

GDP GROWTH OF POLAND 2004-2023: DID THE ECONOMIC POLICY CHANGE A LOT?

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Purpose: This study aims to analyze the effects of the economic policy change in 2016 on the characteristics of Poland's economic growth enjoyed during the EU membership period and the prospects of future development.

Design/methodology/approach: The research presented in this article takes, as a starting point, the analysis of the main factors driving the economic growth of Poland during the whole EU membership period. Then, the analysis period is divided into. After having considered the most critical changes in the economic strategy that took place in 2016, we use the data analysis, including the methodology of growth accounting, to determine essential differences in the outcome of the policies. The results obtained create a basis for conclusions about the impact of the policy change on Poland's future development prospects.

Findings: The study supports the point that the main driving force of Poland's development during the EU membership period was the dynamic integration effects, particularly the shift of production from Western Europe to new EU member states, leading to the enormous increase of FDI and exports. The economic policy of Poland until 2015 was based on institutional development, care for the economic equilibrium and investment, and support for further EU integration. The stress of the policy applied since 2016 shifted to the support for consumption and wages, with the clear recourse in institutional development, a fall in the investment rate, and growing tensions with EU institutions. The results of such a policy may limit Poland's future GDP growth.

Originality/value: The article uses a new approach to analyze the driving forces of Poland's economic growth to formulate, in a pioneering way, conclusions on the effects of the economic policy change in 2016-2023.

Keywords: economic growth, growth accounting, European integration, growth prospects.

Category of the paper: research paper.

1. Introduction

The first decades of this century, particularly the years of Poland's membership in the European Union (EU), were characterized by rapid development of the Polish economy and a significant reduction in the development gap separating it from the more developed Western European countries.

During 19 years of EU membership, Poland recorded an average annual GDP growth rate of 4.0% (which meant more than doubling the GDP level). It is worth noting that this development took place in highly unfavorable external conditions: membership was accompanied by the global financial crisis of 2008-2009 and the global recession it caused in 2009, the debt crisis of the southern countries of the eurozone and the European recession it generated in 2012-2013, the pandemic crisis and the resulting global recession in 2020, and finally the war in Ukraine in 2022-2023. As a result of these phenomena, the average annual growth rate of the economies of developed countries decreased from 3.2% in the twenty years 1984-2003 to 1.6% in the years 2004-2022. Despite such unfavorable conditions, the Polish economy recorded the highest economic growth of all the new member states during the membership period.

It should be noted, however, that since 2016, there has been a significant change in Poland's economic policy during the years of its membership. Despite changes in government, until 2015, this policy was based on three foundations: (1) the development and improvement of institutions, (2) attachment to the principles of economic stability and balance, (3) close integration within the EU, and cooperation with EU institutions. After the change of government as a result of the elections in October 2015, the emphasis on economic policy changed significantly: the promotion of wage and consumption growth came to the fore, with less attention paid to the existing foundations (and in the case of relations with the EU, even to an open reversal of the principles of deepening integration).

While the issue of Poland's economic growth throughout EU membership has received much attention in scientific discussion (including Rapacki, Próchniak, 2009; Nölke, Vliegenthart, 2009; In t'Velt, 2019; Orłowski, 2020; Kawecka-Wyrzykowska, 2021; Hagemeyer, Michałek, Svatko, 2021; Polish Economic Institute, 2022; Orłowski, 2022), the consequences of changes in economic policy after 2015 have so far received surprisingly little attention. In the absence of attempts at a synthetic assessment based on data and scientific analyses, this role is to some extent played by journalistic texts published by respectable economists (e.g., Gomułka, 2017; Hausner, Gronicki, 2023; Wojtyna, 2023; Orłowski, 2023).

In the article, we will try to fill this gap by analyzing the impact of the economic policy change on the trends and prospects for Poland's further development. After recalling the main growth mechanisms throughout EU membership, we will show the effects of its changes after 2015 and discuss their probable consequences in the future, in particular taking into account the development megatrends occurring in the world today.

2. Sources of Poland's economic growth in the years of EU membership

According to economic theory, the integration processes that occurred as a result of Poland's accession to the EU led to the emergence of three groups of effects accelerating GDP growth (Orłowski, 2021): (1) static integration effects, (2) the impact of development support under the EU cohesion policy, (3) dynamic integration effects resulting from the shift of production factors, which in the case of Poland meant the inflow of capital (straightforward investments, FDI) primarily and the shift of production, and to a lesser extent the flow of labor to Western Europe (economic emigration).

The static effects resulting from the elimination of customs duties and non-tariff barriers in exchange with EU countries were largely realized even before accession as a result of the creation, under the Association Agreement, of a free trade area with the EU (excluding agri-food products and maintaining customs controls). And some hidden non-tariff barriers; Kawecka-Wyrzykowska, 2021). That does not mean, of course, that these effects were not felt at all after accession, especially in those sectors of the economy where restrictions still existed in 2003 (especially in the agri-food and services sectors).

EU development aid played a more critical role in dynamizing the development of the Polish economy. With accession, Poland was covered by the EU's cohesion policy, quickly becoming the largest recipient of EU development funds and receiving total aid of EUR 188 billion by November 2023. The inflow of these funds to Poland during the membership period corresponded on average to 2.2% of GDP per year (relatively lower than that obtained by Greece and Portugal during their membership, 3.8% and 3.4%, respectively). The inflow of funds undoubtedly resulted in a positive growth effect, both on the demand side (revival in the economy caused by additional spending) and on the supply side (elimination of infrastructure bottlenecks facilitating investment growth, improvement of the institutional environment of the Polish economy and the quality of human capital). The impact of EU funds is usually estimated at 0.4-0.5% of the average annual additional GDP growth (Ministry of Funds and Regional Policy, 2020).

