency³.

SITRA acts as a center of studies (science and research think-tank) and as a foundation supporting efforts to foster competitiveness and innovation. This institution is also involved in obtaining financing (particularly for venture capital) for initiatives supporting competitiveness [Wierzbołowski, 2003, p. 70].

SITRA's particular concern are, among others, issues related to ecology and ecological investments, health care, food production (especially the healthy food), establishment of clusters, support the competitiveness of the less developed countries (e.g. India), the promotion of international cooperation (in including cross-border with Russia). SITRA's specialists are interested in studies on competitiveness in the global economy (with particular emphasis on the competitiveness of small countries) and on the social and institutional dimensions of competitiveness. In the latter case, the aim is to promote social responsibility in the economy and business, as well as to promote wider field of social innovation⁴.

The attention should be brought to the evolution of interests of T. Hämäläinen and other SITRA's experts. Initially they focused on the competitiveness of economies. Later the area of research has shifted towards the theory of innovation (especially social innovation) and finally towards issues such as sustainable development and well-being of society (sustainable well-being). In the latter case, it is mostly done with focus on new paths for the economic development of the country, in the context of global and domestic crises and new barriers to growth.

In his systemic approach, T. Hämäläinen focuses on the fact that competitiveness itself should not be regarded as an ultimate goal. It is more a mean rather than the objective. It is an attempt to determine and quantify the economic opportunities of the country and its position in the international dimension in the framework of free (or rather, to some extent free) world economy. Competitive countries are those countries that may and are able to obtain benefits in the framework of an open international economy and – what is important – they are able to meet the economic and social needs. Countries that have lost competitiveness are those countries that are experiencing the associated lack of economic, political and social stability and adaptability.

T. Hämäläinen as a leading SITRA expert analyzes the success of the economy of the turn of 20th and 21st centuries and its great achievements⁵. But he also highlights

³ <http://www.sitra.fi/en>

⁴ *Ibidem*.

⁵ <http://www.sitra.fi/en> (Presentation of T. Hamalainen in Tallin, *Policies for Creating new Growth Areas*, Estonian Development Fund, Tallinn 2012).

some of its weaknesses and slowing characteristic of the early 21st century. The fast-growing Finland has experienced a “short of breath” (it is a manifestation of Nokia’s problems) and social problems, such as the scale of mental illness and suicides becoming greater than before.

As a consequence, there is a need for further elaboration on development of new strategies for innovation and innovation including building trust-based relationship which should be conducted by Finland and other countries at similar development level. Related concepts refer to the idea of systemic and holistic approach to the economy, innovative individuals and communities, user orientation and consumer-driven innovation combined with the demand, and finally, the globalization based on knowledge and the structure of a network.

In this context, the authors associated with SITRA call for the implementation of the so-called “open industrial policy”, which is better than the so-called “traditional policy”. This policy is characterized by, among others, striving to find and build new areas of competitive advantage and growth, focusing on supporting cooperation, removing barriers, reducing uncertainty. Primary instrument of this policy is to create and to facilitate the flow of new knowledge and the development of public-private partnerships. Major importance is given to effective and widely regarded political leadership and openness and transparency of the policy.

The development of evolutionary targeting becomes, according to T. Hämäläinen, a specific form of a modern, open industrial policy. In his opinion, this can be seen particularly clearly when analyzing the example of Israel. This type of policy concentrates on the experiments, making strategic choices and focus on long-term public-private partnership. In general, this policy concept assumes that in a turbulent and competitive global environment, important matter becomes a synthesis of structural changes, system adaptation and the choice of priorities⁶.

Recent studies and research promoted by SITRA and conducted by T. Hämäläinen consider the need to combine studies on the competitiveness of the economy with the promotion of social innovation, social responsibility, and promoting studies on the well-being, which is the economic theory of happiness and quality of life [Hamalainen, Michaelson, 2014].

⁶ Ibidem.

Implications for Poland

It seems that the search for a new paradigm for the Poland's development in the context of the 10-year-old Polish participation in the European Union is justified. It should, more than ever, emphasize the construction of a modern knowledge-based economy, improving the quality of social capital and to more take into account not only the narrowly conceived economic competitiveness, but also the ethical and social dimension. Poland is a member of the European Union, which was the home of Solidarity movement and John Paul II. The Institute for Market Economics and associated Civic Congress has made significant effort in this direction.

In the interest of our country, the researchers take into consideration the works written from the perspective of economic personalism (S. Zamagni) as well as the achievements of the Scandinavian countries. It is hard to assume whether predictions voiced by T. Hämäläinen and other SITRA experts may concern Poland. Nevertheless, they became a major source of inspiration for Estonia and other countries. SITRA, as well as the Finnish innovation support model, may and should be the subject of careful study and analysis in Poland, as it happens in Estonia [Wierzbowski, 2003, p. 109].

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Part II

Selected Aspects of Functioning of Poland in the European Union

Development of Poland's Foreign Trade after Its Accession to the European Union

Introduction

The tenth anniversary of Poland's accession to the European Union was an opportunity to undertake a number of studies on the changes that have occurred in the Polish economy, including those in foreign trade in the last decade [Czarny, Śledziwska, 2014, p. 95–116]. This chapter focuses on two threads, the author was looking for answers to the questions whether the positive changes that have been observed in Polish foreign trade in goods, associated with the Poland's accession to the EU, also concerned Polish trade in services and whether the conclusions on the changes in international trade would change, if one took a different way of measuring this trade and relied not on gross values, but on added value.

Analysing the development of Polish trade in the context of ten years of Poland's membership in the EU, one should take into account three important issues. Firstly, trade liberalisation, resulting in strengthened ties between Poland and the EU in the field of trade, began a dozen years before the Poland's accession to the EU. Therefore, part of the trade effects of integration, especially the so-called static ones, should have occurred well before 2004¹.

Secondly, the development of Polish trade, particularly trade connections between Poland and the EU, was the result not only of the Poland's accession to the customs union, but also of Poland's participation in the EU's internal market and, therefore, resulted from the fact that Poland was covered by the regulations of the internal market, including those not directly related to the trade exchange. Changes in foreign trade accompanied, in particular capital flows, in the form of foreign direct invest-

¹ Let us recall that association agreement between Poland and the European Communities, signed on 16 December 1991, of which part on trade came into force on 1 March 1992, provided for the liberalisation of trade, in particular the creation, during a period of ten years, of a free trade zone in relation to industrial goods. However, this did not prevent the introduction by the parties (mainly by members of the EEC) of the restrictions on access of goods to their markets [See: Kaliszuk, 2004].

ments². Poland's trade exchange with other countries was influenced in addition by transfers of funds from the EU budget, made in particular in the framework of the Union's cohesion policy and agricultural policy.

Thirdly, considering the issue of changes in the Poland's foreign trade, it should be remembered that the accession to the EU, which is considered to be one of the most important determinants of the development of Polish foreign trade in the last ten years, was not the only factor shaping Poland's foreign trade. Among the causes of a more general nature one should mention the so-called process of "catching up", i.e. reducing the gap between Poland and more economically advanced countries, in particular through the Poland's use of the pre-existing reserves in productivity³. Exchange rate, unit labour costs or economic cycles are the more specific factors directly affecting the Poland's foreign trade. It is worth noting that two-way dependency occurs between these factors and the foreign trade.

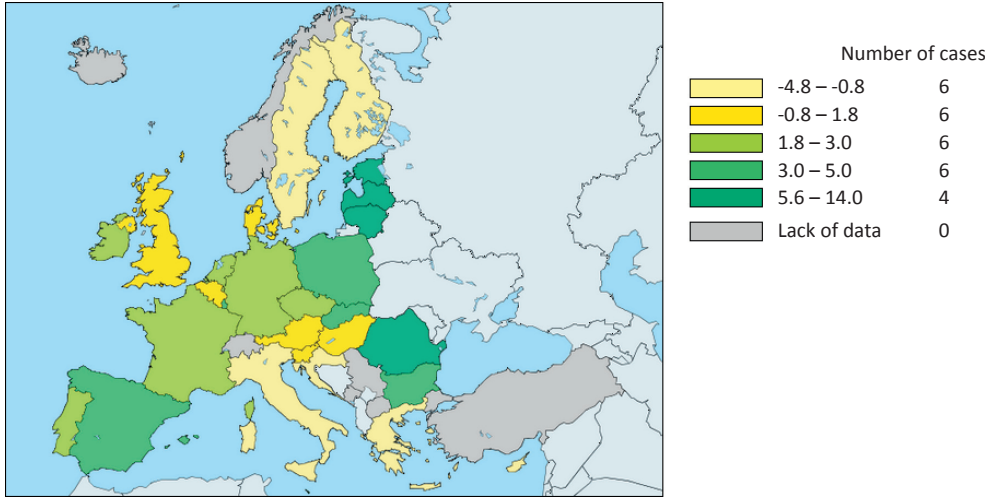
Since 2008 the development of Polish trade has been largely determined by external factors in the form of, firstly, the global economic crisis, and later, the sovereign debt crisis in some euro zone countries. As a result of the crisis in 2010, for the first time since 2001, Poland's share in total world exports of goods and services has declined, and continued to drop for the next two years. The largest decline (at the level of -2.6%) was recorded in 2012. The situation changed in 2013, when an increase in the share of Polish export of goods and services in global trade amounted to 5.5% and was among the highest in the EU (see map 1).

Indicators reflecting longer than annual changes of countries' shares in global exports show better structural changes in their economies and thus deserve a special attention in the context of changes in the level of competitiveness of the Polish economy. Statistics show that an increase in the level of competitiveness of Polish exports of goods and services, as measured by five-year changes of Poland's shares in total world exports, has occurred continuously since 1999 until 2012 (data for earlier years is not available). The highest increase in this share occurred in 2004 (equal to 55%). In 2013, for the first time, the Poland's share in total world exports of goods and services declined (by 0.4%) [Eurostat, 2014].

² This is confirmed by the report of the IMF [2013] on a closer bilateral trade links between the EU countries and Central Europe arising from the inclusion of the new member states into the German industry supply chain.

³ But an opposite conclusion can be drawn from the results of Poland in terms of innovations which are among the lowest in the EU. In the reports on this topic from the *Innovation Union Scoreboard*, published by the Commission [2007–2014], Poland constantly occupies the fourth or the fifth position from the end and belongs to the group of "weak innovators" or "moderate innovators". Moreover, the difference between the results of Poland and the EU average has increased. While the average annual growth rate of innovativeness performance in the EU in the period 2006–2013 amounted to 1.7%, it reached 0.9% in Poland in the same period.

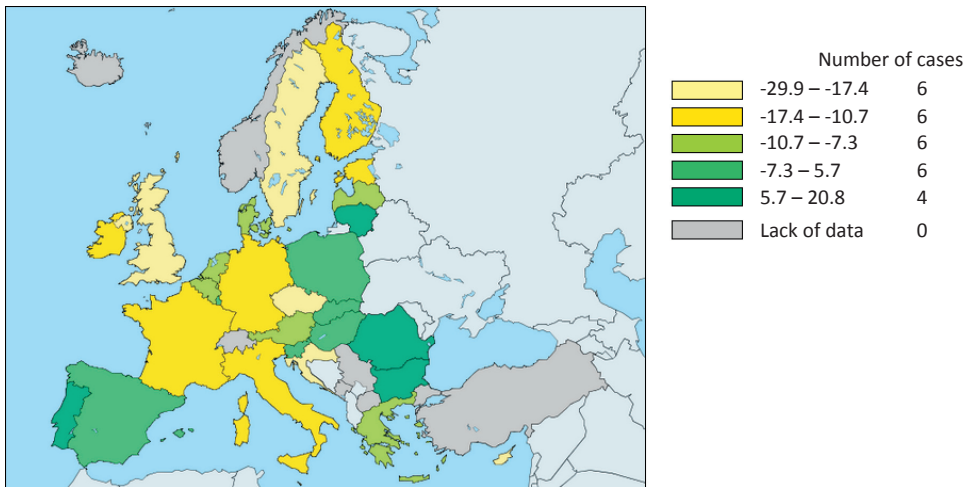
Map 1. Annual Changes of Shares in Total World Exports of Goods and Services in 2013 (%)



Note: Data come from the balance of payments; changes between 2013 and 2012.

Source: Based on Eurostat's data.

Map 2. Five-Year Changes of Shares in Total World Exports of Goods and Services in 2013 (%)



Note: Data come from the balance of payments; changes between 2013 and 2008.

Source: Based on Eurostat's data.

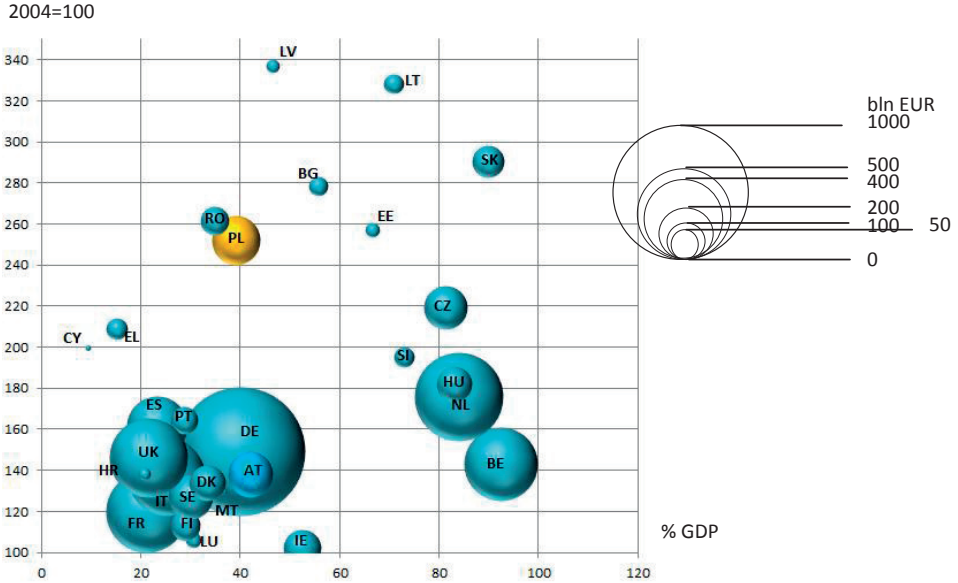
Map 2 shows the five-year changes of shares in total world exports of goods and services across the all EU countries in 2013. It is worth considering that the

situation of the EU countries varied within highlighted groups on the map. This applies especially to the group in which Poland is found. Both EU countries that in 2013 increased or decreased their share in global trade belong to that group. This means that, in addition to Poland, which, as already mentioned, recorded a slight decrease in its share in world trade, as well as Spain and Luxembourg, whose shares dropped by 7.1% and 6.8%, was Bulgaria, whose share in that trade increased by 5.7%. In addition, one should be aware of the existing diversity between the EU countries also in the year serving as a reference point for the analysis of changes in the share in global trade. For example, a five-year change of Poland's share in world exports of goods and services in 2008 amounted to +38.2%, while in Spain it amounted to -13.6%.

1. Trade in Goods

In terms of value of export of goods Poland occupied the 8th place among the EU countries, behind Germany, the Netherlands, France, Great Britain, Italy, Belgium and Spain in 2013 (see Figure 1). Except from Sweden, which is not present on the list, a group of countries that are major exporters in the EU coincided, although in a different order, with a group of countries with the highest GDP in the European Union. On the other hand, if the value of exports of countries was referred to the level of their GDP, it would turn out that Poland took place in the middle of the list, ranked in the 14th place with the level closest to the result of the German economy and amounting to approx. 40%. Economies of Belgium, Slovakia, the Netherlands, Hungary and the Czech Republic were most integrated in this respect in 2013. In the years 2004–2013 the value of Polish exports of goods increased by two and a half, surpassing the growth rate recorded not only by the EU's biggest exporters, but also by the other half of the EU Member States, which, like Poland, joined the union after 2003. The highest growth rate of exports, exceeding 200%, was found in Latvia and Lithuania. Among the EU-15 export of goods most dynamically developed in Greece, increasing by approx. 110%.

Figure 1. Export of Goods of the EU Countries in 2013 (% GDP, the Dynamics: 2004 = 100, in Billion EUR, Current Prices)

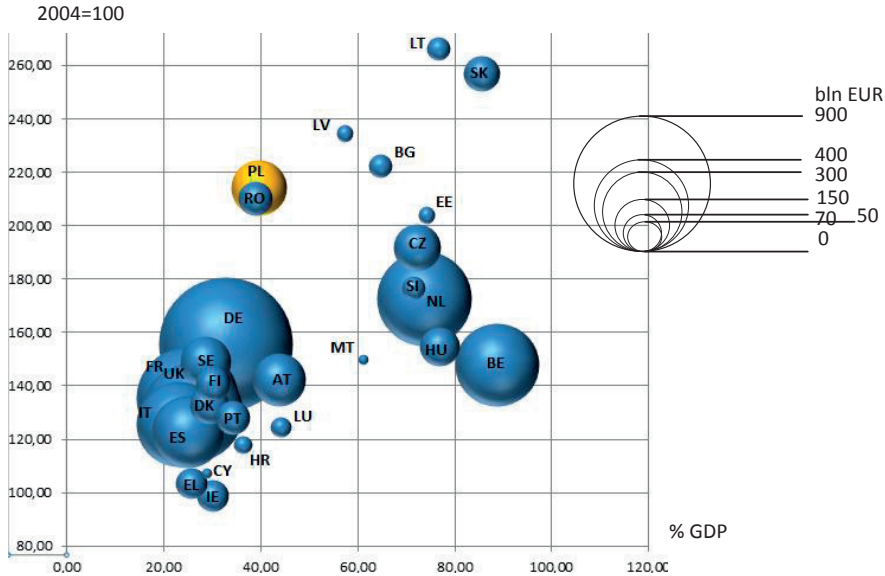


Comments: X axis– export in 2013 as a % of GDP; Y axis – growth dynamics in 2004–2013; size of the point on the figure reflects the value of export in 2013.
 Legend: BE – Belgium, BG – Bulgaria, CZ – The Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, IE – Ireland, GR – Greece, ES – Spain, FR – France, IT – Italy, CY – Cyprus, LV – Latvia, LT – Lithuania, LU – Luxembourg, HR – Croatia, HU – Hungary, MT – Malta, AT – Austria, NL – The Netherlands, PL – Poland, PT – Portugal, RO – Romania, SI – Slovenia, SK – Slovakia, FI – Finland, SE – Sweden, UK – The United Kingdom.

Source: Own calculations based on Eurostat's data.

Comparing the value of imports of goods of the EU countries, one can see that in this case, Poland occupies the 8th position, staying behind the same EU countries (though in a slightly different order), as in the case of exports, i.e. Germany, France, Great Britain, the Netherlands, Italy, Belgium and Spain (see Figure 2). Poland occupies also the same place (14th) in the comparison of the levels of integration indicators of the EU countries measured in terms of goods import in relation to GDP. Moreover, this rate for Poland was at a similar, compared to export, level (approx. 40%). The biggest double-digit rates of the difference between exports and imports related to Malta, Ireland, Cyprus, Croatia, Luxembourg, Greece and the Netherlands, with two of those countries, i.e. Ireland and the Netherlands, being net exporters. The increase in imports of goods in 2004–2013 was in the most EU countries less dynamic than the growth in exports. The largest differences in the dynamics related to Greece and Latvia. Also in Poland exports grew faster than imports, but even in the case of imports, the value of imported goods has increased between 2004 and 2013 by more than twice.

Figure 2. Import of Goods of the EU Countries in 2013 (% of GDP, the Dynamics: 2004 = 100, in Billion EUR, Current Prices)



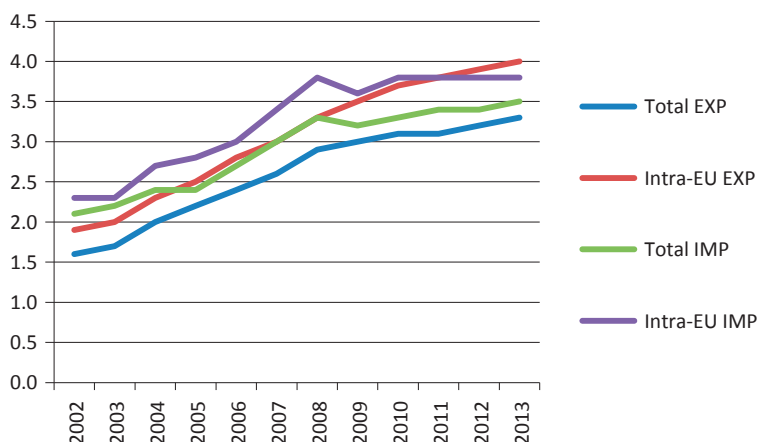
Comments: X axis – import in 2013 as a % of GDP; Y axis – growth dynamics in 2004–2013; size of the point on the figure reflects the value of import in 2013.

Legend same as in Fig. 1.

Source: Own calculations based on Eurostat's data.

Dynamic, until the crisis usually double digit (as measured by five-year changes indicator), growth of integration with the world economy for Poland and other countries from Central and Eastern Europe was undoubtedly associated with a relatively very low starting point. It is confirmed by the fact that despite the high intensification of connections of this group of countries with the global economy, their shares in the global economy remain relatively low. For example, Poland's share in global exports of goods, after several years of rapid growth, according to the WTO, amounted to only 1% in 2012.

The results of the dynamic development of Poland's foreign trade compared to the other EU countries are more visible. Figure 3 shows Poland's share in the EU's exchange of goods in the period 2002–2013. As it can be seen, Poland's participation in the EU trade exchange increased both for exports (in a stronger manner) and for imports. Poland's share in intra-Community sales of goods has more than doubled, reaching in 2013 level of 4% and surpassing in 2012, for the first time, Poland's share in intra-Community purchases.

Figure 3. Poland's Share in the EU Trade in Goods in 2004–2013 (%)

Comments: Total EXP – Poland's share in the EU exports to the world; Intra–EU EXP – Poland's share in EU supplies to the EU countries; Total IMP – Poland's share in the EU imports to the world; Intra–EU IMP – Poland's share in the EU purchases from the EU countries.

Source: Own research based on Eurostat's data.

In the years 2004–2013 Poland was one of the EU countries whose exports, measured as the share in the EU exports of goods, was a subject to the greatest improvement in terms of both supplies to other member states, as well as supplies to third countries (see Table 1). Over the past 10 years Poland's share in trade of goods on the internal market increased by 1.7 percentage points, while in case of exports to outside of the EU, the change amounted to 1 percentage point. Poland took second place in the EU in terms of growth of share in such trade, just behind the Netherlands in the case of intra-EU sales of goods, and Spain in terms of sales to third countries. The biggest losses in both markets during this period occurred in France.

Table 1. Change of Shares of the EU Countries in the EU Exports of Goods in 2004–2013 (Percentage Points)

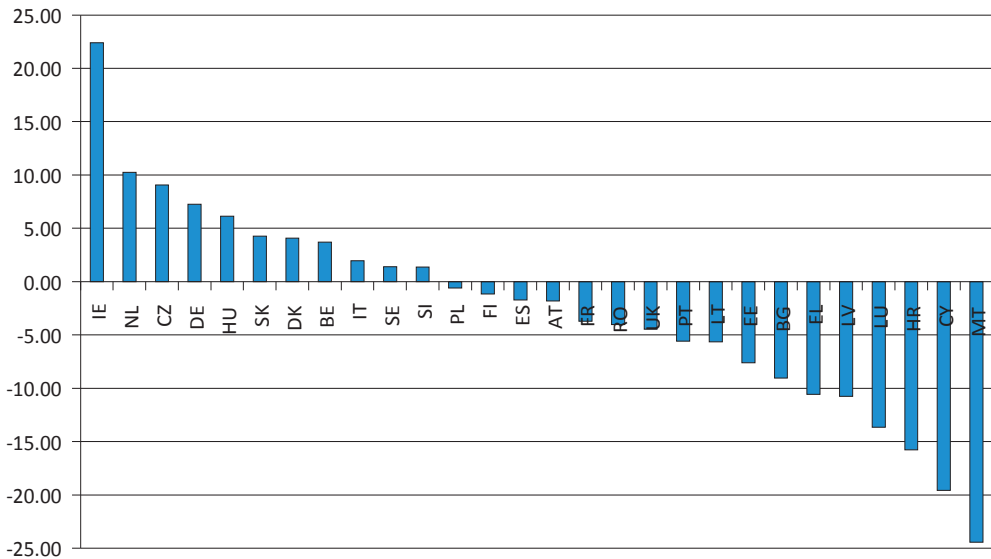
Position	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV
World	-0.4	0.2	0.9	-0.2	-0.2	0.1	-0.9	0.2	0.4	-2.5	0.0	-0.9	0.0	0.1
EU-28	-0.4	0.3	1.2	-0.2	-0.7	0.1	-0.8	0.1	0.1	-2.4	0.0	-1.1	0.0	0.2
Outside EU-28	0.1	0.2	0.6	-0.2	-0.1	0.1	-1.2	0.3	1.1	-2.8	0.0	-0.8	0.0	0.1
Position	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SE	UK
World	0.3	-0.1	0.3	0.0	1.6	-0.2	1.3	0.1	0.5	0.2	0.7	-0.4	-0.5	-0.3
EU-28	0.3	-0.2	0.4	0.0	2.5	-0.2	1.7	0.1	0.5	0.2	1.0	-0.3	-0.2	-1.6
Outside EU-28	0.3	0.1	0.3	0.0	1.0	-0.2	1.0	0.2	0.4	0.1	0.3	-0.8	-1.2	1.1

Legend same as in Figure 1.

Source: Own calculations based on Eurostat's database.

Positive difference between the growth rates of exports and growth rates of imports of goods in the period 2004–2013 was usually not accompanied by positive net balances, as it was in the case of Poland, where the deficit of balance of trade in goods amounted to 0.6% of GDP in 2013 (see Figure 4).

Figure 4. Balance of Trade in Goods in the EU Countries in 2013 (% of GDP)

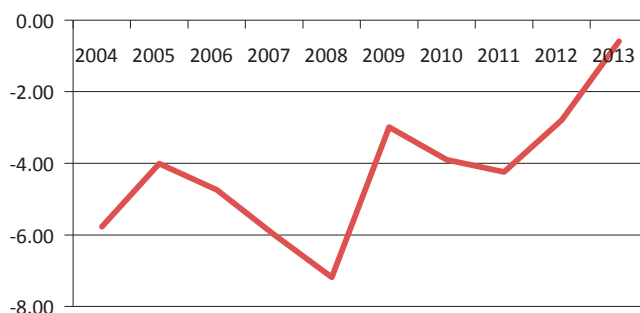


Legend same as in Figure 1.

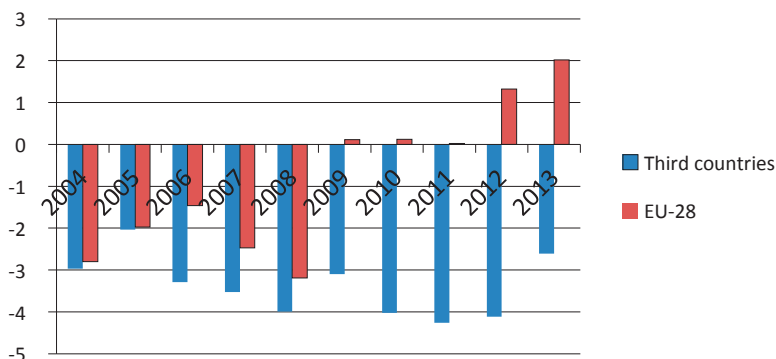
Source: Own calculations based on Eurostat's data.

The level of Polish deficit in trade in goods (in relation to GDP) was, however, in 2013, among the lowest in the EU. What's more, it has been the lowest level of the deficit in Poland since 2004 (see, Figure 5). The highest deficit was recorded in 2008 and exceeded 7% of GDP. Between 2004 and 2013, deficit in trade in goods was reduced by 80%.

Deficit reduction occurs primarily due to the improvement of the balance of trade with the EU (see Figure 6). Since 2009, Polish balance of trade with these countries has been positive and in 2013 it increased even to 2% of GDP. In the same year a negative balance of trade with third countries was reduced, as compared with the previous seven years.

Figure 5. Dynamics of Polish Deficit in Trade in Goods in 2004–2013 (% of GDP)

Source: Own calculations based on Eurostat's data.

Figure 6. Balance of Poland's Foreign Trade in Goods in 2004–2013 (% of GDP)

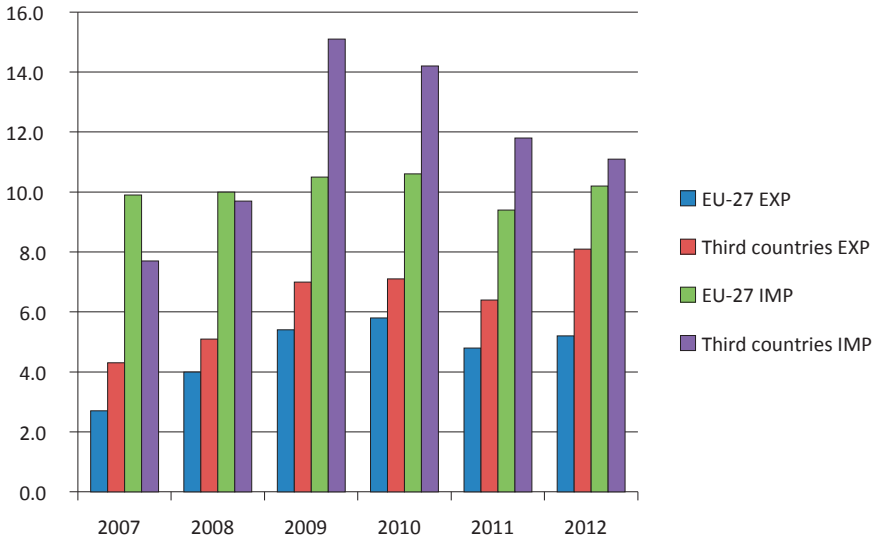
Source: Own calculations based on Eurostat's data.

Positive changes also occurred in the product structure of Polish exports of goods. Between 2007 and 2012 the share of high-tech products⁴, targeting both the EU markets and third country markets (see Figure 7), doubled in Polish exports.

When it comes to imports, at the same time one can notice a lack of major changes in Polish trade with the EU and an increase between 2007 and 2012 of share of high-tech products in Polish trade with third countries. In the case of the latter group of countries, according to the available data for the past three years, this share fell, after the relatively high increase in 2009.

⁴ According to the terminology adopted by the OECD selected products from the following sections (SITC – Rev. 4): aeronautical equipment, computers and office machinery, electronics and telecommunications, pharmaceuticals, scientific equipment, electrical machinery, chemicals, non-electrical machinery, armament are included. [See: Eurostat, 2007].

Figure 7. Share of Technologically Advanced Products in the Polish Trade in Goods with the EU and Third Countries in 2007–2012 (%)

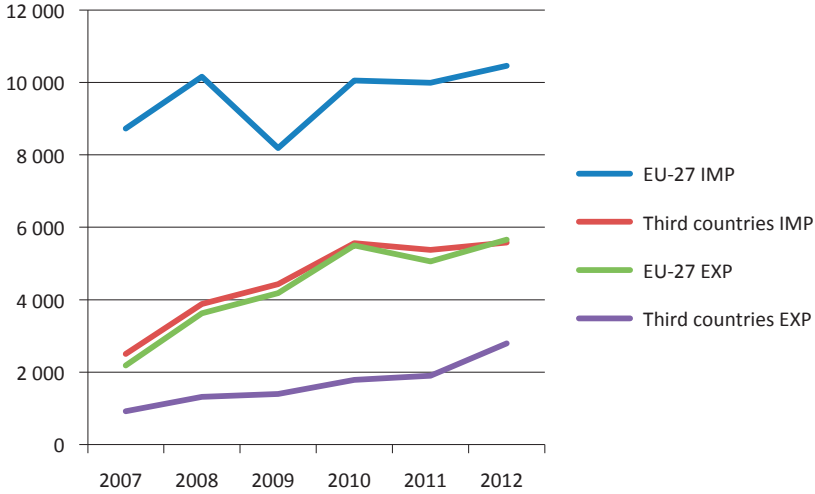


Source: Own research based on Eurostat's data.

Observing the dynamics of the Polish foreign trade in technologically advanced goods, it can be concluded that the increase of the share of these products in Poland's trade in goods in 2007–2012 accompanied an increase in the value of Poland's trade in these goods, while the most profound changes have occurred in Polish exports (see Figure 8). In the analysed period, the value of Polish exports increased to both the EU countries (by 204%), as well as to third countries (by 159%). The growth rate of imports amounted to 20% and 123% respectively. In addition, one may notice that Poland was at that time a net importer of high-tech products, and that the majority of Polish international trade in these products fell on the EU countries (66% in 2012).

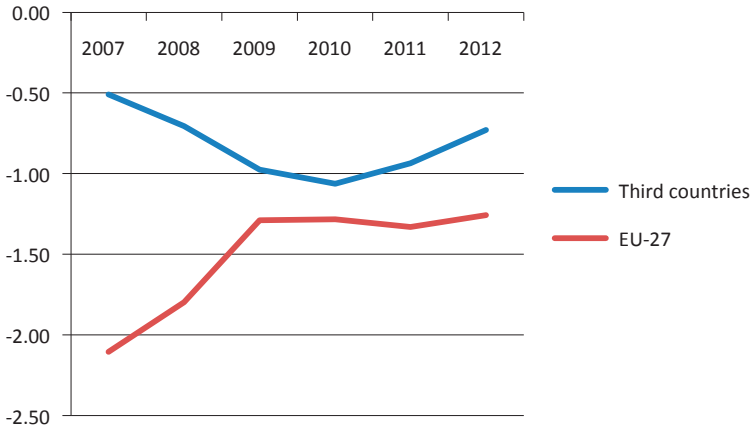
Varied dynamics of trade in technologically advanced products, if you compare Polish relations with the EU with Polish relations with third countries, resulted in opposing trade balance responses (see Figure 9). It was because between 2007 and 2012 there was a decrease in Polish deficit of trade in technologically advanced goods with the EU (from 2.1% of GDP to 1.3% of GDP) and an increase in the negative balance of this trade with third countries (from 0.5% of GDP to 0.7% of GDP), while in 2011–2012 trade deficit with third countries decreased.

Figure 8. Dynamics of Polish Trade in Technologically Advanced Goods in 2007–2012 (Million EUR)



Source: Own research based on Eurostat’s data.

Figure 9. Balance of Polish Trade in Technologically Advanced Goods with the EU and Third Countries (% of GDP)

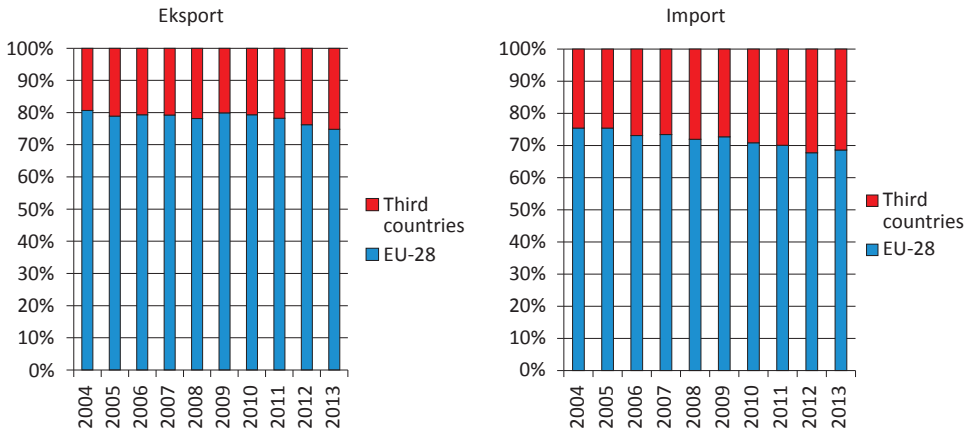


Source: Own calculations based on Eurostat’s data.

The importance of improvement of the trade balance and the product structure of trade in goods with the EU is all the greater because these countries represent the main direction of the Polish trade. In 2013 the EU countries accounted for about 75% of Polish export of goods (see Figure 10). The share of EU countries in the Polish imports of goods was lower than in the Polish export. In 2013 it amounted

to approximately 69%. This was due to the fact that a relatively large proportion of Polish imports is represented by purchases of energy products from Russia.

Figure 10. Share of the EU Countries and Third Countries in Polish Trade in Goods in 2004–2013



Source: Own calculations based on Eurostat's data.

As is clear from the analysis of the Figure 10, in the period from 2004 to 2013, the share of the internal market in both Polish exports, as well in Polish imports of goods, has decreased (approx. by 6 percentage points). With a positive growth rate, which characterised the development of all these trade streams in the past ten years, it reflects a higher growth rate of Polish trade in goods with third countries (the highest was in exports, whose level in 2013 was more than three times higher compared to a decade earlier) than with EU member states⁵.

2. Trade in Services

In terms of value of foreign trade in services Poland occupies a further place on the list of the EU countries than in terms of trade in goods⁶. This applies both to the absolute values (in 2012 Poland took the 13th place in terms of exports of services, and the 14th when it comes to their imports), as well as the relative values (in terms of the ratio of integration concerning trade in services, Poland in 2012 occupied penultimate,

⁵ Own calculations based on Eurostat's data.

⁶ The analysis is based on data from the balance of payments, and so, in general, includes the so-called cross-border trade. It is the main way of providing services to foreign markets in the case of Poland [See: Szypulewska, 2013].

i.e. the 26th place)⁷. In 2012, Luxembourg, Ireland, Malta, Cyprus, Estonia, Belgium and Denmark were the EU most integrated economies in terms of exchange of services, while the difference between the value of the indicators characterising the first and the last of these countries was more than fivefold. In the years 2004–2012 the growth rate of foreign exchange of services in Poland was among the highest in the EU and amounted, in exports and imports respectively, to 173% and to 130%. The value of foreign exchange of services increased the most, in regard to exports, in Malta (19 p.p.) and Romania (17 p.p.), while in the case of imports – in Malta (70 p.p.), Lithuania (32 p.p.) and Romania (6 p.p.). As in the case of trade in goods, despite the apparent intensification of Poland's connections with the world economy in terms of exchange of services, Poland's share in the world exports of services, according to the WTO, remains at a relatively low level and in 2012 amounted to only 0.86%.

Table 2. Polish Trade in Services with the EU and with Third Countries in 2004–2012 (Million USD)

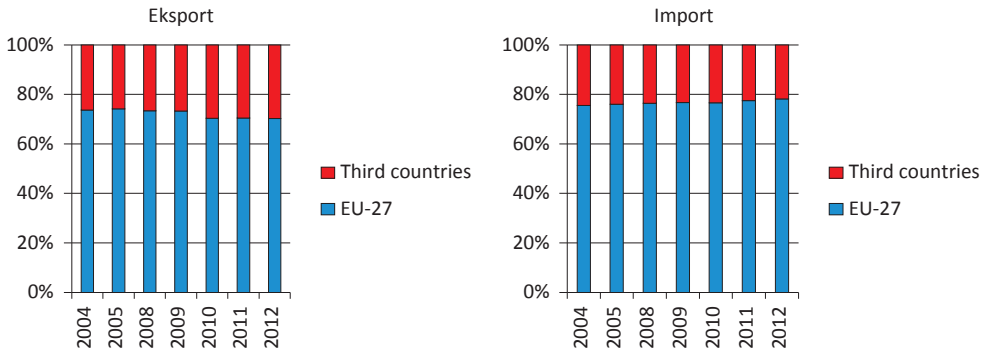
	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU-27 export	9 819.45	12 086	15 334.37	21 335.28	25 851.31	21 027.26	23 029.88	26 458.31	26 640.24
Third countries export	3 503.89	4 205.86	5 200.18	7 329.62	9 388.85	7 652.22	9 716.12	11 083.58	11 265.33
EU-27 import	10 053.75	11 822.67	14 787.51	18 203.36	22 991.48	18 346.61	22 711.84	24 778.51	24 964.53
Third countries import	3 260.03	3 738.85	5 026.16	5 797.44	7 112.2	5 588.85	6 938.94	7 188.68	6 962.92
EU-27 trade balance	-234.3	263.33	546.86	3 131.92	2 859.83	2 680.65	318.04	1 679.8	1 675.71
Third countries trade balance	243.86	467.01	174.02	1 532.18	2 276.65	2 063.37	2 777.18	3 894.9	4 302.41

Source: Own research and calculations based on OECD data and EBOPS 2002 classification.

In 2004–2012 in Poland, as in the most EU countries, the growth rate of exports of services has exceeded growth rate of their imports. On the basis of more detailed data it can be seen that Polish exports of services to third countries have developed most rapidly (see Table 2). The value of this exchange in the discussed period has more than tripled. At the same time, with the exception of the years 2006 and 2009, the balance of trade has been systematically improving with third countries, outperforming (from 2010 onwards, as was the case until 2006) the value of the Polish balance of trade in services with the EU. It should be noted that throughout analysed period Polish balance of trade with the world remained positive. If one applies it to the level of GDP, it turns out, as the OECD figures show, that its level will rise in Poland in the discussed period by over three hundred times.

⁷ In this part of the analysis, unless otherwise indicated, the data come from the statistical base of Eurostat.

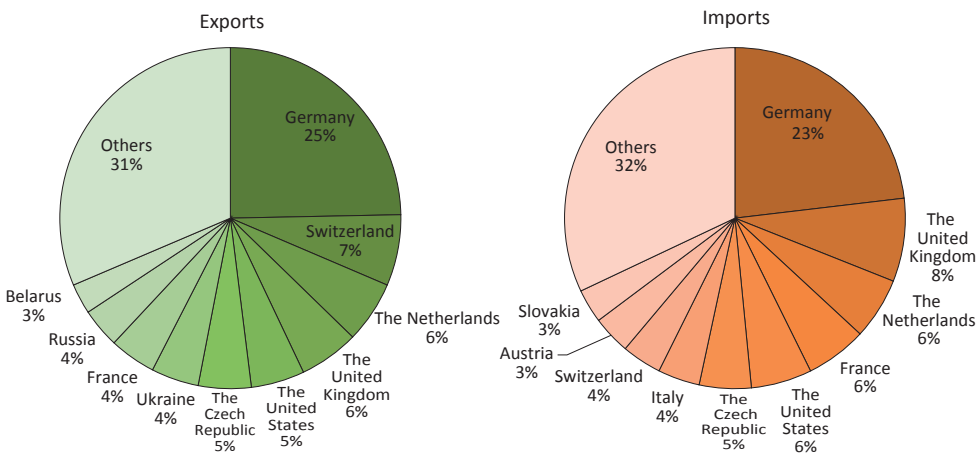
Figure 11. Share of the EU Member States and Third Countries in Polish Trade in Services during Selected Years of a 2004–2012 Period



Source: Own calculations based on OECD data, EBOPS 2002.

Just as in the case of trade of goods, the EU countries represented the main direction of Polish foreign trade in services, while, in contrast to the trade in goods, the share of these countries in Polish imports of services exceeded their share in Polish exports of services (see Figure 11). In 2012 the concentration of Polish exports of services on the internal market attained approx. 70%, and was lower than in 2004 by approx. 4 p.p., while in the case of Polish import it was approx. 78%, and therefore its value decreased during this time by approx. 2 p.p. These changes occurred, generally speaking, with an increase of the foreign exchange of services, which means that Polish exports of services to third countries and Polish imports of services from the EU countries grew relatively faster than Polish exports of services to the EU countries and Polish imports of services from third countries.

Figure 12. Geographic Structure of Polish Foreign Trade in Services in 2012



Source: Own calculations based on OECD data, EBOPS 2002.

