Analysis of Macroeconomic Factors Affecting
the Investment Potential of an Enterprise

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 Abstract:

Purpose: The purpose of this article is the development of a model for optimizing the investment potential formation process for an enterprise based on the analysis of selected macroeconomic management factors. In the course of the study, it was decided to form four groups of macroeconomic indicators: indicators characterizing the overall development and efficiency of the Polish economy; indicators characterizing inflationary processes; indicators characterizing the dynamics of changes in the volumes of foreign and domestic trade of Poland; data that allow assessing the level of public debt and the state budget deficit of Poland.

Design/Methodology/Approach: The research methodology is based on the use of the following methods: a descriptive statistics method; the method of grouping statistical data; the method of correlation analysis, as well as the regression analysis method.

Findings: The results of the correlation analysis allowed to identify three factors that most affect the economic growth in the country and on this basis to develop a model for optimizing the investment potential formation process for an enterprise.

Practical Implications: The model developed by the authors and the resulting rating of macroeconomic factors influencing the process of formation of investment resources can be the scientific rationale for the process of optimization and intensification of investment processes (development processes) in Polish enterprises.

Originality/Value: The results of the correlation analysis allowed us to identify three factors that most affect the economic growth in the country and on this basis to develop a model for optimizing the investment potential formation process for an enterprise.

Keywords: Enterprises, investment potential, macroeconomic indicators, model for optimizing, development.

JEL codes: C51, E01, E22, E23, E31.

Paper type : Research article.

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1. Introduction

During the past decades, income convergence remains a central macroeconomic issue around which a significant proportion of the recent growth literature has evolved. Ever since 1956, Solow's neoclassical model has produced endless debate on the empirical validity of its predictive power upon income convergence. Baumol (1986) found evidence of convergence, but only within developed countries. Mankiw et al. (1992) argued that poorer countries grow faster than richer ones; whereas, Quah (1993), by augmenting Solow's model with human capital, found no such convergence. Ever since, this debate goes on strong.

The basis for the development of any economic structure is the investment process. The possibility of implementing investment activities at an enterprise directly depends on its investment potential (Smith, 1961; Nickell, 1978; Barrell and Holland, 2000; Kanashkina, 2015; Ivancic – Kacer, 2016; Popović and Erić, 2018). The investment potential of an enterprise can be defined as a combination of all the resources that an enterprise can use in the course of the investment activities (Brealey and Myers, 1995; Shamanska, 2010; Lytvynenko and Bakumenko, 2018). These resources can be of both internal and external origin. Accordingly, the existence and availability of sources of financing the investment activities depend on a combination of internal and external factors (Hitt *at al.,* 2002; Polinkevych, 2016; Kaminska *at al.,* 2017; Dubitskaya and Ukanova, 2017; Ritman *at al.,* 2017; Serebryakova *at al.,* 2017; Munro and Belanger, 2017; Mihova *at al.,* 2018; Shandova, 2018; Matinaro *at al.,* 2019).

The internal factors include all factors associated with the production and economic activities of an enterprise. Each of them has a qualitative component (financial, technical, marketing, etc.) and a controlling component (management of the enterprise and production and technical personnel). The availability of the controlling component in the internal factors determines the possibility and degree of the enterprise's influence on these factors, and therefore the possibility of adjusting its development trends (including the formation and implementation of the investment potential).

External factors affecting the investment potential of an enterprise are factors that cannot be influenced by an enterprise, but they create chances or endanger the development of a business entity. The external factors include macroeconomic, legal, political, technological, demographic, natural, and social ones. Effective management of internal factors affecting the investment potential of an enterprise and the enterprise development trends is not possible without a systematic and comprehensive account of external economic management factors.

Among these external factors, primary attention should be paid to macroeconomic factors, such as: the growth rate and quality of the national economy; the general state of market which creates the demand, supply, consumption level and pricing

mechanism; the degree of openness of the national economy which is determined by the volume of export and import operations in relation to GDP (gross domestic product); monetary factors of development of the national economy, such as inflation level, deficit or surplus of the state budget, the amount of public debt, etc.

In this regard, the main hypothesis of the study is as follows: the investment potential formation process of an enterprise can be optimized based on the evaluation and ranking of macroeconomic factors of economic management through mathematical modeling in economics. The purpose of this article is the development of a model for optimizing the investment potential formation process for an enterprise based on the analysis of selected macroeconomic management factors.