However, as numerous studies show, membership's most critical economic benefits were related to the dynamic effects of integration. Never in the history of previous enlargements has there been such a significant difference in the level of economic development between the existing and new member countries. The average level of wages in the countries that joined the EU in 2004-2007, converted according to current exchange rates, at the time of accession was on average only 20% of the level in Germany (19% in Poland). For comparison, at the time of Greece's accession to the EU in 1981, the similarly calculated local wage level was the equivalent of 58%. At the time of the accession of the Iberian countries in 1986, their average wage level was the equivalent of 48% of West German wages (Orłowski, 2020). That meant a substantial competitive advantage for the new member states, and especially Poland, as a

place for locating production, which should lead to dynamic solid effects of integration (shifting investments and output), i.e., a significant increase in foreign investments and then an increase in exports directed to the entire single European market and resulting in a substantial trade surplus. The most important economic benefits for Poland would result from the combination of three factors: unrestricted access to the entire EU market (both due to the abolition of formal obstacles and the elimination of bottlenecks in the transport infrastructure, Kawecka-Wyrzykowska, 2021), cost advantages resulting from lower labor costs (Orłowski, 2020), and finally, increasing investment credibility and decreasing the risk premium (Baldwin, Francois, Portes, 1997).

Statistical data confirm the occurrence of all these effects (see Fig. 1).

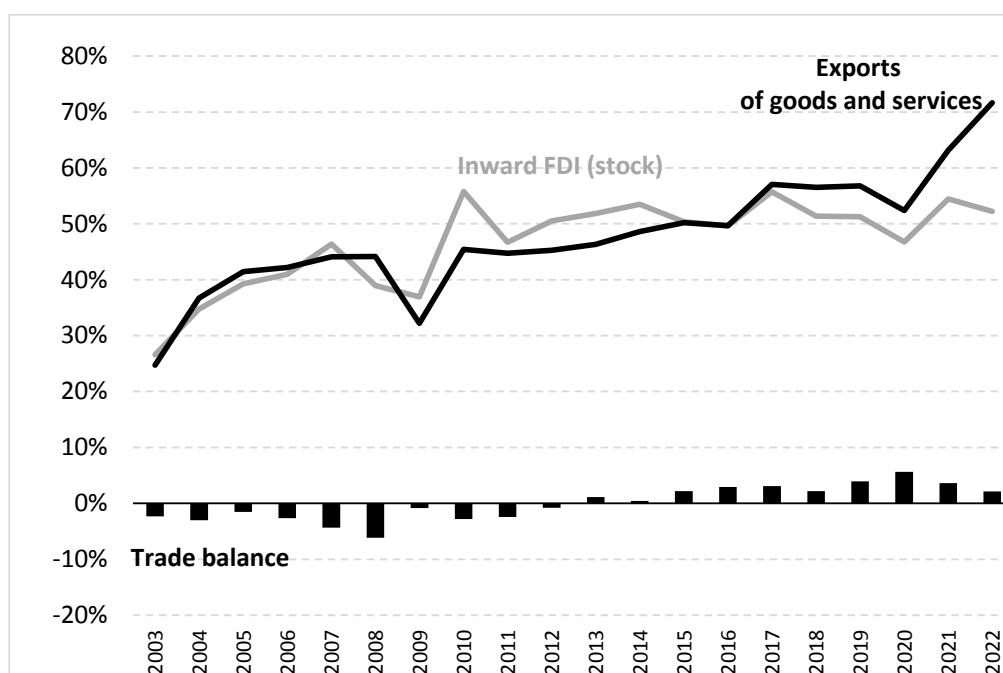


Figure 1. Stock of inward FDI, exports, and trade balance of Poland, as a percent of GDP, 2003-2022.

Source: Author's calculations based on GUS and NBP data.

Firstly, EU membership resulted in a large scale of FDI inflows to Poland, and the ratio of the cumulative FDI resource to GDP increased from 27% in 2003 to 52% in 2022 (the value of the FDI resource, expressed in euro, supplemented by an average annual rate of 9.3%). Secondly, this was followed by a sharp increase in the export of goods and services. Its ratio to GDP increased from 25% in 2003 to 72% in 2022 (the value of exports, expressed in euro, increased annually by 11.5%; in 2022, over 80% of the total was directed to the markets of EU countries and Great Britain). Thirdly, Poland's trade balance, negative during the first nine years of membership and amounting to -2.7% of GDP on average, turned positive in the next decade and amounted to 2.8% of GDP on average (a positive trade balance in exchange with EU countries appeared already in 2005, and in 2022 it was the equivalent of 14% of GDP).

The growing openness of the Polish economy during the EU membership can also be traced by analyzing data from input-output tables. Between 2005 and 2015, the share of exports in final demand increased in all main sectors of the Polish economy. In the case of industry this share reached 56% (which means that the EU market, not the domestic market, is crucial for the Polish industry), in agriculture 29%, services 21%, and construction 8% (see Fig. 2).