Looking at ten countries that are major Polish trading partners in the exchange of services, one will find that in 2012 the levels of geographic concentration of Polish trade in services, both in exports and imports were similar. These countries accounted for about 70% of foreign exchange of services (see Figure 12). Poland conducted trade exchange mainly with Germany, and its share in 2012 amounted to 25% of Polish exports of services and to 23% of imports. When it comes to other EU countries, Poland carried out a relatively intense trade exchange of services with the United Kingdom, the Netherlands, France and the Czech Republic. When it comes to non-EU countries, Polish export of services was mainly directed at countries such as Switzerland, the United States, Ukraine, Russia and Belarus.

3. Trade Measured by Value Added

If the Polish foreign trade measured conventionally (gross approach) is replaced by the one measured by value added (not including foreign components contained in the exported finished products and domestic components included in the imported foreign finished products), it will turn out that – generally speaking – the trade surplus in relations with the EU as well as the trade deficit in relations with third countries are smaller (see tables 3 and 4). From the analysis of the share of value added in gross flows, follows that it was much smaller in the flow of goods between Poland and the EU countries than between Poland and third countries, while the largest difference was in the case of Polish exports (64% versus 91% in 2009).

Table 3. Poland's Gross Trade with the EU and Third Countries in Selected * Years of 1995–2009 Period (USD Million, in %)

	1995	2000	2005	2008	2009	2000–2009
EU-27 export	18 060.3	31 359.7	79 483.2	143 671.6	116 354.9	271.0
Third countries export	12 742.2	12 596.3	28 090.6	56 791.9	45 870.4	264.2
EU-27 import	17 846.7	35 870.1	71 875	138 856.6	99 934.6	178.6
Third countries import	10 015.8	19 086.4	37 953.7	82 623.1	61 968.2	224.7
EU-27 balance	213.6	–4 510.4	7 608.2	4 815	16 420.3	
Third countries balance	2 726.4	–6 490.1	–9 863.1	–25 831.2	–16 097.8	

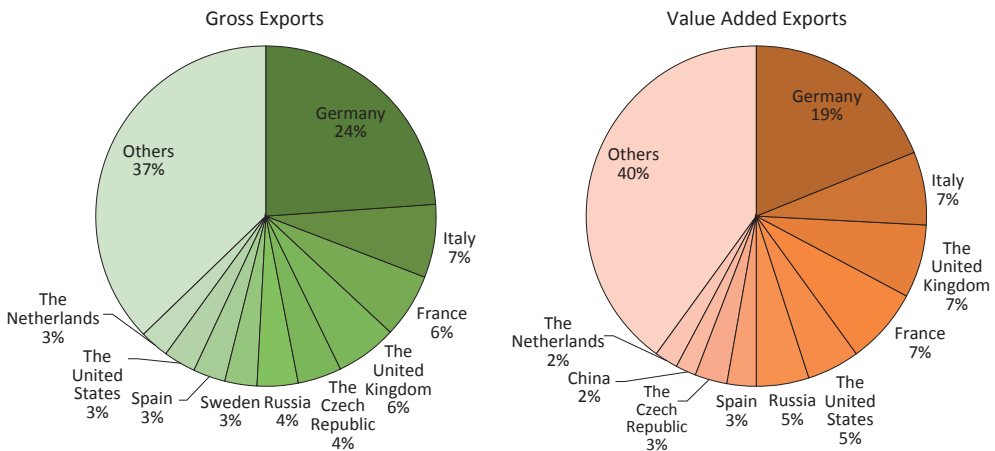
* The selection is based on available data.

Source: own research and calculations based on OECD-WTO [2013] database.

In the analysed period, i.e. in the years 1995–2009, the share of domestic value added in Polish gross commodity flows declined (the largest decline, at 15 p.p., was

recorded in flows between Poland and the EU). Comparing the periods 2000–2005 and 2005–2009, and therefore, generally speaking, the time before the Poland’s accession to the EU and after it, one can see a change in the trend – first, there was a decrease in the share of value added in gross flows (the largest was in imports, both from the EU member states and from third countries, respectively of 10 p.p., and 14 p.p.), and later an increase, but less significant, (the largest when it comes to deliveries from Poland to the EU’s internal market, amounting to 4 p.p.). Polish exports to third countries, for which the share of added value decreased after 2005, although slightly (by 1 p.p.), was the exception.

Figure 13. Geographic Structure of Polish Exports of Goods and Services in 2009



Source: Own research based on OECD–WTO [2013] database.

From the comparison of geographic structure of Polish exports measured by different methods, follows that in 2009 a relatively high part of the Polish exports was constituted by earlier Polish imports from Germany. The significance of the Czech Republic and the Netherlands as markets for Polish goods and services was also lower in net terms. At the same time countries, whose importance in Polish exports is increasing after the application of measuring based on value added, are: the United States, China, Russia, the United Kingdom and France.

Observing the development of Polish trade measured by value added, it can be seen that between 2000 and 2009, there was a rapid growth of Polish exports and imports, both in terms of trade with the EU countries and in terms of trade with third countries (see Table 4). Polish exports grew the most (by more than two and a half), in particular to the EU, which indicates the improvement of the international position of Polish goods and services. There was also an improvement in trade balance

with the EU countries compensating with excess the growth of the Polish deficit in trade with third countries.

Table 4. Polish Trade in Value Added with the EU Countries and with Third Countries in Selected * Years during 1995–2009 Period (Million USD, %)

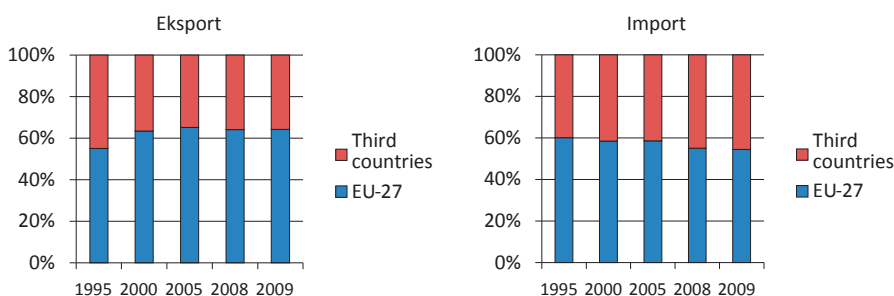
	1995	2000	2005	2008	2009	2000–2009
EU-27 export	14 311.9	21 227	48 174.5	88 370.9	74 639.4	251.6
Third countries export	11 695.3	12 298.6	25 841.3	49 608.9	41 526.5	237.7
EU-27 import	13 871.4	26 034	44 659.7	87 554.4	62 997.3	142.0
Third countries import	9 195.8	18 492.1	31 611	71 441.6	52 846	185.8
EU-27 balance	440.5	-4 807	3 514.8	816.5	11 642.1	
Third countries balance	2 499.5	-6 193.5	-5 769.7	-21 832.7	-11 319.5	

* Same as with Table 3.

Source: Own research and calculations based on OECD–WTO [2013] database.

An increase, although relatively weak, of the share of exports of Polish goods and services to third countries in total Polish exports between 2005 and 2009, may be a proof of the improvement of Poland's international position. If we extend the studied period, i.e. we will also pay attention to the time preceding the Poland's accession to the EU, then we will see a different trend, i.e. increase of the share of the EU countries in Polish exports. We will find a similar picture, examining changes in the share of the EU countries in Polish imports, wherein decline of this share after 2005 was clearer than in the case of Polish exports.

Figure 14. Share of the EU and Third Countries in the Polish Trade in Value Added in Selected Years during 1995–2009 Period (%)

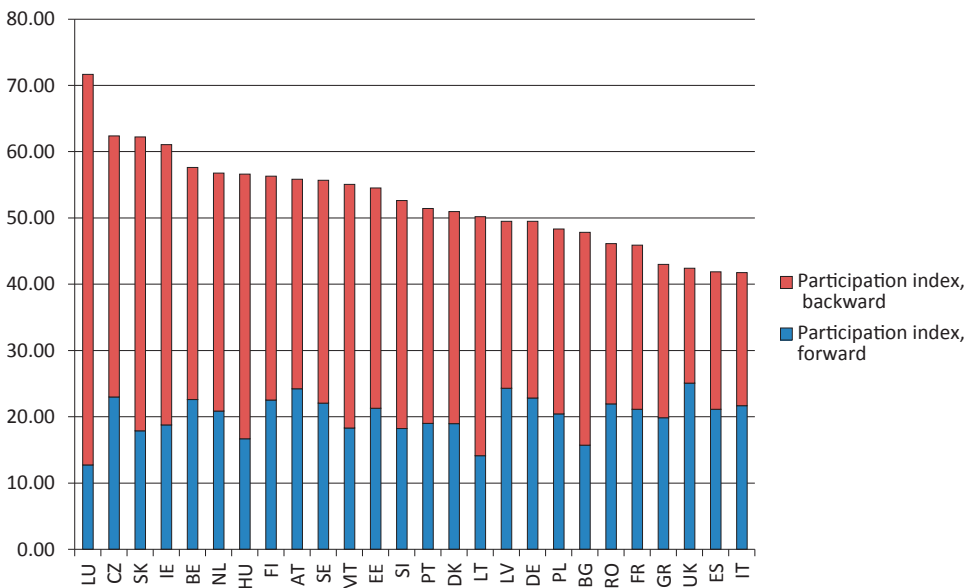


Source: Own calculations based on OECD–WTO [2013] database.

In the case of Polish exports of goods and services, the indicator of foreign content (backward linkages in the production chain) amounted to approx. 28% in 2009 which

was close to the level of Germany (see Figure 15). Domestic products that became the part of exports of other countries (forward links in the production chain) had smaller, compared to the foreign contribution, share in Polish exports. In 2009 their share accounted for approx. 21% and was higher in comparison to 1995 by 3 percentage points. In Poland, the development of both types of relationships went in a similar way, i.e. between 1995 and 2005 the share of Polish products used in other countries' exports increased, and then, between 2005 and 2009, it decreased.

Figure 15. Share of the EU Countries in Global Value Chains of Goods and Services in 2009 (in %)



Note: "Participation index, backward" shows foreign value added in gross exports, and "Participation index, forward" shows domestic value-added exports used in other countries' exports; data for Cyprus are unavailable.

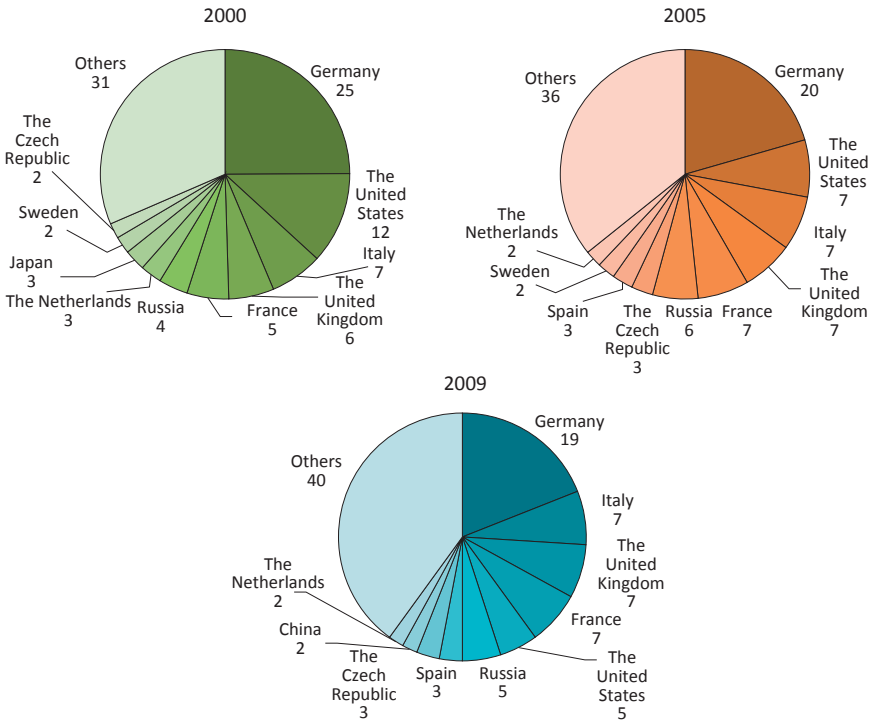
Explanations as in Figure 1.

Source: OECD [2013], OECD-WTO [2013].

In comparison to the other EU countries Poland's backward linkages in global value chains are weaker, which may be surprising, if we take into account the fact that Poland is a relatively large net importer of direct investments (in 2009, according to Eurostat, Poland's international net investment position reached the level of approx. 60% of GDP; it was lower than the level observed, in particular, in countries such as Lithuania, the Czech Republic and Slovenia, where the share of foreign contribution to national export was higher than in Poland). This result could be associ-

ated (despite the same trade policy), with greater size of Polish market, as well as the product structure of inward foreign direct investments and Poland’s exports.

Figure 16. Geographic Structure of Polish Exports of Value Added in the Years 2000, 2005 and 2009 (%)



Source: Own calculations based on OECD [2013], OECD–WTO [2013].

The observation of changes in the geographic structure of Polish value-added exports leads to the conclusion that the geographical diversification of this trade has increased (see Chart 16). In 2005 and 2009 the share of the two largest recipients of Polish goods and services, namely Germany and the United States, declined. The share of France increased by 2 percentage points by 2005 and remained at the same level in 2009. In 2009 China has appeared on the list of ten major recipients of Polish goods.

Summary

One can draw following conclusions from the above analysis of Polish foreign trade after Poland's accessions to the EU:

1. Polish exports, compared with exports of other EU member states, have become more competitive. Poland increased its share in the EU deliveries, both on the markets of other member states, as well as on third-country markets. The biggest five year change of Poland's share occurred in the year of the accession.
2. The Polish trade balance in goods has improved. The level of deficit in relation to GDP in 2013 decreased by 80% compared to 2004. Moreover, since 2009 Poland has been noticing surplus in exchange of goods and services with the EU countries. In 2013 the surplus level was the highest during this period and amounted to 2% of GDP.
3. During the period 2004–2012 Poland managed to maintain a positive trade balance in services. Its level, related to the value of Polish GDP grew between 2004 and 2012 more than three hundred times.
4. Contrary to the expectations associated with the expected effects of the Poland's membership in the EU and ones resulting from the theory of economic integration, in the analysed period the degree of market integration between Poland and the rest of the EU has decreased. Polish imports of services was the exception.
5. Positive changes have occurred in the product structure of Polish exports of goods. In the years 2007–2012 the share of high-tech products in exports increased while trade deficit in these products with the EU, which accounted for 66% of all this trade in 2012, decreased.
6. Similar conclusions result from the analysis of the trade in value added (compared with the conventional way of measurement), when it comes to the degree of Poland's integration with the EU countries and tendencies associated with the development of Polish foreign trade after 2004.
7. Since during the period of Poland's membership in the EU (in contrast to the period prior to the accession) the involvement of Poland in global production chains with participation of other EU countries, when it comes to backward linkages, has decreased, while at the same time this type of connections with third countries has been tightened, the decline of Poland's integration with the EU, when it comes to Polish exports, was smaller in the case of trade in value added than in the case of gross trade.
8. Analysis of changes in the geographic structure of trade in value added leads to the conclusion that geographical diversification of Polish exports has been

steadily increasing. In addition, the share of the main recipients of Polish goods and services, namely Germany and the United States, has decreased, while the share of France and China has increased.

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The Importance of Structural Funds and Cohesion Fund of the European Union for the Development of Polish Economy

Introduction

Ten years of Polish membership in the European Union (EU) raises the question of the balance of costs and benefits of this membership. Poland is the biggest beneficiary of the Structural Funds and the Cohesion Fund of the new EU Member States. European Union's actions taken through these funds are to serve its harmonious development and strengthen economic, social and territorial cohesion (Article 175 of the Treaty on the Functioning of the European Union (TFEU)) [EU, 2008].

The concept of structural funds has been introduced to the Treaty establishing the European Economic Community by adding a new Title V devoted to economic and social cohesion, which was possible thanks to Single European Act signed on 17th February 1986 in Luxembourg and on 28th February 1986 in Hague, which came into force on 1st July 1987¹. In this title, in the article 130b, three structural funds are mentioned in the following notation: (...) "the Community shall support the achievement of these objectives by the action it takes through the structural Funds (European Agricultural Guidance and Guarantee Fund, Guidance Section, European Social Fund, European Regional Development Fund), the European Investment Bank and the other existing financial instruments" [EC, 1987b]. This provision has remained almost unchanged in later treaties, i.e. treaty establishing the European Community (TEC) and the TFEU, in spite of the renumbering of the titles and articles. In art. 175 TFEU (d. Art. 159 TEC) we read that: "(...) The Union shall also support the achievement of these objectives by the action it takes through the Structural Funds (European Agricultural Guidance and Guarantee Fund – Guidance Section, European Social

¹ Notification relating to the date of entry into force of the Single European Act, signed at Luxembourg on 17 February 1986 and at The Hague on 28 February 1986 (OJ L 169, 29.06.1987).

Fund, European Regional Development Fund), the European Investment Bank and the other existing Financial Instruments” [EC, 1987a; EEC Treaty, 1957].

In the 2000–2006 programming period under the term of the Structural Funds, one understood four funds: the European Agriculture Guidance and Guarantee Fund – Guidance Section (EAGGF – Guidance Section), European Social Fund (ESF), European Regional Development Fund (ERDF) and the Financial Instrument for Fisheries Guidance (FIFG) [Council of the EU, 1999, p. 1–42].

In the 2007–2013 programming period under the term of the Structural Funds one understood European Regional Development Fund and European Social Fund [Council of the EU, 2006]. One constituted European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF) in place of the European Agricultural Guidance and Guarantee Fund – Guidance Section and the Financial Instrument for Fisheries Guidance. In both programming periods Cohesion Fund (CF) was treated separately. In the 2014–2020 programming period, as in the previous financial perspective, Structural Funds include European Regional Development Fund and European Social Fund [EP, Council of the EU, 2013]. Both of these funds, including the Cohesion Fund are called cohesion policy funds².

In general, the impact of help provided through the EU cohesion policy funds on the economy is twofold. First, the transfers from the structural funds cause revenue growth in the regions receiving aid, affecting the production and employment when additional income is spent on goods and services. Secondly, through the development of infrastructure, increase of the qualifications and skills of the labour force and strengthening local economic activities, growths the productive potential of the regions, which is the main objective of the policy. Estimating this growth is more difficult than the assessment of the impact of the first type, since many programs are long-term and their overall impact on the economy is revealed only after many years. The effectiveness of Structural Funds interventions depends on many factors, i.e. on the stability of the functioning of the economy, an appropriate selection of strategic objectives, the degree of absorption of funds, dependent on the potential and the institutional and administrative capabilities of the beneficiary country or region, an effective system of selection and implementation of programmes and the quality of projects.

The aim of this study was to assess the importance of Structural Funds and Cohesion Fund for the development of the Polish economy during 10 years of Polish membership in the European Union. The use of these funds under the EU financial

² Cohesion Policy Funds and the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund are referred to as the European Structural and Investment Funds in respect of which some common rules are used.

perspective 2000–2006, from which, since 2004 benefited 10 new member states, has been completed and appraised. The use of these funds in the 2007–2013 financial perspective will be completed in 2015 and then settled; therefore it can only be a subject for assessment of rate of the utilisation of these funds.

1. Financial Transfers under the EU Cohesion Policy Funds within Ten Years of Polish Membership in the EU

During 10 years of membership, Poland under the EU cohesion policy has obtained a total of over 60.7 billion EUR that includes over 13.1 billion EUR from 2004–2006 financial perspective and approx. 47.6 billion EUR from the 2007–2013 financial perspective. These transfers accounted for 62% of all financial transfers between Poland and the EU. Financial transfers of the EU funds under cohesion policy during 10 years of Polish membership in the EU are presented in Table 1.

Table 1. Financial Transfers of the EU Funds under Cohesion Policy within 120 Months of Polish Membership in the EU as at 30 April 2014 (EUR)

Specification		EUR
Cohesion Policy		60,742,290,536.06
Cohesion Fund – financial perspective 2004–2006		2,774,852,874.11
Cohesion Fund – financial perspective 2007–2013		13,901,258,941.24
ISPA*		1,842,081,891.00
Structural Funds		42,224,096,829.71
Under financial perspective 2004–2006		8,547,328,674.30
Current transfers		2,038,181,591.22
	ESF	2,038,181,591.22
Capital transfers		6,509,147,083.08
	FIFG	178,399,777.29
	ERDF	5,141,704,525.16
	EAGGF	1,189,042,780.63
Under financial perspective 2007–2013		33,676,768,155.41
Current transfers		7,479,066,719.16
	ESF	7,479,066,719.16
Capital transfers		26,197,701,436.25
	ERDF	26,197,701,436.25

* Since 1st May 2004 Poland has ceased to be a beneficiary of Instrument for Structural Policies for Pre-Accession Fund. Projects financed by the ISPA were still running under the Cohesion Fund.

Source: [MF, 2014].

The rate of utilisation of the EU Structural Funds allocated to Poland under the financial perspective 2000–2006, as measured by the cumulative interest payments amounted to 99.55%. Among the Member States that joined the EU in 2004, Czech Republic (99.18%), Hungary (99.47%) and Slovakia (99.07%) showed lower rate of utilisation of structural funds. The rate of cumulative payments to Poland was also higher than the rate in the case of some EU-15 countries like Belgium (99.18%), Germany (99.03%), Greece (98.94%), Ireland (96.67%), Italy (96.86%) and the UK (97.67%). The ratio for all EU-25 countries is presented in the table below.

Table 2. The Rate of Cumulative Payments under the Financial Perspective 2000–2006, According to the Objectives, the Community Initiatives and Countries – as at 4 January 2014 (in %)

Country	Objective 1	Objective 2	Objective 3	Equal	IFOR outside objective 1	Interreg	Leader	Urban	In Total
Austria	99.99	100.00	99.98	100.00	100.00	0.00	100.00	100.00	99.99
Belgium	99.11	98.65	99.63	100.00	91.98	0.00	100.00	100.00	99.18
Denmark	0.00	100.00	100.00	100.00	100.00	0.00	100.00	100.00	100.00
Finland	100.00	100.00	100.00	100.00	100.00	0.00	100.00	100.00	100.00
France	99.40	99.91	100.00	100.00	95.00	0.00	100.00	100.00	99.74
Germany	98.91	98.83	99.82	100.00	77.55	0.00	100.00	99.91	99.03
Greece	98.92	0.00	0.00	100.00	0.00	0.00	100.00	100.00	98.94
Ireland	96.59	0.00	0.00	100.00	0.00	0.00	100.00	100.00	96.67
Italy	96.07	99.99	99.15	97.56	95.00	0.00	99.90	99.61	96.86
Luxembourg	0.00	100.00	100.00	100.00	0.00	0.00	100.00	0.00	100.00
The Netherlands	100.00	100.00	100.00	100.00	81.32	0.00	98.48	100.00	99.74
Portugal	99.79	0.00	0.00	100.00	0.00	0.00	100.00	100.00	99.80
Spain	99.55	100.00	99.77	100.00	95.00	0.00	100.00	100.00	99.58
Sweden	100.00	100.00	99.93	100.00	100.00	0.00	100.00	100.00	99.98
The United Kingdom	97.54	95.92	99.99	100.00	64.97	0.00	100.00	100.00	97.67
Cyprus	0.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00	100.00
The Czech Republic	99.24	96.73	100.00	100.00	0.00	0.00	0.00	0.00	99.18
Estonia	99.87	0.00	0.00	100.00	0.00	0.00	0.00	0.00	99.87
Hungary	99.46	0.00	0.00	100.00	0.00	0.00	0.00	0.00	99.47
Latvia	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	100.00
Lithuania	99.93	0.00	0.00	100.00	0.00	0.00	0.00	0.00	99.93
Malta	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	100.00
Poland	99.54	0.00	0.00	100.00	0.00	0.00	0.00	0.00	99.55
Slovakia	98.99	100.00	100.00	100.00	0.00	0.00	0.00	0.00	99.07
Slovenia	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	100.00
Multi-Country	100.00	0.00	0.00	0.00	0.00	98.60	0.00	100.00	98.74
In total	98.76	98.92	99.79	99.69	92.04	98.60	99.93	99.92	98.88

Source: [EC, 2014].

2. The Use of the Structural Funds and the EU Cohesion Fund According to the Programming Periods (Financial Perspectives)

2.1. The Use of the Structural Funds and the Cohesion Fund under the 2004–2006 National Development Plan

In the years 2004–2012 one implemented nearly 88.5 thousand projects under the NDP for a total amount of nearly 70 billion PLN. The funding of these projects from the EU structural funds amounted to approx. 35.7 billion PLN. In the following table one describes their number and value divided into operational programmes and community initiatives.

Table 3. The Number and Value of Projects Implemented under Operational Programmes and Community Initiatives (as at 31 December 2012)

Operational programme/ community initiative	Number of projects	Total value of projects (PLN)	Value of EU funding (PLN)
SOP Increase of the competitiveness of enterprises (SOP ICE)	15,156	14,871,535,293	4,911,705,979
SOP <i>Human resources development</i> (SOP HRD)	4,034	8,514,524,014	6,186,711,149
SOP Transport (SOPT)	146	9,544,282,118	5,611,368,210
SOP <i>Restructuring and modernisation of food sector and development of rural areas</i>	49,837	12,061,664,296	4,513,873,567
SOP <i>Fisheries and fish processing 2004–2006</i>	4,123	1,556,017,854	822,326,265
Integrated Operational Programme for Regional Development (IOPRD)	13,655	21,494,835,367	12,238,032,713
OP <i>Technical Assistance</i> (OP TA)	155	138,772,660	104,079,494
IW <i>Equal</i>	287	761,258,060	570,943,545
IW <i>INTERREG IIIA</i>	1,055	1,041,480,546	698,521,002
Total	88,448	69,984,370,208	35,657,561,924

Source: Based on [MJCSF, MRD, 2013, s. 40].

2.2. The Use of the Cohesion Fund under the Financial Perspective 2004–2006

From the Cohesion Fund one co-financed the implementation of 130 projects worth 21,771,908,856 PLN (1 EUR = 3.9743 PLN). The value of contracts signed with contractors under the Cohesion Fund projects by the end of December 2012

amounted to 9.5 billion EUR, which is approx. 123% of the eligible project costs indicated in the EC decision to award the grants [MJCSF, MRD, 2013, p. 44]³. Until 31 December 2012 one spent 8.697 million EUR (including 4.635 million for projects in the environment sector and 4.062 million in the field of transport), which accounted for approx. 113% of eligible costs indicated in the EC decision to award the grants. By the end of 2012 Poland received from the EC payments totalling to almost 4.9 billion EUR, accounts for 89% of co-financing of Cohesion Fund projects [MJCSF, MRD, 2013, p. 45]. Eventually one settled 29 of the 128 projects for which requests for final payment were applied (for one project under the Extended Decentralised Implementation System-EDIS, 19 projects in the environment sector and 9 projects in the transport sector). From 1 January to 30 April 2013 one received final payments for 14 projects in the environment sector and one project in the transport sector.

2.3. The Use of the Structural Funds and the Cohesion Fund under the 2007–2013 National Cohesion Strategy

Since the launch of programmes implemented under the 2007–2013 National Cohesion Strategy (NSRF 2007–2013) until 30 April 2014 one submitted 295.9 thousand applications (formally correct) that totalled to (both from the EU funds and national funds) 599.6 billion PLN of funding [MJD, 2014, p. 3]. A total of 97,628 contracts were concluded in which the value of eligible expenditures amounted to 396.1 billion PLN, and the EU funding to 275.0 billion PLN. Overall, the value of eligible expenditures declared by the beneficiaries in their payment applications by the end of April 2014 amounted to more than 271.0 billion PLN, which includes the EU funding of 191.9 billion PLN. The utilisation rate of allocation, measured by the ratio of the value of the EU funding shown in applications for payment and the value of the allocation of structural funds and the funds from Cohesion Fund, amounted to an average of 66.4% for national programmes and 68.1% for regional programmes. In the case of national programmes, the highest level of utilization of allocation occurred in the Operating Programme Human Capital (76.3%) and Operating Programme Technical Assistance (68.9%). In the case of regional programmes the highest level of utilisation of allocation was recorded in the ROP Opolskie voivodeship (84.8%) and ROP Świętokrzyskie voivodeship (80.3%). The following table shows the number and value of submitted applications, signed contracts/issued decisions and requests for payment under the NSRF 2007–2013, as at 30 April 2014.

³ This percentage exceeds 100% because the cost of infrastructure investments significantly in comparison with the original assumptions.

Table 4. Number and Value of Submitted Applications, Signed Contracts/Issued Decisions and Requests for Payment under the NSRF 2007–2013, as at 30 April 2014 (in Thousand PLN) (Data Generated from the System KSI SIMIK 07–13 on 2 May 2014. Data on ETC Calculated According to the Exchange Rate of 1 EUR = 4.1739 PLN)

Operational Programme	Applications for funding after formal evaluation		Funding agreement				Applications for payment**		
	Number	Value- EU and national funding (thousand PLN)	Number	The value of eligible expenses (thousand PLN)	EU funding (thousand PLN)	Utilisation level of allocation for years 2007–2013 (in %)	The value of the eligible expenditures declared by the beneficiaries (thousand PLN)	EU funding (thousand PLN)	Utilisation level of allocation for years 2007–2013* (in %)
OP <i>Innovative economy</i> (OP IE)	47 432	112 686 167	16 101	66 973 049	36 515 413	101.3	38 773 321	21 698 335	60.2
OP <i>Infrastructure and environment</i> (OP IaE)	3 574	188 669 788	2 298	155 841 155	115 380 384	97.2	102 502 438	77 639 063	65.4
OP <i>Human capital</i> (OP HC)	182 135	162 986 246	45 289	51 338 279	42 795 788	102.6	38 208 151	31 801 135	76.3
OP <i>Technical assistance</i> (OP TA)	404	1 967 806	393	2 373 283	2 017 291	94.3	1 735 088	1 474 825	68.9
OP <i>Development of Eastern Poland</i> (OP DEP)	434	11 087 718	259	12 983 837	9 682 420	97.2	7 589 134	5 979 145	60.0
OP <i>European territorial co-operation</i> (OP ETC)	665	3 178 280	296	1 747 929	1 443 702	101.0	1 064 557	883 475	61.8
Total National	234 644	480 576 004	64 636	291 257 532	207 834 997	98.9	189 872 688	139 475 978	66.4
ROP Dolnośląskie voivodeship	3 329	7 308 462	2 082	8 119 775	4 984 564	96.9	6 119 641	3 823 032	74.3
ROP Kujawsko-Pomorskie voivodeship	3 305	5 396 141	1 803	6 095 771	3 527 542	85.3	4 288 278	2 615 652	63.3
ROP Lubelskie voivodeship	5 552	9 645 248	2 987	6 941 270	4 454 683	90.1	5 424 349	3 548 769	71.7
ROP Lubuskie voivodeship	1 726	3 586 952	939	3 136 763	1 877 339	91.7	2 603 481	1 537 254	75.1
ROP Łódzkie voivodeship	4 139	7 314 049	2 362	6 583 569	4 314 576	99.4	4 858 688	3 274 251	75.4
ROP Małopolskie voivodeship	4 414	7 305 229	2 757	8 918 086	5 350 902	95.3	7 080 370	4 436 236	79.0
ROP Mazowieckie voivodeship	5 337	18 221 726	1 918	10 218 937	7 062 285	90.9	7 451 019	5 236 979	67.4
ROP Opolskie voivodeship	1 825	3 223 342	1 173	3 138 508	2 026 508	99.2	2 667 996	1 731 741	84.8
ROP Podkarpackie voivodeship	3 613	7 167 791	2 317	6 956 322	4 786 627	96.4	5 645 495	3 843 978	77.4

Operational Programme	Applications for funding after formal evaluation		Funding agreement				Applications for payment**		
	Number	Value- EU and national funding (thousand PLN)	Number	The value of eligible expenses (thousand PLN)	EU funding (thousand PLN)	Utilisation level of allocation for years 2007–2013 (in %)	The value of the eligible expenditures declared by the beneficiaries (thousand PLN)	EU funding (thousand PLN)	Utilisation level of allocation for years 2007–2013* (in %)
ROP Podlaskie voivodeship	2 554	5 755 383	1 166	4 289 452	2 674 861	95.9	2 899 662	1 763 533	63.2
ROP Pomorskie voivodeship	3 655	6 794 543	1 644	5 854 394	3 742 177	96.2	4 700 613	3 047 250	78.4
ROP Śląskie voivodeship	9 230	13 168 035	4 761	10 006 246	6 947 317	95.3	7 616 977	5 245 964	71.9
ROP Świętokrzyskie Voivodeship	1 996	3 745 268	1 259	4 882 658	2 950 315	92.8	4 258 520	2 550 515	80.3
ROP Warmińsko-Mazurskie voivodeship	3 523	6 761 504	2 204	6 460 024	4 062 198	91.5	4 900 778	3 060 495	68.9
ROP Wielkopolskie voivodeship	4 010	8 633 631	2 071	7 915 171	5 186 147	94.0	6 584 047	4 293 807	77.8
ROP Zachodniopomorskie voivodeship	3 013	5 051 700	1 549	5 361 916	3 195 946	89.2	4 039 593	2 455 684	68.5
Total Regional	61 221	119 079 003	32 992	104 878 862	67 143 985	93.6	81 139 507	52 465 140	73.2
Total NSRF	295 865	599 655 007	97 628	396 136 394	274 978 982	97.6	271 012 195	191 941 118	68.1

* To calculate the allocation NSFR 2007–2013 in PLN one used an algorithm developed jointly by the Ministry of Infrastructure and Development and the Ministry of Finance. Under the framework of the algorithm one prepared for each operational programme (with the exception of ETC Programmes under which the whole operation is carried out in EUR) spreadsheets, that calculate on a monthly basis allocation in PLN available for Poland.

** Without deducting the amounts withdrawn and recovered.

Source: [MID, 2014, p. 3].

3. Economic Growth and Regional Polish Disparities during 10 Years of the EU Membership

Due to the fact that the majority of the EU structural funds available for the countries that joined the EU in 2004 concerned the support of regions lagging behind (objective 1 in years 2004–2006 and the Convergence objective for the period 2007–2013), it seems important to present the results of economic growth of Poland and its regions in comparison to other countries and regions of the EU⁴.

⁴ 93.8% of the funds from the EU structural funds available for these countries were allocated for objective 1 in 2004–2006.

During 10 years of the EU membership Polish economic growth rate was positive. In each year of membership in the EU Polish economic growth rate was higher than the EU average. During the crisis, Poland was the only EU country that in 2009 reported no decline in GDP. The rate of growth of the EU countries in the period 2003–2013 is presented in the table below.

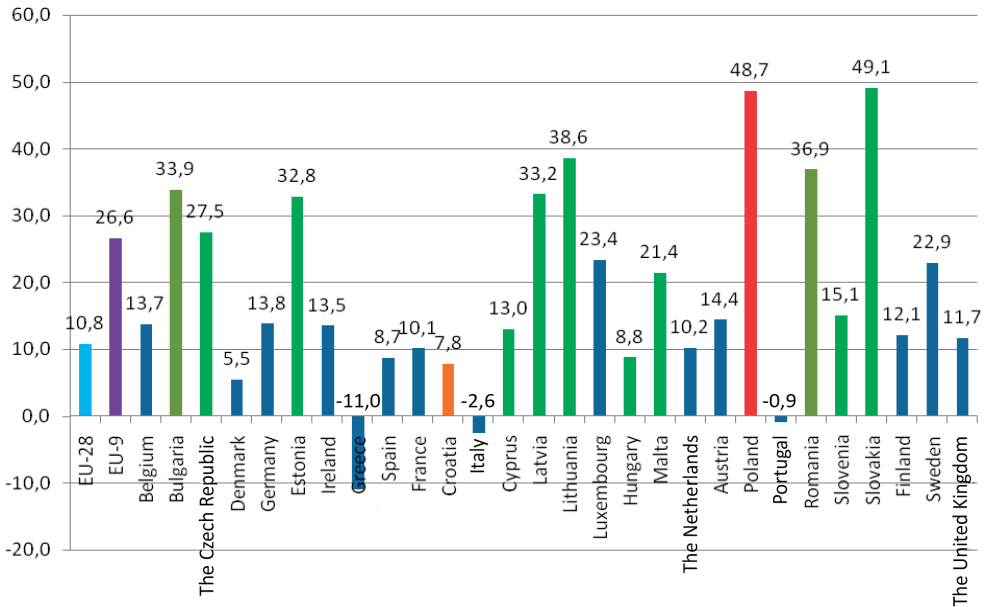
Table 5. The Real GDP Growth Rate in the Period 2003–2013 (%)

Country	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EU 28	1.5	2.6	2.2	3.4	3.2	0.4	-4.5	2.0	1.6	-0.4	0.1
Euro zone 18	0.7	2.2	1.7	3.3	3.0	0.4	-4.5	1.9	1.6	-0.7	-0.4
Belgium	0.8	3.3	1.8	2.7	2.9	1	-2.8	2.3	1.8	-0.1	0.2
Bulgaria	5.5	6.7	6.4	6.5	6.4	6.2	-5.5	0.4	1.8	0.6	0.9
The Czech Republic	3.8	4.7	6.8	7.0	5.7	3.1	-4.5	2.5	1.8	-1.0	-0.9
Denmark	0.4	2.3	2.4	3.4	1.6	-0.8	-5.7	1.4	1.1	-0.4	0.4
Germany	-0.4	1.2	0.7	3.7	3.3	1.1	-5.1	4.0	3.3	0.7	0.4
Estonia	7.8	6.3	8.9	10.1	7.5	-4.2	-14.1	2.6	9.6	3.9	0.8
Ireland	3.7	4.2	6.1	5.5	5.0	-2.2	-6.4	-1.1	2.2	0.2	:
Greece	5.9	4.4	2.3	5.5	3.5	-0.2	-3.1	-4.9	-7.1	-7.0	-3.9
Spain	3.1	3.3	3.6	4.1	3.5	0.9	-3.8	-0.2	0.1	-1.6	-1.2
France	0.9	2.5	1.8	2.5	2.3	-0.1	-3.1	1.7	2.0	0	0.2
Croatia	5.4	4.1	4.3	4.9	5.1	2.1	-6.9	-2.3	-0.2	-1.9	-1.0
Italy	0.0	1.7	0.9	2.2	1.7	-1.2	-5.5	1.7	0.4	-2.4	-1.9
Cyprus	1.9	4.2	3.9	4.1	5.1	3.6	-1.9	1.3	0.4	-2.4	-5.4
Latvia	7.7	8.8	10.1	11	10	-2.8	-17.7	-1.3	5.3	5.2	4.1
Lithuania	10.3	7.4	7.8	7.8	9.8	2.9	-14.8	1.6	6.0	3.7	3.3
Luxembourg	1.7	4.4	5.3	4.9	6.6	-0.7	-5.6	3.1	1.9	-0.2	2.1
Hungary	3.9	4.8	4.0	3.9	0.1	0.9	-6.8	1.1	1.6	-1.7	1.1
Malta	0.7	-0.3	3.6	2.6	4.1	3.9	-2.8	4.1	1.6	0.6	2.4
The Netherlands	0.3	2.2	2.0	3.4	3.9	1.8	-3.7	1.5	0.9	-1.2	-0.8
Austria	0.9	2.6	2.4	3.7	3.7	1.4	-3.8	1.8	2.8	0.9	:
Poland	3.9	5.3	3.6	6.2	6.8	5.1	1.6	3.9	4.5	2.0	1.6
Portugal	-0.9	1.6	0.8	1.4	2.4	0	-2.9	1.9	-1.3	-3.2	-1.4
Romania	5.2	8.5	4.2	7.9	6.3	7.3	-6.6	-1.1	2.3	0.6	3.5
Slovenia	2.9	4.4	4.0	5.8	7.0	3.4	-7.9	1.3	0.7	-2.5	-1.1
Slovakia	4.8	5.1	6.7	8.3	10.5	5.8	-4.9	4.4	3.0	1.8	0.9
Finland	2.0	4.1	2.9	4.4	5.3	0.3	-8.5	3.4	2.8	-1	-1.4
Sweden	2.3	4.2	3.2	4.3	3.3	-0.6	-5.0	6.6	2.9	0.9	1.5
The United Kingdom	3.9	3.2	3.2	2.8	3.4	-0.8	-5.2	1.7	1.1	0.3	1.7

Source: [Eurostat, 2014a].

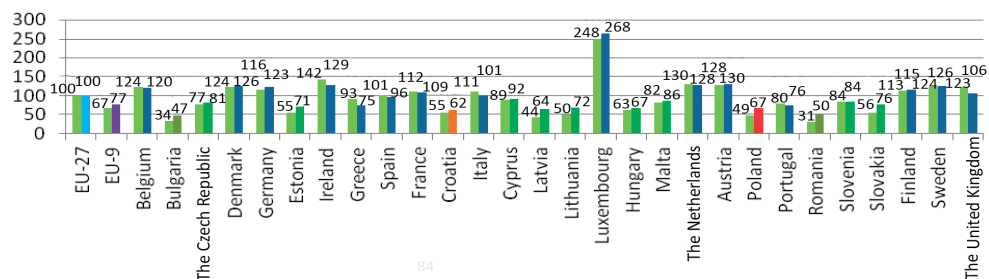
Poland recorded the highest in the whole EU, after the Slovak Republic, cumulative GDP growth in real terms in years 2004–2013 (48.7%), in which the average increase was 10.8%. The average increase in GDP in the countries joining the EU in 2004 (EU 9) amounted to 26.6%. The lowest increase in this group of countries was shown by Hungary (8.8%), followed by Cyprus (13%) and Slovenia (15.1%). The cumulative GDP growth in real terms in years 2004–2013 is presented in the following Figure.

Figure 1. The Cumulated GDP Growth in Real Terms in Years 2004–2013 (2004=100%)



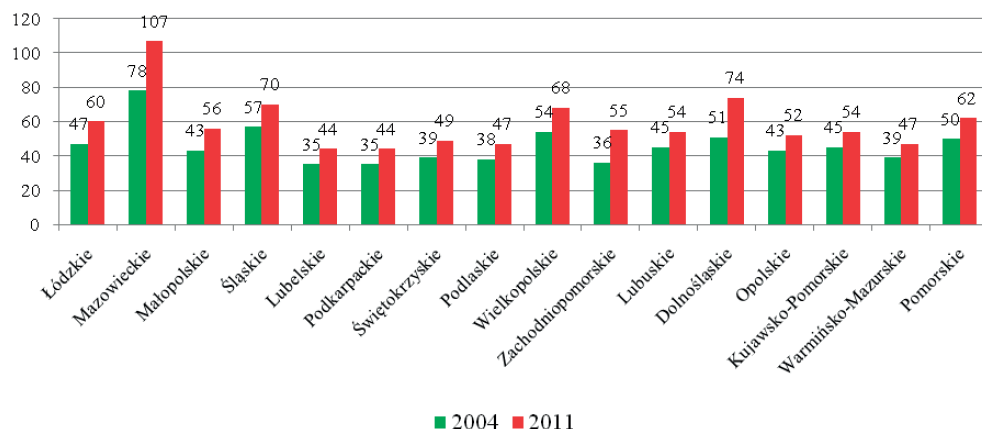
Source: Own research based on data from Table 5.