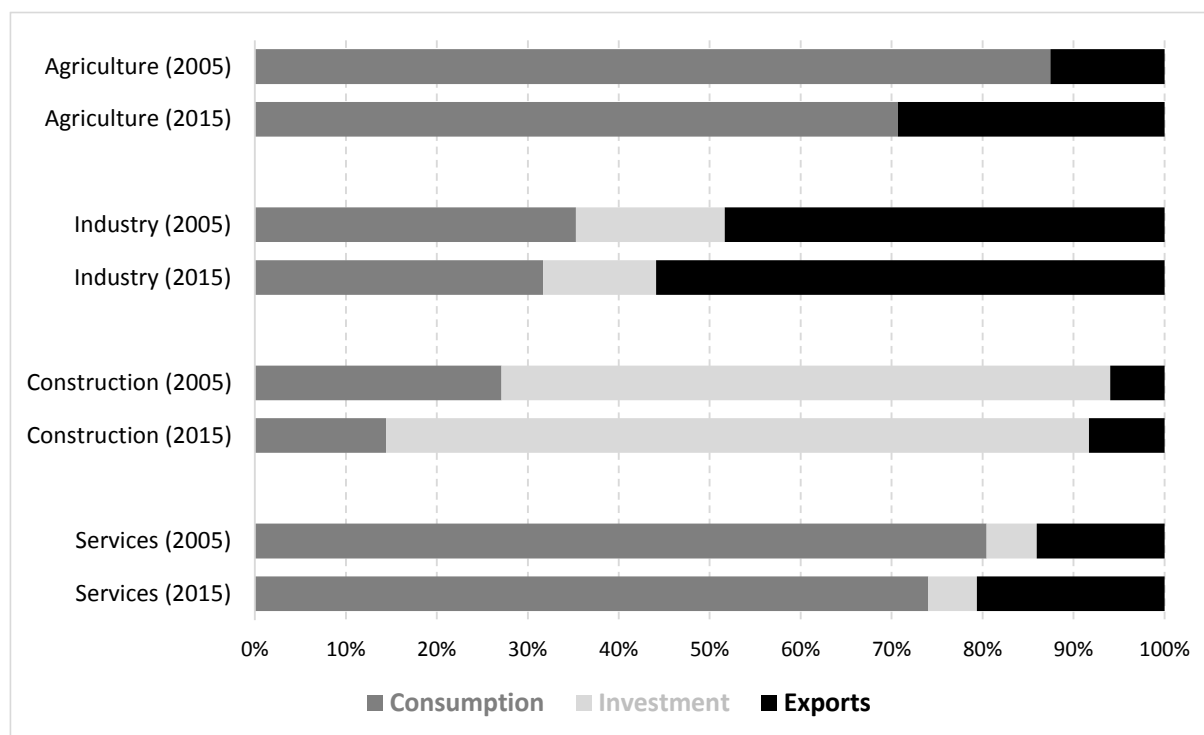


Figure 2. Share of demand categories in the final demand for products of main branches of the Polish economy, 2005 and 2015.

Source: Author's calculations based on GUS data (input-output tables).

Poland's membership in the EU increased the openness of the economy, i.e., an increase in the trade exchange ratio (the sum of exports and imports) to GDP from 52% before accession to 141% in 2022. According to numerous comparative studies, such a substantial increase in the ratio of trade to GDP, especially when achieving a positive trade balance, leads to a significant acceleration of the GDP growth rate (Frankel, Romer, 1999). This acceleration is mainly due to the acceleration in the growth of total factor productivity (TFP). The most frequently mentioned factors leading to this effect are increased competitive pressure forcing companies to increase efficiency and eliminating the weakest companies from the market, economies of scale, specialization (Noguer, Siscart, 2005), as well as faster accumulation of knowledge and diffusion of technology and innovations, essential point of view of the theory of endogenous growth (Barro, Sala-i-Martin, 1995). According to estimates, the dynamic effects of integration were responsible for most of the GDP growth recorded by Poland in the period of the EU membership (Hagemejer, Michałek, Svatko, 2021; Orłowski, 2021).

3. Changes in Polish economic policy in 2004-2015 and 2016-2023

However, Poland's economic policy during the EU membership years can be divided into two clearly different subperiods.

In the first subperiod, 2004-2015, despite changes in government and the resulting sharp verbal criticism of predecessors, economic policy was dominated by attachment to three fundamental pillars: (1) strengthening market institutions, (2) caring for the economic equilibrium (which means, in the long run, care for savings and investments) and increasingly closer integration with the EU, a policy aimed to strive for maximum use of development opportunities created by membership.

In turn, 2016-2022 is a period of politics whose starting slogan is the famous "Poland in ruins" - a fundamental criticism of the current course of economic transformation. Despite parallel plans announced to maintain a balance between stimulating the demand and supply sides of the economy (Ministry of Development, 2017), in reality, this policy turned out to be aimed at increasing consumption (which had to be done at the expense of savings and investments), weakening institutions in the name of short-term political interests and growing conflicts with EU institutions (Gomułka, 2017; Orłowski, 2023).

Despite evident changes in policy, in both analyzed periods, the average annual GDP growth rate was 4.0%. At the same time, however, there were apparent differences in the essential characteristics of this growth, which undoubtedly influenced the prospects for further development.

While the unit labor cost (UCL) expressed in PLN changed only slightly throughout the entire membership period, they were falling in the first sub-period (the increase in labor productivity was ahead of the rise in real wages) and increasing marginally in the second sub-period. However, this picture changes when the UCL changes are calculated in euros; thus, the indicator that is most important for the competitiveness of Polish exports. With a similar average annual increase in wages expressed in euro in both subperiods (5.4% and 6.5%, respectively), a marked slowdown in labor productivity growth in the second subperiod (3.2% compared to 5.8% in the first) changed the trend of a slight decline in UCL into quite strong growth (annual average 3.4%, see Fig. 3).

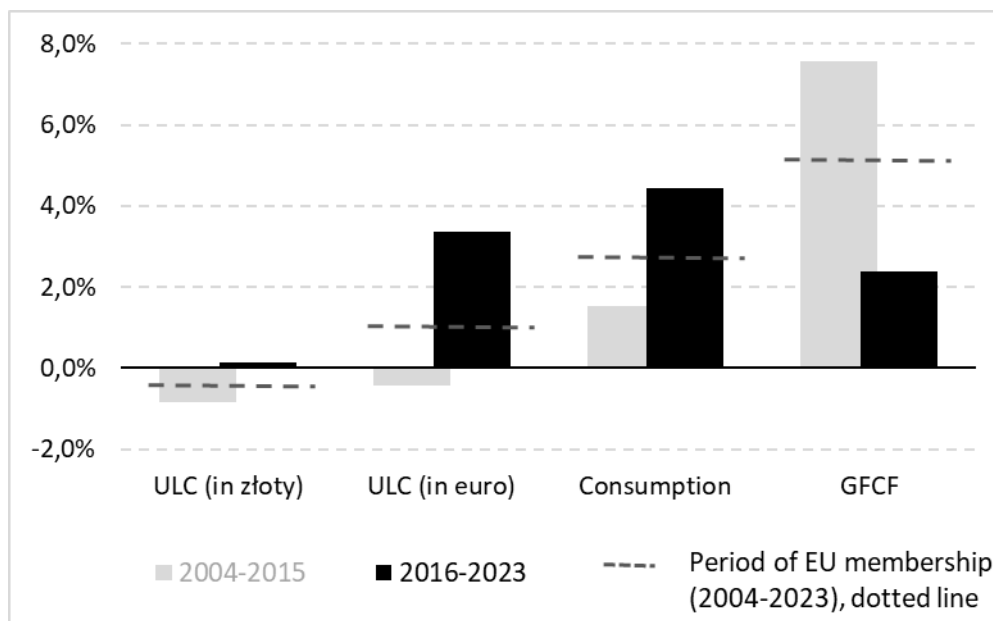


Figure 3. Effects of changes in the economic policy in the years 2004-2015 and 2016-2023: yearly average change of Unit Labor Cost (UCL), consumption, and Gross Fixed Capital Formation (GFCF).

Source: The author's calculations are based on Central Statistical Office data for 2023—author's forecast.

Another effect of the policy (although having an undoubted impact on changes in the labor productivity growth rate) was the acceleration of the consumption growth rate (from 1.5% on average in the first subperiod to 4.5% in the second) at the expense of a three-fold slowdown in investment growth (from 7.6% to 2.4%). As a result, the investment rate (the ratio of gross fixed capital formation to GDP) increased in the first subperiod and decreased in the second.

4. Anatomy of Poland's economic growth in 2004-2015 and 2016-2023

The critical importance of EU membership, including primarily the increase in investments and exports related to Poland's participation in the single European market, is reflected in the structure of GDP growth both during the entire period of membership and in the subperiods 2004-2015 and 2016-2022 (due to the lack of complete data from the analysis of growth anatomy we exclude the year 2023).

Let's start the analysis from the demand side of the economy. Regardless of the economic policy pursued, the most dynamically growing component of final demand from the point of view of GDP growth, both in 2004-2015 and 2016-2022 and also in total for the entire period of Poland's membership in the EU, was export (see Figure 4).

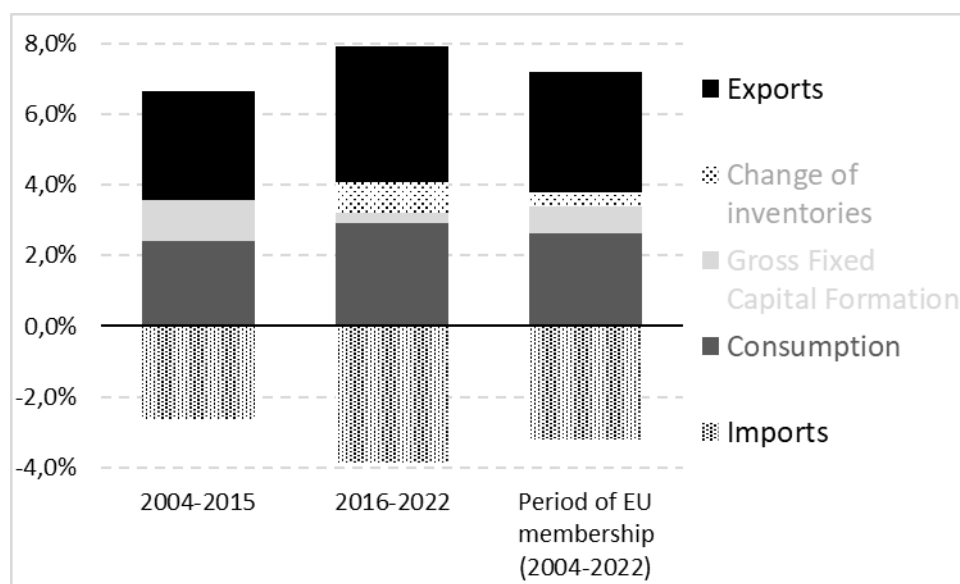


Figure 4. Impact of final demand categories on the yearly average GDP growth, percent points, 2004-2022.

Source: The author's calculations are based on Central Statistical Office data.

While the entire domestic and foreign final demand increased annually during the membership period by 7.2 percentage points of GDP, nearly half of this growth came from increased exports. Of course, both strong production ties, especially within global value chains (supplies of raw materials and semi-finished products for export production), and the usual macroeconomic mechanism (increased exports influencing income growth and strengthening the exchange rate) led to the emergence of increased imports. However, the negative impact of import growth on GDP growth was smaller than the positive impact of exports. Interestingly, the share of exports in the final demand growth remained similar both in 2004-2015 and 2016-2022. Although the economic policy pursued influenced the structure of final demand, this impact was limited to increasing the role of consumption at the expense of investment. That allows us to conclude that the effect of EU membership, expressed in the dynamic growth of exports, was more substantial than the effects of national policy in the observed period.

The analysis of the structure of final demand allows us to conclude that the effect of Poland's membership in the EU was an increase in GDP in both sub-periods, based mainly on a similar rate of export growth (the average annual growth in exports of goods and services was 6.4% and 6.7%, respectively, in both sub-periods and imports 6.8% and 6.9%.) As a result of the dynamic effects of integration, exports, carried out with a trade surplus, contrary to sometimes proclaimed theses, were the main driving force of the development of the Polish economy in the years 2004-2022.