In 2012 Polish GDP per capita, measured in purchasing power parity, stood at 67% of the EU-28, which represents an increase of 18 percentage points in comparison to 2003. Among the countries joining the EU in 2004 Lithuania (22 p.p.), Latvia (20 p.p.) and Slovakia (20 p.p.) showed greater increase in GDP per capita compared to the EU average. In 2004 Slovakia (56% of the EU average) and Lithuania (50% of the EU average) had a higher GDP per capita than Poland while Latvia (44% of EU average) had it lower. Also Cyprus (89% of the EU average), Slovenia (84% of the EU average), Malta (82% of the EU average), Czech Republic (77% of the EU average), Hungary (63% of the average EU) and Estonia (55% of the EU average) had higher GDP per capita in 2004 than Poland, however, these countries have made less progress than Poland. The following figure presents GDP per capita compared to the EU-28 average in 2003 and 2012.

Figure 2. GDP Per Capita as a % of the EU-28 Average in 2011 and 2012

Source: [Eurostat, 2014b].

Comparing GDP per capita growth of Polish regions it should be noted that Mazowieckie recorded the largest increase, whose GDP per capita in 2011 exceeded the EU average. Only three regions exceeded in 2011 the Polish average of 65% of the EU average, i.e. Dolnośląskie (74%), Śląskie (70%) and Wielkopolskie (68%). Five regions form the “eastern wall” had the lowest GDP per capita in 2011 in comparison to the EU average, namely Podkarpackie – 44%, Lubelskie – 44%, Podlaskie and Warmińsko-mazurskie – both 47% and Świętokrzyskie – 49%.

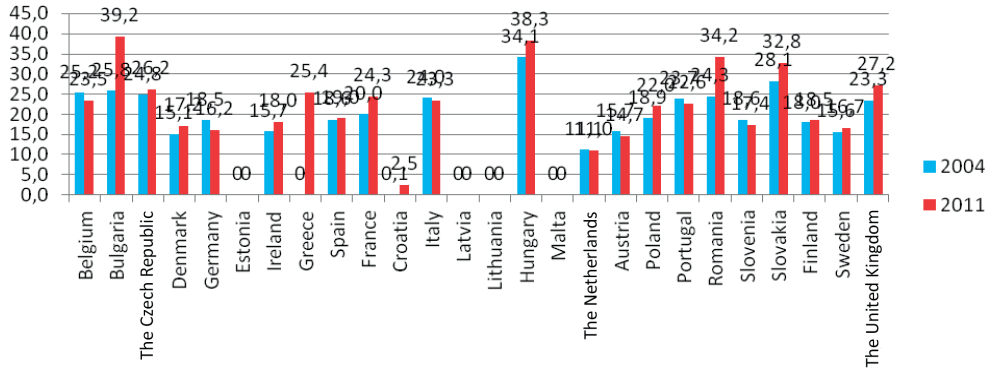
Figure 3. GDP Per Capita of Polish Regions as a % EU-28 Average in 2004 and 2011

Source: [Eurostat, 2014c].

It should be noted that regional disparities in most of the countries that joined the EU after 2004 increased between 2004 and 2011 Bulgaria (13.4 p.p.) Romania (9.9 p.p.), Slovakia (4.7 p.p.) and Hungary (4.2 p.p.) recorded the highest increase of inequality at NUTS 2 level. In Poland, the growth of regional differences was lower

and amounted to 3.1 percentage points. Dispersion of regional GDP at NUTS 2 level in 2004 and 2011 is shown in the figure below⁵.

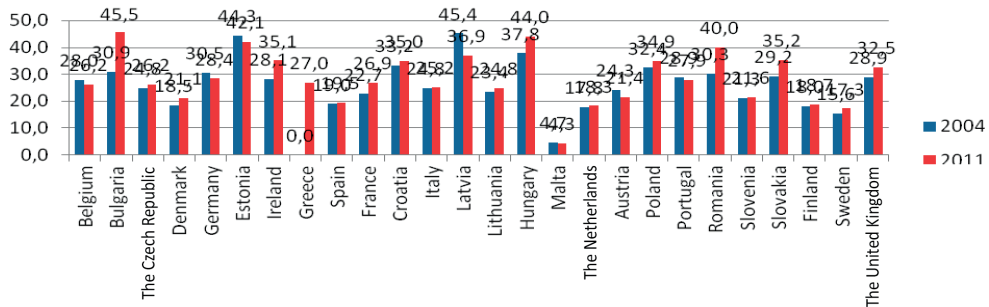
Figure 4. Dispersion of Regional GDP at NUTS Level 2 (%) in 2004 and 2011



Source: [Eurostat, 2014d].

The highest increase in inequalities on the NUTS 3 level was recorded in Bulgaria (14.6 p.p.), Romania (9.7 p.p.), Hungary (6.2 p.p.), Slovakia (6 p.p.). In Poland, the regional differences at the NUTS 3 level rose less than those on NUTS 2 level (by 2.5 p.p. compared with 3.1 p.p.).

Figure 5. Dispersion of Regional GDP an NUTS Level 3 (%) in 2004 and 2011



Source: [Eurostat, 2014e].

⁵ Dispersion of regional GDP per capita is measured by the sum of absolute differences between regional and national GDP per capita, weighted by the share of the population and expressed as % of national GDP per capita. The indicator is calculated on the basis of regional GDP based on the European System of Accounts (ESA95). Dispersion of regional GDP is zero when the GDP per capita in all regions of the country is the same and it increases when there is an increase in the gap between GDP per capita on regional and national level.

4. Implementation of the Objectives of the National Development Plan 2004–2006

The main objective of the National Development Plan for years 2004–2006 was “to develop the competitive economy based on the knowledge and entrepreneurship able to long-term harmonized development to ensure employment growth and improvement of social, economic and spatial cohesion with the European Union at regional and national level” [The Council of Ministers, 2003, p. 63]. This was done using the following five specific objectives:

- support of achieving and maintaining high long-term GDP growth;
- increasing the level of employment and education;
- incorporation of Poland into European transport and information infrastructure networks;
- intensification of the process of increasing share of high value added sectors in the economic structure, development of the technology of information society;
- assistance in the participation of all regions and social groups in Poland in the development and modernization processes.

The main objective of the NDP 2004–2006 was expressed as GDP per capita in Poland in relation to the average for the EU-15, with a target of 42–43%. Actually recorded GDP far exceeded the above target already in 2004, while in 2012 it reached 61% of the EU-15.

With regard to the achievement of the horizontal objective 1: *to support achieving and maintaining high long-term GDP growth* it should be noted that in the 2001–2003 pre-accession period the average growth rate was 2.2%, while in the whole period of implementation of the NDP it rose to 5.4% [MICSE, MRD, 2013, p. 17]. Despite the reduction of average annual economic growth rate to 1.6% in 2009, due to the global financial and economic crisis, Poland was the only EU country to record positive growth of GDP and it is estimated that about half of this increase was a result of the implementation of cohesion policy [MJCSF, MRD, 2013, p. 17].

The level of implementation of horizontal objective 2: *increasing employment and education level* was measured using three indicators. Taking into account the employment rate of the population (aged 15–64 years) it should be noted that, starting from 2006 the indicator steadily increased: from 51.9% in 2004 to 59.7% in 2012. The unemployment rate fell in the years 2004–2006 up to 12.2% in 2006. However, the assessment of the labour market in the years 2004–2006 should take into account the opening of EU labour markets to Polish workers and the consequent permanent or temporary emigration of population. In terms of educational indicators there was

a significant increase in the share of the population aged 15–64 with higher education (from 18.8% in 2004 to 29.8% in 2012) with decreasing (from 70.2% in 2004 to 61.3% in 2012) share of the population in this age range with secondary education (including vocational and post-secondary). Poor rate of increase of the percentage of people aged 25–64 still educating themselves or improving their education (adults educating themselves or participating in trainings) indicates a negligible impact of trainings and other initiatives co-financed by the EU on the quality and effectiveness of education and trainings [MJCSF, MRD, 2013, p. 17].

In terms of implementation of Objective 3: *inclusion of Poland in the European infrastructure networks*, a significant development of Polish transport system occurred, which was the result of the relatively low starting level of development of this infrastructure, expressed by the state of the road, rail and information network. At the end of 2011 the total length of highways amounted to 1070 km and expressways to 737.6 km, which means exceeding the level assumed in the NDP for 2006 (respectively 940 km and 399 km) [MJCSF, MRD, 2013, p. 19]. While in the case of expressways target level set out in the NDP for 2006 (399 km) was exceeded in 2008, in the case of highways target level set out for 2006 (940 km) was reached and exceeded only in 2011. However, Poland still occupies one of the last places in Europe in terms of the density of the express roads network. The development of the road network increased accessibility of many regions, improved ride comfort and increased the efficiency of road transport, as well as it improved road safety, despite the rapid pace of growth in the number of motor vehicles and passenger cars.

Established objective of NDP (2434 km of modernised railway lines in 2006) has not been achieved, since until the end of 2012 one modernised only 1956 km, moreover, the technical condition of railway infrastructure remained unsatisfactory, number of supported passenger connections was limited and one reduced the total length of railways. It should be noted, however, that the investments earmarked for railways were much smaller than in the case of road projects, and that the specifics of the implementation of railway investments is characterised by greater demands than in the case of road projects (e.g. infrastructure manager needs to ensure the possibility of the line).

Implementation of the NDP 2004–2006 has contributed to a significant improvement of the natural environment and increased access to basic municipal infrastructure (water supply and sewerage and sewage treatment plants) and increased the use of renewable energy sources. In the years 2003–2011 the active length of the sewerage network in Poland increased by 71%, i.e. to 117.7 thousand km and the number of people using it has increased by 11.6% (to 24.5 million, i.e. from 57.4% to 63.5% of the population) [MJCSF, MRD, 2013, p. 21]. In the same period the length of the

water supply network increased by 19.8% (to 278.3 thousand km) while a population of recipients increased by 3.9%. In 2011 the network was used by 95.4% of urban population and by 86.7% of rural residents. One has built 128 sewage treatment plants (municipal and industrial), which resulted in 50% increase in throughput of sewage, and the proportion of the population using them increased from 58.2 to 66.3%. One also noticed positive trends in the selective collection of waste and reduction (slight) of air pollutant emissions.

In terms of integration of Poland with EU information network infrastructure one has noticed a significant improvement in terms of access to the Internet (56% of population had access in 2010 compared to 25% in 2006), which was the result of the dynamic growth in the number of computers and of improving the quality of telecommunication infrastructure (the number of broadband connections in relation to the total population has increased in 2004–2010 from 0.5% to 14.9%), with spending on information technology being kept (2006–2010) in the range of 1.6–1.9% of GDP [MICSF, MRD, 2013, p. 21].

Indicator of implementation of Objective 4: *intensification of the process of increasing share of sectors with high added value in the economic* representing the share of employed in the three main sectors of the economy (17.5/30/52.0) was achieved in 2003 in the case of services (53.2% working in the sector) and in 2005 in agriculture (17.4%). In the case of sector II (industry and construction) the share of employees in 2004–2006 and in 2010 was lower than expected (which meant achieving the NDP target for 2006), while it was higher than the expected level in the years 2007–2009 and in 2011 (which meant not achieving the NDP target) [MJCSF, MRD, 2013, p. 21]. In the field of expenditures on research and development, the goal established in the NDP for 2006 (1.5% of GDP) has not been achieved. The share of expenditures on R&D in GDP increased from 0.54% in 2003 to 0.74% in 2010.

In terms of implementation of Objective 5: *supporting participation of all regions and social groups in Poland in the processes of development and modernisation* it should be noted that in the years 2004 to 2012 there has been a relatively rapid reduction in the distance between Poland and the European Union in terms of GDP per capita calculated in PPS. However the goal of reducing the differences of GDP per capita between regions has not been achieved (see Fig. 4 and Fig. 5)⁶.

⁶ Study of the ERDF impact on economic growth of regions under the Objective 1 has shown that while in years 2000–2006 the scope of regional disparities in GDP per capita in the EU-25 as a whole decreased significantly compared to the previous period, regional disparities in the regions of the EU-10, including Poland, increased (index of logarithmic average deviation increased from 4.9 to 5.5 in the EU-10 and from 2.5 to 3.1 in Poland). See: [EC, 2010, p. 29–30].

Regional disparities were also visible on the labour market. In terms of diversity of unemployment rate the ratio reached in 2012 amounted to 1:6 at the assumed target value of less than 1:6. The main objectives and indicators of the level of implementation of the objectives of the NDP 2004–2006 are presented in the following table.

Table 6. Objectives and Tell-Tales of the 2004–2006 National Development Plan

Objectives	Indices	2001	2004	2012	Assumed targets (2006)
General Objective	GDP per capita (EU 15 = 100)	40	45 (EU 15=100) 49 (EU 25=100)	61 (EU 15=100) 64 (EU 25=100) 66 (EU 27=100)	42–43
Objective 1: support of achieving and maintaining high long-term GDP growth	Average annual GDP growth rate (previous year = 100)	101	105.3	101.9	106
Objective 2: increasing the level of employment and education	The employment rate of the population (aged 15–64), in %	52.7	51.9	59.7	54–55
	Unemployment rate, in %	19.9	19	10.1	15
	Level of education (primary/secondary/higher education, aged 25–59), in %*	13.4/ 72.4/ 14.2	11/ 70.2/ 18.8	8.9/ 61.3/ 29.8	Not specified
Objective 3: inclusion of Poland in the European infrastructure networks	Highways/Expressways (km)	398/206	552/233		940/399
	Modernised railway lines (km)**	300	1213	1956	2434
	Internet access (number of hosts/100 inhabitants)***	1.2 (2002)	(–)	(–)	3.4
Objective 4: intensification of the process of increasing share of sectors with high added value in the economic structure	The share of employed in economy sectors (I/II/III)	19.1/ 30.5/ 50.4	18.0/ 28.8/ 53.2	12.6/ 30.4/ 57.0	17.5/ 30.5/ 52
	Expenditures on research and development as % of GDP	0.65	0.56	(–)	about 1.5
Objective 5: supporting participation of all regions and social groups in Poland in the processes of development and modernisation	Internal differences of GDP per capita between regions (at NUTS II – corresponding to NUTS II)	1:2.2	1:2.2	(–)	below 1:2.2
	Differentiation of registered unemployment (NUTS level III – corresponding to NUTS III)	1:7.1	1:5.6	1:6	below 1:6

* Primary education – along with gymnasium and incomplete primary education and no education; secondary – including vocational education; higher – including post-secondary.

** As at the end of the year. Lines upgraded – adapted to traveling speed ≥ 160 km/h.

*** Data not available due to the resignation of Eurostat from counting the indices.

Source: Based on: [M]JCSF, MRD, Warsaw, p. 12–13].

5. Evaluation of the Impact of the Structural Funds and the EU Cohesion Fund on the Polish Economic Situation Using Macroeconomic Models

One uses most commonly two approaches of the evaluation of the impact of the EU structural funds on the economy of countries and regions: first, based on macroeconomic supply-demand models, using a combination of estimation and calibration in order to create a system that simulates the selected aspect (partial equilibrium simulation) or the whole economy (simulation of general equilibrium) [LR Finanšu ministrija, 2007]⁷, allowing for an assessment of the indirect effects of the EU cohesion policy on convergence process [De la Fuente, 2002; Percoco, 2005, p. 141–152] and the second, econometric based on the direct analysis of impact of structural funds on economic convergence with a use of the standard equation estimation of growth by Barro and Sala and Martin [1995] or modified Mankiw-Romer-Weilla (MRW) [1992], based on the concept of conditional convergence⁸. Macroeconomic simulation models are used both in the ex ante and ex post evaluation, and econometric studies in the ex post evaluation.

Assessment of the impact of the EU structural funds on basic macroeconomic indicators (GDP, unemployment, inflation, level of employment, number of employees) made using macroeconomic models involves comparing two scenarios: the so-called baseline scenario for the situation in which the funds are used⁹ and the hypothetical scenario (alternative), adopted on the assumption that the economy does not have access to the structural funds. The difference between these two scenarios corresponds to the impact of the funds, which, however, should be treated with caution, because this difference does not represent a direct effect of cohesion policy. In fact, knowledge, what would happen in case of the absence of support from the EU, is impossible to obtain.

In the application of macroeconomic models one adopted two main assumptions, first, the lack of change in the observed behavioural relationships in the past, and second, there were no other factors during the period after the implementation

⁷ Above division is not the only used classification, i.e. S.E.G. Lolos does not apply the division on econometric models and simulation models, but identifies four groups of macroeconomic models: econometric models, computable general equilibrium models – CGE, input-output models, models for regions of the given country. See: [Lolos, 2001].

⁸ E.g. [Boldrin, Canova, 2001, p. 207–253; Cappelen, Castellacci, Fagerberg, Verspagen, 2003, p. 621–644; Ederveen, Gorter, Mooij de, Nahuis, 2002; Ederveen, De Groot, Nahuis, 2006, p. 17–42; Beugelsdijk, Eijffinger, 2005, p. 37–51; Puigcerver-Peñalver, 2007, p. 179–208].

⁹ For historical periods it corresponds to the real changes in the economy.

of support other than the implementation of cohesion policy. However, the use of macroeconomic models provides knowledge on basic economic relations and creates the possibility of simulating different development scenarios. The results of simulation models can be interpreted as an estimate of the potential cohesion policy and should not be treated as empirical evidence in favour of its effectiveness [Hagen, Mohl, 2009]. The empirical analysis can lead to very different results, mainly due to the problems associated with choosing the right type of macro model.

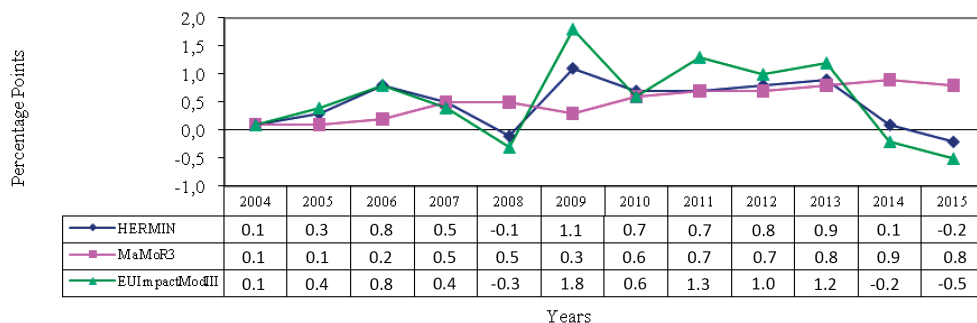
In Poland, the assessment of the impact of the EU structural funds on basic macroeconomic indicators was based on the three macroeconomic models: Hermin [ARD in Wrocław, 2010], model, MaMoR3 [MRR, IBnGR, Prevision, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010] model, and EUImpactModIII [Institute of Structural Research, 2010] model. The evaluation covered the structural funds of the EU funding programmes under the National Development Plan 2004–2006 (NDP) and the National Cohesion Strategy 2007–2013 (NCS). Analysis and predictions made on the basis of the models were carried out both at national and at regional level (individual voivodeships). The projections take into account, in accordance with the n+2 principle, the impact of the EU structural funds until 2015. Further financial perspective has been not taken into account.

Forecasts obtained on the basis of these models give different results, mainly due to the different design of models, and various economic theories underlying, but they point to a significant positive impact of the structural funds and the EU Cohesion Fund on the basic Polish economic and social indicators.

5.1. The Impact of the EU Structural Funds on GDP

Comparing the estimates of the impact of the EU structural funds on GDP growth, made on the basis of three models, it should be noted that in the period until the end of 2010 this impact was mainly visible through demand factors, i.e. increase in aggregate demand due to the absorption of funds. In the forthcoming years, one also forecasts supply effects, mainly due to the accumulation of public and private capital and causing increase in labour productivity. The impact of cohesion policy on the acceleration of economic growth was the strongest in 2013, when GDP growth was higher by approx. 0.9 (Hermin model) to 1.2 percentage points (EuImpactModIII model) compared to a situation without the EU funding. The impact of the structural funds and the EU Cohesion Fund on the growth rate of real GDP is shown in the following figure.

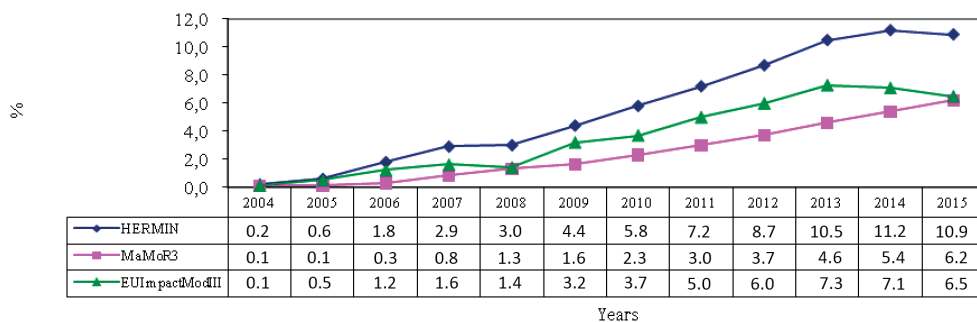
Figure 6. Impact of the EU Structural Funds on the GDP Growth Rate in Fixed Prices (Previous Year = 100; Deviations from the Scenario without Funds, in p.p.)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

In 2010 level of GDP (in current prices) was higher by 2.3% (MaMoR3 model) to 5.8% (Hermin model) compared to the situation without the EU funding. The impact of the EU structural funds on GDP in current prices will be strongest at the end of the forecast period, i.e. during the years 2013–2015. In 2014 GDP (in current prices) will be higher by between 5.4% (MaMoR3 model) and 11.2% (Hermin model). The impact of cohesion policy on GDP level (in current prices) is shown in the following figure.

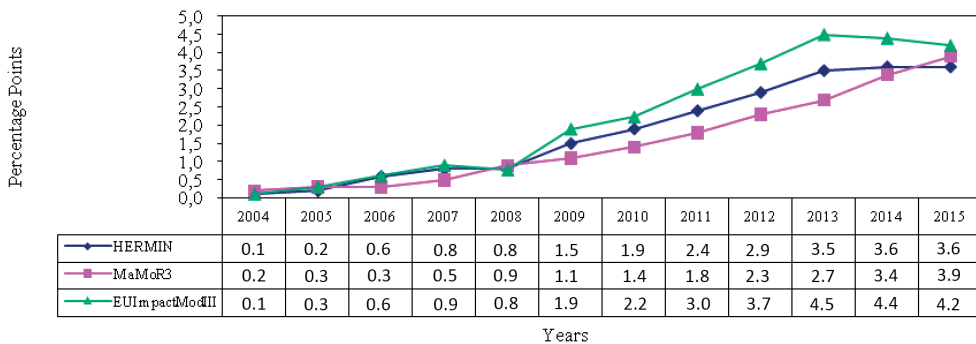
Figure 7. Impact of the EU Structural Funds on GDP Level in Current Prices (Deviations from the Scenario without Funds in %)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

Forecasts of the impact of the EU funds on the level of Polish GDP per capita with regard to the EU-27 have shown that these funds are an important factor in reducing the development gap between Poland and the EU. In 2013 difference in the level of Polish GDP per capita in relation to the EU-27 was, thanks to the EU funds, lower by between 2.7 percentage points (MaMoR3 model) and 4.5 percentage points (EuImpactModIII model) compared to a situation without the EU funding. The impact of the structural funds and the EU Cohesion Fund on the level of GDP per capita in relation to the EU-27 (differences in p.p) is shown in the following figure.

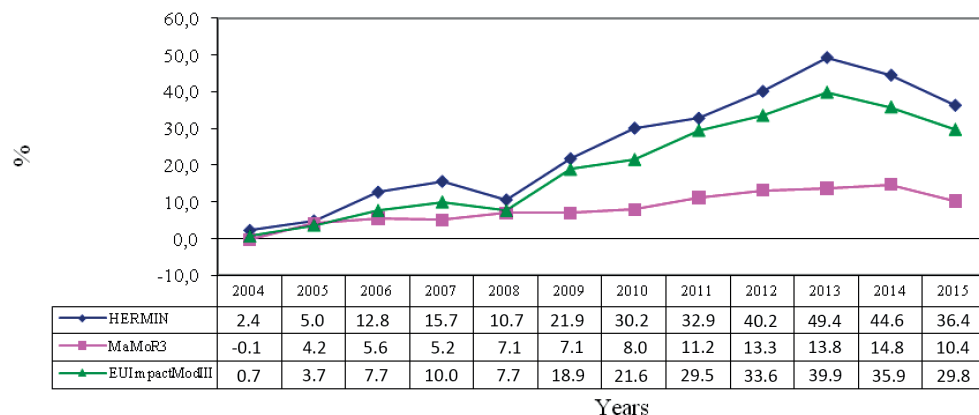
Figure 8. Impact of the EU Structural Funds on GDP per Capita (in PPP) in Relation to EU-27 (Deviations from the Scenario without Funds, in p.p.)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

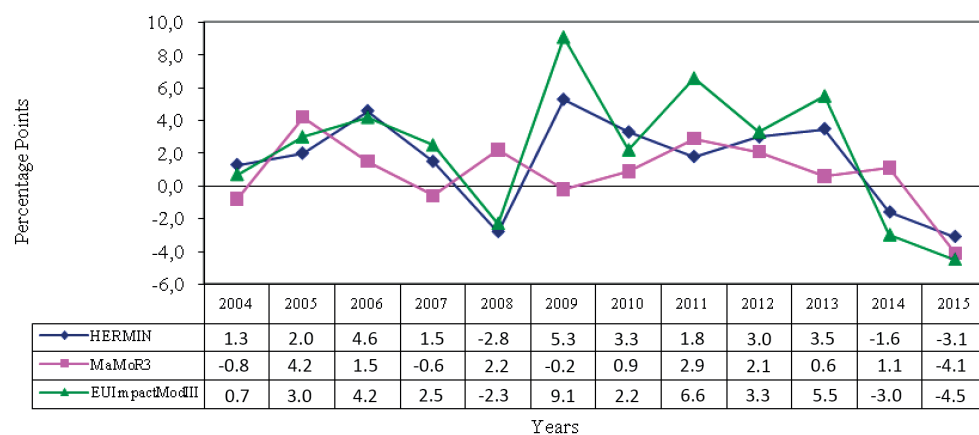
5.2. Impact of the EU Structural Funds on Investments

The EU Structural Funds co-finance investments in infrastructure and support business investments resulting in an increase of gross expenditures on fixed assets and in an increase of the rate of investments. In 2010 gross expenditures on fixed assets were 8.0% (MaMoR3 model) to 30.2% (Hermin model) higher compared to a situation without the EU funding. The biggest impact of the funds on investment activities was forecasted in 2013, when the gross expenditures on fixed assets were 14.8% (MaMoR3 model) to 49.4% (Hermin model) higher compared to a scenario without funds. The impact of cohesion policy on capital expenditures is shown in the following figure.

Figure 9. Impact of the EU Structural Funds on the Gross Expenditures for Fixed Assets in Current Prices (Deviations from the Scenario without the Funds in %)

Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

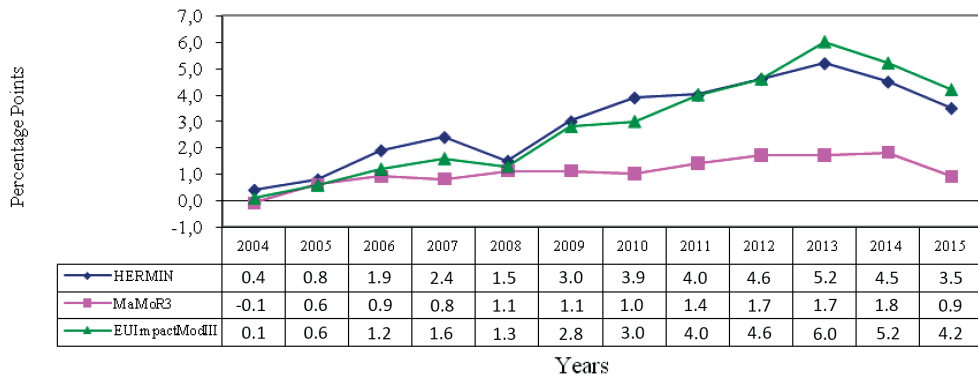
In 2010 growth rate of gross expenditures on fixed capital was from 0.9 percentage points (MaMoR3 model) to about 3.3 percentage points (Hermin model) higher compared to a scenario without the EU funding. Starting from 2014 the projected impact of the structural funds on investment's growth rate is negative, which is caused by not considering the next financial perspective. The impact of cohesion policy on the growth rate of expenditures on fixed capital is shown in the following figure.

Figure 10. Impact of the EU Structural Funds on the Growth Rate of Gross Expenditures on Fixed Assets (Deviations from the Scenario without the Funds in p.p.)

Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

Forecasts based on the three models show the positive impact of the EU funds on the growth rate of investments up till 2013. Forecasts by Hermin model show a smaller effect of funds on the rate of investments in comparison with the other two models. The biggest impact of structural funds on the rate of investments will occur in 2013, and will range from 1.7 percentage points (MaMoR3 model) to 6.0 percentage points (EuImpactModIII model). The impact of the EU structural funds on the rate of investments is shown in the following figure.

Figure 11. Impact of the EU Structural Funds on the Rate of Investments (Deviations from the Scenario without the Funds in p.p.)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

5.3. Impact of the EU Structural Funds on the Structure of Economy

Investments co-financed from the EU structural funds contribute to the change in the sectoral structure of the economy, causing an increase of the share of sector II (industry and construction) in gross value added (GVA) and the decline in the shares of sector I (agriculture) and III (services). The forecasted until 2015 decline of the share of sector I in the creation of GVA varies greatly depending on the model. The biggest changes are predicted by the Hermin model, and the smallest by MaMoR3 model. The impact of the EU structural funds on the gross added value in the agriculture sector is shown in the following figure.

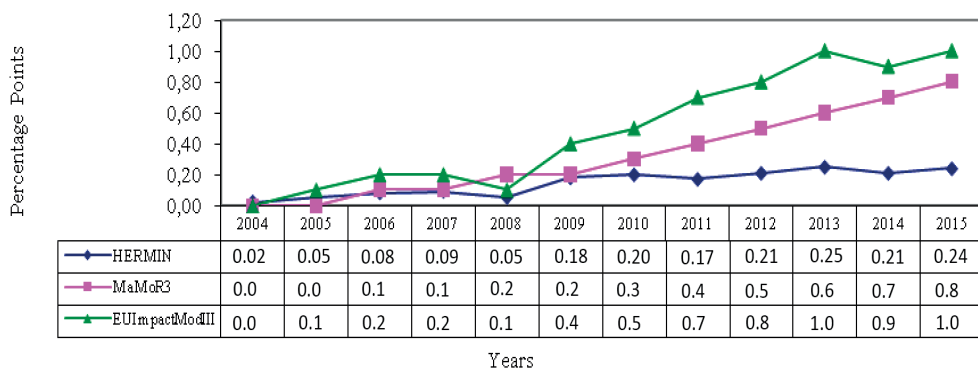
Figure 12. Impact of the EU Structural Funds on the Gross Added Value in Sector I – Agriculture (Deviations from the Scenario without the Funds in p.p.)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

In 2010 impact of the funds has increased the share of sector II (industry and construction) in the creation of GVA by from 0.2 percentage points (Hermin model) to 0.5 percentage points (EuImpactModIII model) compared to a situation without the EU funding. This share is increasing up to 2013 reaching values of 0.25 percentage points (Hermin model) to 1 p.p. (EuImpactModIII model). The impact of the EU structural funds on gross added value in the economy's sector II is shown in the following figure.

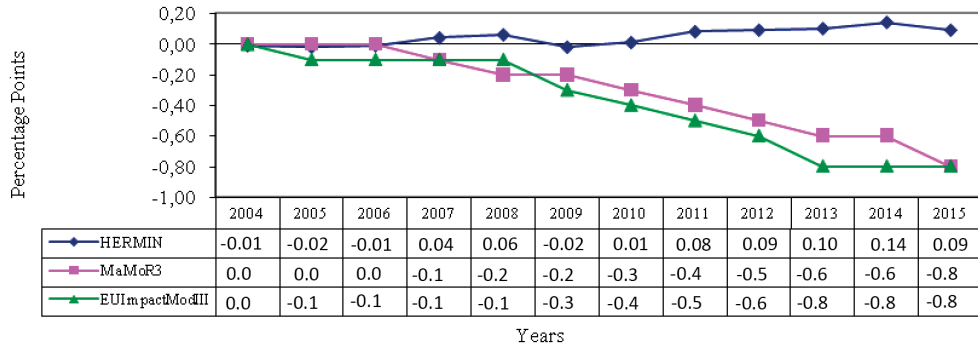
Figure 13. Impact of the EU Structural Funds on the Goss Added Value in Sector II – Industry and Construction (Deviations from the Scenario without the Funds in p.p.)



Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

The inflow of structural funds decreased the importance of the service sector in the creation of GVA (MaMoR3 and EuImpactModIII models) or slightly increased it (Hermin model). The impact of the EU structural funds on gross added value in the service sector is shown in the following figure.

Figure 14. Impact of the EU Structural Funds on the Gross Added Value in Sector III—Services (Deviations from the Scenario without the Funds in p.p.)

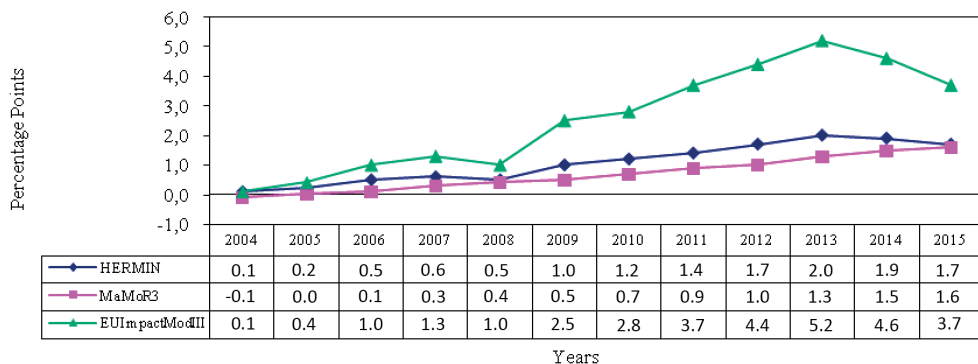


Source: Based on: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

5.4. The Impact of the EU Structural Funds on the Labour Market

The inflow of the EU funds also contributes to employment growth and lower unemployment rates and the largest effects will occur in the years 2013–2015. In 2010 the employment rate of people aged 15–64 years was about 0.7 p.p. (MaMoR3 model) to 2.8 p.p. (EUImpactModIII model) higher compared to a situation without funds. The strongest impact of the EU funds on the employment rate was predicted using the EUImpactModIII model (5.2 p.p. in 2013). The impact of the EU funds on the employment rate is shown in the following figure.

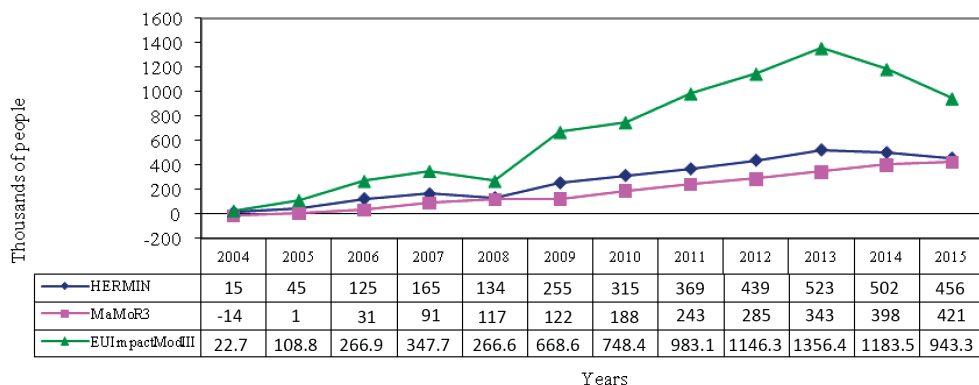
Figure 15. Impact of the EU Structural Funds on Employment Rate of People Aged 15–65 (Deviations from the Scenario Without the Funds in p.p.)



Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

Forecast of the impact of the EU structural funds on the employment growth shows the increasing trend of the number of employed until 2013, in which the number of employees will increase by 343 thousand people (MaMoR3 model) to 1356.4 million (EUImpactModIII model). The impact of the EU structural funds on the number of employees is shown in the following figure.

Figure 16. Impact of the EU Structural Funds on the Number of Workers (Deviations from the Scenario without the EU Funds, in Thousands of People)

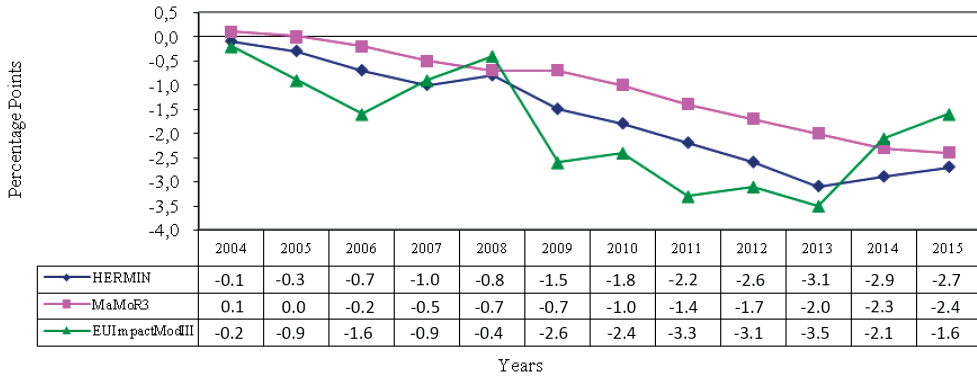


Years

Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

The growing impact of the EU funds on the reduction of the unemployment rate is visible up to 2013 according to forecasts based on MaMoR3 and EUImpactModIII models and until 2015 according to HERMIN model. The smallest declines in the unemployment rate are forecasted on the basis of the MaMoR3 model. In 2013 the unemployment rate was supposed to be lower by 2 p.p. (MaMoR3 model) up to 3.5 p.p. (EUImpactModIII model) compared to the situation without the EU funds. In the following years the decrease in the unemployment rate will be lower except for the forecasts based on the MaMoR3 model. The impact of the EU structural funds on the unemployment rate is shown in the following figure.

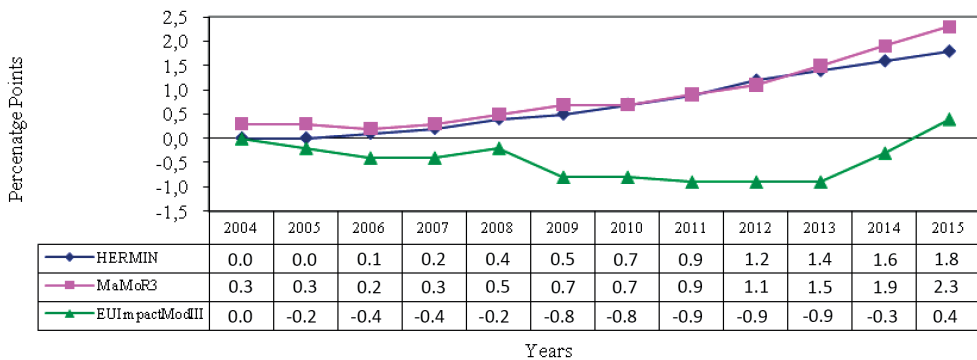
Figure 17. Impact of the EU Structural Funds on the Unemployment Rate among People Aged 15–64 (Deviations from the Scenario without the EU Funds, in p.p.)



Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

In the first period of Polish membership in the EU, the impact of the EU structural funds on labour's productivity growth, as measured by gross added value per person employed was small, as the funds were allocated primarily into the creation of new jobs. Forecasts of the impact showed mixed results: a positive effect in case of the Hermin and MaMoR3 models and a small negative impact until 2015 in case of EUImpactModIII model. The strongest impact of the EU funds on the growth of labour productivity as a result of the increased investments in human and physical capital with a limited increase in the number of employed will occur in 2015 and will range from 0.4 p.p. (EUImpactModIII model) to 1.8 p.p. (Hermin model) and 2.3 p.p. (MaMoR3 model). The impact of the EU structural funds on labour productivity is shown in the following figure.

Figure 18. Impact of the EU Structural Funds on the Labour Productivity in Relation to the EU-27 (Deviations from the Scenario without the Funds, in p.p.)

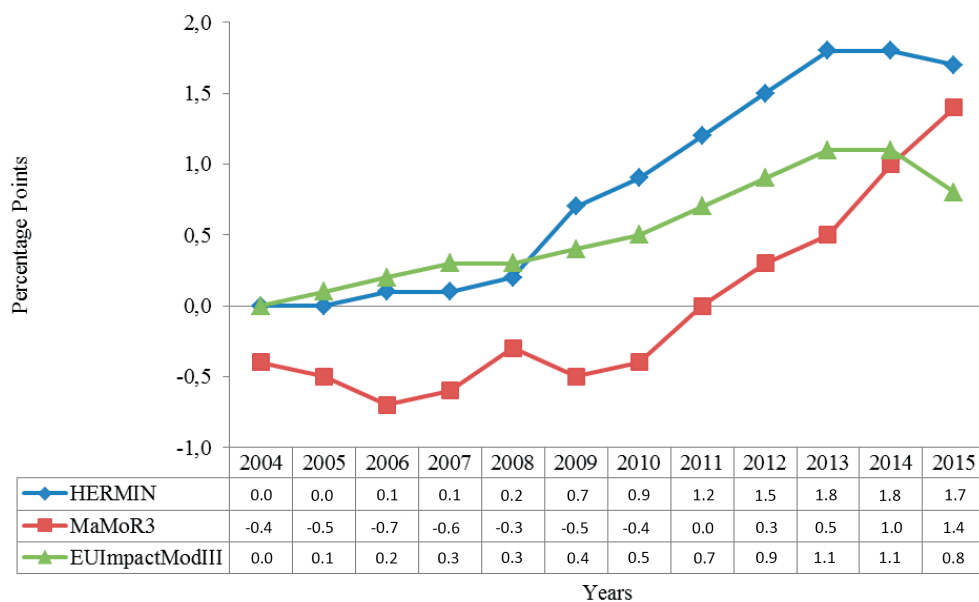


Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

5.5. The Impact of the EU Structural Funds on Public Finances

Forecasts of the impact of the EU structural funds on the basis of the three models show that the funds help to improve the results of the public finance sector in relation to GDP, which has the effect of reducing the size of public debt in relation to GDP. The most important influence of the funding, from the point of view of the discussed ratio, will occur in the years 2013–2014 and will reduce the public sector deficit in relation to GDP by 1.1 p.p. (EUImpactMOD III model) and 1.8 p.p. (Hermin model) compared to a situation without funds. According to the forecast based on the MaMoR3 model maximum effect will occur in 2015, reaching 1.4 p.p. Impact of the EU structural funds on the results of the public finance sector in relation to GDP is shown in the following figure.

Figure 19. Impact of the EU Structural Funds on the Result of Public Finance Sector in Relation to GDP (Deviations from the Scenario without the Funds, in p.p.)