The confirmation of the impact of EU membership on Poland's economic growth can also be found in analyzing the supply side of the economy using growth accounting tools (Barro, Sala-i-Martin, 1995; Rapacki, Próchniak, 2009), which allows for isolating the effect of the increase in total factor productivity in GDP growth (Total Factor Productivity (TFP)). TFP growth means that part of GDP growth that an increase in labor and capital inputs cannot

explain. This quantity, the "Solow residual", is identified with technical and organizational progress broadly understood. Let us recall that, according to the postulates of economic theory, both the increase in the openness of the economy (resulting from the dynamic effects of integration) and the improvement of the economic environment, infrastructure, and the quality of human capital (resulting mainly from development support from European funds) should first lead to a significant increase in TFP (Noguer, Siscart, 2005).

The starting point for growth accounting may be the neoclassical, two-factor Cobb -Douglas production function of the form:

$$Y_t = A_t K_t^\alpha L_t^{(1-\alpha)} \quad (1)$$

where:

Y_t is production (GDP) in period t ,

A_t is the level of technology equivalent to total factor productivity (TFP),

K_t and L_t are capital and labor inputs, respectively,

the parameter α is the elasticity of production with respect to capital.

The assumption of no economies of scale means that the elasticity of output with respect to labor is $(1 - \alpha)$.

Performing a series of transformations of the above production function allows us to determine the formula used to calculate the growth rate of total factor productivity (TFP), i.e., the Solow residual, in the form of equation (2), which is a standard growth accounting tool (the dot above the symbol indicates the increase in the variable):

$$\frac{\dot{A}}{A} = \frac{\dot{Y}}{Y} - \left[\alpha \frac{\dot{K}}{K} + (1 - \alpha) \frac{\dot{L}}{L} \right] \quad (2)$$

This formula means that the GDP growth rate is the sum of the growth rates of labor and capital inputs, weighted by the shares of income of these factors in total income (equal to the parameters α and $(1 - \alpha)$ from the production function), increased by the growth rate of TFP (Barro, Sala-i -Martin, 1995; Rapacki, Próchniak, 2009).

The analysis of growth accounting confirms the hypothesis about the critical importance of TFP growth, most likely linked to the increased openness, for Poland's economic development throughout membership. TFP growth accounted for half the growth rate achieved in 2004-2015 and two-thirds in 2016-2022. The factor that clearly distinguished both periods was the impact of the increase in labor input, which was significant in the first period and insignificant in the second (see Fig. 5).

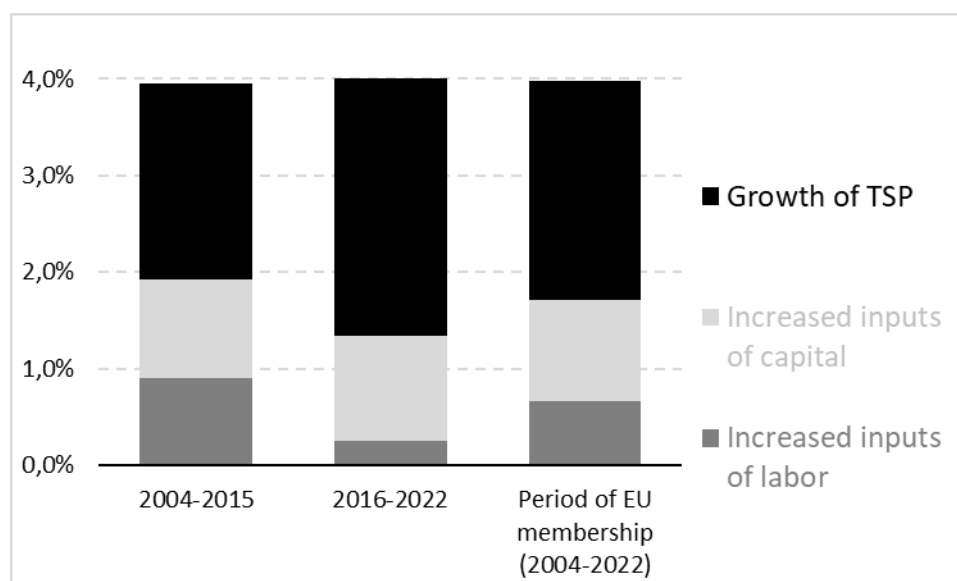


Figure 5. Impact of labor, capital inputs, and the Total Factor Productivity (TFP) increase on the yearly average GDP growth, percent points, 2004-2022.

Source: The author's calculations are based on Central Statistical Office data.

In general, it can be concluded that the obtained results confirm the hypothesis of the critical importance of the effects of EU membership for Poland's growth in the entire period 2004-2022, in particular, the effects of increased openness leading to pressure on TFP growth, regardless of changes in the country's economic policy. It is worth adding that a similar phenomenon was also observed in the other new member states (Młynarzewska -Borowiec, 2018).

5. The impact of changes in Poland's economic policy on the prospects for further development

However, the analysis of Poland's undoubted economic success during the period of EU membership also requires referring to the problem of maintaining a relatively high growth rate in the long term, particularly the issue of the so-called traps of middle development. This risk was highlighted both in theoretical studies (Nölke, Vliegthart, 2009) and government documents (Ministry of Development, 2017). Further growth will take place in the conditions of the Fourth Industrial Revolution. That may mean that in the conditions of rising labor costs, Poland's current competitive advantage leading to the shifting of production in the EU may be threatened by a decline in labor costs in high-wage countries resulting from robotization (especially in industry) and the use of artificial intelligence in services (International Federation of Robotics, 2023).