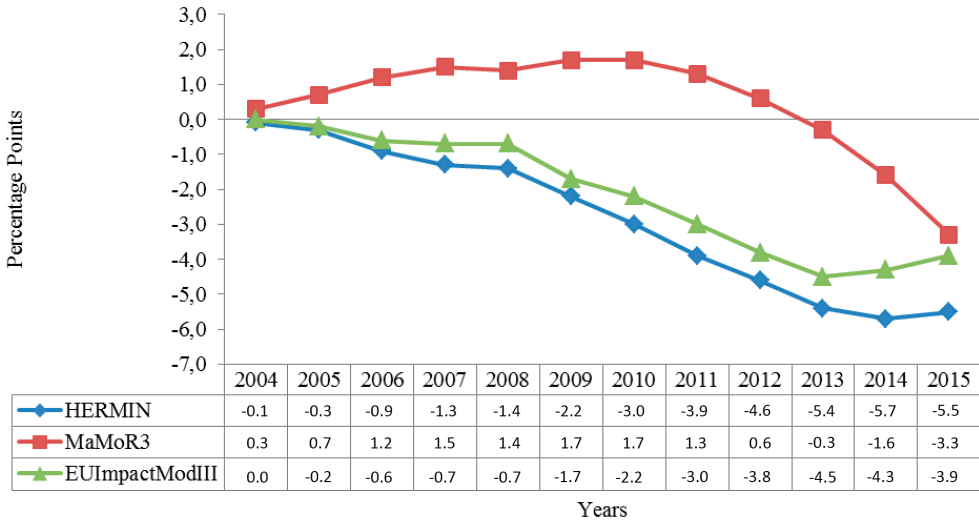


Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

Apart from reducing the public sector deficit, strengthening of PLN due to the influx of the EU funds, which results in a reduction of foreign debt expressed in PLN, is an additional factor contributing to the improvement of public debt to GDP ratio. The greatest positive impact of the structural funds on the public debt to GDP ratio will occur in 2014 and will amount to 5.7 p.p. (Hermin model). Forecasts based on

MaMoR3 model predict that the impact of the funds on the public debt to GDP ratio will be positive from 2013 onwards. The impact of the EU Structural Funds on the public debt to GDP ratio is shown in the following figure.

Figure 20. Impact of the EU Structural Funds on Public Debt to GDP Ratio (Deviations from the Scenario without the Funds, in p.p.)



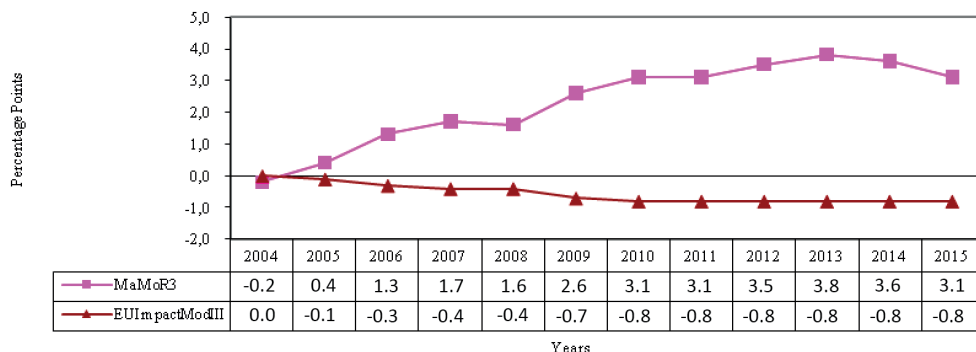
Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Łyziak, Michniewicz, 2010; IBS, 2010].

5.6. The Impact of the EU Structural Funds on the Poland's External Balance

The assessment of the impact of the structural funds on the state of the external balance of the Polish economy, measured by current account balance in relation to GDP, is not unambiguous and depends on the model involved. According to the forecast based on the MaMoR3 model inflow of structural funds has a positive effect on the current account balance and contributes to reducing the current account deficit in relation to GDP ratio by 0.4 p.p. in 2005, 3.1 p.p. in 2010 and 3.8 p.p. in 2013. In contrast, forecast based on EUImpactMOD III model indicates the opposite direction of the impact of the funds, namely worsening of the current account deficit, which is caused by a stronger influence of the funds on the dynamics of import than export, which results in a growth of the negative trade

balance¹⁰. The impact of structural funds on current account balance is shown in the following figure.

Figure 21. Impact of the EU Structural Funds on Current Account Balance in Relation to GDP (Deviations from the Scenario without the Funds, in p.p.)



Source: [ARD in Wrocław, 2010; Kaczor, Mackiewicz-Lyziak, Michniewicz, 2010; IBS, 2010].

In addition to the impact of the EU structural funds on the above key macroeconomic indicators, evaluations made also included examination of the impact on other indicators such as the employment and the unemployment rate by gender, employment by sectors of the economy, export, import etc. Evaluations of the impact of the funds on the basis of the above models were conducted not only at national level but also on a regional level, showing the impact of the EU funding on reducing disparities between voivodeships. Their influence was higher in poorer regions, but the strength of this influence depended on the scale of the available funds and the structure of distribution of resources among the main areas of support.

Summing up the results of these forecasts, it is clear that, despite the different results, stemming from different construction of models and various underlying economic theories, they point to a significant positive impact of the Structural Funds and the EU Cohesion Fund on the basic Polish economic and social indicators. After an initial period of Polish membership in the EU (2004–2006), when the impact of structural funds on the economy was small, in 2007 one could have observed a clear increase of the influence on the main macroeconomic indicators [MRD, 2008] and its accumulation is predicted for the period 2013–2015.

¹⁰ Hermin model forecasts a negative impact of the funds on the trade balance either due to a deepening excess of import of goods and services over their export (in the years 2004–2008), or due to reducing the growth of net export (in 2009 one noticed a positive trade balance). The results of the model were not included due to lack of comparability of data.

Comparison of the effects of the EU structural funds on the Polish economy with the impact of these funds on the economies of other major beneficiaries of support was made with the use of Hermin and Quest models [Bradley, Untiedt 2009; Varga, Veld in't, 2011; EC, 2010]. Comparing the estimates of the impact of the EU structural funds on the Polish economy, made using macroeconomic HERMIN and QUEST models on the background of the main beneficiaries of this aid, one should note that the impact of the funds was significantly higher in the case of the four former cohesion countries (Greece, Spain, Ireland and Portugal) than in ten new member states. The impact of structural funds on the Polish economy was higher than the average impact on the economies of the EU-10. Greater difference of this impact was shown in the estimates based on the QUEST model than on HERMIN model.

Summary

The Structural Funds and the EU Cohesion Fund are important factors affecting the conditions of development processes in Poland [MRD, 2009]. Projects co-financed from EU funds are an important part of the pro-development and modernisation investments, carried out in the country. In the period 2004–2013 the total investments increased by 75%. In years 2009–2011 approx. 51.6% of public investments in Poland were funded under the EU cohesion policy [MRD, 2009].

The main, measurable results of the use of the structural funds and the EU Cohesion Fund, received in years 2004–2013 include [MFA, 2014, p. 16]:

- implementation of more than 160 thousand projects; construction of a total of 673 km of motorways, construction or modernisation of 808 km of expressways, 36 thousand km of sewerage network and 683 wastewater treatment plants;
- realisation of 62.6 thousand of various projects by entrepreneurs, co-financed by the EU in amount of approx. 85.5 billion PLN; implementation in enterprises in years 2007–2013 just only under one programme (OP Innovative Economy) results such as, among others, 551 new technologies and 215 research and development results; support of 972 innovative projects under the so-called incubators and introduction of 2960 e-services;
- substantial modernisation of Polish agriculture and agri-food sector – more than 1.5 million farmers received (apart from for direct payments) almost one third of the EU funds, that is more than 117.7 billion PLN (29 billion EUR);
- changes in education – one equipped more than half of Polish schools (about 20 thousand units) with the computer labs; creation of approximately 250 thousands computer

stations; the creation of more than 2.8 thousand of pre-school centres, and creation of additional kindergarten places in the subsequent 2.2 thousand institutions.

Undoubtedly, projects co-financed from the EU funds contributed to the high GDP growth, increased competitiveness and innovativeness of Polish enterprises, the development of an institutional system of the business environment, modernisation and development of transport and environment infrastructure, increase of employment and education level, support of the education system, especially lifelong learning, human capital development, socio-economic development in the regions, positive systemic changes in the Polish administration (e.g. improvement of the quality of strategic processes in the administration, strengthening the coordination between public policies, the introduction of mechanisms for monitoring, evaluation and control of public funds).

In addition to the positive changes that have occurred through the use of the EU cohesion policy funds, one can also give examples of improper or inefficient use of them. List of imperfections includes [Gorzelać, 2013, p. 10–12]:

- unnecessary trainings and silly gadgets given away;
- construction of unrelated fragments of roads without proper coordination in space and time, particularly severe delays in construction of roads leading out of big cities;
- purchase of equipment for scientific laboratories, in which there is almost nobody to work;
- “revitalisation” projects being just simple renovations and not a complex undertakings changing functions of the parts of cities;
- counteracting the improvement of agrarian relations through direct payments;
- building expensive municipal infrastructure in shrinking municipalities;
- creation of industrial parks in quite unattractive locations;
- building unprofitable aqua parks that require permanent subsidies;
- dreams of airports in more and more exotic locations.

The catalogue of above drawbacks should be completed by the complaint concerning the inability of structural funds to create jobs and stimulate sustainable growth of regions [“Gazeta Wyborcza” 2014].

Summing up, one should say that the first period of the Poland’s use of the EU funds, including the financial perspective 2004–2006, was a period of learning the rules, procedures and organisation of the use of the EU structural funds. During the second period, namely the 2007–2013 financial perspective, the main emphasis was placed on the efficacy of the use of the funds. In turn, in the present period one should focus on greater efficiency of the use of these funds.

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The Importance of Support from the EU Budget for Polish Agriculture and Rural Areas¹

Introduction

After entering to the EU, Poland is supported from the EU budget under the Common Agricultural Policy (CAP)². This primarily includes direct payments (income support), and many times smaller market support (including export subsidies, intervention buying, inventory holding costs). Both instruments are financed from the first pillar of the Common Agricultural Policy (CAP) of the European Union (through the European Agricultural Guarantee Fund – EAGF). In addition, the EU is participating in financing of rural areas development (II pillar of the CAP – European Agricultural Fund for Rural Development – EAFRD). The fund may be used for modernisation of farms and their development, changes in production profile, launch of a new environmentally friendly production, the creation of producer groups etc. The money from EAFRD may also be used for the renewal of rural areas, the development of agri-food sector, entrepreneurship-related agricultural production, improving the skills of farmers etc.

The aim of the analysis is to show the scale of the funds channelled to agriculture and rural areas in Poland during 10 years that have passed since the accession and an attempt to assess what was the significance of these measures for beneficiaries. Due to the extremely comprehensive and methodologically heterogeneous nature of the issue, we discuss only some of its aspects. We skip apart from general information about the scale of funding – the importance of funds for market interventions³ and supporting fisheries.

¹ This text is an expanded and updated version of the author's text entitled *Wsparcie polskiego rolnictwa i obszarów wiejskich z budżetu UE* published in: [Weresa, 2014].

² According to the TEU, agricultural policy is no longer subject to the exclusive competence of the EU, and is a shared competence between the EU and the Member States (Article 4). However, the very notion of the common agricultural policy is still used in the Treaty (cf. Title III of the TFEU: Agriculture and Fisheries).

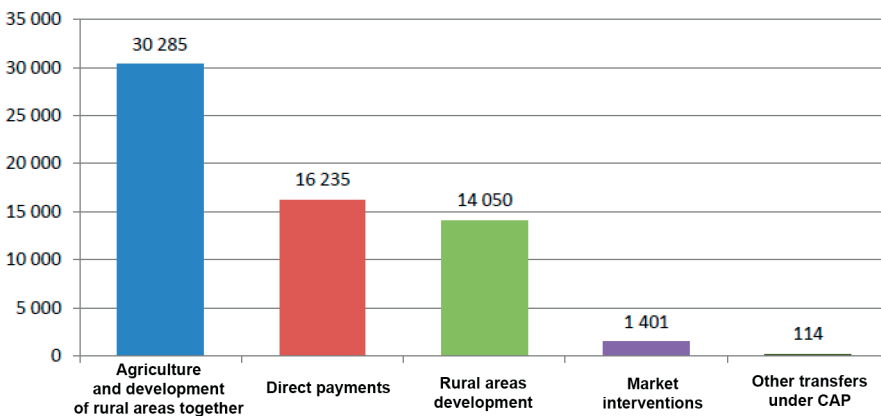
³ The funds for this purpose amounted to only a few percent of the total EU funding for Polish agriculture (approx. 4.6% – cf. Figure 1). They were intended, inter alia, for intervention purchases of grain, as well as to subsidise the export of sugar, butter and milk outside the customs territory of the EU. Part of the funds was spent on subsidies for the consumption of milk and milk products in educational institutions, the so-called “Glass of Milk” [Ministry of Agriculture and Rural Development, 2014, p. 16].

The final section presents the size and structure of the allocation of funds that Polish agriculture will obtain from the EU budget for the period 2014–2020.

1. The Total Amount of Financial Resources for the Common Agricultural Policy and Fisheries in 2004–2013 and Their Purpose

The total transfers from the EU related to support of agriculture and rural areas in the period May 1, 2004–March 31, 2014 amounted to approximately 31.8 billion EUR (134 billion PLN). Most of the funds – 54% (approx. 16.2 billion) were allocated to I pillar (including in the vast majority funds for direct payments), 44% (approx. 14.1 billion) – to the II pillar (on the development of rural areas) and the remaining 2% (approximately 1.4 billion) – on the fishery – Figure 1. It is worth noting that this was a different structure of a use of funds compared to the average for the EU, in which direct payments are up to about 80% of the CAP budget. The difference resulted primarily from the fact that Polish farmers did not receive the full level of due direct payments from the EU budget for the years 2004–end of 2012 (cf. below).

Figure 1. Transfers from the EU Supporting Agriculture, Agri-Food Sector and Rural Areas in the Period 01.05.2004 – 31.03.2014 (Million EUR, Current Prices, without the Support from the Polish Budget)



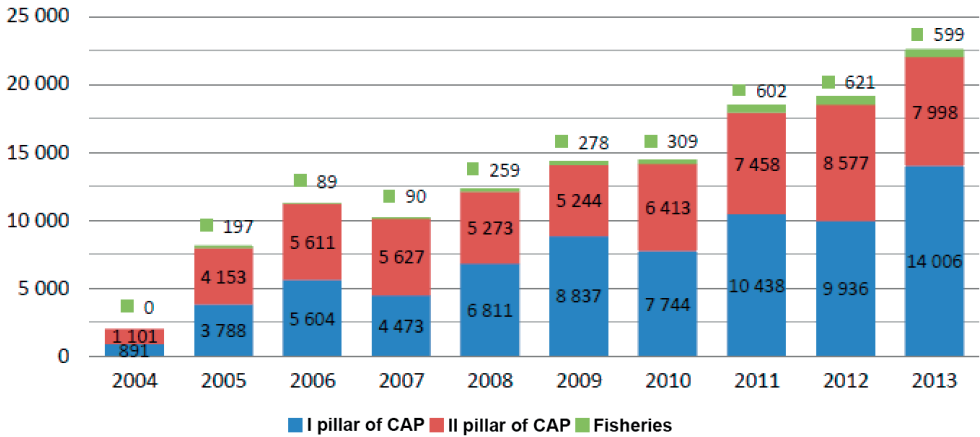
1 – position “Rural areas development” includes transfers connected with the SOP 2004–2006, RDP 2004–2006 and RDP 2007–2013;

2 – the item “Other transfers under CAP” includes transfers co-financing veterinary expenses, the Common Fisheries Policy, agricultural accountancy (FADN), Multiannual Programme of Fisheries Data Collection.

Source: [Ministry of Agriculture and Rural Development, 2014b].

The use of EU funds in each year is illustrated on Figure 2. One can notice the significant increase of support amount in the last few years compared with the first years after accession.

Figure 2. Use of the European Union’s Funds for Common Agricultural Policy and Fisheries in 2004–2013 (in Millions PLN)



Source: [Ministry of Agriculture and Rural Development, p. 14].

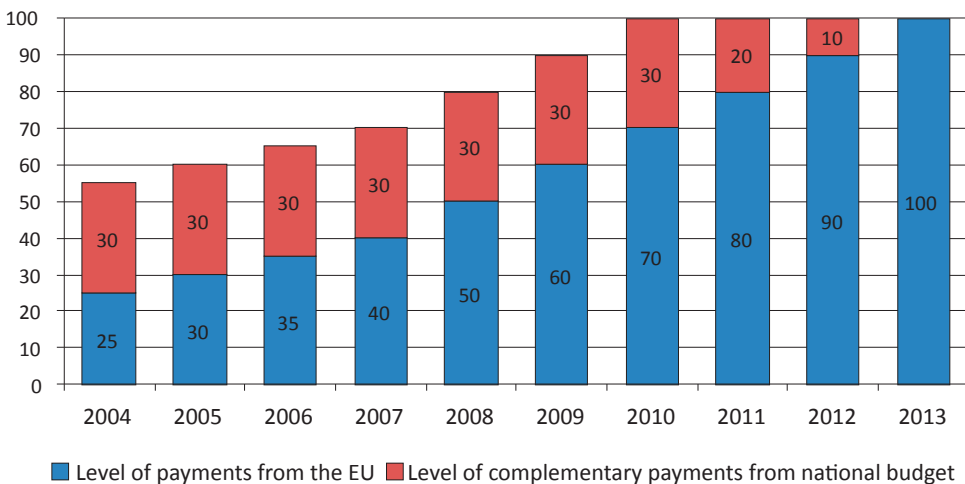
To have a complete picture, one should add a few elements to the above sum. First, the data from Ministry of Agriculture and Rural Development presented in Figures 1 and 2, on the EU budget support for rural development, include only funds actually disposed by the end of March 2014. Therefore they do not take into account that part of the money that has been allocated for the whole period 2007–2013, but shall be spent by the end of 2015. The entire amount of funds available from the EU budget for a target discussed here amounted to 13.4 billion EUR. Secondly, one should add to the funds included in Figures 1 and 2 national public funding that supplemented both direct payments and funds for rural development. In the analysed period of 10 years it amounted to a total of approx. 12 billion EUR (about 8 billion EUR to complement direct payments and less than 4 billion EUR to co-finance RDP, current prices) [Public Finance Commission, 2014]. Thirdly, the figures do not take into account the co-financing from private funds of beneficiaries (for rural development). Only in the years 2007–2014 it amounted to 7.5 billion EUR. All this makes the actual sum spent on the development of agriculture and rural areas much larger than it would result solely from the data on transfers from the EU budget listed in Figures 1 and 2.

2. Direct Payments

The most important (in financial terms) instrument of support to agriculture, both in Poland and the EU, are direct payments (as indicated above – they accounted for approx. 44% of the total EU funds under the CAP). Polish farmers have received payments from the Polish accession to the EU, i.e. since 2004. Direct payments are granted each year to individuals or legal entities that carry out agricultural activities on at least one hectare of agricultural land and maintain the farm in good agricultural and environmental condition and meet certain basic requirements in the field of environmental protection, animal welfare, good agricultural culture etc. (the so –called cross-compliance rule).

Under the Accession Treaty, Polish farmers (as well as farmers from other new EU Member States) in the first years of membership, received significantly lower direct payments per 1 ha of agricultural land than in the EU-15. The level was increased gradually (Figure 3), in order to reach in 2013 100% of the agreed level of support (phasing-in). In the accession negotiations partners agreed on the possibility of increasing payments (within certain limits) from the national budget (in the form of so-called national complementary payments). In the years 2004–2012 the Polish government increased subsidies from the national budget in accordance with the limits shown in Figure 3 (usually by about 30 percentage points, and then by 20 or 10 percentage points of the target level). Thanks to that Polish farmers received 100% of negotiated payments already in 2010.

Figure 3. The Level of Direct Payments to Polish Farmers under the Treaty of Accession in 2004–2013 (in % of the Full Amount of Payments)



Source: [Ministry of Agriculture and Rural Development, 2014a].

In 2013, for the first time since joining the EU, all payments received by Polish farmers were financed from the EU budget. On the other hand, complementary payments in the following sectors: basic crops (including cereals, oilseeds, proteins), hops, potato starch, tobacco products intended for animal feed grown on permanent grassland (animal payment – paid since 2007) were covered (from the beginning of accession) from the national budget. In addition, sugar payment (which was a result of the reform of the sugar market) has been paid by the EU since 2006, and the payment for tomatoes and payment for soft fruits since 2008 – cf. Table 1.

From year to year Poland received more funds from the EU budget for payments (in EUR), due to their gradual approach to 100% due level. Data for the period 2007–2013 indicate that the size of the EU budget payments increased during this period from 1.3 to 3.1 billion EUR [Council of the EU, 2007; 2009].

Level of funds given for Polish payments, converted into PLN, was variable from year to year (Figure 2), partly due to changes in payment rates and the level of EU funding, but also because of the volatility of the zloty against the euro, which was determined once a year for those payments⁴. As a result, when zloty was weaker against the euro than in the previous year, the amount of funds in PLN was relatively higher, while it was stronger, the payments were relatively lower. The amount of direct payments in PLN has increased in the years 2007–2013 almost 3.1 times, from nearly 4.5 billion PLN to approximately 14.0 billion PLN.

Number of recipients is fairly constant and is approx. 1.4 million people, which operate on around 14 million hectares of arable land⁵. Changes in the structure of the size of farms were therefore small, contrary to expectations, that the accession will reduce the number of smallest farms and will increase the size of others. In fact, the number of smallest and largest farms increased and the number of average sized farms has decreased.

Under the Treaty of Accession Poland applies a simplified system of direct payments. It includes the Single Area Payment Scheme (SAPS)⁶, as well as supplementary

⁴ The conversion rate of payment fixed in EUR to PLN is based on the exchange rate published in the Official Journal of the European Union. The operative event for the exchange rate is the rate most recently set by the European Central Bank prior to 1 October of the year preceding the year in which the payments are paid. Since 2005 direct payments have been carried out in all EU countries in the period from 1 December of the current year to 30 June of the following calendar year [Pośrednik, 2009].

⁵ Only in the first year it was lower because not all farmers applied in time necessary documents, [See: ARMA, 2014c].

⁶ The amount of EU support for individual countries is determined by the area of agricultural land that is maintained in good condition and the size of the so called reference yield. Due to the fact that Polish reference yield, which the Commission took into account when determining the area payments was lower than in the former EU-15, Polish farmers were granted with lower payments than those which were paid in the EU-15.

payments, usually dependent on the type of production (cf. Table 1). This means that the actual amount of aid for a particular farmer is often greater than the rate of basic payment (SAPS) multiplied by the number of hectares of the farm.

Table 1. Rates of Direct Payments Applicable in 2013 by Payments Type

	The planned amounts for each direct payment for 2013 in million PLN	% of a whole	Rate of payments for 2013 in PLN
Single Area Payment Scheme (SAPS)	11,530.6	81.0	830.30 PLN/ha
Supplementary payment to the area of the primary crop (UPO in Polish)	972.1	6.8	139.39 PLN/ha
Supplementary payment to the area of plants intended for animal feed, grown on permanent grassland (animal payment)	346.3	2.4	238.93 PLN/ha
Supplementary payment to the area of growing hops, which were granted with a supplementary payment to the area of growing hops for 2006	2.5	0.0	1,263.50 PLN/ha
Unrelated payment for tobacco – Virginia tobacco	115.8	0.8	5.75 PLN/kg
Unrelated payment for tobacco – remaining tobacco	55.6	0.4	4.02 PLN/kg
Unrelated payment for starch	36.6	0.3	449.44 PLN/ton
A special area payment to the area of leguminous crops and legumes	148.5	1.0	719.43 PLN/ha
Specific support – payment for the cows	164.9	1.2	602.60 PLN/pc
Specific support – payment for the sheep	9.7	0.1	126.86 PLN/pc
Separate sugar payment	655.5	4.6	54.10 PLN/T
Separate payment for fruit and vegetables (tomatoes payment)	27.6	0.2	167.44 PLN/T
Payment for tobacco – Virginia	77.7	0.5	×
Payment for tobacco – Burley	35.0	0.3	×
Payment for tobacco – dark tobacco	8.4	0.1	
Separate payment for soft fruit	46.0	0.3	1,579.54 PLN/ha
Total direct payments	14 232.8	100.0	×

Source: [ARMA, 2014c].

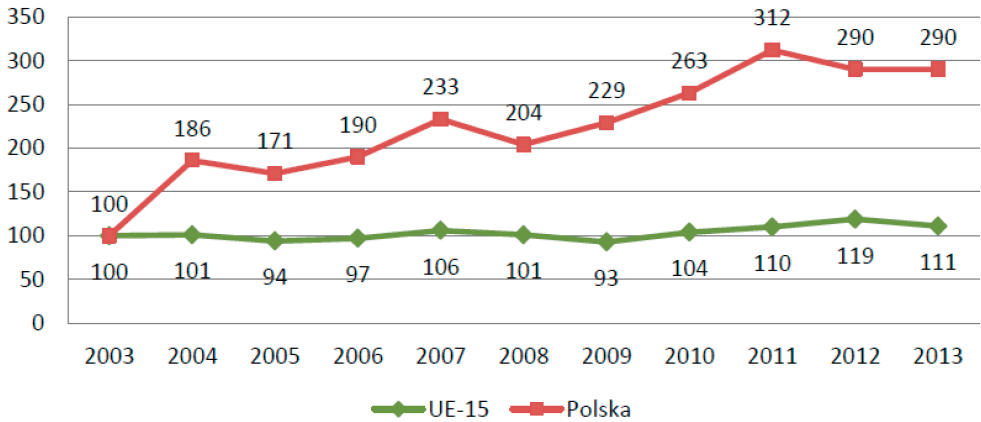
3. Evaluation

Payments are among the most controversial agricultural support instruments. The obvious benefit for farmers is that they have significantly improved their income situation. It is estimated that in Poland, direct payments account for more than half

of farmer’s income, while in the entire EU, on average, 60% of the income of farmers comes from subsidies [Poślednik, 2009].

Large “injection” of funds (much higher than those offered by the national budget before accession) made farmers the professional group of which income increased most due to accession. One should also notice that farmers have become a social group, which benefited soonest from the support of the EU (the first funds from payment for the year 2004 were paid to farmers in the autumn of 2004).

Figure 4. Changes in Farmer’s Income per 1 Employee, (2003 = 100)



Source: [Ministry of Agriculture and Rural Development, 2014, p. 5].

According to EUROSTAT Polish farmers’ income increased in 2013 compared to the level in 2003 by 190% thanks to payments, as well as other sources, including increased sales of agricultural products and their higher prices⁷ (in the years 2007 to 2012 commodity production of Polish agriculture at constant prices increased by about 15%, and in current prices by 43%). At the same time, the income of farmers in the EU-15 increased in comparison to 2003 by only 11%. One might add that in Estonia and Lithuania agricultural incomes increased more than in Poland. In general, apart from Romania, income situation of farmers in all EU member states from Central and Eastern Europe improved significantly. It should be stressed out that at the same time, after the Polish accession to the EU, the cost of agricultural produc-

⁷ On the basis of Polish FADN, in the first year of accession subsidies for operating activities (direct payments, funds from the EU structural funds, including agri-environmental payments, LFA payments and other payments related to the development of rural areas) accounted for 13% of farmers’ income, while in 2005–2008 this share stood at 52% and in 2009 it exceeded 80%, [Ministry of Agriculture and Rural Development, 2014b, p. 15].

tion increased as a result of the increase in VAT rates for fertilizers and agricultural machinery.

No less important advantage of payments is that they stabilise agricultural income. It is because they are guaranteed at a certain level in the next financial perspectives, which are the basis for determining the annual EU budgets. In a view of the uncertainty of production conditions (droughts, floods etc.) and sales (economic slowdown), stabilising function of direct payments is of great importance for agricultural producers.

The size of support that individual farmers receive is very different and depends primarily on the size of the farm (fixed payment per unit of area in a given year multiplied by the number of agricultural land in the farm), as well as the structure of production (basic payments are supplemented by additional payments, if a particular crop or animal production is carried out). In this situation, the calculation of any average attributable to one farm would be misleading. Estimates indicate that in Poland approx. 70% of the payment goes to 20% of the largest farms [Poślednik, 2009]. It also means that the EU support is mainly used by these farms, which are already competitive and can effectively use the payments to further improve their position in the single European market.

Note that the incomes of some farmers are increased by the so-called LFA payments (support of agriculture in less favoured areas). In addition, some farmers who have finished 55 years and have not reached retirement age and passed their farms to their inheritors or sold them, are eligible for structural pensions. Both of these activities are funded from the Rural Development Programme (RDP – cf. the next chapter) which among others, is to support programmes promoting change in the structure of agricultural production. In fact, these actions also support farmers' incomes. The funds obtained under the LFA and structural pensions may be, like direct payments, used for any purpose, not necessarily related to the improvement of quality of agri-food products or increase of agricultural productivity.

Direct payments have different functions. In so far as they are devoted to investments or current production expenses, they affect the development of farms. It is difficult to determine for what purposes they are actually issued. Agribus Research carried out in 2010 by Martin & Jacob revealed that the owners of farms over 15 hectares used direct payments mostly for fertilizers, plant protection chemicals, materials and equipment for sowing. In small subsistence farms, payments are probably entirely spent on current consumption. In such farms, they perform social function.

Supporters of the payments indicate that they act as a brake on the growth of food prices (allow to keep the price increase at a lower level), despite increasing prices of fertilizers and other necessary means of production. So they are beneficial

to consumers. As a result, the price of Polish agri-food products is competitive in foreign markets.

Payments – through their effects on income – allow making a living for some farmers and thus limit the number of unemployed and reduce budgetary expenditure on social support for the poorest farmers.

4. The Rural Development Programme 2007–2013 (RDP)

As already mentioned, the development of Polish agriculture, food processing and rural areas is financed from the EU funds under the second pillar of the CAP. Rural Development Plan (RDP) was carried out in the years 2004–2006 and absorbed 3.6 billion EUR from public funds, including 2.9 billion EUR from the EU funds.

In the years 2007–2013, and in fact until the end of 2015⁸, next Rural Development Programme (RDP) was being implemented, with a budget of approx. 70 billion PLN (17.4 billion EUR) [ARMA, 2014b] RDP funds come from the EU budget (European Agricultural Fund for Rural Development) – in the amount of 13.4 billion EUR and from the Polish public funds (about 4 billion EUR) [ARMA, 2014d]. Among all member states, Poland is the biggest beneficiary of the programme with the share of 15%. In addition, some activities are co-financed from the private funds of beneficiaries. Financial assistance from the RDP 2007–2013 was granted to farmers, entrepreneurs and local governments and forest owners for the implementation of specific actions (the objectives; there are 23 of them) in the framework of the so-called 5 axes (tasks) [Ministry of Agriculture and Rural Development, 2012].

The largest sum – 43% of the total funds was allocated to improve the competitiveness of the agricultural and forestry sector (axis 1)⁹. The second largest position was to support the improvement of the environment and rural areas – 30.6% of the total pool (axis 2). A little less – 20.0% was reserved for improving the quality of life in rural areas and diversification of the rural economy (axis 3). The remaining small sum (total of 6%) was used for the implementation of local development strategies (axis 4) and technical assistance (axis 5).

Generally, it can be said that the funds were distributed fairly evenly among the three previously mentioned axes. Closer analysis of the structure of expenditures, however, shows that the division on axes and operations is misleading when one

⁸ In case most of the activities from the RDP, the agreements are concluded until the end of the programming period (i.e. until the end of 2013), and the funds are being spent for the next two years.

⁹ ARMA data as at 20 September 2013.

evaluates actual allocation of resources. For example action “to support farming in mountain areas and other less favourable areas” (the so-called LFA)¹⁰ is hardly conducive to improving the environment and rural areas, but still one can find it in axis with that name. In turn, the “structural pensions” were placed in the axis 1, the name of which is: “Improving the competitiveness of the agricultural and forestry sector”. It is also difficult to recognise that “supporting subsistence farms – liabilities of RDP 2004–2006” improves competitiveness. The same axis includes “Restoring agricultural production potential damaged by natural disasters and introducing appropriate prevention actions” which may mean restoring yet completely uncompetitive agricultural production potential.

In the case of actions: “structural pensions” and the “LFA”, a good business plan was not a criterion for the allocation of resources, as in most of the activities of the RDP. A farmer was granted funds when he/she had (or leased) land located under “unfavourable conditions” (56.5% of the land in Poland was considered so), or – respectively – when farmer was at least 55 years old but has not yet achieved the retirement age (male – 65 years, female – 60 years)¹¹. In both cases, farmers had full flexibility of spending the funds (for investment purposes or for current consumption). Structural pensions were supposed to improve the agrarian structure and accelerate the process of generational change of agricultural operators, which of course could help improve the profitability and competitiveness of farms. This is not, however, as it had to be, especially when the pension was granted for the transfer of small farms. Enlarged farm still remained not competitive enough. So one can say that these actions had, respectively, the nature of social and income support, and not necessarily served “rural development”, as suggested by the name of the entire programme. Both structural pensions as well as support for LFA contribute to the keeping of the existing, not competitive area structure of Polish farms.

In the period 2007–2013 a total of almost 5.5 billion EUR¹² was channelled to the discussed income and social purposes, which accounted for almost 32% of the total resources of the RDP. This means that the actual sum to improve the competitiveness of the agri-food sector and for rural development has been lower than the amount granted from the EU budget. Note that both goals can be considered as “fixed” liabili-

¹⁰ 53,400 farmers received structural pensions from the RDP 2004–2006 funds for a period of up to 10 years. In 2007–2013 one assumed that – as a result of a reduction in the pension, while tightening the criteria for their awarding – pensions will be granted to further 20 400 people [Ministry of Agriculture and Rural Development, 2007, p. 191].

¹¹ The basic amount of structural pension amounted to 1.013 PLN in 2013 (with the possibility of some growth).

¹² One included in that sum 0.5 billion EUR for “semi-subsistence farms –RDP 2004–2006 liabilities”.

ties also in the next years. The decision to grant funds for these purposes was made for the first time during the determining of the structure of expenditures just after the accession (under RDP 2004–2006, based on then applicable Financial Perspective 2004–2006). Both measures were maintained, when the decision was taken on the distribution of funds for the period 2007–2013 because it is difficult to imagine a government that would refuse the continuation of previously implemented social and income programmes. Their omission would cause the opposition of a large part of the rural population, which undoubtedly would have impact on the outcome of the next parliamentary elections [Rowiński, 2008, p. 50–72]. Thus, it is expected that these activities will also absorb significant resources during the implementation of the RDP 2014–2020 – at the expense of, as at present, the funds for modernisation of farms [Rowiński, 2008].

Among other actions, the largest amount was spent on “agri-environment” (2.3 billion EUR), and the next in order was the sum on the “modernisation of farms” (1.9 billion EUR). One should note, therefore, that less money was spent on the modernisation of agriculture than on each of the two above-mentioned operations supporting farmers’ incomes that is structural pensions and LFA programmes (incomes were supported even more by direct payments – cf. previous section).

5. Effects of Implementing Programme of Development of Agriculture in 2007–2013¹³

Assessing the implementation of the EU funds one can analyse, in principle, only their use in accordance with the approved programme, which demonstrates completion of approved financial programme and achievement of set goals. For most of the described actions the implementation was in accordance with the programme. The effectiveness of the implementation of the programme does not have to testify about the effective use of EU funds. For the assessment of their effectiveness one should compare the achieved results (benefits) with costs incurred, and thus determine whether one achieved best possible results. Such an assessment, however, is very difficult, and often impossible due to the lack of appropriate tools to perform such a measurement, as well as the allocation of resources for a wide variety of purposes. It largely determines that we have so many divergent opinions about the effects of the

¹³ More information on effects of implementing Programme of Development of Agriculture. See: ARMA [2014b].

EU support. For that reason we focus below on selected elements of the effectiveness of EU rural development policy.

Until June 2014, Agency for Restructuring and Modernisation of Agriculture (ARMA), which is the operator of payments and manages most of described actions under the RDP, paid or booked in the framework of multiannual adopted commitments more than 90% of the budget of the RDP¹⁴. Such a high rate of commitment of resources offers hope that by the end of the programming period one will be able to use the full amount of the funds in accordance with the assumptions. The vast majority of funds have been distributed in accordance with planned objectives. So one can say that the absorption of funds from 2007–2014 RDP is high.

Many entities benefited, and have continued to do it, from the programme. Until the beginning of January 2014 farmers, entrepreneurs from agri-food sector and other beneficiaries such as Local Action Groups applied over 439 thousand requests for assistance by the Agency for Development and Modernisation of Agriculture. In addition, every year more than 700 thousand individuals apply for the LFA payments, while approx. 100 thousand people apply annually for agri-environmental payments and for the structural pensions [ARMA, 2014a].

According to the calculations of the Institute for Structural Research, “the effects of the RDP 2007–2013 will be responsible for approx. 0.8% of the Polish total gross domestic product growth in the years 2007–2015”. At the same time, the authors estimated that “the Programme will be responsible for approx. 21.3% of the total increase in the number of people employed in Poland in the years 2007–2015” [ISR, 2011, p. 14].

When it comes to concrete results, they, of course, differ depending on the action. According to estimates of the Ministry of Agriculture and Rural Development funds for the modernisation of agricultural holdings made it possible to modernise about 60 thousand farms and hundreds of companies involved in food processing. In rural areas, approx. 36 thousand of new jobs unrelated to agriculture were created. Subsidies from the RDP 2007–2013 made it possible to maintain economic activity in unfavourable and mountain areas (LFA). The Ministry estimates that if there were no payments, food production would be abandoned on even half of Polish agricultural area, which is 7.3 million hectares¹⁵. Support from the RDP 2007–2013 also allows keeping traditional farming methods and livestock, and provides the highest environmental standards in the area of approx. 2.3 million hectares. It also allowed

¹⁴ Some money is planned, among others, for payment of structural pensions granted in previous years, or to annual payments for afforestation, [ARMA, 2014a].

¹⁵ Experts suggest that such an assessment overestimates the importance of subsidies for agriculture in unfavorable areas. Without the support area of agricultural land would be reduced, but not as much as estimated by the Ministry.

for afforestation of 70 thousand hectares of the worst land. Without the support from the RDP 2007–2013 it is also difficult to imagine farmers actively joining the production of very high quality food [“Zielony Sztandar”, 2014].

Money from the RDP 2007–2013 also helped to rebuild the production in hundreds of farms that have suffered from various disasters: floods, frost, hurricanes etc. Thanks to the funds from “Village renewal and development” programme, one created hundreds of playgrounds and many community centres were built, renovated or equipped properly. Water supplies, sewerage, waste segregation systems etc. were built in many rural areas within the framework of other programmes. Conditions of life of people in these areas have been substantially improved [Rowiński, 2008].

Above positive evaluations of the RDP 2007–2013, prepared by Ministry of Agriculture and Rural Development, indicate that almost all of the funds allocated for the mentioned period were distributed until the autumn of 2013. These evaluations of course say nothing about the effectiveness of completed projects, so for example, did they contribute to raising the productivity of the agricultural production. An open issue is the question whether the available EU funds (and supplementing them national public funds) are properly divided. It was partially mentioned above, in the context of a controversial distribution of resources among objectives such as the modernisation of farms and structural pensions for farmers. Generally, however, there is no good answer for that question. Main indicators of the level of development of a significant part of Polish agriculture and rural areas are still much worse than in the most productive countries. Therefore the needs are vast and varied, while the available resources – limited.

In addition, critics may indicate that the number of beneficiaries of the EU funds in comparison with the total number of Polish farmers is very low. However, one can answer them that firstly there were no funds for a greater scale of support and secondly that the number of beneficiaries should be compared to a much smaller number of commercial farms while one should skip a large number of farmers, who operate on tiny farms, have no contact with the market and have not applied for funds to transform their farms.

6. Foreign Trade of Agri-Food Products

In the context of the discussed effects of support from the EU funds on Polish agriculture and rural areas, it is worth mentioning the trends shaping trade exchange of agri-food products. Of course, the exchange is only in part the result of the increased financial support after the Polish accession to the EU. It developed mainly

under the influence of changes in demand on the markets of other EU countries (and partners outside the EU).

Part of a financial support from the EU funds was allocated directly to improve the competitiveness of Polish agri-food products (by modernising and improving productivity in the agri – food sector, use of funds for adaptation to the EU sanitary, veterinary, environment, formation of producer groups etc. requirements).

Since the Polish accession to the EU, there has been a strong growth of import, and an even stronger increase of export of agri-food products. In the years 2003–2013 agri-food export has increased five-fold, i.e. from 4.0 to almost 20 billion EUR, while import almost quadrupled, i.e. from 3.6 to 14.2 billion EUR. In 2013, the share of agri-food exports in total trade amounted to 13.1% and imports to 9.2%. Balance of trade in these goods, negative for many previous years, was converted in 2003 into surplus, which steadily grew and in 2013 it amounted to 5.7 billion EUR. Currently, the EU market gets more than 3/4 of agri-food sector's export. These results indicate that Polish producers were able to seize the opportunities arising out of the integration of the common agri-food products market¹⁶.

7. Funds for Common Agricultural Policy for 2014–2020

Under the new multi-annual budget for 2014–2020 373.2 billion for the implementation of the Common Agricultural Policy is provided¹⁷. It is estimated that Poland will receive around 32 billion EUR in current prices. So the support will be higher by approx. 3.5 billion EUR than in the previous seven-year financial perspective (although the EU budget for the Common Agricultural Policy has been reduced by about 11%). Certain provisions of the Multiannual Financial Framework for 2014–2020 make budgetary resources for the CAP to be used more effectively than ever before.

The last reform of the CAP predicts that 30% of direct payments will be dependent on the farmers' compliance with environmental requirements. Ministers for

¹⁶ Poland's trade position is very good in the sphere of discussed here products in comparison to other countries, which in 2004 and later joined the EU. Apart from Poland, only Hungary, Lithuania and Bulgaria, as well as – to a lesser extent – Latvia, improved the balance of trade in agri-food products. In the other EU-10 countries the deficit remained the same or even deepened. [cf. Ministry of Agriculture and Rural Development, 2014b].

¹⁷ The entire seven-year budget for 2014–2020 will amount to 960 billion EUR (as of 2011 prices), and the actual payments to more than 908 billion EUR. Poland will get the most money out of all EU countries, i.e. approx. 115 billion EUR, while our contribution will amount to approx. 30 billion EUR. [Kulpa, 2014].

agriculture, who adopted the shape of a reformed CAP during a meeting in Brussels on 16 December 2013 agreed that this “ecological recipe” will come into force in 2015. Year 2014 will be a transitional period in which new ecological requirements won’t apply yet and agricultural support will be provided depending on the previously existing rules.

Ministers also agreed on reduction of the spreads between countries with the highest direct payments and those in which payments per hectare are lower than 90% of the EU average (this includes, among others, Poland)¹⁸. The arrangements provide that the difference between the level of the lowest payments and the level of 90% of the EU average will be gradually reduced by one-third between 2015–2020¹⁹.

Partial compensation of payments is to be financed by member states in which they are above the EU average.

In addition, one adopted the Polish postulate that countries that receive payments of less than 90% of the EU average will be able to finance them by moving of up to 25% funds from the second pillar of the CAP, in other words from the 2014–2020 Rural Development Programme. However, for rural development not to be affected adversely, the Polish government decided that the development of infrastructure in these areas will be supported by the Cohesion Fund. Approx. 5.2 billion EUR will be dedicated for this purpose. As a result, the total sum of funds that will be allocated to agriculture and rural development in the years 2014–2020 will amount to approx. 42.4 billion EUR (cf. Table 2).

Table 2. Estimates of the Amount of Funds for Agriculture and Rural Development in Poland in Years 2014–2020 (in Billion EUR)

	EU Budget	National contribution	In total
RDP (funds from the EAFRD)	8.6	4.9	13.5
RDP (funds shifted from the Cohesion Fund)	5.2		5.2
Direct payments	23.5	0.2	23.7
CAP together	37.3	5.1	42.4*

* This estimation does not include the national co-financing of 5.2 billion EUR shifted from the Cohesion Fund.

Source: Own research based on: [Ministry of Agriculture and Rural Development, 2014c; The National Council of Agricultural Chambers, 2014].

¹⁸ These changes were adopted by the ministers of agriculture, during a meeting in Brussels on 16 December 2013, when they adopted the shape of a reformed CAP.

¹⁹ Until 2020 payments may not be less than 196 EUR per hectare (their level is the lowest in the Baltic countries).

Summary

Poland's accession to the EU meant a significant change for economic conditions of agricultural production in Poland [Stankiewicz, 2010]. Ways of supporting this sector, the scope and conditions of intervention for basic agricultural markets have changed. Polish farmers gained access to direct payments, which have become an important component of agricultural income. They could also apply for funds under the programmes supporting the development of agriculture and rural areas. Membership in the European Union strongly increased the level of support for Polish agriculture and rural areas, as compared to the period before accession and at the same time ensured the stability of support. There is no doubt that these measures significantly increased the income of farmers and allowed some of them to improve the competitiveness of their farms. Payments helped to improve living conditions for owners of small farms that do not produce for the market. Adding funds for agriculture and rural areas to the multiannual EU budgets allows programming of development and modernisation of agricultural holdings (e.g. switching production to ecological principles), starting new activities in or outside agriculture, making the decisions of transferring farms to a younger generation.

At the same time competition from producers in other member states on the Polish market increased. Polish membership was also associated with the need to fulfil a number of the EU standards, regulations and requirements imposed on institutions, farmers and agricultural processors. That increased production costs. Prior to accession, many farmers feared a new environment, anticipating that they would be forced to reduce production, and their income would be significantly reduced. These fears did not materialise. Inclusion in the single European market has enabled farmers to expand production scale and strengthened the competitive position of Polish agri-food sector. It accelerated restructuring and modernisation. At the same time living conditions and economic activity in rural areas have gradually improved. Of course, adaptation to the EU regulations in the agricultural sector was reached not without costs and sacrifices. However, the impressive increase in agricultural income as well as the positive results of foreign trade in agri-food products indicate a positive balance of accession to the Polish agriculture.

Past results of implementation of the EU funds in Polish agriculture and rural areas indicate that the vast majority of the funds either has already been or will be absorbed. Most of the EU funds in the period 2007–2013 supported agricultural income (direct payments, structural pensions and LFA) – a total of approx. 20.9 billion EUR,

i.e. 84 billion PLN. This amount accounted for 72% of funds granted from the EU budget to Poland for the development of agriculture, rural areas and fisheries.

Virtually all of the support, regardless of what specific targets it was issued for, contributed to the increase of demand in the market and through the multiplier effects it increased production and GDP²⁰. These effects, however in principle disappear after some time.

From the economic development's point of view supply effects, that permanently affect the potential for development of Polish agriculture and rural areas, are more important. Part of the EU funds strengthened development potential by improving infrastructure, modernisation of farms, strengthening local entrepreneurship and improving the quality of agri-food products. The above statement does not mean that the funds could not have been used in more effective way. It is equally true, however, that without these funds the situation of Polish agriculture and rural areas would have been much worse.

It should be noted again that the funds for Polish agriculture, which were negotiated in the Treaty of Accession did not ensure equal treatment between Polish farmers (and other new EU countries) and farmers from the EU-15. Even after the end of transitional period in 2013 farmers from the EU-10 get significantly higher direct payments per hectare of arable land than farmers in the EU-15. Thereby, the conditions of competition in the EU internal market are not the same for agricultural producers. Despite many reforms of the CAP, there are still differences between member states regarding the level of support, as well as its structure, and even the way of implementing the different instruments. So, such a situation distorts the conditions of competition in the single European market and makes the EU agricultural policy not transparent, not only for the public, but also for farmers.

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²⁰ Ministry of Regional Development estimated that the EU contribution to economic growth was at about 0.8–1.2 percentage points (so it contributed to at least half of the GDP growth), [cf. Niklewicz, 2012].

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Poland's Energy Security after the Accession to the European Union

Introduction

Poland's accession to the European Union (EU) ended a process of more than 10 years of adjusting Polish economy and marked the beginning of a new stage of Poland's socio-economic development. On 1 May 2004 a phase of integration with the EU economy began. Poland, joining the European Union, was a country with a lower level of economic development than the then EU members, a country with a different, although the changing structure of the economy, with high unemployment, high inflation, and with a long experience of operating in a centrally planned economy. Thus, the adjustment processes of the Polish economy to the EU regulations and institutional structures included in the EU's *acquis communautaire*, covered the whole economy and its various sectors, including energy industry.

The paper analyses the changes that have occurred in the area of energy management in Poland during the ten years of Polish membership in the European Union (EU). In particular, the study concerns the Poland's energy security issues, and their purpose is to determine the effect of Polish membership in the EU on country's energy security. Energy security in the light of the literature on the subject and the approach of international organisations is understood as a state of the national and/or regional economy, which allows in the short and long term a sustainable supply of economy in fuel and energy, taking into account the environment and economically viable prices. It is directly associated with the need for harmonious access to a competitive, sustainable and environmentally friendly energy. As a result, regional groupings and individual countries take multiple actions towards securing their "own" demand and ensuring energy supplies.

The aim of the study is to analyse the changes that have occurred in the energy industry in Poland during the ten years of Polish membership in the European Union from the point of view of energy security. It was emphasized that during this period there have occurred major changes in the energy industry.

Structure of the text is in line with its aim. After bringing closer and defining the basic concepts used in the national regulations one conducted the analysis of the impact of national conditions and the ones resulting from Polish membership in the European Union on Poland's energy security. One has shown changes in the Polish energy policy after the accession to the EU, characterised changes in the Poland's energy balance as a result of development of Polish economy and identified actions to enhance energy security. An attempt to assess the impact of Poland's accession to the EU on the energy security of the country was made. In the final section one highlighted the challenges that Polish economy would have to face in terms of energy security, related to the EU's climate and energy policy, increasing investment needs in the energy industry, including the needs of cross border connections, the ongoing economic crisis and the disturbed stabilisation in the regions that supply Poland and Europe in energy. In the final part of the paper one included conclusions from the conducted analysis.

The analysis covers a period of ten years of Polish membership in the EU. In justified cases, one used the earlier data or estimates for 2014. In the study one used literature, the basic EU and Polish legal and program regulations within the subjects covered by the survey, Eurostat's and CSO's statistics. Descriptive analysis and the analysis of time series methods were used.

Presented paper is the result of ten years of performed analyses on the participation of Poland and Polish economy, industries and enterprises operating in the EU, under the statutory research "Poland in the European Union". In particular, these studies have focused on the impact of climate and energy policy on the situation of the energy sector and the economy as a whole, as well as on conditions of development of Polish economy [Wojtkowska-Łodej, 2014b, p. 320–333]. Due to the internal conditions and the observed increase in the demand for imported energy sources, namely gas and oil, in the medium and long term Poland's energy security remains an important issue for both the Poland and the EU, and may be the subject of further in-depth research and analysis.

1. Poland's Energy Security in the Light of National Regulations

With the growing demand for energy in the global economy, the concentration of supply sources and observed asymmetry in the global market between countries owning energy resources and their major importers and due to natural disasters, political crises and armed conflicts in the regions of occurrence of energy resources, the issue of energy security is becoming increasingly important today.

Energy security is a part of the economic security of the state, for which one deems a situation when the country's economy develops, creates profits and savings for investments, when its functioning is not disturbed, when citizens and businesses are in no possibility of danger, and when physical survival of the state is not threatened [Halizak, Książopolski, 2011, p. 28; NSB, 2008, p. 63–79]. Polish economy after the systemic transformation, the experiences of the functioning in the conditions of the market economy, and since 2004 in the structure of the EU, has faced another, new challenges, concerning development strategies. One such priority was and still is to ensure the country's energy security, understood, in accordance with art. 3 section 16 of the amended act on energy, as "(...) the state of the economy allowing to cover the current and prospective demand for fuel and energy, technically and economically justified, while minimising the negative impact of the energy sector on the environment and living conditions of the society" [CPM, 1997; 2007]²¹. Energy security is often associated with the reliability of energy supply for the recipients, its continuity, high quality of parameters of energy and efficiency of the network infrastructure systems [Motowidlak, 2014, p. 23–37; Szablewski, 2012; Duda Mikołajuk, Skwierz, Tatarewicz, 2014, p. 5–14]. Therefore, the security of energy and electricity supplies are one of the manifestations of energy security.

From these definitions emerge several important aspects of energy security, namely the aspects of economic, environmental, technical and political nature. Economic conditions are associated with the need to balance supply with demand in the field of energy sources and energy processed under market mechanisms and institutional regulations. As a result, price of energy is formed, which should also take into account the environmental considerations of energy production. In addition, due to the nature of the energy industry in which to secure the supply of electricity or gas, a transmission and distribution infrastructure is necessary; energy security will be affected by the efficiency of the technical network, its density, and technical standards. Finally, due to limited indigenous energy resources and the need to import them, an important issue is the inclusion of issues related to the supply of the country with appropriate to the needs supply of energy resources, to the problems undertaken under economic policy, especially foreign policy, trade, but also regional.

Ensuring energy security is one of the main objectives of the Poland's energy strategies and is reflected in energy policy [Paska, Surma, 2013, p. 7–19]. For many

²¹ So understood energy security also includes the obligation imposed on Member States in the directives on electricity and gas. In particular, it relates to the security of electricity supply and technical security (Directive 2003/54 EC art. 2 § 28), as well as the monitoring of security of gas supply, including the balancing supply and demand in the domestic market, ensuring expected demand and availability of supplies (2003/55 EC art. 5).

years in the subsequent programs and documents within the energy policy dominated an aspect of supply-side energy security. Own considerable resources of coal and lignite and their energy use were a key element of Poland's energy security, in particular due to the fact of Polish economy's high dependence on imports of oil and natural gas.

One points to several factors and objectives in the currently pursued Poland's energy policy [Ministry of Economy, 2009, p. 8 and next], which should lead to energy security. Among them, the most important are: required diversification, maintaining fuel reserves in an amount to provide continuity of supply to customers, taking care of the technical condition and efficiency of equipment and installations in which energy conversion of energy carriers takes place, transport, transmission and distribution (maintaining reserves of power), providing transmission capacity, enabling the desired diversification of sources and/or directions of supply of oil, gas and electricity, as well as a plan for the construction and activation of Poland's first nuclear power plant by 2020²².

Upon accession to the EU, Poland engaged in actions, in accordance with the EU regulations, to build and strengthen energy security. EU's climate and energy policy will exert a significant impact on the Poland's energy policy, as well as on the situation in the energy industry, including the Poland's energy security.

2. Objectives and Instruments of the EU's Energy Policy

Energy management issues were important factors during integration processes and were also reflected in the Treaties of Rome, as well as in the provisions of the Treaty of Lisbon. The EU acting in accordance with the provision of art. 3 section 3 of the Treaty on European Union (TEU), "for the sustainable development of Europe based on a balanced economic growth and price stability, social market economy of high competitiveness, aiming at full employment and social progress, and a high level of protection and improvement of the environment, supports the scientific and technological progress (...) promotes economic, social and territorial cohesion and solidarity among member states" [EU, 2010a; 2010b].

Introduction to the Treaty on the Functioning of the European Union (TFEU) a separate chapter (Title XXI), dedicated to the energy sector, which sets out the

²² In January 2014 one adopted Polish nuclear energy program, which involves the construction of nuclear power plants with a total capacity of 6 GW, and their construction is to be completed in 2035. Cf. [Gawlikowska-Fyk, Nowak, 2014].

objectives of the EU policy in this regard, is a proof of recognition of the importance of issues related to energy. In art. 194 it is stated that: “under the establishment and functioning of the internal market and taking into account the need to preserve and improve the environment, Union’s policy on energy shall aim, in a spirit of solidarity between member states: ensuring the functioning of the energy market, ensuring security of the EU’s energy supply, promoting energy efficiency and energy savings, as well as the development of new and renewable forms of energy and promoting the interconnection of energy networks”.

The inclusion in the Treaty on the Functioning of the European Union (TFEU) shared competences between the Union and the member states (art. 4 of TFEU) in areas such as the environment, energy, trans-European networks, the adoption of the EU energy policy and recognition of industry as being important for the European economy (art. 6 of TFEU) create a new situation and provide a legal basis for increasing the effectiveness of efforts to build a low-carbon economy in Europe. However, in the energy sector of the EU member states, the national point of view, resulting from internal conditions, including the existing natural resources, energy infrastructure, the level of industry’s development, employment etc., is extremely important. Ambitious EU targets for climate and energy policy will depend on the capacity to adapt and practical implementation of the national policy of reducing emissions.

Among these objectives one can find the security of EU’s energy supply, but at the same time it should be emphasised that, according to the provisions it is to be provided not only by the activities directly aimed at its achievement, but also by the other targets interacting indirectly, i.e. through the development of the internal energy market, energy efficiency, innovations and new technologies aimed at strengthening the competitiveness of the EU’s economy, and through protecting the environment. It can therefore be assumed that the remaining activities will also affect the security of supply, but also more broadly – the energy security of the member states²³.

Under the light of the mentioned regulations the initiating, supporting and coordinating actions taken by the EU institutions in the area of energy management have been considered to be relevant for further economic and political integration. Energy policy objectives are simultaneously closely related to the objectives of the EU’s environmental policy, especially concerning “(...) prudent and rational utilisation of natural resources, promoting at international level measures to deal with regional or worldwide environmental problems, in particular combating climate” (art. 191 of TFEU). Treaty provisions in the field of climate and energy are the basis for projects undertaken at the end of the first decade of this century to reduce greenhouse gas

²³ But one cannot exclude negative correlations. Cf. [Motowidlak, 2014, p. 24].

emissions and build a long-term strategy for a low carbon economy. Objectives set out in the EU's energy policy are to be achieved in practice by indispensable measures set out by the European Parliament and the Council, after consulting the Economic and Social Committee and the Committee of the Regions (art. 194, paragraph 2 of TFEU). At the same time, it is concluded that these measures "(...) do not affect the right of a member state to determine the conditions of exploiting its energy resources, its choice between different energy sources and the general structure of energy supply, without prejudice to article 192, paragraph 2, letter c)".

As mentioned, in the EU's energy policy energy security, in particular since the beginning of the new century, has become the subject of many projects [EC, 2013; 2006; 2007]. These included efforts to diversify energy supply sources (including the diversification of energy carriers, the country of origin or transit routes), stocking, further liberalisation of energy markets, the construction of new energy infrastructure (including transmission), conducting a dialogue with third party countries and with significant producers and consumers of energy [Weisser, 2007; Constantini, Graccera, Maskandya, Vicini, 2007]. These activities are associated with the need to reduce risk related to dependence on supply sources, on transit countries and network infrastructure. Activities aimed at new projects enable acquiring gas from new regions and the creation of new gas connections in Central Europe and the Baltic countries and may also allow for better gas supply of the member states of the enlarged EU. Some initiatives and bilateral projects, like opened in November 2011 Nord Stream pipeline linking Russia with Germany, built although the lack of acceptance from many countries of the enlarged EU, including the ones from Central and Eastern Europe, overshadow the community projects.

In the years 2020–2030 improvement of energy security, while at the same time building of a low-carbon and competitive energy system, in accordance with the EU's documents and programs, should be executed through joint actions, integration of energy markets, diversification of foreign supply sources, sustainable development of domestic energy sources, investments in the necessary infrastructure, savings especially at the end users level and through support of research and innovations [EC, 2014].

Summing up, it is clear that the EU's energy security definition includes direct actions affecting the stability of EU's energy supply, as well as a whole range of initiatives supporting and enhancing the supply in long run and stabilising energy demand and its structure through all market participants. Thus, in this concept one assumes to obtain positive effects by stimulating the desired actions not only on the supply side, but also in terms of energy consumption.

3. Analysis of the Impact of National Conditions and Ones Resulting from the Membership in the European Union on Poland's Energy Security

Polish economy on energy market of the enlarged European Union at the time of its accession was characterised by: the carbon structure of the energy balance, high CO₂, SO_x, NO_x, dust etc. emissions, lower than the EU average dependence on imported energy in general, but a high dependence on imported oil and gas (especially from one supplier), energy-intensive economy, the network connections with the new member states in Central and Eastern Europe (CEE) and the lack of such connections with the countries of the so-called old EU.

In recent years, as a result of processes in Poland of systemic transformation and the pre-accession adaptation and later resulting from the EU membership, Poland's economy, as well as the situation in the field of energy management, has changed. Along with the accession to the EU, Poland has made commitments regarding compliance with the EU legislation (*acquis communautaire*), including energy management. As a result, Polish energy sector was being transformed, and it was mainly related to the processes of liberalisation of the electricity and gas markets (demonopolisation, deregulation, restructuring and privatisation), one took steps to strengthen energy security and energy production in accordance with the requirements of the natural environment, including actions resulting from the climate and energy policy.

In the analysed period, the energy intensity of GDP declined from 389.6 toe in 2004 to the level of 299.2 toe in 2012 (see Table 1). This process was accompanied by the increase in energy consumption per capita by 135 kgoe (it amounted to 2541 kgoe per capita) and in the electricity consumption by 442 kWh (it increased to 3183 kWh per capita in 2012). However, total and per capita CO₂ emissions increased just in a small degree.

Table 1. Energy in the Polish Economy – Selected Indicators

No.	Position	Years								
		2004	2005	2006	2007	2008	2009	2010	2011	2012
1.	CO ₂ emissions (MtCO ₂)	318.3	319.8	333.6	334.4	329.1	314.4	334.4	330.0	323.0
2.	CO ₂ /per capita emissions (kgCO ₂ /cal)	8.2	8.3	8.4	8.8	8.6	8.2	8.8	8.6	8.4
3.	Energy intensity (toe/M€'05)	389.6	380.3	377.0	351.4	339.7	321.8	328.0	315.0	299.1
4.	Energy per capita (kgoe/cap)	2 407	2 439	2 567	2 556	2 598	2 498	2 663	2 627	2 542
5.	Electric Energy per capita (KWh per capita)	2 741	2 762	2 912	3 004	3 086	2 954	3 092	3 164	3 183
6.	Import intensity (%)	13.1	17.2	17.6	20.0	25.6	30.6	32.1	33.4	30.7

Source: [Wojtkowska-Lodej, 2014b, p. 325; EU, 2014; CSO, 2014, p. 286–287].

Poland's accession to the EU was related to the achievement of the objectives of energy policy, including energy security, in accordance with the EU regulations in this regard. Given the importance of energy security for the development of the EU economy and the economies of the member states, efforts to achieve it were an expression of concern of the EU and national authorities. When it comes to the approach and understanding of the issues of energy security in the EU and Poland, one can spot some differences. In Polish energy policy dominated an emphasis on taking care of one's own energy resources and this trend was seen in the past decade, although it was accompanied by changes resulting from the transformation of the system and any necessary adjustments to the EU requirements, even in terms of the implementation of secondary legislation [Bożyk, 2013; Szczerbowski, 2013; Wojtkowska-Łodej, 2010, p. 261–267]. The EU's actions aimed at strengthening energy security within energy supply and its processing and transmission, distribution and marketing, including energy consumption, are expanding the existing directions and instruments of impact and create a new system of multidirectional influence on the Polish energy security.

In the period 2004–2013 energy production decreased, while its consumption increased, which is illustrated by the data in Table 2. Still the basic energy carriers, used in the Polish economy, are coal (with share in domestic consumption that amounted to 50.6% in 2012), crude oil and petroleum products (24.8%) and natural gas (13.6%) [EU, 2014, p. 216]. Noteworthy are the changes in the structure of the consumed energy, expressed by a decrease, in relation to 2000, of coal share by 6.3 p.p. and by an increase in consumption of oil and petroleum by 5.8 p.p., and also gas by 3.6 p.p., and the increase of use of renewable energy sources (RES) by 4.8 p.p. These changes had a significant impact on the development of indicators related to carbon dioxide emissions.

Table 2. Production and Consumption of Energy in Poland in 2004–2013

No.	Position	Years									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.	Energy production (Mtoe)	79.0	78.9	77.9	72.8	71.7	67.9	67.8	68.6	71.9	70.6
2.	Primary energy consumption (Mtoe)	91.9	93.1	97.9	97.4	99.0	95.3	101.7	101.2	98.0	98.6
3.	Final energy consumption (Mtoe)	62.1	63.3	67.1	66.8	69.2	67.0	66.3	63.0	63.6	63.3

Source: [Wojtkowska-Łodej, 2014, p. 325; EU, 2014; CSO, 2014, p. 286–287].

Availability of primary energy sources is an important factor contributing to energy security. Owned and used resources of coal and lignite give Poland a great sense of stability and sovereignty. In comparison with the EU, overall import intensity

rate in Poland is lower than the EU average, but it is also increasing (see Table 3). It is the result of an increase of imports of both gas and coal. Coal import to Poland, observed in the last few years, is connected with its competitive pricing. It is imported from the eastern direction, and the main suppliers are Russia, Kazakhstan, and Ukraine. In turn, its main customers are individual consumers and the energy, heating and chemical industry [Stala-Szlugaj, Klim, 2012]. Trends for coal import can also be seen in a number of the EU countries, including Germany [Pongas, Todorova, Gamba, 2014], and in Poland it has a significant impact on the financial position of the coal mines.

Table 3. Dependence on Imported Energy Carriers in Poland Compared to EU28

Position	In total			Coal			Natural gas			Crude oil		
	2000	2005	2012	2000	2005	2012	2000	2005	2012	2000	2005	2012
Poland	9.8	17.2	30.7	-29.9	-21.3	2.5	66.3	69.7	73.8	99.1	97.3	97.1
EU28	46.7	52.5	53.4	42.6	55.7	62.5	48.9	57.1	65.8	74.5	81.3	87.8

Source: Own research based on: [EU, 2014, p. 66–75; CSO, 2014, p. 286].

Modernisation efforts and new capacities as well as a modern and secure energy infrastructure are particularly important for the energy security. Since Polish accession to the EU increased supply generated electricity in Poland, but also significant change in the structure of its production (See: Table 4).

Table 4. Production of Electricity in Poland

Position	2000		2005		2012	
	TWh	%	TWh	%	TWh	%
Total production this includes:	145.2	100.0	156.9	100.0	162.1	100.0
– coal and briquette	135.9	93.6	142.2	90.6	134.7	83.1
– crude oil and petroleum products	1.9	1.3	2.8	1.8	2.0	1.2
– gases	2.7	1.9	6.4	4.1	8.1	4.9
– renewable energy sources	4.3	2.9	5.4	3.4	17.3	10.7
– wastes	0.3	0.3	0.2	0.1	0.1	0.1

Source: Own research based on: [EU, 2014, p. 216–217].

Growth of investments using renewable energy is noteworthy. In 2004 one produced in Poland 964 MW of electricity from RES, and at the end of 2013 it increased more than fivefold, to the level of 5511 MW [Ministry of Foreign Affairs, 2014, p. 158]. While in the accession year dominated hydropower, currently the

most electricity is produced using wind power and biofuels. The share of RES in total electricity production increased from 5.5% to almost 11% in 2012 [Ministry of Foreign Affairs, 2014, p. 158]. Moreover, during the Polish membership in the EU one launched a modernisation of the energy infrastructure, including manufacturing. These activities contribute to the strengthening of Polish energy security and are reducing carbon emissions.

In efforts to increase Poland's energy security one indicates, in particular the necessary **diversification of energy carriers supply**, especially oil and gas. This is due to the current conditions and the fact that Russia dominates in geographical structure of the Polish oil imports (approx. 94.5% of all deliveries), while North Sea and Arab countries have a much smaller share. Also gas sector is highly dependent on import. Russia accounts for approx. 53% of import, Ukraine for approx. 8%, Norway – 4% and Germany 3%. Such a large dependence on imports, especially from one geographical direction is specific for Poland and other European countries, including some of the CEE countries. Russia is an important trading partner and supplier of energy carriers to the EU28 market. Import of energy carriers from Russia to EU28 countries in 2013 amounted to 34.5% (compared to 32.7% in 2005) of total imports, and the largest share fell on gas imports, which amounted to 48.6% in 2013, and next on import of crude oil and petroleum products (34%) and coal (28%). Thus, in the near future it will be particularly important for the EU to take action to safeguard and stabilise gas and oil supplies to the EU member states.

Mechanism for strategic reserves of oil and gas, created in the Poland's accession year, may have a stabilising effect on the changes in the supply of energy and the ability to react flexibly to demand impulses from the Polish economy. Maintaining stocks at 90-day average consumption from the previous year is an expensive and difficult undertaking for the Polish economy, however, as shown by the experience of other countries, it is an instrument for stabilising the economy in terms of supply of energy in the short term [BBN, 2008, p. 68–69].

Poland's energy policy is in line with the policy of the EU, although it is possible to take into account the specifics and internal conditions. This is due to both the shared competences, as well as the EU coordinating initiatives. The EU legal regulations, in particular in the form of directives, oblige Poland to introduce into Polish law rules on the construction of the internal energy market, energy security, the development of renewable energy sources and increased energy efficiency and sustainable energy management. **The EU regulatory framework** determines the direction of changes also in Polish energy sector and thus affects the energy security of the country. Implementation of the **climate and energy package** is an example of

such projects. Internal conditions and the environment, including the phenomena occurring now in the European Union and beyond, will decide on the possibilities and the anticipated effects of its implementation [Wojtkowska-Łodej, 2009]. Due to the own coal resources the structure of production and consumption of primary energy in Poland still quite differs from the EU Member States. Such a high share of coal in electricity production structure involves a significant environmental impact, in particular through the emission of CO₂, SO₂, NO₂ and dust into atmosphere. The most difficult objective of the package for Poland to accomplish is to reduce by 2020 an increase of carbon dioxide emissions, created in the process of electricity production. Taking into account national conditions of electricity production, achieving the planned emission reduction seems to be very difficult, and because of the lack of widely available today technology, capable of reducing carbon dioxide emissions, it seems also technically unrealistic. Attention in this regard should also be paid to the proposed in climate and energy package possibility of using low-carbon energy technologies. Clean coal technologies, which Poland might be particularly interested in, still remain in the demonstration phase (non-commercial). In addition, all new energy technologies require huge financial resources and time for their implementation.

With the Poland's accession to the EU, enterprises could count on getting the EU funds for changing energy infrastructure. In particular, attention should be paid to the support offered by the Trans-European Energy Networks (TEN-E), amounting to 7.32 million EUR for research and feasibility studies of projects connecting Polish network with networks of Denmark, Lithuania and Slovakia, as well as the expansion of the gas connection with the Czech Republic and Germany [MFA, 2014, p. 156–157]. During the 2007–2013 budget perspective considerable resources for the construction and modernisation of, important for the Polish economy, gas infrastructure, including the transmission network and gas storage facilities, were used (in the amount of about 2.3 billion PLN). These funds, among others, have been used to co-finance, among others LNG terminal in Świnoujście (supported also by funds from the European Energy Programme for Recovery – EEPR) and gas pipelines in the north-western Poland. Upgrading electricity infrastructure is also of great importance for the energy security of the country. Currently, one executes the project of connecting Polish and Lithuanian electricity networks, which is co-financed from the EU cohesion policy funds and from the TEN-E project funds. This connection will increase the length and capacity of the 400 kV line.

Among the activities indirectly affecting the Polish energy security one can distinguish: the liberalisation of the energy market, the development of transmission

infrastructure, in particular cross-border connections, attention to cooperation with suppliers of energy carriers (contracts), and research.

The liberalisation of the electricity and gas market has a significant impact on the security of supplies. In studies and conducted research one draws attention to the fact that the expected impact of the internal electricity market on Polish energy security will depend on the pace and quality of the transformation of the Polish energy sector and the ability of Poland to implement and comply with the rules of its functioning [Pach-Gurgul, 2012, p. 242, 244; Szablewski, 2012].

The co-operation with the main suppliers of energy carriers to the EU is an important, not only now, but also in the future, factor of building appropriate economic and trade relations. So far, wide and varied actions undertaken and carried out by the EU institutions appear to be insufficient.

Cross-border connections are another element of the strengthened efforts for energy security and may allay, also in Poland, concerns about security of electricity supply. Next to the previously discussed projects under the TEN-E, there are also important, so called phase regulators, which are to be implemented and which will reduce uncontrolled flow of electricity created on the basis of renewable energy, particularly wind, between Germany and Poland. For these flows use a significant proportion of interconnection capacities of Polish power system and reduce possibility of energy imports from Germany to Poland. Thus, the liberalisation of the energy market creates new opportunities for transactions between entities operating in the energy market and increases security of supplies, but it raises new and difficult challenges for transmission system operators. They cover both interconnection capacity and the need to increase the number of cross-border connections.

Similarly important area of activities, important for future energy security, concerns adopted in the EU research projects in the field of energy technologies (European Strategic Energy Technology Plan – SET-Plan) and opportunities for Poland to participate in them. SET-Plan may be a start of a new “industrial revolution”, accelerating the transition to a new phase of growth, with low CO₂, and leading to increased production and higher consumption of locally produced energy.

Synthetic assessment of the impact of Poland’s membership in the European Union is presented in Table 5.

While the community mechanisms of a direct impact on the Polish economy are in the short and medium term a support, although some of them, such as climate and energy package can be a burden and might be associated with a high risk, they might in the long term, while maintaining invariance of external conditions, contribute to enhancing energy security.

Table 5. Poland's Membership in the EU and Energy Security in the Light of Existing and Planned Projects

Position	Crude oil	Natural gas	Coal	Renewable energy sources	Electrical energy	Impact on Poland's energy security (in total)
Direct						
Changes in the structure of energy balance (energy mix)	high	high	medium	medium	medium/high	+
Diversification (of energy sources, of geographical origin and of transit routes)	low	high	high	medium	low	+
Strategic reserves	low	high	medium/high	low	low	+/-
The extension of regulatory standards (economic and environmental aspects of security)	medium	medium	medium	medium	high	+
Climate and energy package	high	low	low	high	high	-(risk)
The use of the European funds	low/medium	low	low	medium	medium	+
Indirect						
The liberalisation of the energy market	medium	medium	high	medium	high	+
Transmission infrastructure's development strategies (new investments)	low	high	high	medium	high	+
Energy infrastructure (TEN), cross-border connections	low	medium/high	medium/high	medium	medium/high	+/-
Dialogue with major energy carriers suppliers	medium	high	high	low	medium	+
Research, new energy technologies, innovations	medium/high	medium	medium	medium	medium	+

Source: Own research based on: [Wojtkowska-Lodej, 2008].

4. Challenges for Poland's Energy Security. Selected Aspects

Reflections on the impact of the EU's energy policy on Poland's present and future energy security must be complemented by issues related to external circumstances. Among them are: the economic crisis, climate and energy policy, the need for new power capacity in Polish energy sector, changes in energy policy, the development of new energy technologies and the lack of stability in the regions of oil and gas production.

Ongoing since 2008 economic crisis, which has affected all European countries, in particular the euro zone, weakens economic activity and is not conducive in short to taking many of the necessary actions in the field of energy management.

As a consequence of the implementation of the climate and energy package and the increasing share of renewable energy sources in the supply of primary energy and electricity production, and taking into account the specificities of electricity as a commodity (e.g. the lack of storage options of electricity and the need for its simultaneous consumption) and the state of the national production capacity, transmission and distribution networks, it can be concluded that further regulations in the area of climate policy pose a significant challenge for Polish economy. This also applies to subsequent arrangements, which were made at the European Council on 23–24 October 2014, on climate and energy policy of the EU by 2030. According to the decisions taken, by this year one will see a reduction of greenhouse gas emission of at least 40% (compared to 1990), an increase of energy efficiency by 27% and an increase of the share of renewable energy sources in energy production to 27%. It is difficult already today to determine the effects of this trade-off for the Polish economy. As a result, it can be expected that the achievement of these objectives may limit the import of raw materials to the EU. Poland has also negotiated a possibility to use the additional funds for modernisation of the Polish energy sector. In the EU one must develop mechanisms to ensure their effective use by Poland. Still, it is uncertain if in further international negotiations, first in Lima, and later in Paris in 2015, one will reach a compromise on the measures to reduce greenhouse gas emissions and if the EU will not be alone in this effort.

Due to the absence in the last two decades of significant new investments in generation capacity in the power sector and in transmission infrastructure, as well as the need to implement the new regulations, e.g. resulting from climate and energy package, one may experience concerns about the stable development of Polish economy in the coming years. Implementation of the development of nuclear energy project in Poland, having its record in the Poland's Energy Policy until 2030, and started work on the construction of a nuclear power plant with a capacity of 6000 MW, will have a significant stabilising impact on the Polish power system, which is also important due to the further development of unstable RES. However, it should be emphasized that both nuclear power and renewable energy development and ongoing exploration of shale gas are changing the structure of Poland's energy balance, and are activities that today and in the future can enhance the energy security of the country. This is especially valuable because of the observed instability in the area of energy resources production. The dramatic events in Ukraine raise strong concerns about energy security [Brad-Karpowicz, 2014].

Sustainable energy development strategy is an essential part of a long-term sustainable development strategy of the EU. The relevant provisions of the treaty determine the long-term objectives of the Union in this respect, and given the diversity

of the energy situation of the member states, the question is still valid (and finding answers for it), how to create a harmonious access to a competitive, stable and environmentally friendly energy. According to the “Europe 2020” strategy in the EU it comes to the development of smart, sustainable and inclusive growth. In this and the aforementioned long-term EU programmes reaching 2050, one can include from the formal point of view, EU energy policy. Innovative, based on modern information and communication technologies and modern, clean energy technologies approach to changes in the energy sector is a big challenge, but also a chance for the Polish energy sector [Malko, 2014]. These challenges are also related to the current (2014–2020) pursued economic policy of the EU. They include, for example, changes in cohesion policy, expressed in the modified rules for the use and management of resources and their management by the member states. These changes should be reflected in the new approach of state institutions to all potential projects co-financed from the EU funds. In face of the absence of the desired effects of actions on the energy market, stimulating new investments in generation capacity, investors expect not only long-term development strategies for the energy industry, stable legal regulations, but also financial support reducing risk. The prepared regulations concerning the use of public support or the discussions on the so called differential contracts meet these expectations. Therefore, strengthening energy security will be affected by the current and future EU regulations, as well as the efficiency of the particular state institutions. Today, in the world economy, there is a need for action, but from observations it appears that their taking, now and in the future, will take place in conditions of increasing uncertainty, hence the high importance of the efficiency of state's institutions [Wojtkowska-Łodej, 2014].

Summary

The paper analyses the changes that have occurred in the energy sector in Poland during the ten years of our country's membership in the European Union in the field of energy security. Analysed period of Poland's presence in the European structures is not sufficient for far-reaching changes to occur in the energy industry, which is related to, among others, its specificity, complexity, high costs of entrance, with capital intensity of investments and a long time of their return. Conducted research has indicated a significant effect of Polish membership in the European Union on the transformation of the Polish energy sector, as well as the Poland's energy security.

The processes of systemic transformation and the EU membership, and with it the transformations in the structure of demand and energy consumption (including the

development of renewable energy sources), the projects aimed at increasing diversification of supplies, especially natural gas, strategic inventories, the liberalisation of energy markets within the internal EU market, efforts to increase energy efficiency, modernisation and implementation of new investments in generation capacity and connections of cross-border infrastructure, research in the field of new energy technologies and other measures resulting from the implementation of the EU energy policy have transformed the Poland's situation in terms of access to energy carriers resources. Still, coal will remain the primary raw material used in the production of electricity in Poland, despite ongoing diversification of the supply of natural gas and crude oil, increase of its own raw materials mining, technical progress etc. Basing Poland's energy balance on all energy carriers, including coal, gas, crude oil, renewable energy sources and nuclear energy increases Polish energy stability. Due to the existing supplies, Russia will remain the main Polish trade partner in the supply of energy resources. Poland's membership in the EU and systemic changes in the country strengthen the position of Poland as a Russia's trade partner. This should also be encouraged by the Poland's foreign policy, taking into account the changing situation and taking care of long-term economic interest of the country.

Poland's membership in the EU has created a new situation in the energy sector and stimulates the search for new solutions and, by direct and indirect actions, has a positive impact on energy security. However, there is a need for further intensive work on defining the optimal structure of demand for energy carriers in Polish economy.

New threats and challenges that emerge, concerning the level of energy security, supply of energy resources and electricity, and the need to meet the growing requirements for environmental protection, will involve intensive work and activities for new energy investments, including the modernisation and investments in new generation capacity and in transmission and distribution networks. Investment needs, in turn, are closely linked with the possibilities of financing. Investors operating in the energy market expect forming a vision for the development of the energy sector, the development of mechanisms for financing energy investments and reducing risk.

Due to the large and increasing dependence of Poland and other EU member states on imported gas and oil from Russia, the EU's long-term actions in this regard will be important. Energy security is becoming today, in the absence of stability in regions of gas and oil production, the main challenge for the EU. Still valid is a need for in-depth debate on the EU energy policy leading to an internal EU deepened cooperation and as well as on its external dimension.

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Balance of Ten Years of the EU Common Transport Policy in Terms of Advantages and Disadvantages to Poland¹

Introduction

Common Transport Policy (CTP) has more than 55-year history. Indeed, in 1957 in the Treaty of Rome one stated that the European Economic Community (EEC) will conduct three types of common policy: commercial, agricultural and transport. While the first two types of common EEC policy were implemented very quickly and consistently since the creation of the organisation, it is the third that until 1983 had little success. Its explicit acceleration occurred only since 1983, when the Council of Ministers of EEC was sued in the Court of Justice for violations of the provisions of the Treaty of Rome, i.e. lack of progress in the field of transport integration.

Most often creation of CTP is divided in the literature into five stages [Załoga, 2013, p. 50–59], each consists of one decade, starting from the 1960s. We are interested especially in the last stage, namely 2004–2014 since Poland has been a member of the European Union and addressed significant benefits and incurred certain losses related to the implementation of the CPT, and since 1 December 2009 – transport policy (TP) of the EU. From that moment the Lisbon Treaty has come into force (LT). It is unusual treaty because its consolidated version contains – besides the articles written from scratch – also articles incorporated into its content coming from the treaties: of the European Union (in LT it is stated, for example – f. art. 1 TEU; there are total of 28 from 55 articles in this part of the LT) and on the Functioning of the European Union (example in the LT – f. art. 3. par. 2 of the TFEU, there are total

¹ (Research carried out within statutory grant allocated to the Collegium of World Economy in 2014, entitled “Poland in the European Union. The Balance of Ten Years of Membership” – the head of the research: Associate Professor Grażyna Wojtkowska-Łodej, Ph.D.).

of 298 of such articles from 358 articles in this part of the LT). Probably because of this fact of the incorporation there are certain imperfections in the Treaty, which will be discussed later in this chapter.

In the Treaty of Lisbon in Part I, entitled “Treaty on the Functioning of the European Union”, in Title I “Categories and areas of competence of the Union”, in art. 3 one lists the exclusive competences [Baldwin, Wyplosz, 2012, p. 92] of the Union in the following areas:

- a) customs union;
- b) the establishing of competition rules necessary for the functioning of the internal market;
- c) monetary policy for the Member States whose currency is the euro;
- d) the conservation of marine biological resources under the common fisheries policy;
- e) common commercial policy.

As one can see, there are 5 types of common policies, of which only one, namely the common commercial policy comes – without any changes – from the Treaty of Rome. Common agricultural policy, which was written in that treaty, is no more here. Only its small part remained in the form of the common fisheries policy, in terms of the conservation of marine biological resources, which in practice means that the European Commission (EC) will continue to establish fishing limits for the five “Union” seas and for the various species of fish, and here nothing does change compared to the situation from before the entry into force of the Treaty of Lisbon.

Common transport policy has been completely removed from the types of common policies. It was moved into shared competencies [Baldwin, Wyplosz, 2012, p. 92], which are listed in art. 4 LT. These include areas such as:

- a) internal market;
- b) social policy for the aspects defined in this Treaty;
- c) economic, social and territorial cohesion;
- d) agriculture and fisheries, excluding the conservation of marine biological resources;
- e) environment;
- f) consumer protection;
- g) transport;
- h) trans-European networks;
- i) energy;
- j) area of freedom, security and justice;
- k) common safety concerns in public health matters for the aspects defined in this Treaty.

It therefore follows, that shared competences in LT relate to 11 areas, including 10 economic *par excellence*, of which we are interested in this paper in areas such as transport (g) and trans-European networks (h).

In turn the art. 6 of LT lists areas where the EU has competences to carry out actions intended to support, coordinate or supplement the actions of the member states [Baldwin, Wyplosz, 2012]. These include the following areas:

- a) *protection and improvement of human health;*
- b) *industry;*
- c) *culture;*
- d) *tourism;*
- e) *education, vocational training, youth and sport;*
- f) *civil protection;*
- g) *administrative cooperation.*

Tourism covered by these competences appears for the first time as an area of the EU policy, which is very closely linked to transport policy related to the passenger transport.

For the full precision one should – ending this maybe too long, but necessary in this situation, according to the author's opinion, introductory discussion – conclude that art. 3 and 4 of LT speak of exclusive and shared competences, and not about policies. But what, in practice of decision making, are the differences between exclusive and shared competences from the different types of common and shared economic policy? Is it not that common policy in some area means transferring competences by the member states to the Brussels, which creates this policy, and controls its precise application in practice by all member states? On such questions, not being a lawyer, I am not able to give a definite answer. It seems to me, however, as being an economist that with regard to the functioning of the EU in the economic sphere one can consider these terms identical.

At the end one should return again to shifting the CAP to the types of so-called shared policy, because Title II of LT "Agriculture and Fisheries" art. 38, paragraph 1 states that: "The Union shall define and implement **common** [emphasis by W.J.] agriculture and fisheries policy". This raises the important question of whether there is still a common agricultural policy, or whether it is a shared policy, as enshrined in the already cited art. 4 of LT. This situation is due either to the fact of incorporation of the text of one treaty to another (as I wrote earlier, when I announced returning to this issue), and was created perhaps because of the messiness of redactors of LT, or it is the intended effect of the creators of LT. So legal status allows now for the supporters of the common agricultural policy to invoke its further existence in accordance with art. 38, paragraph 1 of LT (f. art. 31 of the TFEU) and its opponents

may argue that such a common policy no longer exists, in accordance with art. 4 of LT. So in this situation, it is difficult to carry out responsible scientific discourse concerning consequences of changes in the approach to economic policies in the LT for the functioning of the EU, in particular in the field of transport integration, since the situation is analogous in the case of the common transport policy, which is no longer present in art. 3 of LT, but appears in art. 90 (f. art. 70 of the TFEU) in Title VI “Transport”, which states as follows: “The objectives of the Treaties, with respect to matters governed by this title, are pursued under the **common** [emphasis by W.J.] transport policy”. So I am not sure whether the EU is currently conducting CTP or TP. And no doubt, in the current state of integration of transport in the EU, TP would be more favourable for Poland than the CTP.

1. Benefits for Poland Resulting from the European Union’s Transport Policy

Poland has achieved a number of significant economic benefits for the past 10 years due to the functioning of CTP/TP. The balance of these years is undoubtedly very positive (only opposition PiS condemns indiscriminately everything in the Polish transport what during that time happened).