The analysis of Poland's economic growth over the past 19 years suggests that the main driving force of development was the increase in exports and the openness of the economy resulting from the dynamic effects of integration. This mechanism, however, is primarily associated with the inflow of capital from that part of the integration area where there is relatively much of it and its marginal productivity is low to that where there is little capital and a lot of labor resources (so wages are low and marginal productivity of capital high). However, the condition for the continuation of economic growth is, as differences in wages decrease, a change in the development model to one in which internal investment mechanisms play a more significant role, leading to an increase in the share of capital in GDP growth and to more intensive use of knowledge, accelerating the growth of TFP (Gomułka, 2009). The inability to change the development model this way may mean getting stuck in the middle-income trap.

Although the possibility of forming a middle-income trap does not result directly from theoretical growth models that assume a smooth process of necessary institutional adjustments (Barro, Sala-I-Martin, 1995), it is supported by empirical experience. This risk was observed when analyzing economic growth in Southeast Asian countries: after a period of rapid development based on cheaper labor, many countries managed to achieve an average level of GDP per capita, but only a few managed to maintain rapid economic growth and reach a high level of GDP per capita in conditions of increasing labor costs (Kharas, Kohli, 2011). Further development required not only further intensive investments in improving human and physical capital but, above all, fundamental changes and improvement in the functioning of institutions, which most of the surveyed countries were incapable of.

Considering the above statements, we can assess the extent to which changes in Poland's economic policy during the membership period contributed to avoiding the trap of average development, thus maintaining a relatively high growth rate in the future.

Firstly, demographic forecasts indicate growing problems with job availability. During the period of membership, Poland managed surplus labor resulting from its underutilization (measured based on BAEL surveys, the unemployment rate decreased from 20.7% at the beginning of 2004 to 2.6% in mid-2023, which in practice means zero unemployment, and the number employed increased by 20%). However, a further increase in the number of working people is unlikely for demographic reasons (according to Central Statistical Office forecasts, the working-age population is expected to decrease by 15.7% in the twenty years 2025-2045, and its share in the total population of the country will drop from 58% to 54%). Although the phenomena of solid immigration may change the situation, increased economic activity and a gradual shift up of the actual retirement age, one should take into account the prospect of a minimal, or probably even negative, impact of labor input on GDP growth, which can only be mitigated by improving the quality of education (growth of human capital). Although there was an apparent increase in economic activity during the membership period (the share of working people in the working-age population increased from 53% to 69%), this process has wholly slowed since 2016. It should be noted that the social and economic policy pursued after

2015 (including lowering the retirement age and increasing non-work-related social transfers) may contribute to deepening difficulties in maintaining a relatively high pace of development in the future (Melich-Iwanek, 2021).

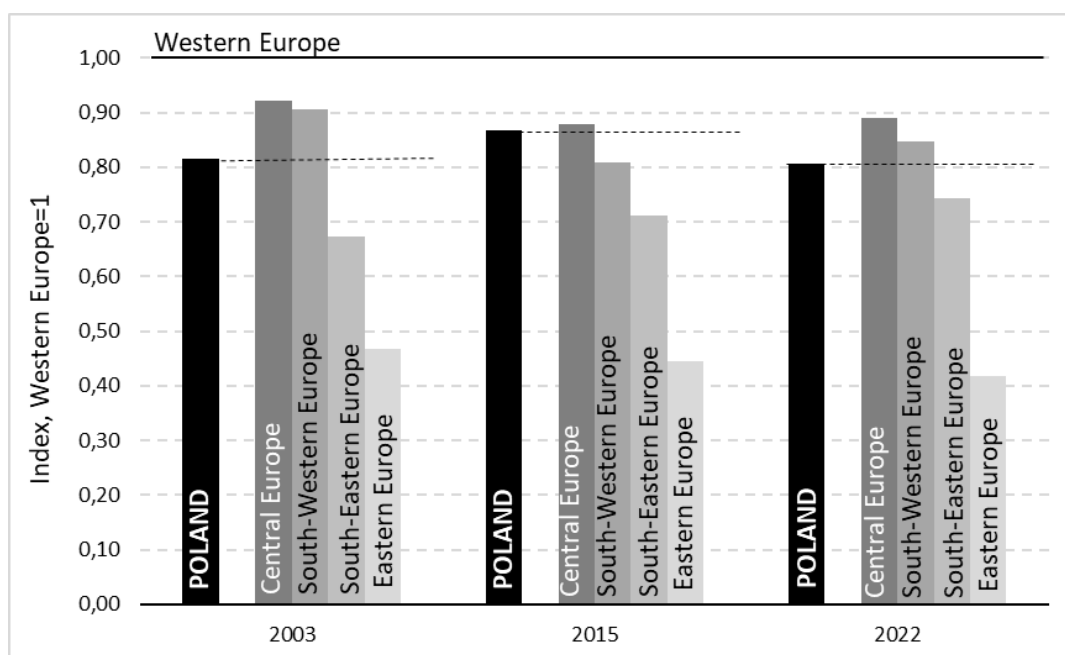
Secondly, changes in economic policy during the membership period resulted in a reduction in investment intensity and, therefore, in the accumulation rate of physical capital. The share of investment (Gross Fixed Capital Formation) in GDP increased in 2004-2015 from 18.3% to 21.2%, but in the 2016-2022 subperiod, it decreased to 17.5% (in the first three quarters of 2023 to 15.3%). There is no doubt that the collapse of investment activity should be considered the greatest failure of Poland's economic policy in 2016-2022, especially in the context of the declaration that one of its main goals was to increase this share to 25% to avoid the middle-income trap (Ministry of Development, 2017). Low investment activity for a long time will limit both the impact of the increase in capital expenditure on GDP growth and the improvement of the technological level of the economy necessary to increase TFP (Gomułka, 2009).