Undoubtedly, the received EU funds for investments in transport, mainly road transport, but also rail, air and sea are the biggest benefits. In the financial perspective 2007–2013 Poland received more than 19 billion EUR for transportation, from a grand total of more than 67 billion EUR, which accounted for 28.36% and has been fully utilised, and now is being finally settled. Thanks to these funds we have built highways, the length of which is now already 1,521.5 kilometres, and so to realise the entire highway program, scheduled for 1990 km, one misses only 468.5 km, while another section of the highway AK, with a length of 35 km, was opened in October 2014, thus the length of highways will increase to 1,556.5 kilometres. This means that the share of highways in the whole public road network in Poland currently amounts to approx. 0.37% and we cannot in no way be compared with record holders in this field, such as the United States (the length of highways over 91 thousand km), China (more than 60 thousand km), Australia (more than 18.6 thousand km) or Spain (over 14.3 thousand km) and Germany (over 12.8 thousand km). Only major objections are raised in connection with our highways arrangement and the problems of corruption, which will be discussed in Section 2 of this paper.

Better in terms of the arrangement, but not length, is our network of expressways, counting on present day 1,281 km from 5,490 km planned to be built (implementation

of the plan for the construction of expressways amounts at present for 23.3%). In total, we are supposed to have 7,480 km of highest quality roads, i.e. highways and expressways, so to realise this plan one misses 3,677.5 km (or 49.2%), which are to be built in the EU financial perspective for 2014–2020 and which will account for 1.8% of all public roads in Poland, which is not an embarrassing indicator. We must bear in mind that throughout the post war period, until 1990, we had only 212 km of highways [CSO, 2005] and they were in terrible condition. In 2004, when we joined the EU Poland had 552 km of highways, so after the accession the length increased almost threefold, while their quality is incomparable.

Disclaimer among scientists are raised the final shape of motorway connections. Resignation from the A3 motorway construction and especially A8 (see Fig. 1) caused that our arrangement of highways in its present form is adapted to transit transport through Poland rather than to domestic transport needs. Given the volume of road freight transport in Poland, which in 2013 amounted to 1,548.1 million tons [CSO, 2013] all motorways should “lead to Rome” – according to the well-known saying – that is, to Warsaw. In our case, only one highway i.e. A2 leads to Warsaw, which as the capital city generates the highest road traffic. In the case of other capitals, the situation is reversed: six highways coincide in Berlin, five in Prague and four in Bratislava².

There is no accurate data as to the size of road transit through Poland. However, one can estimate that during the year in the East-West relation and back pass approx. three million trucks, and in north-south relation and back approx. one million trucks, making a total of approx. four million vehicles a year. Multiplying this number by the average load capacity of a single car of approx. 24 tons, we get the volume of carriage, i.e. approx. 96 million tons, which accounts for only approx. 6.2% of the total car freight carried each year on Polish territory. Should the arrangement of highways be adjusted to this amount? This raises serious questions, not just from scientists.

Huge investments have also been made in Polish airports, increasing their throughput. For example, at the airport of Warsaw-Okęcie investments will eventually increase the airport's capacity to 12 million passengers annually. Total value of the planned investments amounts for more than 1,236 million PLN, including the EU funding of approx. 148 million PLN (of which 143 million PLN comes from the OPIE). In turn Gdańsk-Rembiechów investments enabled to increase the capacity of the port to 5 million passengers per year. The project was worth approx. 396 million PLN, including funding from the EU of approx. 183 million PLN (of which 178 million PLN comes from the OPIE). Wrocław-Strachowice will increase its

² This problem is widely analysed by P. Lesiak in his research carried out within the same project being a part of this publication.

capacity after completion of the entire investment program to approx. 3.5 million passengers per year. The project is approx. worth 457 million PLN, of which 147 million PLN comes from the EU (of which approx. PLN 142 million is derived from the OPIE). And finally in Poznań-Ławica realisation of the planned investments will increase airport's capacity to 3 million passengers annually. The value of investments will amount to over 326 million PLN, of which approx. 143 million PLN comes from the EU funds (including 111 million PLN from the OPIE). The total amount of EU funds for investments in major Polish airports therefore exceeded PLN 760 million PLN. Slightly less money was spent on modernisation investments in Polish seaports, and much more on the needs of the railway infrastructure.

In total, Poland received in financial perspective for the years 2007–2014 the most money of all the Member States, which amounted to more than 67 billion EUR (i.e. over 280 billion PLN), of which more than 19 billion EUR (nearly 80 billion PLN) was spent on transportation needs, which accounted for 28.4% of the total amount.

To conclude this discussion, it should be noted that Poland made full use of the EU funds from the 2007–2013 financial perspective and now its final settlement is taking place. Much of the credit goes to the former Deputy Prime Minister, and at the same time Minister for Infrastructure and Development, who is a competent, firm and very demanding woman, who even uses vulgar words in extreme cases, which greatly mobilizes usually lazy officials to work more efficiently. It is difficult to predict how the new Minister for Infrastructure and Development will manage to acquire the EU funds from the new financial perspective for 2014–2020. She is a qualified lawyer and has recently dealt professionally only with rail while there are surely other modes of transport as well.

The other big advantage from Poland's accession to the EU is the access to the huge European international car transport market. As a result, Polish carriers occupy first place in international EU transport, since 2009 being ahead of such countries as Germany, Spain and the Netherlands. Thanks to this our export of highly efficient car services increases, supplying our balance of payments with foreign currency.

The elimination of customs barriers, not only in the EU, but also in the EEA is another benefit. It greatly accelerates international trade of goods, increases the possibility of better use of the car fleet by our carriers, it provides shorter delivery times and greater timeliness and enables delivery in *Just-in-time* regime, which is becoming standard in Europe. Poland cannot be left behind when it comes to such deliveries.

Other benefits for the Polish transport from Poland's accession to the EU will be only mentioned, without detailed discussion due to the common knowledge of

their positive impact on the functioning of our transport. One should therefore conclude that: one liquidated costly and burdensome for international motor carriers TIR carnets; system of permits for foreign truck entrances on the territory of other countries ceased to exist; one created beneficial to the environment green logistics and ecologistics and e-logistics; outsourcing of logistics has started to be widely used in Poland; knowledge of managers in Polish transport increased; we gained access to the latest transportation and logistics technology, and finally one put the emphasis on the growth of transport safety, which is particularly important in Poland, where the average number of people killed on the roads is almost 10 a day and is one of the highest in Europe. In 2013 the number of people who died on Polish roads amounted to 3,334, a significant decrease compared to 1999, when the number of victims amounted to 6730. Poland, however, failed to comply with instructions of the European Commission from 2000, which spoke about the need to reduce the number of people killed on the roads by half by 2010. In 2000 the number of people who died on Polish roads amounted to 6,294 and in 2010 – to 3,907, so about 760 more people died than were allowed by the European Commission. It is interesting in this context whether Poland will be able to meet the new recommendation, contained in the recent White Paper of 2011 [EC, 2011], where one speaks about the need to reduce the number of road deaths to zero by 2050.

2. Disadvantages for Poland Resulting from the European Union's Transport Policy

Apart from highways' unfavourable arrangement for domestic road services (preliminary programme for the construction of the motorway network in Poland – see Fig. 1 – assumed creation of highway system of two latitudinal and one meridian highway), which is partly a result of the EU decree about trans-European transport corridors, which determined the acceptance of road investments and acquisition of the EU funds needed to finance them (one could receive funds only for large road investment projects, lying in those corridors, and not outside of them), the increase in corruption and the decline of Poland in world rankings concerning this phenomenon were the next important negative consequences of our membership in the EU.

It is no wonder that corruption and so called scams have increased in Poland with the huge influx of funds from the EU. Many people, including Polish officials think that these funds are so vast that you can win some of them for yourself. Therefore, we are building the most expensive highways in the world! The EU is treated

in Poland as a “cash cow”. It is well known that in Europe a Pole is seen as a dodger, a drunkard and a thief. We alone have earned such a stereotype. Fortunately, it does not apply to all Poles, there are also honest people (despite proverb that in Poland “Only Fish Don’t Take the Bait”). As an example proving the existence of a number of corruption cases one can cite an investigation by officers from the department for the fight against corruption from Regional Police Headquarters in Katowice, under the supervision of the Gliwice prosecution on corruption referred to approx. 450 thousand PLN concerning the construction of the A1 motorway Świerklany-Gorzyczki, which took place in 2008–2009. Prosecutor’s Office has put already 177 charges against several suspects who handed and took bribes in exchange for an abuse of the powers granted to them, unfair competition, and the preference of selected entities participating in tenders [Puls Biznesu, 2014].

One could mention of course more examples of corruption related to the use of the EU funds in Poland, but that’s not the point of this study.

Poland’s accession to the EU caused a permanent deterioration in the branch structure of the cargo freight from the point of view of the requirements of ecology. Well, the car transport is certainly most environmentally damaging type of transport and its share in transportation is steadily growing almost from the moment of Poland’s accession to the EU, which is clearly illustrated by the statistics contained in Table 1.

Table 1. The Branch Structure of Cargo Freight in Poland in 2004 and 2012 (in %)

Type of transport	Year 2004	Year 2012
Car transport	72.2	84.0
Rail transport	21.4	12.5
Pipeline transport	4.0	2.9
Navigation	1.7	0.4
Inland shipping	0.7	0.2
Air transport	0.002	0.003

Source: Own calculations based on [CSO, 2005; 2013].

As it is clear from the data presented in this table, the share of road transport in total transportation in the period 2004–2012 increased by 11.8 p.p., while much “greener” rail in turn fell by 8.9 p.p. These are very significant, adverse changes in the branch structure of transport in Poland, which is one of the worst in Europe. It is difficult to find a country where road transport carries over 80% of the total weight of the cargo, unless the country does not have at all rail transport (in the EU it applies only to Cyprus and Malta). Such an imbalance in the transport system also reflects

negatively on its operation, as it is clearly seen in the case of Poland, where there are constant congestions on the roads, there is a huge number of road accidents and collisions, we have to deal with delayed deliveries, drivers nervousness etc.

The last disadvantage discussed in this chapter and related to Polish membership in the EU, is over-regulation of transport by the European Commission. The number of acts in this area of economic activity, covering the entire transport-forwarding-logistics industry exceeds 1,000. Can anyone, especially management of transport companies, embrace this overwhelming number of directives, regulations and decisions, which are still being novelised? One should remember that there are also national legal acts in the form of laws, regulations and messages. Attempts to organise this state of affairs undertaken by the EC did not bring any results so far. The number of legal acts continues to grow exponentially. Employees of the Brussels administration want to show intensive work that would justify their exorbitant salaries.

Finally, it would be worthwhile to refer to the misguided theoretical concepts, promoted by the European Commission and regarding the future development and functioning of transport on the territory of the member states. One such concept is the idea of the so-called decoupling, which recommends breaking links, existing for ages, between economic growth and the increase in cargo freight. I shall not elaborate this topic more widely because P. Lesiak did this in his study, which is a part of this publication.

Final Conclusions

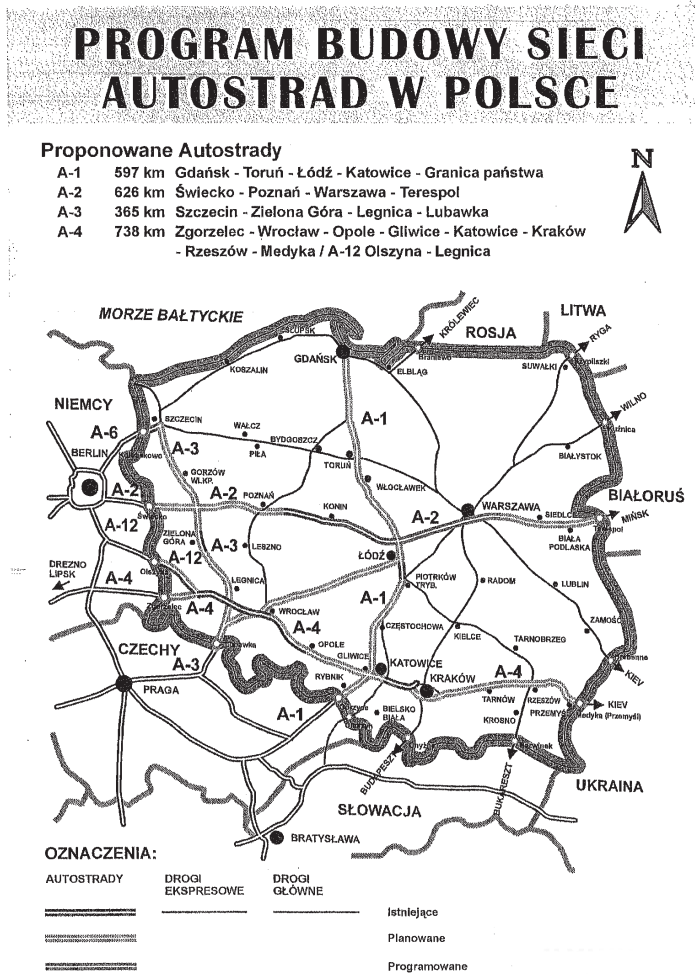
Common Transport Policy/Transport Policy of the European Union, carried out in the years 2004–2014 by the European Commission, had a profound influence on the development and functioning of the Polish transport, in particular international. The balance of the impact of CTP/TP on the Polish transport in the last decade is definitely positive. The effects of our 10-year membership in the EU are visible with the naked eye, especially in the field of transport.

Due to the fact that there are no complete data for 2013, one cannot make an overall analysis of the benefits and losses of our 10-year participation in the European Union. It is obvious that such reports will appear when all the necessary statistical and factual information are available. Thus, there will be time for more in-depth analyses and evaluations. Institute of International and European Studies will also certainly actively participate in these works, as a result of its statutory tasks.

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Figure 1. The Programme for Construction of Highways Network in Poland



Paweł Lesiak

The Importance of Polish Road and Rail Freight Transport Operators in the International EU Transport Market since 2004

Introduction

Poland's accession to the EU was not only a natural consequence of Polish aspirations to become independent from the influence of the Soviet Union and later Russia, through sustainable political bond with the West, but also the choice of a particular way of socio-economic development. In economic terms, this choice also covered such areas as transport, which accounted for both integration activities area (subject) and a tool, widely used to facilitate the process of Polish integration with the EU.

While it is difficult to evaluate the historical aspirations of Poles for independence from the point of view of economics, the appraisal of the socio-economic impact of Polish accession to the EU in the various sectors of the economy, especially from the perspective of ten years of our membership in it, allows one to draw more far-reaching scientific conclusions. This chapter presents reflections on the role (and the changes in this respect) which the Polish road and rail freight carriers have started to play on the internal transport market of the EU since 2004, i.e. from the time when our land transport system began to be shaped by the EU transport policy (TP).

1. Transport Policy in the Context of European Integration

Transport has always been a subject of interest to different countries because it allows warfare and is a key factor in the development of trade and economic growth. After World War II it supported the process of Europe's recovering from the devastation of the war. Efficient and relatively cheap transport enables the globalisation of the world's economy.

Inevitably transport could not be omitted when creating the EEC. Since in the Treaty establishing the European Economic Community in 1957 one has foreseen the removal of barriers to the free exchange and movement of persons, goods and capital, and in the provision of services, the EEC countries also agreed to coordinate their actions in the field of transport development. Hence, next to the common policy, both agricultural and commercial one provided in the Treaty a common conduction of transport policy (CTP).

Issues related to transport are governed by Art. 3 of the Treaty, which states that the objectives of the Common Market (later referred to as the EU Single Market or Internal Market), which was to include the EEC Member States by the end of the 60s, are, among others, the creation and implementation of the CTP. The detailed arrangements for the CTP are contained in Art. 70–80 of the Treaty.

It can be said that the creation of the CTP has become the treaty goal of the EEC, because without it, it would not be possible to achieve two of the four freedoms (free movement of people and goods), on which the Common Market provided in the Treaty was supposed to be based. During the 50s one had the assumption that relying solely on market mechanisms will not allow to achieve assumed integration and economic objectives of EEC and the ones of the European Coal and Steel Community (ECSC), which operations and activities were largely depended on transport.

It is worth noting that the importance of the CTP in the integration process of Western European countries grew along with the progress of the creation of the single market and removing barriers to trade between Member States, as well as in connection with the geographical expansion of the EEC, EC, and finally the EU. With the collapse of “Eastern Bloc” (Council for Mutual Economic Assistance – CMEA and the Warsaw Pact), it became clear that the post-socialist countries will also strive to access the EEC.

Although at the turn of 80s and 90s the perspective of Poland’s accession to the Western socio-economic structures still seemed to be distant, the more perceptive economists have already begun to reel off considerations on the possible integration process and its implications for the Poland. Among the first authors dealing with this issue in the context of transport economics one may mention in particular researchers from the Department of International Transport from Warsaw School of Economics.

Department of International Transport from Warsaw School of Economics collaborated with the Institute of Transport (Institut für Verkehrswissenschaften) of the Westphalian Wilhelm University of Münster in Germany and thanks to that his staff knew the essence of European integration, and knew its conceptual basis. Researchers from the Department of International Transport from Warsaw School of Economics

were among the first who studied the impact of CTP on Polish transport market, including the impact of deregulation and regulations, liberalisation of admission to the profession of transport operator, liberalisation of access to transport markets and the consequences of the introduction of principles of the social market economy for transport markets in this part of Europe.

Analyses of E. Teichmann from the Department of International Transport seem to be interesting. They have made a major contribution to the studies on the implications of CPT for Poland. Already at the end of socialist Poland E. Teichmann [1989, p. 155] wrote that “the status and trends of changes in transport of the EEC and CMEA countries are the main external determinants of Polish foreign transport policy”. With regard to Polish foreign transport policy she advocated then to [Teichmann, 1989, p. 156]:

- “maintain internal consistency of maritime policy with the policy of land, air etc. transport,
- perceive the Polish system as part of the European transport system,
- reduce the regulatory functions of the state to extent that is necessary and give businesses as much freedom of providing international transportation services, as possible”.

E. Teichmann [1989, p. 156] supported the idea of our country’s participation in the creation of a pan-European transport development concept, since she considered Poland – as an exporter of transportation services – should play a “special role in overcoming the tendencies disintegrating Europe”, actively working towards “the creation of a single European transport system”. More specifically, she opted for the unification of “technical and technological solutions in the transport on the Western European level in order to fully ease international transport and to bring closer conditions of functioning of transport companies to the European ones” [Teichmann, 1989, p. 156].

E. Teichmann postulates have been adopted, and her predictions were generally true. Both in transport, as well as more broadly – in the socio-economic and political sphere, Poland was from the very beginning of the socio-economic changes in the countries of Central and Eastern Europe, among the countries most involved in the process of rapprochement with the EEC, EC and later the EU.

The future also confirmed her projections for the harmonisation of the European transport system. During preparations to the accession, Poland, along with the other countries of the CEE candidating to the EU, had to adopt the *acquis* of the European Communities (the so-called *acquis communautaire*), including, as estimated by J. Burnewicz, over 600 legal acts. Adjusting the transport system to the EU requirements for transport generally came down to the so-called structural harmonisation

that is to standardisation of conditions of competition in the CEE countries and the old EU Member States in the social, fiscal and technical areas.

Analysing the impact of CTP and the European integration on the Polish economy and transport system, E. Teichmann drew attention to the strong and growing dependence of transport in Europe from international trade. She used the term “Europeanisation of transport”. She emphasised that this process depends on the relationship of foreign trade¹ to transport capacity in a given country. These relationships, in turn, determine the nature of the transport policy [Teichmann, 1989, p. 33].

2. The Liberalisation of Transport as the Main Area of CTP’s Impact on the Functioning of the Transport Companies

Before 2004 both Polish as well as Western transport companies feared the full opening of the transportation market [Lesiak, 2001]. This applies especially to companies engaged in road freight transport which were and still are very numerous and highly diverse group of companies, in terms of organisational schemes and organisational structures. Therefore most of them cannot expect to be noticed by a wide range of potential customers of “pan-European transportation market” [Lesiak, 2001]. Despite some concerns, since its accession to the EU, Poland strove to as soon as possible liberalisation of road transport of goods, because in our country since the 90s one can notice an oversupply of transport capacity, which cannot be absorbed by the domestic demand for transport.

It is worth noting that liberalisation of cabotage operations in the EU was supported by international organisations such as the IRU, while the old EU countries were main opponents (mainly Germany). Costs of doing business in the field of road transport there are higher than in the countries of Southern Europe, and above all in the CEE.

Gradual liberalisation of road haulage market in the EU, especially after its enlargement in 2004 led to the confirmation of concerns expressed by entrepreneurs about increased competition and a drastic decrease in the general price level of road transport services. Therefore, although generally there are no quantitative restrictions both to the admission to the profession of road haulage operator and to the access to transport markets in the EU, one can notice discussions about placing certain

¹ Since the creation of the internal/single European market, i.e. since 1.01.1993, terms “foreign trade” or “international trade” in respect to trade between the EU Member States have been replaced in the literature by terms “intra-community sales” or “intra-community acquisition of goods”.

restrictions again. Still there is an ongoing discussion about the full liberalisation of cabotage operations and the ensuing possibility of reducing the so-called empty runs.

It should be noted that the situation of Polish road haulage operators is not clear. On the one hand, in the field of international transport they dominate quantitatively on the EU transportation market, on the other hand, their competitive ability – as one can suppose – began to wane, as they roll incessant fierce price war among themselves and with the cheap hauliers from Romania, Bulgaria, Slovakia or Lithuania. In addition, the persistent from approx. ten years low rates are accompanied by rising costs of transport in the form of taxes, charges for the use of road infrastructure, fuel prices² (till mid of 2014 when they first began to fall significantly), wages, or insurance. Problems concerning the increase in the cost of business are systematically deepening due to the difficulties that are associated with the transport both in eastern direction – connected with unpredictable Russia's trade policy (cyclic embargoes on imports into Russia of some Polish products and Polish drivers harassment by Russian border guards) – as well as in the western direction – exchange-rate risk (the carriers are paid for transport in euro, and a large part of operating costs is paid in Polish Zloty).

Despite everything, one can argue that the Poland's accession to the EU has created great opportunities for development for our road freight haulage companies. Certainly they were bigger than the opportunities that they could count on, mainly operating on the domestic market, with a very limited supply of goods.

One should, therefore, agree with E. Teichmann, who claims that Poland, being an exporter of transport services, should be interested in the unification of the technical and organisational aspects of transport in Europe, because the process has not been completed yet. With the unification of the conditions of the transport market the interoperability of transport increases, that is the possibility of penetration of foreign markets by Polish transport operators increases.

It is worth noting also the risks of too far-fetched (full) harmonisation (“homogenisation”) of the European transport markets. P. Krausz [1995, p. 200] pointed out that the “absolute and complete international harmonisation of the conditions [of competition in road transport – P.L.] is neither possible nor advisable”. He argued that accusations from Western Europe against dumping from carriers from Central and Eastern European countries are unjustified and blocking their access to transport markets in the old EU countries, by harmonising the conditions of competition, are damaging the transport industry and the European economy.

² Generally, the fuel prices in the last ten years have been steadily growing. The reverse trend is observed only in the second half of 2014 and at the time of this book's writing, it was difficult to state clearly how stable this tendency is.

P. Krausz correctly relied on a factor contributing to the development of international trade, namely the existence of differences in absolute and comparative production resources between trading partners. He argued that the favourable conditions for an economic activity in the region or country are due to the general economic and social conditions, and don't have to be the result of "costs and data manipulation by some individual transport operators" [Krausz, 1995, p. 200]. He also argued that the full public benefits from transport can be achieved only when the transport operations are undertaken by the companies "offering the best possible conditions on the market" [Krausz, 1995, p. 200].

To sum up the events of the last twenty years, unfortunately one cannot assume that similar, economically reasonable thinking (at least when it comes to road transport of goods) will dominate both the old EU countries and the European Commission itself. Therefore one did not fully benefit from potential and entrepreneurship of road transport operators from the new Member States. The optimisation of the allocation of productive resources in road freight transport within the widened in the first decade of the twenty-first century EU is held under the dictation of influential old Member States, which in fact have long been disrupting free competition in order to protect domestic operators. It should be noted that such actions as blocking and delaying access to domestic markets for operators from "low-cost countries" are run just under the pretext of protecting free and fair competition and to ensure traffic safety and protection against unfair operators from CEE countries.

Unfortunately, despite the abolition from 1.05.2004 of a very limiting for Polish transport and commercial and industrial sector licensing requirement in order for the vehicles to enter the EU countries, one still has to deal with economically and environmentally inefficient use of transport potential in the EU. This is manifested, among others, by a fairly large number of empty runs of trucks, and these in turn mainly result from administrative restrictions on cabotage operations³, and not from market conditions, or from organisational problems that carriers, shippers and freight forwarders may have.

³ Pursuant to the Regulation of the European Parliament and of the Council (EC) no. 1072/2009 concerning common rules of access to the international road haulage market, cabotage operations in all member states of the EU have been unified. And so, each road carrier transporting goods for money, holding community license is entitled to perform with the same vehicle up to three cabotage operations following international carriage from another member state or third country to the host member state. An additional condition in this case is that, that the last unloading of goods in the course of a cabotage operation before leaving the host member state needs to take place within seven days from the last unloading in the host member state in the course of receiving goods within incoming international traffic. In case of entering the foreign member state without carrying cargo, each EU carrier can perform only one cabotage operation within three days from the entry into the territory of that state.

But this is not the only manifestation of inefficient transport policy interventions in the transport market, based on its liberalisation. The EU, in order to balance a growing from year to year road freight transport, since 90s has conducted intensive policy of liberalisation and de-monopolization of rail transport. The European Commission hopes at the same time that the railway market in individual countries, so far monopolised by national carriers, after the introduction of domestic and international competition in the natural way will be forced to improve services and reduce mismanagement.

It turned out, however, that economic compulsion does not work on the railways as in the other modes of transport. Although the Polish rail freight market is one of the most liberalised in Europe, and the share of private carriers is systematically growing [Barcik, Czech Republic, 2010, p. 14], the phenomenon of “competition on the track” has not produced the expected results in terms of reducing the role of road transport. On the contrary – our country’s accession to the group disavouring road transport and supporting “greener” rail transport has in turn even further worsened competitive position of railroad. It seems that fragmentation of the unified system of state railways (PKP), having exclusively rights for the freight operations and management of the railway infrastructure has led to a dysfunction of the entire rail system, and the abolition of customs barriers between Poland and other Member States mainly improved road transport. This is probably because the technical monopoly in railway transport is too strong, and interoperability insufficient for many Polish and foreign participants of our railroad market on the supply side of transport services, to operate in conditions of intermodal competition more efficiently from one centrally managed railway enterprise.

It should be added that competition on the Polish railway market, although, of course, having a much smaller number of competing companies (83 subjects had active licenses to carry rail freight in August 2014, while 81 thousand entities were entitled to perform road freight transport⁴), is gradually converging to the fierce price competition, with which one is dealing in the road transport market. Thus, it seems that the introduction of free competition into the rail transport with vertical separation (separation of infrastructure management from the department related to the performance of the transport operations) has made rail transport similar to the road transport only in fierce price competition. However, this has not led to an increase in intermodal competitiveness of rail carriers themselves or to the increase of the attractiveness of the services offered to a wide range of potential shippers.

⁴ Data on the number of entities with an active license to carry rail freight come from the website of the Office of Rail Transport (<http://www.utk.gov.pl/pl/licencjonowanie/>), while data on the number of road freight carriers come from the Eurostat database (<http://epp.eurostat.ec.europa.eu/portal/page/portal/transport/data/database>).

3. The Political Conditions for the Development of Transport Infrastructure

Transport infrastructure is – apart from relationship of carriers with shippers, i.e. the demand side of the transport market – the main external factor of the competitiveness of transport enterprises. It is also a natural focus of the state, which means that by acting on it, the state also affects the competitiveness of domestic transport companies.

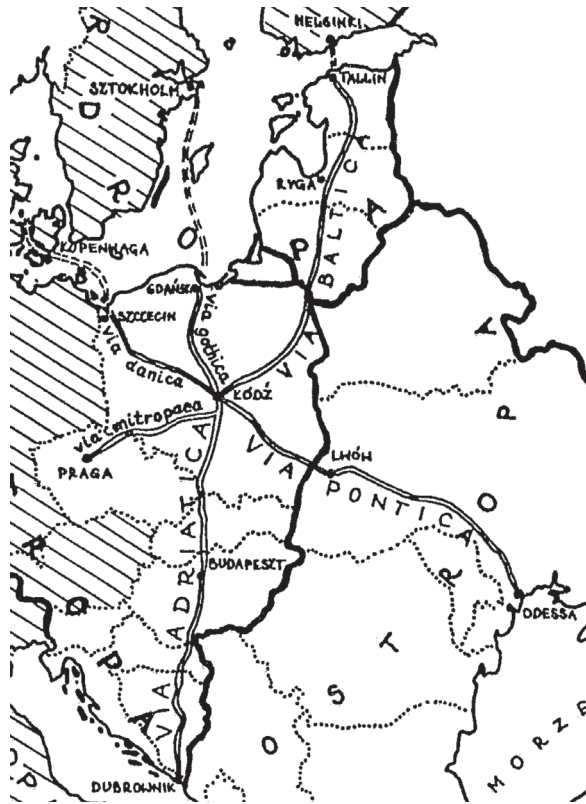
State's interest in transport infrastructure, however, is often not determined by the attention to the development and smooth functioning of the carriers, but by other factors. For centuries, the need to protect each country's defense capabilities and widely understood socio-economic development were important factors in the development of transport infrastructure. Transport infrastructure was used even to ground statehood itself and to create a sense of national community. So it was in the days of the republic of Rome and the Empire, in the industrial age, and now, in the era of globalisation. The establishment of the first rail connections in the UK has allowed people from different parts of the country at the same time to read the same newspapers and magazines, obtain same products and enjoy the same benefits of civilisation. It is worth recalling that the development of railways in the UK was in no less degree than the invention of the steam engine, conditioned by rail infrastructure development, which had to be built from scratch on a very difficult, sometimes wet, ground.

It is worth remembering that the situation of our country when it comes to the history and development of the transport infrastructure, differs from that of the UK and many other industrialised countries of Western Europe. For when they were creating in those countries the basic outline of the modern system of roads and railways, in Poland began 123 years of partitions. Therefore, the Polish transport infrastructure system still faces problems, which are remnants of that period. Then created routes had to meet the requirements of three different socio-economic systems, with different points of gravity and hubs, also different in terms of the structure of geographical directions of cargo and people transport. This is evident even watching the system of railway lines.

In the case of roads, the situation was partially similar. As rightly pointed out by A. Piskozub [1995, p. 44], in the PRL geopolitical and military assumptions were the basis of the concept of two highways crossing the country latitudinal, running from east to west, i.e. from Przemyśl to Zgorzelec and from Brest to Frankfurt an der Oder. Both concepts were imposed by the Soviet Union and its military and economic agenda – the Warsaw Pact and CMEA. They were supposed to serve the aggressive plans of the Soviet authorities, related to the march of Soviet troops to west of Europe.

When one started working in independent Poland on the construction of toll highways program, i.e. in the first half of the 90s, we received a chance to redesign the motorway network. This allowed to take into account the needs of Polish society and the national's economy. A. Piskozub [1995, p. 48] suggested then not to build in the first place latitudinal highways. In return, he proposed a system of "European highways running through Poland [from the north-east to south-west and north-west to south-east – P.L.], of fundamental importance for Poland, as well as for the whole Europe". (New highway network plan is presented in Figure 1). He also argued that the system designed by him would not exclude the construction of other highways of international importance, and only would move to the fore those most uniting Poland and neighbouring countries with the rest of Europe and would unite together countries of Central, Northern and Eastern Europe aspiring to membership in the EU. In his opinion such a system would increase Polish transport and economic importance in the uniting Europe, making our country a more active player in the international arena.

Figure 1. Arrangement of the Motorway Network in Poland by A. Piskozub (1995)



Source: [Piskozub, 1995, p. 47].

E. Teichmann put forward very consistent proposals in the 80s [1989, p. 157]. Speaking about the inclusion of Polish transport network into the European communication paths, she indicated how big for Poland's interests is the importance of the transport corridor leading from Scandinavia to southern Europe, and advocated mainly the construction of the Trans-European North-South Highway and the Trans-European North-South Railway. In her opinion the construction of both connections would facilitate "activation of exports of transit services and the resulting visibility of Poland on the map of the Europe's transport system", therefore, it would be "a kind of counterweight to the moves of other countries" [Teichmann, 1989, p. 157]. Besides, it would provide a stronger basis for the organisational and capital engagement of countries and international institutions in the modernisation and development of the Polish transport system.

As is known, concepts of E. Teichmann and A. Piskozub have not been implemented. In return, one built latitudinal highways, which serve more transport and foreign trade of our big neighbours – Germany and Russia. As a result of this (i.e. the lack of convenient connections with the rest of the country), some Polish regions have been for years marginalised and deprived of the possibility of adequate economic development, including the development of transport infrastructure. This applies for instance to Zachodniopomorskie with Sea Ports Szczecin-Świnoujście.

If however one would realise the concept of A. Piskozub and E. Teichmann, probably it would be more likely for a European logistics platform to be built in Poland. This would create growth opportunities for Polish companies from the TSL sector that could sell not only pure transport services, but also the wide range of logistics services. It is worth noting that the idea of Poland as a logistics platform for Europe was discussed several years after conception of the development of Polish infrastructure by A. Piskozub and E. Teichmann. Adoption of this issue by the participants in the debate confirmed the validity of the proposal of both scientists, well enrolling in "natural" long-term plans for the development of our economy.

It should be added that the newly built highways not only have not connected together some important regions of the country, but also have not been properly connected to their immediate surroundings. It often contributes more to the division of local communities than to the improvement of their communication accessibility, especially since the new motorways and expressways are often separated from urban settlements by a few meter high noise damping screens. It can be assumed that when planning the network of motorways and expressways in Poland one did not take into account the negative effect of "a tunnel".

One also cannot ignore the fact that the construction and exploitation of highways, almost from the very beginning, are accompanied by many controversies concerning e.g.: unreasonably high costs of construction and exploitation, unclear tender procedures when choosing construction contractors and entities managing the exploitation of highways, purchase of land in violation of property rights of current owners and finally incorrectly functioning and inefficient system of tolling.

It is difficult to say to what extent the allegations raised are valid, because despite the involvement of the public funds (including EU) in highway investments part of the related contracts has been kept secret, and institutions and government offices responsible for investments are reluctant to provide information, and if they do, the information is incomplete. However, it seems that in Poland the construction of the motorway network is associated with excessive costs, plus the poor quality of the used materials and performed road works. Ineffective public supervision over construction works, as well as the related mismanagement and corruption can be the reasons for these phenomena. So one can say that not fully thought through political decisions in conjunction with the ever-changing organisation of departments responsible for supervising development of transport infrastructure, transport and distribution of the EU funds, resulted in the construction of not much functional and expensive motorway network.

Concluding reflections on the infrastructure, it should be noted that although the EU membership did not protect us against improper political decisions within the development and modernisation of transport infrastructure, thanks to a very large financial assistance from the EU, the effects of these errors become less noticeable, and above all, are a lesser burden for the state's budget. In addition, the state of infrastructure in each of discussed modes of transport is gradually improving, at least where the repairs and investments are carried out. It should also be noted that according to law the resources allocated to road and rail infrastructure should be in the ratio of 60:40. This proportion, however, is not preserved in Poland. This is done mainly to the detriment of rail transport. Moreover, despite the support of "green modes of transport" from the CTP, and now from the Poland's and EU's transport policy, paradoxically rail network is systematically shortened⁵, while the network of roads (especially highways and expressways) grows. But this is not the specificity of Poland – similarly happens in some other EU countries, e.g. in Germany.

⁵ According to CSO length of railway lines in Poland amounted to 27.2 thousand km in 1980, 22.6 thousand km in 2000 and 19.3 thousand km in 2013.

Summary

Due to its location, simultaneously advantageous for the transport capacity (transit) and unfavourable geopolitical reasons, Poland in 2004 practically had no other choice. It had to join the EU. Perhaps that is why our position in the accession negotiations on transport policy was not very strong. However, it appears that the Polish side has shown too little determination in fight for protection of the interests of domestic carriers, especially given that transport, especially freight, is quite important and permanent element in our export services, and provides a lot of jobs. It should be noted that opening as soon as possible (liberalisation) of road freight transport market in the EU laid in the interest of Polish operators. Poland needed also the time (longer transitional period) for PKP restructuring. Besides one should have adequately prepared our rail market for competitive activities of foreign operators. These goals have not been fully achieved due to the hard stance of the European Commission.

On the other hand, it should be noted that the Poland's accession to the EU has significantly expanded our market for transport services. Thus, although most of our carriers were pushed to the role of subcontractors of large logistics operators from Western Europe, their transport potential, according to data provided by the Bureau of International Transport Service, became significantly larger (number of vehicles engaged in international transport increased from 41.1 thousand in 2004 to 154.6 thousand in 2013). This means that Polish road carriers rather quickly took first place in the EU in terms of the number of international transport services. However, it is the half-success, as many carriers and professional drivers are simply forced to providing services abroad (cabotage and cross trade) due to lack of sufficient domestic freight weight. Moreover, they often take almost unprofitable orders from other subcontractors because of fierce price competition and a lack of cargo for return way to the country. It should be noted that the market position of the Polish carriers must be assessed very carefully, because the public statistical data do not clearly indicate what part of freight transport goes into the transport companies representing fully Polish capital, and which into entities registered in Poland, but controlled by foreign capital.

The inclusion of Poland into CTP caused very serious quantitative transformation of the road freight transport market (increase in traffic and the number of operators and vehicles, which occurred due to abolishing the requirement for having permits for conducting foreign transport within the EU, as well as quantitative restrictions on admission to the profession of road transport operator and through the removal

of border controls) and changes in the organisation of road haulage (for the reasons mentioned above and also because of stricter standards for drivers' working hours, the introduction of digital tachographs and the creation of the Road Transport Inspectorate as a specialised controlling institution). Implementation of the CTP affected organisation and conduct of rail transport to a lesser extent, but was more evident in the rail market organisation system. One can even speak about the introduction of a new order in the rail market or even the creation of such a market, if we assume that the existence of free competition is an inherent feature of the market. Adoption of CTP requirements was associated in Poland with the need of restructuring of PKP, the former monopolist. It was therefore necessary to divide the PKP into separate companies, including the company responsible for the management of the infrastructure (so called vertical separation), and let private rail carriers to participate in the market. In turn, since 1.01.2007, as a result of the opening of the EU's rail freight market, cabotage operations in Poland may also be conducted by rail operators from other EU countries.

It is difficult to assess unequivocally the situation of rail freight in Poland and the EU. The situation is developing rapidly and in recent years was affected to a large extent by a global economic crisis. One cannot forget about the fierce price competition between PKP Cargo and DB Schenker Rail Poland. PKP Cargo at the time of global economic crisis in 2009–2010, was even threatened by bankruptcy. However, the swift and decisive response of the company's management board, which has reached an agreement on this issue with the unions, saved our national carrier from bankruptcy.

Although the former monopolist's crisis is somewhat a result of fierce intra-industry competition, which in turn is the result of Poland's membership in the EU (liberalisation of domestic and international freight rail market), our membership in the EU eventually led to long postponed and needed restructuring of the freight department of PKP, and now also allows PKP Cargo SA, which is now responsible for this department, expansion into foreign markets.

Currently, PKP Cargo is the second, after the German Railways (DB Schenker Rail Deutschland), the EU rail freight carrier and is ahead of, for example French freight railway. It should be noted that the Polish rail freight market is one of the most liberalised markets in the EU. It should also be remembered that 50% minus one share of PKP Cargo is traded on the Warsaw Stock Exchange.

The biggest European competitor of the Polish company (DB Schenker Rail Deutschland and Poland) for many years benefited from very large government subsidies, thus becoming one of the world's largest logistics companies, operating also on the Polish market. Nevertheless, Chancellor Angela Merkel withdrew from

the planned for 2009 public offering of 25% of its shares due to the serious problems associated with the global economic crisis.

As one can see, not only Polish former railway the monopolist was plagued with problems typical for this mode of transport. The European Commission, aware of the competitive advantages of road transport over rail, from 90s is conducting a policy of disadvantaging road transport. It is based on tightening social norms (drivers' working hours) and security, on an increase of tolls and taxes (e.g. fuel) and on tightening standards for emissions and noise caused by heavy vehicles. Practice has shown that tools intended for slowing down or even stopping excessive – for the purposes of the European Commission – development of road transport were not effective and have not resulted in reducing the share of road transport in the transport market in the 90s of twentieth century [Burnewicz, Szałucki, 2003, p. 62]. Allowing competition in the production and repair of railway tracks did not also improve the competitive position of the EU rail.

Therefore, for more than ten years, one supports the idea of decoupling, i.e. decoupling transport growth from GDP growth. Attempt to achieve this utopian idea also failed. The European Commission blame the new EU member states for this failure, which it considers to be still largely dependent on road freight transport.

Summarising all considerations in this chapter, one can argue that the CTP and TP are not entirely consistent with the interests of Polish transport operators and users. However, practice shows that the deficiencies in the sphere of transport policy have so far been compensated either by the benefits resulting from the increase in the supply of cargo (due to the development of intra-EU trade and liberalisation of transport markets) and improvement of the interoperability of transport – and these issues are important for Polish carriers – or either by a decrease of transportable level in Poland and the EU (due to increased intra- and intermodal, domestic and international competition on the Polish transport market) – the issue is in turn important for transport users – or, finally, thanks to greater access to a wider than before 2004 transport-forwarding-logistics services submitted by carriers from Poland and the other EU countries.

If we assume that the freight transport should support socio-economic development of the country, it should be noted that Poland's membership in the EU and inclusion of our country into CTP/TP facilitate rather than hinder this process, however no small part of the EU's political concepts (especially decoupling, modal shift or decarbonisation) should be considered as a part of utopian policy and wishful thinking rather than realistic and effective policy.

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Adam A. Ambroziak

The Effects of Granting State Aid in Special Economic Zones after Poland's Accession to the European Union

Introduction

Period of functioning of special economic zones in Poland (SEZ) after 10 years of membership in the European Union allows one to draw some conclusions about both the need, effectiveness and the results of public interventions in the form of tax breaks for businesses that invest in these areas. Of the sixteen originally created SEZ, still remain fourteen. It is worth paying attention to some very important details of their operation. Firstly, they are managed by the so-called zone companies which find investors and help them to meet most of the administrative requirements. However, they do not limit their offer to individual voivodeships, but rather follow the preferences of investors seeking to locate themselves in larger urban and industrial agglomerations [Ambroziak, 2009]. As a result, there are several hundred so-called sub-zones of special economic zones scattered throughout the country. Secondly, all the conditions for authorisation to operate in the zone are identical throughout the country. Thirdly, the size of the support provided, which is a derivative of a permissible regional aid, is determined by the location of an investment and the classification of a voivodeship and not, for example by a place of the headquarters of the company managing the zone. Consequently, one decided to analyse the results of functioning of the SEZ at the level of voivodeships, which will allow to better and more accurately associate the possible effects of the size and intensity of acceptable support regulated by EU legislation.

The aim of this study is to evaluate the effects of granting state aid in special economic zones (SEZ) at the level of voivodeships after the Polish accession to the European Union. It's about capturing both the direct effects of the zones in the form of new investments and employment of staff, as well as an assessment of the possible directions of their influence on the socio-economic situation of the regions.

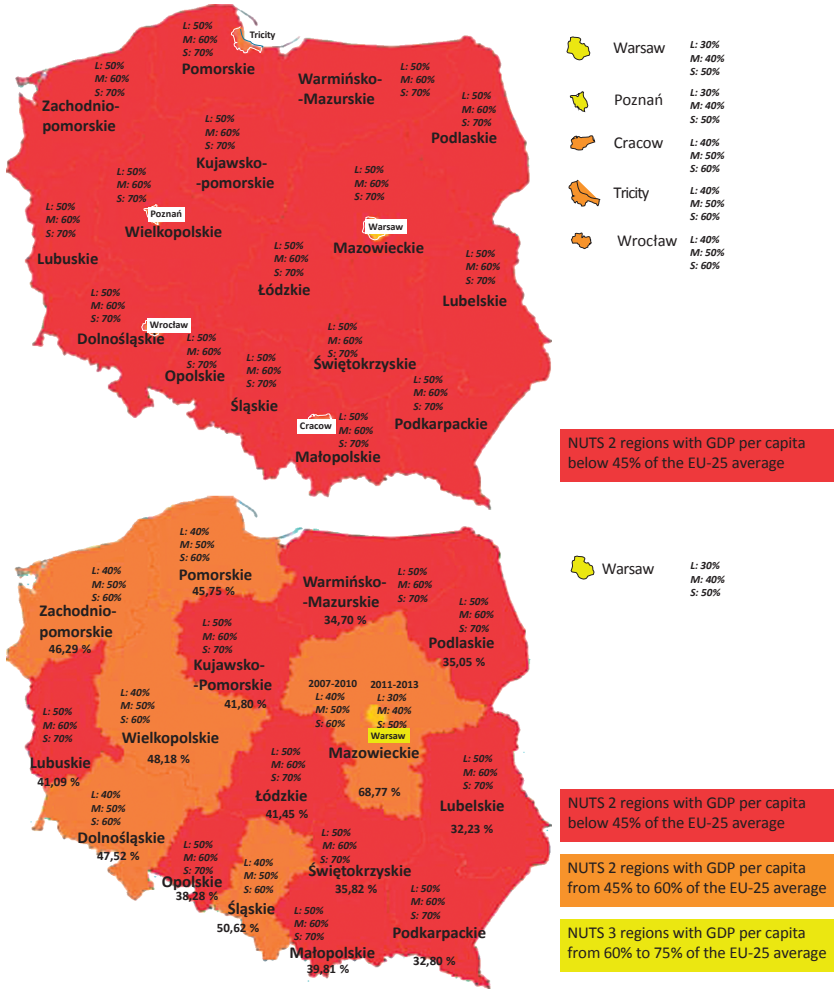
1. The Concept of Regional Aid in Special Economic Zones in Poland

The attractiveness of the location of each region depends on many factors, both external and internal [Ambroziak, 2014]. The present study focuses on one of them: corporate tax breaks offered to encourage businesses to locate their investments in special economic zones in Poland. This instrument is a mean of public support at the regional level within the understanding of the EU law and, therefore, after the Polish accession to the EU, it required appropriate adjustments [Ambroziak, 2003a, 2003b]. National regional aid under the EU rules may in fact be granted in the case of the so-called market failure, so in the least developed regions in order to cover the additional costs incurred in connection with an investment in the less favourable area (lower quality of human capital, poor transport infrastructure and telecommunications etc.). It is assumed that the regions in which this kind of support is offered should catch up with the more developed ones, by offering relatively greater support in the poorer and less support in the more developed areas. A new regional aid map took effect on 1 January 2007. On its basis one maintained 50% GGE level for the then poorest (with a GDP per capita below 45% of the EU average) regions: i.e. Warmińsko-Mazurskie, Podlaskie, Lubelskie, Podkarpackie, Małopolskie, Łódzkie and Opolskie. One reduced up to 40% of GGE allowable support intensity in slightly more developed regions (GDP per capita from 45% to 60% of the EU average): Wielkopolskie, Zachodniopomorskie, Pomorskie, Śląskie and Mazowieckie to 40% in 2007–2010 and to 30% in the period of 2011–2013 [Council of Ministers, 2006; Ambroziak 2006].

Due to the fact that any public intervention may distort competition, the EU regulations provide restrictions on, in addition to the eligible costs, maximum intensity of public support. The so-called regional aid map, which was introduced in Poland under the framework of pre-accession adjustments already in 2001, determines the allowable state aid intensity [Council of Ministers, 2001, 2002]. In regard to the fact, that in all NUTS 2 regions (in the voivodeships) in Poland one recorded GDP per capita below 75% of the then European Union, the map stipulated that the maximum allowable aid in all voivodeships will amount to 50% of gross grant equivalent (GGE) with the exception of five agglomerations: Trójmiasto (40%), Cracow (40%), Wrocław (40%), Warsaw (30%) and Poznań (30%) (Map 1)¹ (Council of Ministers 2004; Ambroziak 2006).

¹ In this section one indicates only the maximum levels for regional aid for large enterprises. Until the end of 2006 one could have increased them by 15 percentage points (p.p.) for SMEs in the “a” regions and by 10 p.p. in the “c” areas. In 2007–2013, for small enterprises they were increased by 20 p.p., and for the medium ones by 10 p.p.

Map 1. Map of Regional Aid in Poland in Years 2001–2006 and 2007–2013



Regional state aid for 2001-2006: left side; Regional state aid for 2007-2013: right side; L – large enterprises; M – medium enterprises; S – small enterprises

Source: Own research based on [Guideline 98/C 74/06; Guideline 2006/C 54/08].

Exempt from income tax (legal persons or sole traders) is the main investment incentive offered in special economic zones in Poland. Diversification of admissible regional aid meant that in the poorest and most vulnerable voivodeships, mainly of Eastern Poland, entrepreneurs could have been granted in SEZ with tax exemptions of up to 50% of the cost of the original investment. As already mentioned, even though the rules of the zones throughout the country are identical, one limited the intensity of support under the Act on SEZ in more developed and wealthier voivodeships to respectively 40% and 30% of GGE. **Assuming that the instrument in the form of tax exemptions is an attractive tool for businesses considering location of their**

investments in Poland, it should allow targeting more investments with new jobs in the poorest voivodeships with the highest allowable support intensity².

It should be noted, however, that the instrument of tax benefits in SEZ is characterised by a certain specificity of action, and the consequences for the recipient and the donor: both its attractiveness to businesses and risks relating to the effects on the side of the state, are quite limited. State's intervention occurs after the completion of the investment and employment of workers that is after the most risky period for the business and begins only with the emergence of profits (even not revenues).

2. Public Aid in Special Economic Zones

Shortly after the Polish accession to the EU, one evaluated the value of support provided under the act on special economic zones to 406.3 million PLN and 666.9 million PLN in 2005³ and 2006 respectively (Figure 1), which accounted for an average of up to 39.9% and 34.8% of the total regional aid in Poland. It should be noted, however, that in many, especially the less developed voivodeships (Warmińsko-Mazurskie, Podkarpackie, Małopolskie) zone reliefs were almost the only one and in the case of slightly more developed ones (Dolnośląskie, Śląskie, Pomorskie, Łódzkie) a main type of available regional aid within the first 2–3 years after the accession (Figure 2). In subsequent years, the value of the financial support gradually increased with the exception of 2009, when during the economic crisis and the decline in demand for Polish goods among consumers from other member states of the EU, profits, and thus the amount of tax-exempt dropped slightly. Also the structure of regional aid changed through a substantial decrease in the amount of regional aid to the level of 17.5% of regional aid offered in Polish voivodeships. This was due to the mobilising of structural funds, especially funds from the European Regional Development Fund for entrepreneurs.

The strength and direction of these changes depend on the level of regional development of individual regions. In the case of less-developed regions one offered relatively larger and easier access to the EU funds, which resulted in a strong decrease of zone support in the total amount of regional aid. In contrast, better-developed regions reported maintaining a relatively high proportion of zone support in regional aid (for example in 2013 at the level of 40.9% in Dolnośląskie, 34.8% in Lubuskie, 31.1% in Śląskie and 29.6% in Zachodniopomorskie). Thus, **despite the fact that it**

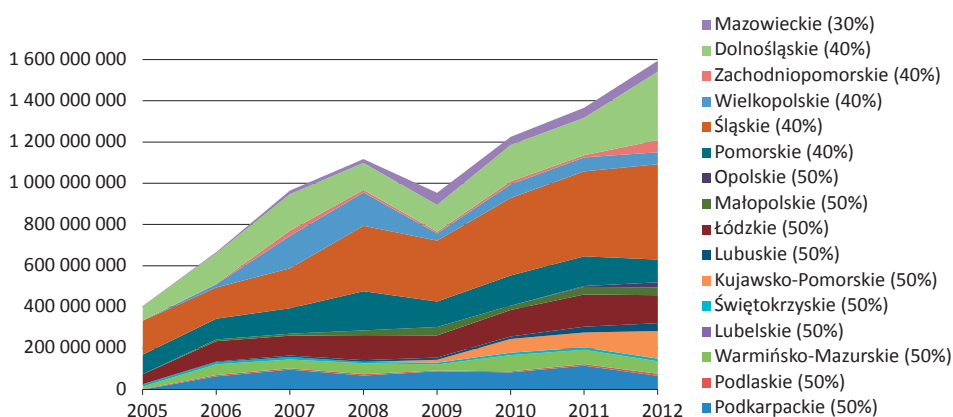
² In order to easily identify the different categories of regions (low, average and better developed) one provided the figures and tables with the names of voivodeships with maximum levels of the intensity of regional aid for large enterprises in parentheses (the lower the intensity is, the better developed area is, the higher – less developed).

³ Due to the incomplete data of low reliability for 2004, the analysis was limited to the years 2005–2013.

was statutorily intended for the poorer regions, zone support no longer constitutes a significant investment incentive compared to other available resources, while in more developed voivodeships, its share still remains significant.

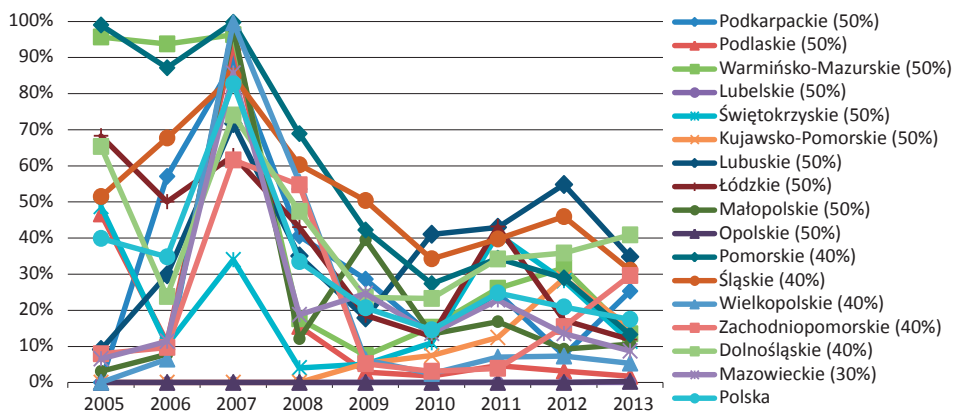
It seems that this is due to the nature of the support, which is used by businesses only after completion of the investment, while support from European funds was available very often in the form of grants already at the declaration of the project and hence more attractive for companies from poorer regions in need of support during the stage of starting or significant development of business.

Figure 1. The Amount of State Aid to Entrepreneurs in Special Economic Zones in the Years 2005–2013



Source: Data from Office of Competition and Consumer Protection.

Figure 2. The Share of State Aid in Special Economic Zones in the Total Value of Regional aid in the Years 2005–2013



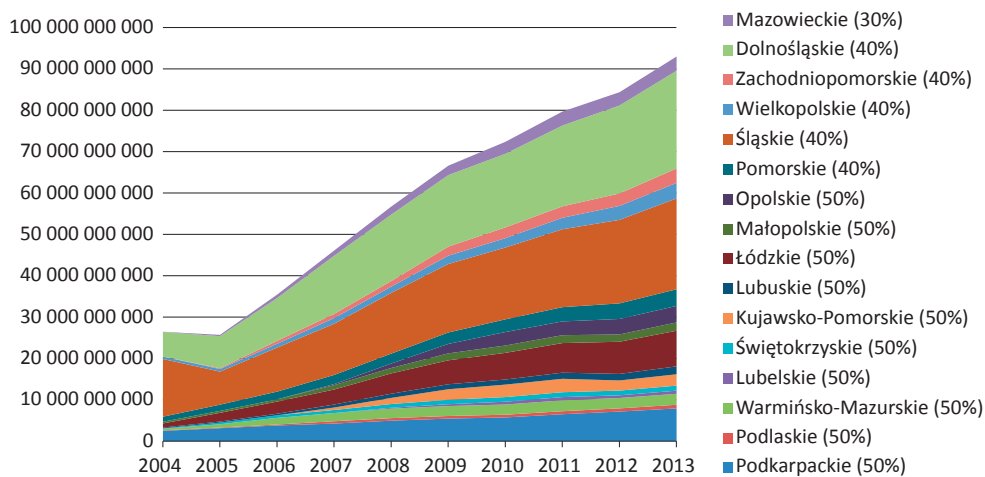
Source: Data from Office of Competition and Consumer Protection.

This observation is confirmed by the analysis of the total value of the financial assistance provided under the act on special economic zones. Since Poland's accession to the European Union one granted support in the zones in the amount of 9.8 billion PLN. The biggest funds were allocated in the following voivodeships: Śląskie (28.5%), Dolnośląskie (16.7%), Pomorskie (11.3%) and Łódzkie (10.3%), and therefore in relatively more developed regions of the country. By far the smallest share (not exceeding 1%) of the total amount of regional aid was granted in the poorest regions of the country (Opolskie, Lubelskie, Podlaskie, Świętokrzyskie). In consequence, **the aid, which was supposed to be directed at enhancing the development of the most vulnerable regions, was channelled in the largest amount (absolute value) into the richest ones.**

3. Investments in Special Economic Zones

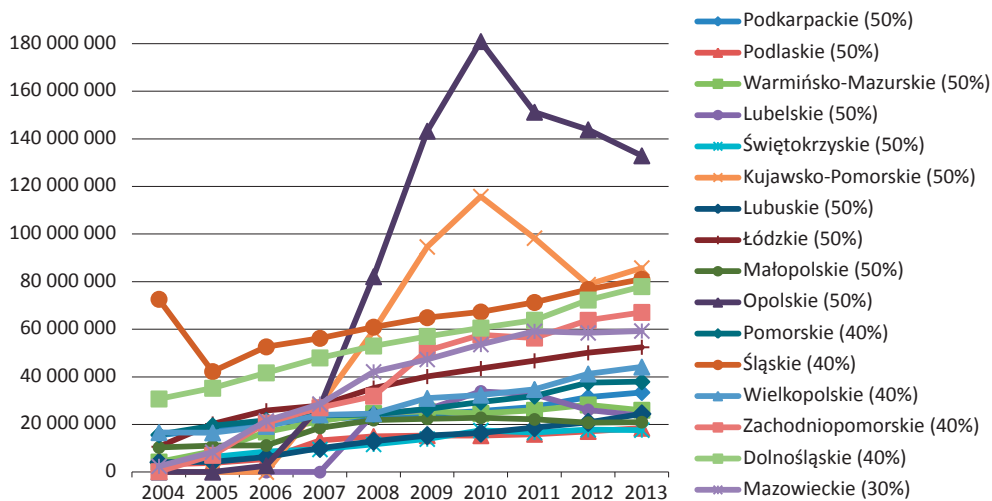
In 2004, eight years after the launch of the first zones the total value of investments made in SEZs reached nearly 26.5 billion PLN (Figure 3), which meant an average of about 24.3 million PLN for one zone project (Figure 4). Within ten years of the zones functioning dynamics of investment inflows to them changed, noting the greatest value in the years just after Poland's accession to the EU (up to 37% compared to the previous year) and significantly lower in the period of economic crisis (to 8.7% in 2010 r.) and just after it (5.9% in 2012). At the end of 2013 one witnessed an increase in the value of investments in the SEZs to the level of 93 billion PLN. It should be noted, however, that, as in the case of investments in SEZs, the value of fixed assets of enterprises in Poland has also quadrupled. As a consequence the share of investment in the zone of fixed assets has not changed significantly and remained at a relatively high level (up from 9.1% in 2004. 11.2–11.4% in 2007–2012, and 10.8% in 2013.) (Figure 5). However, during the period of years 2004–2013 not captured at the national level a significant increase in investment in SEZs in relation to the total assets of enterprises, which is rather weak impact of the investment on the overall size of the zone of capital invested in Poland. As a consequence the share of zone investments in the value of fixed assets has not changed significantly and remained at a relatively high level (increase from 9.1% in 2004 to 11.2–11.4% in 2007–2012 and 10.8% in 2013) (Figure 5). **However, during the studied years 2004–2013 one did not notice at the national level a significant increase in investments in SEZs in relation to the total assets of enterprises, which means a rather weak impact of the zone investments on the overall size of capital allocated in Poland.**

Figure 3. The Value of Investments in Special Economic Zones in Poland by Voivodeships



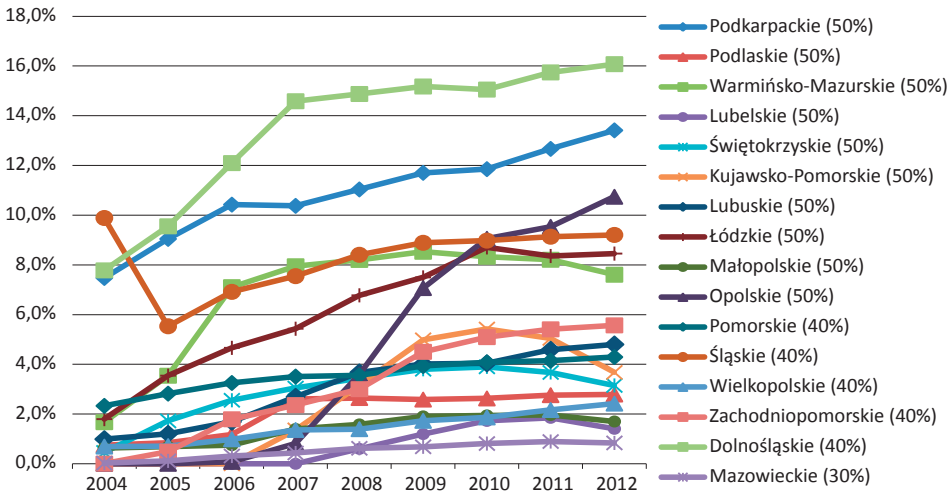
Source: Data from Ministry of Economy.

Figure 4. The Value of Investments in Special Economic Zones in Relation to the Number of Valid Permits



Source: Data from Ministry of Economy.

Figure 5. The Share of Investments in Special Economic Zones in Poland in the Total Value of Fixed Assets of Entrepreneurs



Source: Data from Ministry of Economy and Local Data Bank of CSO.

The situation at the regional level is much more diverse. Since Poland's accession to the EU one has observed a substantial increase in the importance of a few, relatively richest voivodeships in the zone investments. These are mainly Śląskie and Dolnośląskie, where one located almost half of all investments in the SEZs at the end of 2013. Next comes Podkarpackie (with the first well developing SEZ in Mielec [Domański, Gwosdz, 2005; Dziemianowicz, Szlachta, Hausner, 2000] and Łódzkie, which, although having significantly weaker results (shares amount to respectively 9.3% and 8.5%) characterise by boosting zone investments. **In case of other voivodeships, especially the poorest, their share in the total value in zone investments is small.**

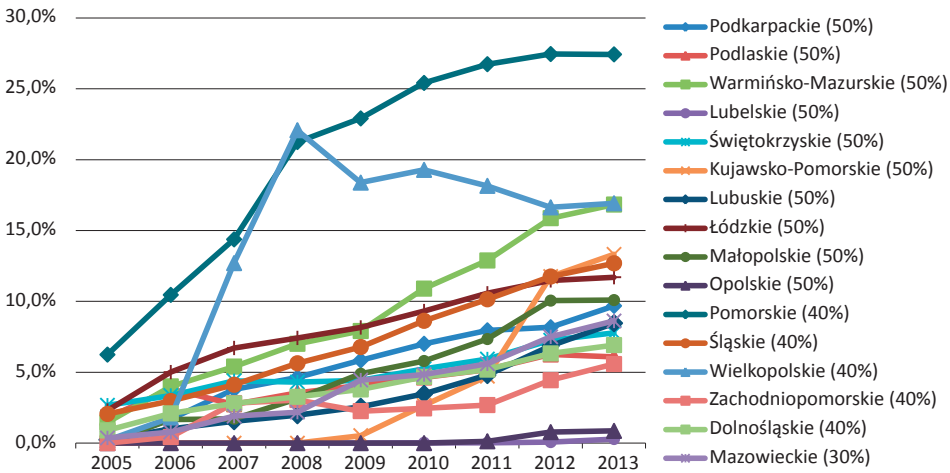
In order to capture the relative effects of zones' functioning one compared the value of the investment to the number of valid permits in a given year. This allowed for an assessment of the relative value of individual investments and capturing directions of placement of larger investment projects and, consequently, maybe more capital than labour-intensive. It turns out that also in this comparison dominate richer Polish regions, although the magnitude of the investments in relation to the number of permits also increased in two slightly poorer voivodeships (but not the weakest ones): Kujawsko-Pomorskie and Opolskie. But this is due to a small number of projects and individual investments in these regions and not to radically improvement of their attractiveness. Similar trends can be observed in the dynamics of investments in the zones: **richer regions attract investments much faster, while the poorer much slower.**

The share of zone investments in the value of fixed assets of enterprises at the level of voivodeships may be a proof of their impact on regional development. The greatest value of the ratio of investments made in special economic zones to the value of fixed assets was recorded in 2004 for two fairly well-developed voivodeships of Śląskie and Dolnośląskie (respectively 7.8% and 9.9%) and Podkarpackie (7.5%). The proportion of zone investments in the value of assets of companies in mentioned regions increased during the studied period to levels of 9.2%, 16.1% and 13.4% in 2012⁴. This group was joined by slightly less developed areas: Opolskie with 10.7%, Łódzkie with 8.5% and Warmińsko-Mazurskie – 7.6%, although for the least developed regions still zone investments are not significant in relation to the fixed assets of companies operating there. It can therefore be concluded **that the size of the zone investments, the dynamics of their inflow and the power of the potential impact on the economic development of regions depend on the location: the more developed the region, the greater investment in the zones and the less developed, the less investments.** The exception to this rule is Podkarpackie, on whose territory businesses quite successfully operate within the Mielecka special economic zone since 1995.

Public aid in the form of tax exemptions for entrepreneurs is the expense of attracting zone investments. Generally speaking, the relation of the cumulative value of the assistance provided under the SEZ Act in the years 2005–2013 to the size of the investments at the end of the studies period amounted to approximately 10% (Figure 6). One should pay attention to the territorial distribution of the value of this relationship at the level of voivodeships. In 2004 the highest level has been recorded in the relatively more developed regions of Pomorskie (6.2%), Łódzkie (2.3%) and Śląskie (2.1%). In subsequent years, the structure of the group of voivodeships has gradually changed so that in 2013 the above-average support accumulated in the years 2005 to 2013 in relation to the value of the completed investments was granted in areas of more developed voivodeships: Pomorskie (27.4%), Wielkopolskie (16.9%), Kujawsko-Pomorskie (13.3%), Śląskie (12.7%) and Łódzkie (11.7%), but also in less developed: Warmińsko-Mazurskie (16.8%) and Małopolskie (10.1%), in which single investors received significant tax credits. And therefore **attracting investors to the richer regions than to the weaker voivodeships was generally more costly for the state budget. Furthermore, taking into account the fact that decidedly more investments appeared in these first group, as well as having regard to the nature of the assistance in the form of tax reliefs in the SEZs, it can be concluded that the economic effects of the zonal companies in richer voivodeships are relatively much better than in poorer.**

⁴ No Central Statistical Office of Poland data about the gross value of fixed assets of enterprises for 2013, access: 31.07.2014.

Figure 6. Intensity of State Aid in Special Economic Zones in Poland in Relation to the Value of Investments in the Voivodeships in the Years 2005–2013

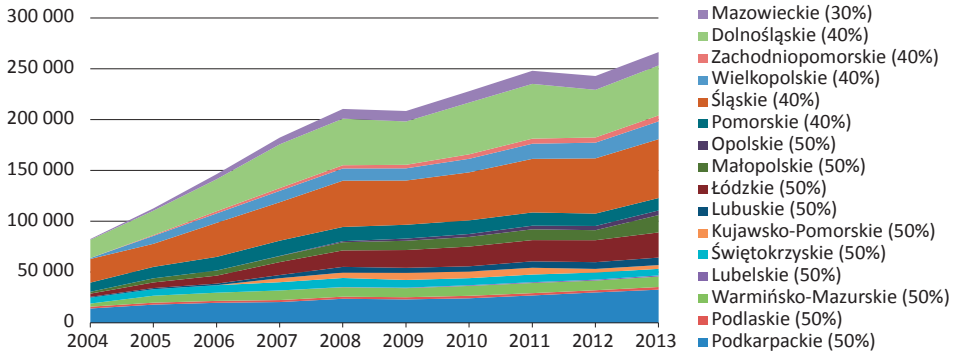


Source: Data from Ministry of Economy and Office of Competition and Consumer Protection.

4. Employment in Special Economic Zones

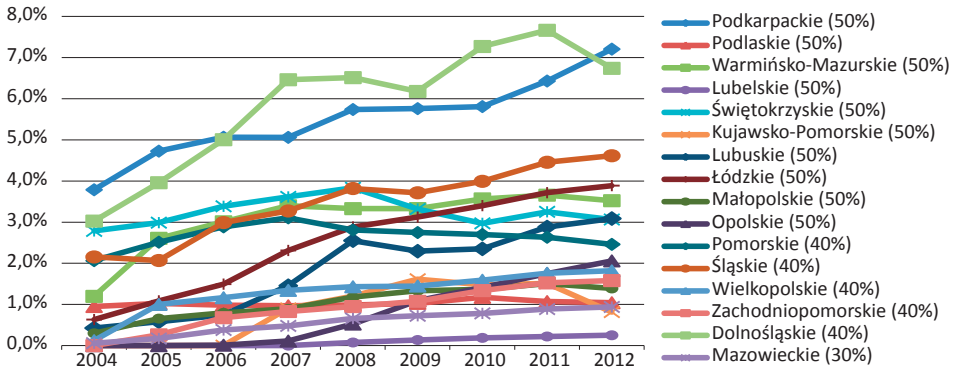
One of the objectives of both the statutory appointment of special economic zones [Act, 1994], as well as national regional aid offered under the SEZ is to create jobs. At the end of 2004 one created in zones more than 82.5 thousand jobs, which accounted for about 4.8% of employed in Poland (Figures 6 and 7). On average, one employed about 76 people in a single zone investment (Figure 8). As in the case of value of investments, in the first two years after Poland's accession to the EU, one has noticed a significant increase in employment in the zones within the limits of 25–29% annually. The following years were a period of crisis and lack of economic confidence, which resulted in fluctuations in the number of jobs including the sharp decline in 2009 and 2012 below the level of the previous year. Finally, total employment in SEZs in Poland rose to nearly 266.5 thousand in 2013, so nearly three times compared to the initial level in 2004, while the value of the zone investments has quadrupled in the same period. Number of jobs per one valid permit has only doubled to 151 in 2013. Moreover, the share of jobs in the zones in the total number of employed across the country has not changed dramatically and, despite fluctuations did not exceed 6%, to reach only 5% 2013 (so only 0.2 percentage points above the rate in 2004). Thus, the number of jobs offered in zones grew at the same rate as the total number of employed across the country, which indicates a weak impact of zones on the creation of new jobs at the national level.

Figure 7. The Number of Jobs in Special Economic Zones by Regions



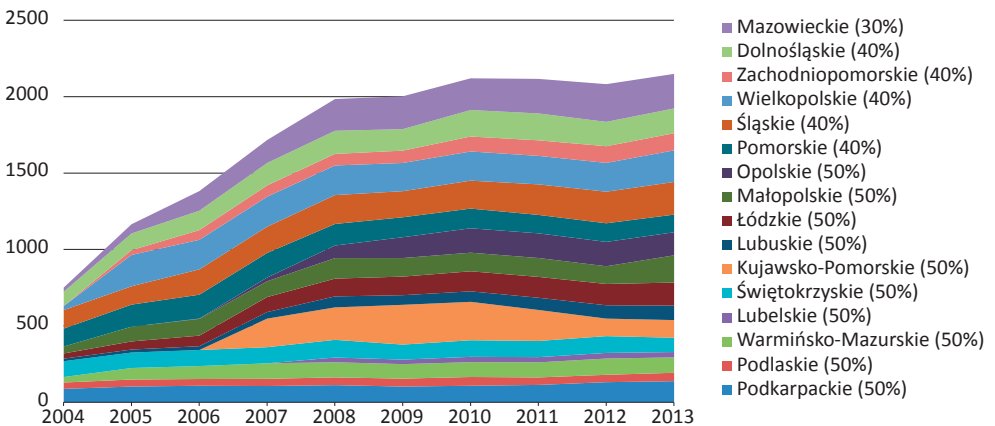
Source: Data from Ministry of Economy.

Figure 8. The Number of Jobs in Special Economic Zones in Poland in Relation to the Number of Employed in Voivodeships



Source: Data from Ministry of Economy and Local Data Bank of CSO.

Figure 9. Number of Jobs in Special Economic Zones in Poland in Relation to the Number of Active Permits



Source: Data from Ministry of Economy.

The situation at the level of voivodeships, as in the case of value of investments, was quite diverse. In 2004 one recorded the largest number of jobs in the zones of the more developed voivodeships of Śląskie (23.2 thousand) and Dolnośląskie (17.9 thousand), but also Podkarpackie (14.2 thousand). Their almost 70% share in the number of zone jobs was primarily due to the fact that in these three regions, first zones were already created in 1995 and 1997. In the following years after the Polish accession to the EU, the number of employed in the zones significantly increased (24–26% annually) up until 2008. The highest increases were recorded in the above mentioned richest voivodeships, but also in Łódzkie, Opolskie and Małopolskie. Definitely the least successful were the zones in least developed voivodeships, which was a consequence of a small inflow of investments into SEZs in these regions. Year 2008 deserves a special attention because of the fact that in almost all voivodeships the number of jobs decreased compared to the previous year. Considering the fact that only in the following year 2009 one granted least zonal support in the form of tax exemptions, so entrepreneurs witnessed the serious problems associated with the economic crisis, therefore it can be assumed that entrepreneurs in 2008 just started preparing for the difficult economic situation and they limited the employment in SEZs preventively rather than as a result of economic problems. **The largest reductions were made in areas located in the voivodeships with the lowest number of the zonal employees, although even in more developed regions one also noticed declines in the number of employees.** This may mean that, **despite the requirement to maintain an adequate number of jobs in connection with the receipt of a regional aid, which should provide some kind of protection against dismissal of workers, zonal entrepreneurs decided to reduce labour costs by limiting employment.** It should be stressed however, that a smaller number of jobs is also a result of the total cessation of activity in the zone after the expiry or revocation of the permit. In subsequent years, entrepreneurs from the zones in richer voivodeships more quickly and effectively increased employment rate, while in poorer regions, it was sometimes even negative (in relation year to year).

After nine years from accession, the share of individual voivodeships in the total number of jobs created by companies from SEZs changed slightly. Still zones located in Śląskie (21.7%), Dolnośląskie (18.5%), Podkarpackie (12.3%) and Łódzkie (9.3%) have the most share (more than half in 2013) in the total number of employees. This ranking coincides with their classification on the basis of their participation in the zone investments. As a result one can conclude that **zones develop most rapidly in these relatively wealthier regions, while in far poorer regions of the country, the results of zones measured by investments and jobs are definitely weaker.**

Relation of number of jobs in plants located in special economic zones to the total number of employees in the voivodeship would help to identify the relative importance

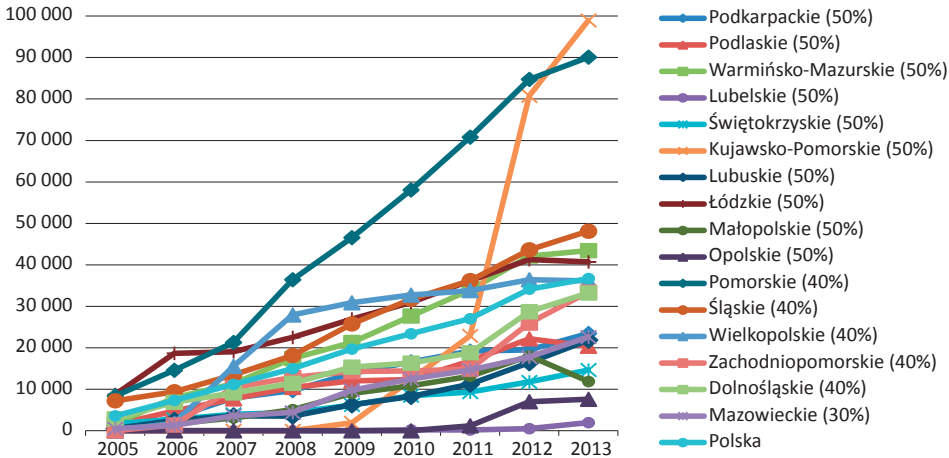
of zones for the local labour market. In the year of Poland's accession to the EU one noticed the largest proportion of jobs in special economic zones in relation to employment in the region in the following voivodeships: Podkarpackie (3.8%), Dolnośląskie (3.0%) and Świętokrzyskie (2.8%). In other cases it was extremely low and with the exception of Pomorskie and Śląskie, it did not exceed 2%. In the mentioned voivodeships the SEZs existed for a long time, hence the higher intensity of employment in the firms located in the zones. In subsequent years, the number of jobs created by companies in SEZs in relation to the total employment grew in the first two mentioned voivodeships in 2013 respectively to the levels of 7.2% and 6.7%. This group was joined, though with far lower values, by Śląskie (4.6%) and Łódzkie (3.9%). As for the poorest voivodeships, they are again ranked in the last positions. **This means, therefore, that the special economic zones had a relatively greater impact on the labour market in the more developed regions of the country, while it was weaker in poorer ones.**

The size of employment in terms of a valid zone permits allows to evaluate the performance of investment projects from the point of view of the objective of increasing employment in areas of need. Also in this case the highest level of employment for the investment has been noticed in relatively more developed regions of Dolnośląskie and Śląskie, Wielkopolskie and Mazowieckie (though in the latter case it is due to the increased employment in several individual companies). Relatively high employment per single permit has been achieved in the zones located in the wealthier voivodeships: Łódzkie, Kujawsko-Pomorskie and Małopolskie. In contrast, **zones in the poorest voivodeships showed no significant relation of employment and valid permits.**

Smaller employment, both in absolute terms and per one investment project, in the weaker regions with at the same time relatively small investments resulted in a fairly significant variation between voivodeships in terms of state's budget costs of jobs creation in the SEZs. Taking into account the cumulative value of the assistance granted so far in the zones in the form of tax exemptions in the Years 2005–2013 and employment in companies located in SEZ at the end of 2013, one can conclude that the most expensive for the budget was to create jobs in zones located in the Kujawsko-Pomorskie (98.9 thousand PLN) and Pomorskie (90.1 thousand PLN). Creation of jobs in voivodeships of Śląskie (48.1 thousand PLN) and Łódzkie (40.1 thousand PLN) cost the budget less than half of it. One reported relation between employment and the aid granted on the average national level (between 30 and 40 thousand PLN) in the most developed voivodeships: Dolnośląskie, Wielkopolskie, Zachodniopomorskie. In the less developed voivodeships the cost of job creation was not so high and fluctuated around 20 thousand PLN except for the Warmińsko-Mazurskie (43.4 thousand PLN), for which the amount of the aid granted is determined by a support for one, large investor. So more aid expressed by the number of people employed was

granted in prosperous voivodeships, while this support was supposed to be targeted to less developed voivodeships. This means that, in principle, **the cost to the state budget of creating jobs (calculated as the value of the aid in the relation to the number of people employed in the zones) was higher in relatively more developed voivodeships, and significantly lower in less developed ones.**

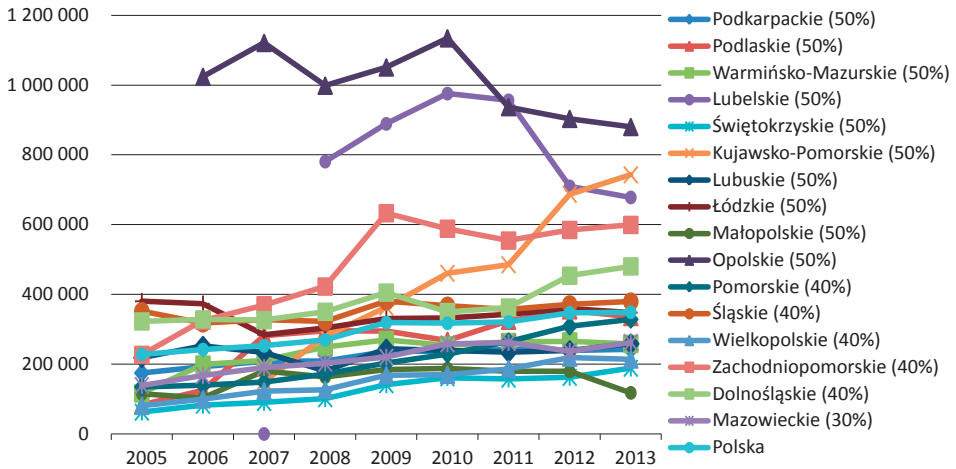
Figure 10. Size of State Aid Granted to Entrepreneurs in Poland in Relation to the Value of Investments in Special Economic Zones



Source: Data from Ministry of Economy and Office of Competition and Consumer Protection.

It should be stressed that this is not the state aid, but the investments made by entrepreneurs that create jobs. Comparing the value of the investments to the employment in the zones one can capture the relative cost for entrepreneurs and pre-assess the project in terms of capital and labour intensity. At the beginning of the studied period the value of investments calculated per one job amounted to an average of 230 thousand PLN. For the most capital-intensive investments emerged in the relatively most developed voivodeships, i.e. Śląskie (351.7 thousand PLN), Dolnośląskie (322.7 thousand PLN), but also in just a little less developed than them, Łódzkie (380 thousand PLN) (see Figure 11). In subsequent years, the value of created jobs calculated as the value of investments per one employee increased in richer regions much faster than it did in the poorer ones. Opolskie and Lubelskie are exceptions to this rule, where the investment of individual entrepreneurs significantly changed the overall picture. In consequence, it can be concluded that the **better developed voivodeships acquired more capital-intensive investments (high ratio of investments' value per one job), while in the less developed regions appeared smaller investments (in relation to the employed people), which may be a proof of a larger labour intensity of implemented projects.**

Figure 11. Value of Investments in Relation to Jobs Created in Special Economic Zones in Poland in Years 2004–2013



Source: Data from Ministry of Economy.

5. Convergence of Effects of SEZs

The current EU regional policy and national policy of regional aid within it, preferred to support the poorest regions in order to achieve their convergence with more developed ones. Similar goals were to be implemented through public aid in the form of tax reliefs in special economic zones. Its maximum size was depended on the level of regional development of the voivodeship.

In order to capture changes in the degree of differentiation of the direct effects of functioning of special economic zones in different Polish voivodeships one made a comparative analysis of the volatility index (standard deviation in relation to the arithmetic mean) of selected data on the SEZs (Table 1). This made it possible to determine the dispersion of the individual values of data about the effects of actions of companies operating in the zones in division into voivodeships. In 2004 data showing both the absolute value of the investments in the zones (218%), as well as in relation to the assets of entrepreneurs (156%) and the number of licenses (149%) characterised with highest variability. As a result, the size zone aid granted and the number of jobs in the SEZs showed significant variation by voivodeship. This means that just after the accession to the EU concentration of investments in only certain voivodeships was quite high, and in some regions the zone investments were extremely low or not even present. In subsequent years one can observe declining volatility for all the analysed data. Only in 2009 the indicator showed a slight increase and

therefore during the crisis some voivodeships were affected more by changes in the value of zone investments: entrepreneurs decided to invest more in richer regions, which resulted from the reduction of the possible risk of such actions in the poorer ones, even though they had higher acceptable intensity of support.

In the period 2004–2013 (alternatively 2004–2012 or 2005–2013, depending on the availability of reliable data) one reported the greatest reduction in the rate of variation, and thus differentiation between voivodeships, for data on state aid and in the next place on investments and employment in the zones. Generally, it should be emphasized that in almost the entire studied period volatility rate received values above 60%, which indicates a very high diversity. In 2013 it has declined to the level specifying large variation (from 40% to 60%) in case of the number of jobs per a single permit (41%) and the value of investment per one person employed (56%). Thus, differentiation among provinces in employment within individual zone companies and the size of the capital invested in relation to one person employed in the SEZ decreased.

Table 1. Volatility Index of Data Relating to the Functioning of Special Economic Zones in Poland, by Voivodeships in the Years 2004–2011 (in %)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Size of aid in SEZs	No data	185	130	115	131	129	127	122	126	121
Aid in relation to valid permits	No data	167	105	130	128	87	98	93	101	80
Number of active permits	93	90	90	90	89	87	85	82	82	79
Value of investments in SEZs	218	161	154	146	136	125	118	117	121	120
Share of investments value in SEZs in total value of fixed assets of entrepreneurs	149	125	114	100	84	73	70	70	75	No data
Value of investments in SEZs in relation to valid permits	156	98	84	57	59	78	87	74	68	64
Size of aid in SEZs in relation to the value of investments in SEZs	No data	124	95	96	119	104	94	85	69	65
Number of jobs in SEZs	140	113	115	111	107	101	105	105	104	101
Share of jobs in SEZs in total number of people employed	116	101	96	87	78	72	73	72	73	No data
Number of jobs per valid permit	93	79	71	55	45	48	44	42	42	41
Value of aid in SEZ per one person employed in SEZ	No data	128	100	76	92	84	80	78	76	78
Value of investments in SEZ per one person employed in SEZ	110	58	90	87	75	70	73	64	56	56

Source: Own calculations based on data from the Ministry of Economy, the Office of Competition and Consumer Protection and the Central Statistical Office of Poland.

This analysis confirms earlier observations that **there is still a significant diversity among the voivodeships both in terms of investments, public aid granted and employment in the SEZs**. This applies, above all, however, to the absolute values. By examining both the relative size of the capital invested and the number of available jobs, one can say that **gradually the impact of special economic zones on the socio-economic situation in the provinces begins to be less diversified geographically**. This does not mean, however, that still dispersion between regions is not important. It seems that currently one can only indicate some trend that due to the increasingly higher costs of economic activity in the more developed regions of the country (where SEZs were mainly created so far), investors may begin to be interested in the weaker regions, which, thanks to the European funds, are gaining attractiveness.

6. The Potential Impact of SEZs on the Socio-Economic Situation in the Region

Analysing the effects of functioning of special economic zones one should examine not only the direct effects of offering investment incentives like investment flows associated with the creation of jobs, but also the potential impact on the development of the region. One should, however, make a few reservations. It is impossible to separate the effects of zones from the consequences of the use of other instruments especially that after the EU accession their number and value increased significantly. In addition, the role of the zone support, as already mentioned, has consistently decreased in the considered period. It is also extremely difficult to distinguish the extent and the components of regional development that were affected by the zone investments on the level of voivodeships. Therefore, in order to approximately evaluate the effects of zones one verified the connections between investments and jobs in the zones and the selected parameters of voivodeships defining the socio-economic development.