Third, the rate of TFP growth is crucial for further growth. Because, along with the increase in wages observed in Poland during the membership period, the cost attractiveness underlying the process of transferring production decreases (the average salary expressed in current euros increased during the membership period from EUR 475 to EUR 1,585, i.e. 3.3 times and increased from approx. 19% of the German level in 2003 to approximately 39% in 2023), it is necessary to change the development model towards the one based on knowledge and innovations (Gomułka, 2009; Grzybowska, 2013). Such a change requires, first of all, institutional changes aimed at improving the efficiency of management and the effectiveness of the implementation of pro-efficiency economic policy (Wojtyna, 2009; Orłowski, 2020). It should be noted that, currently, Poland is one of the EU countries with the lowest advancement of knowledge-based growth processes (the synthetic innovation index compiled by the European Commission places Poland in the group of 6 EU countries most lagging behind in this respect, the European Commission, 2023).

However, the economic policy pursued in both analyzed subperiods differed significantly in terms of the emphasis on improving the institutional environment of the Polish economy. While until 2015, improving the quality of institutions' operation was the focus of development policy, in the years 2016-2022, there was an apparent regression in this respect, and the efficiency of their functioning decreased.

The efficiency of an institution can be measured by a synthetic indicator of management quality (Worldwide Governance Indicators) compiled by the World Bank as an average of 6 partial indicators: (1) government accountability and civil liberties, (2) stability and security, (3) government efficiency, (4) quality of regulations, (5) rule of law, (6) control corruption (World Bank, 2023).

The development of the synthetic indicator of management quality in Poland during the period of EU membership, against the background of various European regions, is presented in Figure 6.



Note: Western Europe - Germany, France, UK; Central Europe - Austria, Czechia, Hungary, Slovakia; South-Western Europe – Italy, Spain, Portugal, Greece; South-Eastern Europe - Romania, Bulgaria, former Yugoslav countries; Eastern Europe – Russia, Ukraine, Belarus.

Figure 6. The level of effectiveness of institutions influencing the economic development of Poland compared to 5 regions of Europe¹.

Source: The author's calculations are based on World Bank data (World Bank, 2023).

In 2003, the level of efficiency of Polish institutions could be estimated at 82% of the level observed in Western Europe; this level was lower than in Central and Southern Europe. The progress achieved in 2004-2015, both as a result of the policies pursued and the pressure created by EU membership, resulted in an increase in efficiency to 87% of the level of Western Europe, bringing it on par with the rest of Central Europe and overtaking other regions of the continent. Unfortunately, the improvement process was reversed in 2016-2022, resulting in the efficiency level of Polish institutions dropping again in 2022 to 81% of the level of Western Europe and below that of Central and Southern Europe. However, it was still higher than in South-Eastern Europe (although the difference decreased significantly compared to 2015) and higher compared to Eastern Europe.

¹ Western Europe - Germany, France, UK; Central Europe - Austria, Czechia, Hungary, Slovakia; South-Western Europe – Italy, Spain, Portugal, Greece; South-Eastern Europe - Romania, Bulgaria, former Yugoslav countries; Eastern Europe – Russia, Ukraine, Belarus.

6. Summary and Conclusions

The analysis of Poland's economic development during the period of EU membership and the effects of economic policy changes in the subperiods 2004-2015 and 2016-2023 leads to several important conclusions.

Firstly, Poland has achieved great success throughout its membership in reducing the difference in the level of development compared to Western European countries. That was possible thanks to achieving the highest economic growth among all new EU member states despite unfavorable external development conditions. Considering both the scale and the pace of improvement measured by changes in GDP per capita, this success should be regarded as historic.

Secondly, the primary source of economic growth that allowed for such a spectacular success was Poland's membership in the EU, especially the dynamic effects of integration related to the inflow of capital and shifting production. Poland's continuing competitive advantage resulting from lower labor costs led to increased investments aimed at production for the entire European market. Subsequently, it led to a massive increase in exports and a trade surplus.

Thirdly, throughout the period 2004-2022, there was a substantial increase in the openness of the economy, leading to accelerated TFP growth. Rapidly growing exports became the central demand engine of development, regardless of changes in the country's economic policy.

Fourthly, the changes in economic policy observed after 2015, in particular the decline in the efficiency of institutions, weakening investment intensity, and the lack of effective measures to mitigate the decline in labor supply resulting from demographic reasons, mean that the chances of maintaining a relatively high growth rate in the future leading to a further decline in the development gap compared to Western European countries have decreased.

Fifthly, the changes mentioned above led to a substantial increase in unit labor costs expressed in euro and, at the same time, to a reduction in the intensity of investment and the rate of technological progress (increase in total factor productivity). In the conditions of the Fourth Industrial Revolution, this may lead to weakening of export-based growth processes and to reducing the possibility of taking full advantage of the development opportunities created by EU membership.

Further economic convergence is possible but requires changes in economic policy and effective actions towards strengthening the institutions, creating more favorable conditions for investment, increasing the technological level and innovativeness of the economy, and developing human capital.

References

1. Baldwin, R., Francois, J., Portes, R. (1997). The costs and benefits of Eastern enlargement: The impact on the EU and Central Europe. *Economic Policy*, 12(24), pp. 125-176.
2. Barro, R.J., Sala-i-Martin, X. (1995). *Economic growth*, New York: McGraw-Hill.
3. European Commission (2023). *European Innovation Scoreboard 2023*. Brussels: European Commission. Retrieved from: https://ec.europa.eu/assets/rtd/eis/2023/ec_rtd_eis-country-profile-pl.pdf.
4. Frankel, J., Romer, D. (1999). Does Trade Cause Growth? *American Economic Review* Vol. 589(3), pp. 379-399.
5. Gomułka, S. (2009). Mechanizm i źródła wzrostu gospodarczego w świecie. In: R.Rapacki (Ed.), *Wzrost gospodarczy w krajach transformacji* (pp.15-31). Warszawa: PWE.
6. Gomułka, S. (2017). Doktryna ekonomiczna PiS. *Rzeczpospolita*, 1.11.2017. Retrieved from: <https://www.rp.pl/opinie-ekonomiczne/art10124541-stanislaw-gomulka-doktryna-ekonomiczna-pis>
7. Grzybowska, B. (2013). Wiedza i innowacje jako współczesne czynniki wzrostu gospodarczego. *Ekonomista*, nr 4, pp. 521-531.
8. Hagemeyer, J., Michałek, J.J., Svatko, P. (2021). Economic impact of the EU Eastern enlargement on New Member States revisited: the role of economic institutions. *Central European Economic Journal*, 8(55), pp.126-143. DOI: 10.2478/ceej-2021-0008.
9. Hausner, J., Gronicki, M. (2023). Polska gospodarka na grząskim terenie. *Rzeczpospolita*, 12.06.2023. Retrieved from: <https://www.rp.pl/opinie-ekonomiczne/art38594791-hausner-gronicki-polska-gospodarka-na-grzaskim-terenie>.
10. In t'Velt, J. (2019). The economic benefits of the EU Single Market in goods and services. *Journal of Policy Modeling*, Vol. 41, Iss. 5, pp. 803-818. Retrieved from: <https://doi.org/10.1016/j.jpolmod.2019.06.004>.
11. International Federation of Robotics (2023). *World Robotics 2023*. Frankfurt: IFR. Retrieved from: https://ifr.org/img/worldrobotics/2023_WR_extended_version.pdf.
12. Kawecka-Wyrzykowska, E. (2021). Znaczenie udziału Polski w Jednolitym Rynku Europejskim: rynek towarów. In: W.M.Orłowski (Ed.), *Gdzie są konfitury? Najważniejsze gospodarcze korzyści członkostwa Polski w Unii Europejskiej* (pp. 50-74). Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
13. Kharas, H., Kohli, H. (2011). What Is the Middle-Income Trap, Why do Countries Fall into It, and How Can It Be Avoided? *Global Journal of Emerging Market Economies*, nr 3(3), pp. 281-289.
14. Melich-Iwanek, K. (2021). Aktywność ekonomiczna ludności w Polsce – wybrane problemy i uwarunkowania. *Zeszyty Naukowe WSH Zarządzanie*, 3, pp. 9-28.

15. Ministerstwo Funduszy i Polityki Regionalnej (2020). *Wpływ polityki spójności na rozwój społeczno-gospodarczy Polski i regionów w latach 2004-2019*. Retrieved from: https://www.ewaluacja.gov.pl/media/98107/BROSZURA_PL_web_v2.pdf.
16. Ministerstwo Rozwoju (2017). *Strategia na rzecz Odpowiedzialnego Rozwoju do roku 2020 (z perspektywą do 2030)*. Warszawa. Retrieved from: <https://www.gov.pl/web/fundusze-regiony/informacje-o-strategii-na-rzecz-odpowiedzialnego-rozwoju>.
17. Młynarzewska-Borowiec, I.E. (2018). Łączna produktywność czynników produkcji (TFP) i jej zróżnicowanie w krajach członkowskich Unii Europejskiej. *Acta Universitatis Lodzianensis. Folia Oeconomica*, vol. 3, t. 335, pp. 109-122. Retrieved from: <http://dx.doi.org/10.18778/0208-6018.335.08>.
18. Noguer, M., Siscart, M. (2005). Trade Raises Income: A Precise and Robust Result. *Journal of International Economics*, Vol. 65, pp. 447-460.
19. Nölke, A., Vliegthart, A. (2009). Enlarging the Varieties of Capitalism: The Emergence of Dependent Market Economies in East Central Europe. *World Politics*, 61(4).
20. Orłowski, W.M. (2020). Trajectories of the economic transition in Central and Eastern Europe. In: G. Gorzelak (Ed.), *Social and Economic Development in Central and Eastern Europe* (pp. 11-34). London/New York: Routledge.
21. Orłowski, W.M. (2021). Źródła korzyści gospodarczych z członkostwa Polski w Unii Europejskiej: próba szacunku. In: W.M.Orłowski (Ed.), *Gdzie naprawdę są konfitury? Najważniejsze gospodarcze korzyści członkostwa Polski w Unii Europejskiej* (pp. 19-49). Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
22. Orłowski, W.M. (2023). W stronę złego modelu rozwoju. *Rzeczpospolita*, 13.06.2023. Retrieved from: <https://www.rp.pl/opinie-ekonomiczne/art38600261-witold-m-orlowski-w-strone-zlego-modelu-rozwoju>.
23. Polski Instytut Ekonomiczny (2022). *Korzyści Polski z Jednolitego Rynku*. Warszawa: PIE.
24. Rapacki, R., Próchniak, M. (2009). Rachunek wzrostu gospodarczego w krajach transformacji w latach 1990-2003. In: R. Rapacki (Ed.), *Wzrost gospodarczy w krajach transformacji* (pp. 74-107). Warszawa: PWE.
25. Wojtyna, A. (2009). O badaniach nad „głębszymi” przyczynami wzrostu gospodarczego. In: R. Rapacki (Ed.), *Wzrost gospodarczy w krajach transformacji* (pp. 187-201). Warszawa: PWE.
26. Wojtyna, A. (2023). Zdławienie inflacji czy niezależności NBP. *Rzeczpospolita*, 13.10.2023. Retrieved from: <https://www.rp.pl/opinie-ekonomiczne/art39261001-andrzej-wojtyna-zdlawienie-inflacji-czy-niezaleznosci-nbp>.
27. World Bank (2023). *The World Bank Data*. Retrieved from: <https://www.worldbank.org/en/home>.