Along with the inflow of investments to the special economic zones one would expect the increase of the value of fixed assets of enterprises in different provinces. Firstly, the new capital injected into zones directly increases their value, but also, according to the theory of the new economic geography and the concept of agglomeration of enterprises, should attract new businesses: both providers and recipients of goods and services, as well as competitors, seeking ways to reduce costs. Analysis of the correlation coefficient showed a strong relationship between the value of zone investments and the value of fixed assets of companies, although its strength strongly depends on the voivodeship (Table 2). In the case of the poorer provinces (Podlaskie,

Warmińsko-Mazurskie, Lubelskie) the correlation is slightly weaker compared to the richer regions (Dolnośląskie, Zachodniopomorskie), or those where the zones have been functioning for many years (Podkarpackie). Śląskie is a noteworthy province, due to the where lower than average correlation, which is a result of slower growth of the total value of fixed assets in the voivodeship compared to the development of zones located there.

In order to capture the possible link between the inflow of zonal investments and an increase in value of fixed assets of enterprises from a given province during a period of time one took this last data and analysed it with one year ahead (t+1) and two years ahead (t+2). On the basis of such a constructed matrix of relations one can see the strongest link between the analysed values with the ones delayed by one year in the case of almost all provinces. This may indicate the inflow of capital with a yearly delay in relation to investments in the SEZs, which is consistent with the spatial concentration of businesses theory. These observations were confirmed by the analysis of correlation of investments in special economic zones and the number of economic operators. In this case, one also observes the strongest relationship between the analysed data in the developed regions and taking into account the annual delay. The relatively weaker correlation can be captured again in the case of the poorest provinces of the country.

Table 2. Correlation of the Value of Investments and the Number of Jobs in the Special Economic Zones with the Value of Assets of Companies, Number of Economic Operators and the Unemployment Rate

Voivodeship	Correlation of investments in SEZs with the value of assets of entrepreneurs			Correlation of investments in SEZs with the number of entrepreneurs			Correlation of investments in SEZs with the unemployment rate			Correlation of number jobs with the unemployment rate		
	t	t+1	t+2	t	t+1	t+2	t	t+1	t+2	t	t+1	t+2
Podkarpackie (50%)	0.9901	0.9895	0.9901	0.9541	0.9709	0.9690	-0.4983	-0.2500	0.2543	-0.4983	-0.2500	0.2543
Podlaskie (50%)	0.9483	0.9583	0.9272	0.6722	0.7996	0.8020	-0.4150	0.0316	0.7284	-0.4150	0.0316	0.7284
Warmińsko-Mazurskie (50%)	0.8775	0.9381	0.9612	0.8769	0.8892	0.9086	-0.8847	-0.6991	-0.1907	-0.8847	-0.6991	-0.1907
Lubelskie (50%)	0.9048	0.9592	0.9534	0.9473	0.9258	0.9136	-0.4887	-0.1271	0.2420	-0.4887	-0.1271	0.2420
Świętokrzyskie (50%)	0.8097	0.8771	0.9151	0.7755	0.6412	0.4471	-0.8618	-0.7082	-0.3453	-0.8618	-0.7082	-0.3453
Kujawsko-Pomorskie (50%)	0.8972	0.9761	0.9757	-0.1160	-0.1863	0.0345	-0.5192	-0.0938	0.4268	-0.5192	-0.0938	0.4268
Lubuskie (50%)	0.9915	0.9542	0.9344	0.6502	0.5054	0.4982	-0.7345	-0.4754	0.0086	-0.7345	-0.4754	0.0086
Łódzkie (50%)	0.9689	0.9552	0.9422	-0.6417	-0.6110	-0.3446	-0.6191	-0.3558	0.1576	-0.6191	-0.3558	0.1576
Małopolskie (50%)	0.9537	0.9778	0.9506	0.9132	0.9576	0.9803	-0.5677	-0.1297	0.5465	-0.5677	-0.1297	0.5465

Voivodeship	Correlation of investments in SEZs with the value of assets of entrepreneurs			Correlation of investments in SEZs with the number of entrepreneurs			Correlation of investments in SEZs with the unemployment rate			Correlation of number jobs with the unemployment rate		
	t	t+1	t+2	t	t+1	t+2	t	t+1	t+2	t	t+1	t+2
Opolskie (50%)	0.9562	0.8998	0.7443	0.8828	0.8476	0.8109	-0.4100	-0.0936	0.3004	-0.4100	-0.0936	0.3004
Pomorskie (40%)	0.9931	0.9954	0.9897	0.9816	0.9808	0.9782	-0.6195	-0.4362	0.0449	-0.6195	-0.4362	0.0449
Śląskie (40%)	0.9009	0.8206	0.7349	0.8746	0.8856	0.8303	-0.4537	-0.0530	0.5639	-0.4537	-0.0530	0.5639
Wielkopolskie (40%)	0.9935	0.9913	0.9844	0.9836	0.9940	0.9687	-0.5614	-0.3834	0.1145	-0.5614	-0.3834	0.1145
Zachodniopomorskie (40%)	0.9934	0.9745	0.9380	0.9259	0.8862	0.7612	-0.6460	-0.4384	-0.0288	-0.6460	-0.4384	-0.0288
Dolnośląskie (40%)	0.9866	0.9934	0.9750	0.9221	0.9506	0.9450	-0.8271	-0.6417	-0.1626	-0.8271	-0.6417	-0.1626
Mazowieckie (30%)	0.9870	0.9939	0.9857	0.9599	0.9529	0.9813	-0.6494	-0.3634	0.1085	-0.6494	-0.3634	0.1085
Poland	0.9917	0.9936	0.9806	0.7035	0.7219	0.7208	-0.6423	-0.3561	0.1990	-0.6423	-0.3561	0.1990

Source: Own calculations based on data from the Ministry of Economy and the Central Statistical Office.

The second examined phenomenon, in addition to changes in the number of entrepreneurs in the provinces due to the inflow of investments, is the fluctuation in the unemployment rate. Comparison of both the size of the investments and the number of jobs in the zones with the unemployment rate in the voivodeship helped to capture negative strong and medium strong correlation in the more developed voivodeships and also negative, medium strong and weak in the case of the poorer regions. This may mean that the inflow of capital to the zones and creation of new jobs is generally accompanied by a decrease in unemployment.

Conclusions

Summarising the analysis of the effects of supporting investments in special economic zones in Poland one can draw a few conclusions:

- the largest and most capital-intensive investments in SEZs are located in the most developed regions;
- the value of investments in zones both in absolute terms and in relation to the fixed assets of enterprises increase in a fastest way in the richest voivodeships;
- highest aid both in absolute terms and in relation to the acquired capital was granted in the relatively richer voivodeships;
- one reported the best financial results evaluated on the basis of the tax exemptions in relation to the made investments in more developed regions, although the intensity of regional aid was lower compared to poorer regions of the country;

- special economic zones had a potentially relatively greater impact on the labour market in the more developed regions of the country, while it was weaker in poorer ones;
- the growth rate of the number of jobs offered in the zones was similar to the dynamics of employment growth in Poland, which indicates a weak impact of zones on the creation of new jobs on the country level;
- the largest job reductions during the economic crisis occurred in zones located in the voivodeships with the lowest number of zone employees;
- relatively high employment per a single permit has been achieved in the zones located in the wealthier voivodeships;
- the cost of creating jobs to the state budget (calculated as the value of the aid on the number of employees in the zones) was higher in relatively more developed regions, and significantly lower in less developed ones;
- better developed voivodeships attracted more capital-intensive investments (high rate of value of investment per one job), while smaller investments in comparison to the number of jobs appeared in the less developed regions, which may indicate more labour-intensive projects implemented there.

One can conclude that there is still a significant differentiation among the voivodeships both in terms of investments, public aid granted and employment in SEZs. They developed more dynamically in wealthier regions and were more costly to the state's budget, while in the far poorer regions of the country, results of the zones measured both by investments and number of created jobs or by the granted aid, are much weaker. It seems, therefore, that three issues are clear: 1) whether the special economic zones should continue to function; 2) whether tax relief in the SEZs should be offered in all voivodeships of the country; 3) whether the support should be limited only to the acquisition of innovative investments or whether it should still be an instrument for the simple support of entrepreneurs from the public funds.

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Changes in the Competitiveness of Selected Polish Cities since 2004. The Attempt of Assessment of the Impact of the European Integration on Urban Development in Poland¹

1. Urban Development in Policies of the European Union

EU actions related to urban development have not yet been formalised in the form of urban policy – invoking the rule of subsidiarity, the EU Member States have not transferred competences concerning urban areas at community level. Urban policies, as such, are therefore mainly the domain of the Member States, although a number of the EU policies have an impact on the cities: transport, energy, innovation policies and above all, cohesion policy, which increasingly clearly specifies its urban dimension (Fig. 1). Therefore, the impact of the European integration on the cities in the Member States (including Poland) is implemented primarily through cohesion policy instruments, which will be briefly described in the following section.

Since 1990, Urban Pilot Projects have been funded under the cohesion policy, and since 1994 projects under the URBAN programme, designed to promote integrated local development [EP, 2011]. Until the entry into force of the financial perspective 2007–2013, urban areas were the subject of separate programmes and initiatives, which not only gave urban projects much greater recognition, but also effectiveness. However, since 2007 urban initiatives have been incorporated into the mainstream of structural funds under the goals of competitiveness and employment

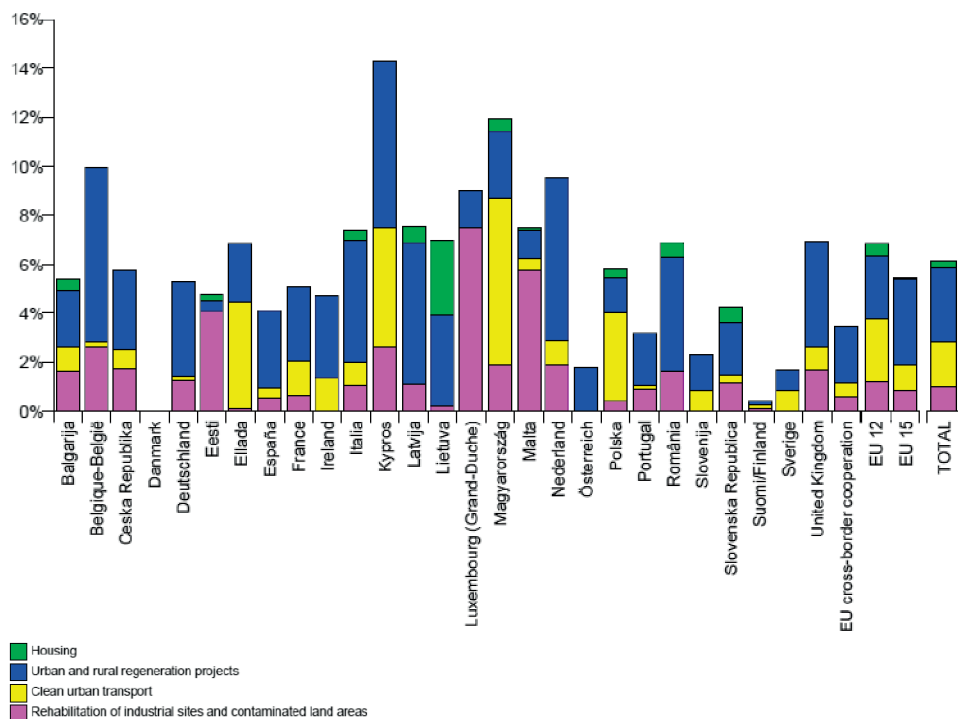
¹ The presented text is a summary of the research conducted within the framework of statutory research “Poland in the European Union in 2004–2014” in the academic year 2013/2014 under the guidance of Associate Professor Grażyna Wojtkowska-Łodej, Ph.D. The text contains content developed and published in the following publications: [Szczech-Pietkiewicz, 2013a; 2013b; 2012a; 2012b].

growth. Member States, however, were encouraged by the European Parliament to create projects for sustainable urban growth in their National Strategic Reference Framework. As pointed out by the European Parliament “given the importance of towns and cities for the European economy, lack of such action could significantly reduce the chances of countries to be an active player in the efforts to achieve the objectives of the European Union” [EP, 2011]. In the Cohesion Policy 2007–2013 approx. 6% of the funds were reserved for the urban development: 9.8 billion EUR to finance the regeneration programmes in cities and villages, 3.4 billion EUR for the rehabilitation of industrial areas, 7 billion EUR to support clean urban transport, and nearly 1 billion EUR for housing.

Figure 1. Urban Dimension of the European Commission’s Policies

Agency/DG	Cities present in policy and regulations	Local dimension in the area of impact	Financing of local projects	Analysis and studies concerning cities	Tools
Climate Action	×	×		×	×
Competition	×				
Communication, Networks, Content & Technology	×	×	×	×	×
Education and Culture	×	×			
European Environment Agency				×	×
Employment, Social Affairs and Inclusion	×	×	×		
Energy	×	×	×		×
Environment	×	×	×	×	×
Eurostat		×		×	
Home Affairs	×	×	×		×
Joint Research Centre	×			×	×
Justice	×	×			
Mobility and Transport	×	×	×		×
Regional and Urban Policy	×	×	×	×	×
Research and Innovation	×			×	
Health and Consumers	×	×			

Source: EC [2014, p. 4].

Figure 2. Allocation of Funds for Urban Development in the 2007–2013 Programming Period

Source: [EP, 2011, p. 16].

In the current cohesion policy, cities gained more importance through excluding them from the general trend of financing (mainstreaming) and by granting them separate funds for the purpose of integrated urban development. Basic instruments dedicated for urban development, as provided in the Financial Perspective 2014–2020, are:

- Integrated Territorial Initiative, ITI also applies to other areas: a tool that allows one to combine financing from the ERDF and the ESRF, as well as creating partnerships of cities and areas functionally related to them in order to complete the project. Funds for ITI can be used to finance sustainable development projects, transportation within the area implementing the project, revitalisation taking into account social issues, improvement of the environment and others;
- 5% allocation of European Regional Development Fund for the implementation of integrated urban development strategy;
- Urban Innovative Actions, with budget of 330 million EUR. The aim of these projects will be to identify and test new solutions in urban areas. European

Commission will announce several financing rounds and they will be targeted to urban areas with over 50 thousand residents;

- a network of urban development: aims to promote dialogue between European cities, the exchange of experiences and enhancement of skills of local administration. Networks include cities implementing the integrated development strategies financed by the ERDF and by innovative actions;
- URBACT III programme: return to programmes dedicated to cities. Its budget will be increased to 74 million EUR and will be a continuation of the URBACT II programme, with an emphasis on the sustainable and integrated development;
- Financial instruments of JESSICA type (Joint European Support for Sustainable Investment in City Areas): financial instruments supporting urban development will be in the forms of loans, guarantees. They can be used for a large spectrum of investments: from revitalisation, through education, culture, tourism, transportation to renewable energy sources.

Regardless of the allocation level and a way of funding of urban development in the European Union, cities – home to 73% of population, generating 80% of GDP and being a major consumer of energy (70%) – are essential for economic, social and territorial cohesion. Urban areas may primarily act as innovators, because they involve the large volume of investments: information, information technology and other infrastructure. Metropolises are also a natural place of residence of “creative class”. In addition, although most of the energy is consumed in urban areas, they are home to a number of initiatives aimed at sustainable growth, e.g. in the field of “clean” transport, matching the demand and supply of energy, energy-neutral building. Also they play an important role in relation to the objectives of the Europe 2020 strategy for smart, sustainable growth, both in the implementation of various flagship initiatives, as well as the overarching objective of the strategy, which is to increase the international competitiveness of the European Union. It was recognised and confirmed by the ministers responsible for urban development in the Toledo Declaration, signed in June 2010, that “they perceive the role that cities play in achieving these goals and are calling for a genuine partnership with the cities in order to implement Europe 2020 strategy”.

On the other hand, cities can also be beneficiaries of the Europe 2020 strategy, at least in three ways, which was brought to attention by the European Parliament [EP, 2011].:

- “firstly – helping urban areas to develop their basic physical infrastructure, which determines the growth and allows to make a full use of the potential contribution to economic growth in Europe and the diversification of the economic base and sustainable development of energy and environmental infrastructure, primarily

in order to maintain and improve air quality in the urban centres, without damage to rivers;

- secondly – helping urban areas in the economic, social and ecological modernisation through smart investments in infrastructure and services based on modern technologies, closely related to the specific regional, local and national requirements;
- thirdly – the revitalisation of urban areas through the rehabilitation of industrial sites and contaminated land areas, taking into account the need to combine urban and rural areas in order to support social inclusion in line with the Europe 2020 strategy”.

2. The Concept of Competitiveness in the Territorial Dimension

Competitiveness is a term quite commonly used in relation to the economy, both at national and local levels. This term derived from the science of the enterprise and often occurs today in relation to the macro and mezo-economic phenomena, but also in the context of regional or local phenomena. The phenomenon of competitiveness is used in the regional and local policies quite commonly due to the fact that mobility of capital and the importance of transnational corporations increase and the markets are becoming more and more open, economies are therefore more exposed to economic relations with foreign countries. Globalisation trends in the European Union are also complemented by the single European market. At the same time, in a theoretical discussion, the theoretical achievements for the competitiveness of cities are dispersed and definitions are often divergent. Below one presented the choice of definitions, allowing one to bring not only the issue, but also the main trends in this discussion.

The basic problem of defining the notion of competitiveness of a territorial unit is to determine whether the competitiveness in the territorial dimension even exists. The discussion on this issue has continued in the literature since the criticism of competitiveness of an economy by P. Krugman [1994]. P. Krugman points to the lack of empirical evidence on the existence of competition between national economies and on the fact that the assumption of the existence of competition between countries can lead to serious consequences in both the internal politics of the country, as well as in foreign policy, making it an appealing tool in the political struggle. The main points of Krugman's criticism refer to the following characteristics of competition in the territorial dimension:

- raise of living standards (which is the goal of competing countries) is made mainly due to the increase of productivity and other factors created in the country and not in the international markets;
- countries or regions cannot compete with each other similarly to the companies where winning of one means losing of the other entity.

In addition, the cities function only as locations of these companies, and the conditions which they create are not able to affect the competitiveness of firms located within their borders – this is created solely on the basis of cost-effectiveness, innovativeness, and other factors specific to the company. In Krugman's theory cities provide the necessary conditions for doing business but do not determine the success in competition with other entities and are not able to affect their competitiveness without fulfilling the other conditions which, however, are the sole responsibility of the companies.

In contrast to P. Krugman is M. Porter's theory. It argues that the territorial units are just as competitive entities, as companies are, although this competition is of different nature. The aim of a territorial unit is not profit maximisation, so both actions and their outcome cannot be equated to a 'zero sum game'. Porter is opposed to the view, according to which the result of the competition between the economies is to obtain the highest possible share of the global market, which must be at the expense of other countries (regions), as the size of this market is limited and defined. According to Porter, productivity is the only measure of the competitiveness of the economy (national, local, regional):

"Productivity allows the economy (the country) maintain high wages, attractive returns on invested capital, a strong currency – and with them, a high standard of living" [Porter, 2005].

Both P. Krugman's and M. Porter's theories refer to competition between countries or regions (although the regions are understood differently in US research, i.e. as states that have macroeconomic policy instruments similar to European countries). However, they do not apply directly to the competitiveness of urban areas.

Competitiveness at the level of cities have specific conditions, due to the fact that the cities not only compete on the international level, but also often at national. At the same time the importance of domestic competition increases, also in terms of trade as a result of: retail sales growth, increase of value added of goods and the growing importance of business-related services [Kresl, Singh, 1999]. The tools of this competition are also different, because cities do not have the traditional instruments of trade policy. Therefore, they compete primarily on the ground of labour and capital resources.

In the literature one can find three such factors the cities compete for [Kitson, Martin, Tyler, 2004]:

- investments: through the ability to attract foreign, private and public capital;

- human resources: through the ability to attract educated and skilled workers, entrepreneurs and representatives of the so-called creative class, while increasing the innovative potential;
- technology: through the ability to maintain innovative activity and related to knowledge.

Another trend in the discussion on the competitiveness of cities is related to the answer to the question whether the area competes through the strengths of companies operating in its territory, or by the attributes of its location. These two dimensions of competitiveness territorial unit can be summarised as follows [Gorzelałak, Jałowicki, 2000]:

- “the competitiveness of companies located in the territorial system, in an open global economy;
- competing of territorial systems for new capital, creating jobs and bringing income, for workers with the highest qualifications, capable of creating innovation and use of new, advanced technologies and of managing large corporations”.

That issue is fundamental for further research, because it affects set of factors that can be considered as determinants of competitiveness, followed by the selection of measures by which competitiveness of cities is measured.

The first approach, derived from microeconomy, is reflected in the P. Krugman's criticism of competition between territorial units. Second, assumes great significance of policies developed and implemented throughout the city. Elements of this approach can be found in M. Porter's diamond, but also in studies of other researchers. E.g. Gordon and Cheshire [1998] indicate the dominant role of 'external factors' (local authorities, policy-makers) for the competitiveness of cities and state that: “Territorial competition may be presented as actions involving representatives of some areas trying to strengthen their competitive edge resulting from the location, taken by changing some characteristics valuable from the point of view of different types of activities undertaken in this location”.

One of the few definitions of competitiveness in urban dimension was created by M. Storper [1997], who stated that it is: “The ability of the urban economy to attract and keep firms with stable or rising market shares while maintaining or increasing the standard of living of people who are involved in their business”.

This definition therefore places emphasis on two aspects: the activities of companies and quality of life of urban residents. This approach is now quite widespread in the study of competitiveness in general, also in regional perspective. Also Porter, referring to productivity, indicated that its improvement is an equivalent to raising the standard of living, and this is the goal of the competition.

High quality of life of residents is also indicated as the main objective of competitiveness, also at regional and local level in the European Union. The definition

adopted by the European Commission [1999] for the regional level implies: “It is the ability to produce goods and services, demanded on the international markets, while maintaining a high and sustainable level of income or, more generally, the ability of the region to generate, in terms of exposure to external competition, relatively high levels of income and employment” or: “In other words, for the region to be competitive, it is important to ensure both the quality and quantity of jobs”.

Stressing that the competitiveness of enterprises is only one element of competitiveness of the region, the EC states that: “Definition (of the region’s competitiveness) should grasp the idea that – despite the fact that in every area there are companies competitive and non-competitive – the region has some common characteristics that affect all businesses operating in it”.

This approach, assuming that competitive city is not only the one, whose economic entities are able to maximise profit and expand, while productivity is not the objective of competition policy but a mean to improve the standard of living, should be adopted for further analysis in the chapter.

3. Factors Supporting the Competitiveness of the City – Review and Typologies

Adopting an approach, that competitive city is not only the aggregate of competitiveness of companies; this is also the place where the standard of living of residents is maintained and raised in a sustainable manner (in accordance with, for example the definition of the European Commission), implies the selection of the factors which may be considered as determinants of competitiveness.

Various theories suggest the dominance of different factors in the creation of urban competitiveness. And so, the classic location theories emphasized the “hard” factors; theories of “path dependency” point to structural factors, theories of the clusters look for determinants of territorial competitiveness in factors associated with the benefits of agglomeration, and the theories of “soft” factors – in qualitative factors.

Although the emphasis is currently put on non-economic factors of territorial competitiveness, i.e. cognitive, social, institutional, or cultural, as necessary for the creation of knowledge and progress, this does not mean that these phenomena are spatially unlimited. They can be transferred or connected more easily through the interaction of individuals operating within the territorial system. A. Saxenian [1994] writes about the fact that the economic activity, even in high-tech industries and in the conditions of globalisation, cannot be conducted in isolation from territorial factors, in a following manner: “Paradoxically, the regions provide an important source of competitive

advantage, even while production and markets become increasingly global. The geographical proximity promotes repetitive interactions and mutual trust needed to sustain cooperation and to accelerate the continuous recombination of technology and skills”.

Due to the multiplicity of approaches to the competitiveness of cities and regions and the dispersion of theories of these phenomena, the choice of a typology of territorial competitiveness factors has been presented in Table 1. One can notice possible approaches to the distribution of determinants of competitiveness of the city.

Table 1. Selection of the Typology of Factors Affecting Competitiveness of the City

Typology of European Commission	<i>Raising productivity, increasing the economic result of companies</i>	Labour costs, the cost of buying/renting an office, transportation costs, tax policy, the general business climate, quality of legal regulations concerning business activity
	<i>Raising the standard of living</i>	Employment and wage policies of companies and the availability of transport to and within the city, accessibility (geographic and economic) of houses and flats, the quality of the education system and higher education, the presence of green spaces, culture and recreation
Competition between firms vs. competition between territorial units alone	<i>Related to the activities of enterprises</i>	Productivity of enterprises and their employment policies, affecting the quality of life in the city
	<i>Characterising territorial systems (the cities) alone</i>	City policies related to enhancing their attractiveness
The division into exogenous and endogenous factors	<i>Internal factors</i>	Environment that ensures that companies created within it are successful: improve productivity, innovativeness, usually by investing in labour resources and research*
	<i>External factors</i>	Migrating resources of labour and capital
Peter Kresl's typology of <i>Global Urban Competitiveness Report</i>	<i>Strategic determinants**</i>	Effectiveness of local government, city development strategy, the cooperation of the private and public sectors and institutional flexibility
	<i>Economic determinants</i>	Factors of production, infrastructure, location, economic structure and facilities
Robert Huggins's types of factors	<i>Saturation with companies</i>	Number of firms per capita, knowledge companies as a percentage of all enterprises
	<i>Economic activity</i>	Activity rate, productivity, GDP per capita
	<i>Outcomes</i>	Earnings (wages for full time employees), unemployment (unemployment rate)

* The importance of this group of factors (endogenous) for territorial competitiveness finds a growing support in the results of studies that point to a growing relationship between innovativeness, knowledge-spillovers, creativity and competitiveness. This change can be seen even in the last decade [DETR, 2000] states that “the English cities have to compete for jobs and investments on a global scale”. Currently, also in the analysis of British territorial relations, dominates the belief that cities should create the conditions for the formation of high-quality labour resources (e.g. through the creation of research and educational units).

** Economic determinants have qualitative character and may consist specific measures while strategic determinants are of qualitative nature and their evaluation results from the analysis of strategic documents or personal contacts.

Source: Based on own research.

In literature, one can find a variety of factors affecting the competitiveness of cities. One of the more detailed summaries is the one created for the European Commission (Table 2).

Table 2. Overview of Competitiveness Factors in the Regional Dimension

INFRASTRUCTURE AND AVAILABILITY	HUMAN RESOURCES	ENVIRONMENT OF ENTERPRISES
Basic infrastructure: roads, railways, air transport availability, ownership	Demographic trends: migration of skilled workers, diversity	Organisational culture: low entry barriers, approach to risk
Technological infrastructure: ICT, Internet	Highly qualified workers: the availability of skills that require expertise	Industry concentration: distribution of industries, concentration of employment, business generating high added value
Infrastructure of knowledge: educational units		Internationalisation: the level of exports, the share in global sales, investments, business culture, the type of FDI
Quality of location: housing, the natural environment, cultural institutions, safety		Innovativeness: the number of patents, the level of expenditure on R&D, research facilities and universities, commercialisation of research
		Institutional environment
		Availability of capital
		Specialisation
		Type of competition

Source: [EC, 2002–2003, p. 2–32].

4. Models Measuring Competitiveness of Cities on the Example of Polish Voivodeship Cities

The aim of a models presented below is to identify the impact of particular factors (including the discussed above) on the level of development of cities in Poland. In next step, the results of forecasts based on historical data (period 1998–2008) will be compared with the actual values observed in cities in 2012 in order to determine the importance of European integration process on urban development.

Presented models have been developed basing on panel data, estimated using generalised least squares method and the fixed-effects method.

The panel method is increasingly being used in economic research due to the fact that it allows multiple, at certain time intervals, tests of the sample selected from the population. Data tested are observed in at least two dimensions, for example, they are of time-cross-sectional nature (in this case, the dimensions are time and space). For

this reason, it is a suitable method for repeated, during the studied period, analysis of compounds and the mechanisms involved in the development of the sample cities.

Panel data analysis can be performed using three methods: ordinary least squares estimation method, the model with fixed effects and random effects model.

In the ordinary least squares estimation method (OLS) one uses the following formula [Kufel, 2007, p. 164]:

$$y_{it} = x_{it}\beta + v_{it},$$

where:

y_{it} – dependant variable;

x_{it} – independent variable;

β – coefficient for that independent variable;

v_{it} – total random error, composed of random effect (ε_{it}) and the random intercept u_i for each entity (i).

Panel model with fixed effects formula takes the following form [Kufel, 2007, p. 164]

$$y_{it} = x_{it}\beta + u_i + \varepsilon_{it},$$

where:

u_i – unknown intercept;

ε_{it} – random error.

When using FE we assume that something within the individual may impact or bias the predictor or outcome variables and we need to control for this. This is the rationale behind the assumption of the correlation between entity's error term and predictor variables. FE remove the effect of those time-invariant characteristics so we can assess the net effect of the predictors on the outcome variable [Torres-Reyna, 2007].

Third method used in panel data analysis is random effect method. For this type of model unknown intercept (u_i) is assumed to be random variable. Total error combines unknown intercept and random effect ($v_{it} = \varepsilon_{it} + u_i$). Random effects assume that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables [Torres-Reyna 2007].

The aim of this study is to determine the direction of the impact of the European Union membership on the development of Polish cities. Therefore, using panel data analysis, based on historical data, author has estimated level of urban competitiveness index for 2012 and compared its level with actual data for 2012.

Implementation of the research required one to build panel models using two methods: ordinary least squares and fixed effects. In the construction and estimation of the model, GRETTL program has been used.

GDP per capita is the dependent variable in the presented models. Although it is not an ideal indicator, it can serve as a basis for determining changes in the territorial competitiveness. 11 indicators were used as independent variables. They were selected on the basis of substantive analysis, partly presented in the above parts of paper. The sample consisted of 16 voivodeship cities. Preliminary, 13 indicators were selected for the analysis, corresponding to all aspects of urban development, reflecting the above mentioned factors of urban competitiveness. These indicators are:

- the number of the total population (NTP);
- the number of population in productive age (NPP);
- the number of population in non-productive age per 100 working-age persons (NNP100);
- Number of employed (NE);
- the number of dwellings (ND1000);
- the balance of internal migration per 1000 persons (BM1000);
- population density (PD);
- the number of readers in public libraries per 1000 inhabitants (RPL1000);
- the number of private sector enterprises per 100 inhabitants (NPE100);
- incomes of municipalities (gminas') per one inhabitant (IM);
- expenditures of municipalities (gminas') per one inhabitant (EM);
- proportion of people with higher education;
- the percentage of people who insecure in place of residence.

In the course of estimating models the last two variables were not included due to the lack of complete time series.

The data used in the research come from the following sources:

- *Cities in Numbers*, years 1998 –2008, Central Statistical Office;
- Local Database, Central Statistical Office;
- *Population. Condition and structure of the population and natural movement by territorial division in 2013. As of 31 December*, Central Statistical Office;
- *Housing conditions of households and families – Census 2011*, Central Statistical Office;
- *Urban Audit. Cities and Greater cities*, Eurostat;
- publications of Provincial Statistical Offices; *Social Diagnosis* reports, years 1998–2013.

5. The Results of Quantitative Research and Discussion

Analysis of the dynamics of variables in the period 1999–2008 provides interesting results. The study period was divided into two parts: from 1999 to 2004, i.e. before the Polish accession to the European Union and from 2005 to 2010², i.e. the period of Polish membership in the EU. Then, Author compared the dynamics of all the variables in the two periods. In the table of the results of this comparison (Table 3) “lower” means that the growth rate after the Polish accession to the EU declined, while “higher” that growth rate increased in the post-accession period.

The most general variable examined in this analysis indicates that the vast majority of cities after the accession to the EU increased the GDP growth rate (except in Poznan and Opole). This allows to draw the conclusion that accession to the EU has had a positive impact on the level of development of the competitiveness of Polish cities. A more thorough analysis, allowing to indicate the mechanisms of this impact results from the following observations:

- 1) The number of employees increased in all voivodeship cities; while both the number of people in productive age and the ratio of the number of people in non-productive age to those in the productive age decreased (due to demographic changes). This might render the statement that the EU accession allowed to create in Polish cities new jobs and had a positive impact on the labour market.
- 2) The expenditures of the municipalities in the vast majority of cities have increased after the accession to the European Union. This is of course related to the availability of structural funds, which increased the level of investments in the cities.
- 3) The number of enterprises in the post-accession period was characterised with the lower growth rate compared to the 1999–2004 period. In comparison with the data for the labour market (as shown in the preceding paragraphs), it indicates that the GDP growth in Polish cities, to a greater extent, was affected by the changes on the labour market and investments than entrepreneurial activity.
- 4) The balance of internal migration in Polish cities has greater dynamics in the post-accession period. This may be due to the increased attractiveness of cities in the perception of potential residents. The increase of the standard of living in large Polish cities, in the light of the theory of urban competitiveness, can be considered as the achievement of the objectives of urban development.

² Due to the availability of data: the GDP per capita values are available until 2010 [Eurostat, 2010].

Table 3. Change in the Dynamics of Selected Indicators of Urban Competitiveness before and after the Polish Accession to the European Union

	The number of the total population	Population in productive age	Number of non-productive population per 100 productive	Number of employed	Number of dwellings per 1000 inhabitants	Balance of internal migration per 1000 persons	Density of population	The number of readers in public libraries per 1000 inhabitants	The number of private sector enterprises per 100 inhabitants	Incomes of municipalities per one inhabitant	Expenditures of municipalities per one inhabitant	GDP per capita (in PPS)
Wrocław	Lower	Lower	Higher	Higher	Higher	Lower	Lower	Higher	Higher	Lower	Higher	Higher
Bydgoszcz	Higher	Lower	Higher	Higher	Lower	Higher	Higher	Lower	Lower	Lower	Higher	Higher
Lublin	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Higher	Higher
Gorzów Wlkp.	Lower	Lower	Higher	Higher	Lower	Higher	Higher	Lower	Lower	Lower	Higher	No data
Łódź	Lower	Lower	Higher	Higher	Higher	Higher	Lower	Lower	Lower	Lower	Higher	Higher
Kraków	Lower	Lower	Higher	Higher	Higher	Lower	Lower	Lower	Lower	Lower	Lower	Higher
Warszawa	Lower	Lower	Higher	Higher	Lower	Lower	Higher	Lower	Lower	Lower	Lower	Higher
Opole	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Higher	Lower	Higher	Higher	Lower
Rzeszów	Higher	Lower	Higher	Higher	Lower	Higher	Lower	Lower	Lower	Lower	Lower	Higher
Białystok	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Higher	Higher	Higher	Higher	Higher
Gdańsk	Higher	Lower	Higher	Higher	Higher	Higher	Higher	Higher	Higher	Higher	Higher	Higher
Katowice	Higher	Lower	Higher	Higher	Lower	Lower	Higher	Lower	Lower	Lower	Lower	Higher
Kielce	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Lower	Lower	Higher	Higher	Higher
Olštyn	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Lower	Lower	Lower	Higher	No data
Poznań	Lower	Lower	Higher	Higher	Lower	Higher	Lower	Higher	Lower	Lower	Higher	Lower
Szczecin	Higher	Lower	Higher	Higher	Lower	Lower	Higher	Lower	Lower	Higher	Higher	Higher

Source: Own research based on data from the Central Statistical Office, Eurostat and Provincial Statistical Offices.

Panel data analysis was conducted in several stages. In the first place, each indicator was extrapolated with linear trend for the year 2010 based on 2004 data and the dynamics for the period 1999–2004 (pre-accession). This made it possible to establish a hypothetical level, which would have been achieved by the individual indicators in 2010, with the conditions from before the Polish accession to the European Union. The so estimated levels of indicators were used to estimate GDP in 2010, in the hypothetical situation of no Polish accession to the EU. Then, the hypothetical levels of GDP for voivodeship cities were compared with real data observed in the Polish cities. Such construction of the study allowed to determine what was the direction and impact of the accession to the EU on the competitiveness of cities by comparing actual results with the scenario without Polish membership in the EU.

Table 4 shows the numbers characterising panel data estimation results with the method of ordinary least squares (OLS). In this method, the influence of individual data (in this case, individual cities) is eliminated.

Table 4. Results for OLS Method Estimation of Panel Data

	Coefficient	Standard error	t-Student	P value
const	-11,356.7	5,432.39	-2.0906	0.03945
NTP	0.00157375	0.00216796	0.7259	0.46982
NPP	-0.00437792	0.00170501	-2.5677	0.01193
NNP100	86.8674	71.3058	1.2182	0.22639
NE	0.0100781	0.00455285	2.2136	0.02944
ND1000	21.1573	7.15488	2.9570	0.00399
BM1000	-119.875	77.4714	-1.5473	0.12537
PD	-0.200586	0.34959	-0.5738	0.56758
RPL1000	-13.7155	2.50555	-5.4740	<0.00001
NPE100	742.814	142.119	5.2267	<0.00001
IM	0.738654	0.907763	0.8137	0.41801
EM	0.747681	0.802674	0.9315	0.35415

Table 5. Statistics for the OLS Model

The arithmetic mean of the response variable	11,669.57	Standard deviation of the response variable	3,521.307
The sum of squared residuals	1.28e+08	Standard error of residuals	1,204.391
Response variable R-square	0.896014	Adjusted R-square	0.883016
F(11, 88)	68.93343	P-value for F test	2.15e-38
Logarithm of likelihood	-844.8751	Akaike information criterion	1,713.750
Bayes-Schwarz Crit.	1,745.012	Hannan-Quinn criterion	1,726.403
Autocorrelation of residuals – rho1	0.062449	Durbin-Watson statistic	1.616605

Table 6 shows the results obtained from the model estimated with OLS. The column “GDP 2010 estimation based on the model” presents the potential GDP of Polish cities in the scenario without accession (linearly extrapolated data based on data from the pre-accession). In the column “Difference” differences between real GDP (in PPS) in 2010 compared to the hypothetical results obtained without the potential EU membership is indicated. The difference takes values between -2676.8 (Kielce) to 5768.26 (Katowice). On average, it was accounts to 1811.1 for one city.

Table 6. The level of GDP per Capita in PPS in 2010 in the Polish Cities: Real and Calculated on the Basis of OLS Estimated Model

City	GDP 2010 estimation based on the model	GDP 2010	Difference
Wrocław	15,211.97	18,919.6	3,707.63
Bydgoszcz	14,865.73	16,488.4	1,622.67
Lublin	12,223.32	13,409.4	1,186.08
Gorzów Wielkopolski	No data	No data	No data
Łódź	15,641.83	16,786.9	1,145.07
Cracow	16,341.85	16,882.8	540.95
Warsaw	24,526.84	31,865.3	7,338.46
Opole	16,014.09	13,829.7	-2,184.39
Rzeszów	11,450.96	12,232.3	781.34
Białystok	10,731.75	12,919	2,187.25
Gdańsk	15,889.22	17,054.3	1,165.08
Katowice	11,945.15	17,713.4	5,768.25
Kielce	15,140.10	12,463.3	-2,676.80
Olsztyn	No data	No data	No data
Poznań	19,444.28	23,596.4	4,152.12
Szczecin	15,544.49	16,166.2	621.71

Table 7 presents the estimation results of the panel data in the fixed effects model.

Table 7. Results of Fixed-Effects Estimation of Panel Data

	Coefficient	Standard error	t-Student	P value
const	-15,464.8	5,535.4	-2.7938	0.00650
NTP	-0.000463946	0.00223672	-0.2074	0.83620
NPP	-0.00296757	0.00179773	-1.6507	0.10267
NNP100	285.536	98.8078	2.8898	0.00494
NE	0.0149103	0.00471639	3.1614	0.00221
ND1000	11.0612	8.25951	1.3392	0.18425
BM1000	-57.6553	78.9327	-0.7304	0.46723

	Coefficient	Standard error	t-Student	P value
PD	-0.558072	0.374182	-1.4914	0.13973
RPL1000	-11.8797	2.6576	-4.4701	0.00003
NPE100	706.984	152.979	4.6214	0.00001
IM	0.370785	0.992935	0.3734	0.70981
EM	0.251918	0.981155	0.2568	0.79802

Table 8. Basic Statistics for the Fixed-Effects Model

The arithmetic mean of the response variable	11,669.57	Standard deviation of the response variable	3,521.307
The sum of squared residuals	1.11e+08	Standard error of residuals	1,172.428
LSDV R-square	0.909299	Within R-square	0.893341
LSDV F(18, 81)	45.11333	P-value for F test	1.19e-34
Logarithm of likelihood	-838.0410	Akaike information criterion	1,714.082
Bayes-Schwarz Crit.	1,763.580	Hannan-Quinn criterion	1,734.115
Autocorrelation of residuals – rho1	-0.023422	Durbin-Watson statistic	1.759118

On the basis of the model estimated by fixed group effects method slightly different values were obtained when it comes to the difference between actual GDP per capita in Polish cities in 2010 and the estimated values based on the model (Table 9).

Table 9. The Value of GDP per Capita in PPS in 2010 in Polish cities: Real and Calculated Based on the Fixed Effects Model

City	GDP 2010 estimated based on the model	GDP 2010	Difference
Wrocław	11,390.89	18,919.6	7,528.71
Bydgoszcz	12,584.74	16,488.4	3,903.66
Lublin	8,771.02	13,409.4	4,638.38
Gorzów Wielkopolski	No data	No data	No data
Łódź	12,075.47	16,786.9	4,711.43
Cracow	12,574.73	16,882.8	4,308.07
Warsaw	20,595.28	31,865.3	11,270.02
Opole	12,396.30	13,829.7	1,433.40
Rzeszów	7,882.05	12,232.3	4,350.25
Białystok	7,344.30	12,919	5,574.70
Gdańsk	12,360.48	17,054.3	4,693.82
Katowice	9,336.13	17,713.4	8,377.27
Kielce	11,763.56	12,463.3	699.74
Olsztyn	No data	No data	No data
Poznań	14,721.34	23,596.4	8,875.06
Szczecin	13,405.32	16,166.2	2,760.88

In the model estimated by the fixed effects method the difference between actual GDP and the estimated value amounted to, depending on the city, from 699.74 (Kielce) to 11,270.02 (Warsaw). Average for the city was here higher (5,223.24) and all values were positive.

In both models, it can be seen that the size of the city is important when it comes to the strength of the impact of the European Union membership on competitiveness. As a rule, the larger cities have gained more from the accession than smaller ones.

Conclusions

The analyses presented in this paper, being a result of several years of research on urban development, allow one to draw following conclusions:

1. Actions aimed at increasing the competitiveness of cities are not the subject of a separate policy of the European Union, but are present, in varying degrees, in a number of the EU policies and agendas. Cohesion policy (under the Treaty of Lisbon, including also the territorial dimension), which in the programming period 2014–2020 also includes instruments directly addressed to the cities, has the biggest impact on urban development.
2. Assuming that the competitiveness of cities is an economic phenomenon, the fundamental difference in approach to its studies is to define it through the competitiveness of businesses operating in the city or through the competitiveness of the territorial units itself, competing, among others, for high-quality labour resources and capital.
3. Analysis of the dynamics of GDP per capita (taking into account purchasing power parity) before and after Polish accession to the European Union, made it possible to observe that on the urban level this indicator reached a higher level thanks to the membership in the EU, than in the scenario without accession. This difference was estimated on the average level from 1,811.10 to 5,223.24.
4. Higher values of GDP increase obtained as a result of the EU membership have been observed in big cities, which tend to be larger beneficiaries of accession.
5. Analysis of the dynamics of indicators corresponding to urban factors enabled to observe, that both the number of the employed and the balance of internal migration were growing faster thanks to the accession to the European Union. Given the fact, that the increase of employment and improvement of the quality of life in cities are key objectives of competitiveness policy, one can conclude that the EU membership has had a very positive impact on the competitiveness of major Polish cities.

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