To achieve this goal in the work:

1) The dynamics of changes in 51 macroeconomic indicators affecting the investment potential of Polish enterprises was investigated. According to the results of analysis, a conclusion was made on the macroeconomic conditions of management in Poland;
2) Based on the correlation and regression analysis of the selected macroeconomic indicators of management, an economic-mathematical model has been developed to optimize the investment potential formation process of an enterprise, and factors influencing the investment potential of enterprises have been rated.

In the course of the study, macroeconomic indicators of the development of Polish economy for 2005–2017 were used. They were posted on the official Internet resource Central Statistical Office of Poland.

2. Literature Review

A number of scientific works are concerned with the issues of analysis and evaluation of the investment potential of an enterprise. The following can be named among the most recent research in this area.

Thus, in the article "Comprehensive method of analyzing the investment potential of industrial enterprises" (2017), Burdina A.A., Kaloshina M.N., Chizhik, A.S. offer the author's interpretation of the concept of investment potential and develop methodical tools for analyzing the investment potential of enterprises, based on methods for evaluating the effectiveness of investment projects. The evaluative approach proposed by the authors is focused on the account the specifics of the risks of aviation enterprises (Burdina *et al.,* 2017).

Shlafman N., Frolina K., Gotal D.L. in the work "Modeling for the analysis of the investment potential of the construction sector" (2018), based on the use of the three-factor Cobb-Douglas production function, developed a model for analyzing the investment potential of enterprises in the construction sector. The model developed

by the authors enables analyzing the effect of a change in the chosen factor affecting the investment potential on the resulting factor (Shlafman *et al.,* 2018).

Alzoubi T., Jordan, A. in the work "Firms' Life Cycle Stage and Cash Holding Decisions" (2019), analyze the process of change in the amount of monetary funds of a company depending on the company's life cycle stage and size. The study was conducted on the example of 141 non-financial companies listed on the Amman Stock Exchange (Alzoubi and Jordan, 2019).

Vera Intanie Dewi, Catharina Tan LianSoei, Felisca Oriana Surjoko in the article "The Impact of Macroeconomic Factors on Firms' Profitability (Evidence From Fast Moving Consumer Good Firms Listed on Indonesian Stock Exchange)" (2019), examine the impact of global economic crises on the level of enterprise profitability. As macroeconomic indicators characterizing the state of the economy and affecting the profitability of enterprises, the authors used the inflation rate, the unemployment rate, the dynamics of the gross domestic product and the exchange rate. The studies were conducted on the example of firms registered on the Indonesian Stock Exchange (IDX) during 1998–2016 (Vera Intanie Dewi *et al.,* 2019).

In terms of the formation of investment potential of an enterprise through external sources of finance, the work of Berg, G. and Kirschenmann, K. "Funding Versus Real Economy Shock: The Impact of the 2007–09 Crisis on Small Firms' Credit Availability" (2015) is of particular interest. In this article, the authors examine the credit resources mobilization problems at small and medium-sized enterprises in the post-crisis period (Berg *et al.,* 2015).

As part of the research of macroeconomic factors which affect on the investment potential of Polish enterprises, the works of academic economists on the analysis of the external conditions of business development in the post-socialist countries of Europe and the search for effective instruments of state investment policy in the EU countries are also of interest. Among the most significant works in this area are the following: Chepurenko, A. "Entrepreneurial Activity in Post-Socialist Countries: Methodology and Research Limitations" (Chepurenko, 2017), Orlova N. "Comparative analysis of some EU and EU associated countries to identify the phenomenon of business development in post-socialist countries" (Ivashchenko and Orlova, 2017) and "The European Union effective investment policy formation based on cluster analysis" (Orlova and Marukhlenko, 2018), Ramadani, V. "Product innovation and firm performance in transition economies: A multi-stage estimation approach" (Ramadani *et al.,* 2018), Szerb, L. "Entrepreneurship and policy: The national system of entrepreneurship in the European Union and in its member countries" (Szerb *et al.,* 2013), "REDI: The regional entrepreneurship and development index – Measuring regional entrepreneurship" (Szerb *et al.,* 2014), "The development of entrepreneurship in the European transition countries: Is transition complete?" (Szerb and Trumbull, 2016), "Multidimensional, Comparative Analysis of the Regional Entrepreneurship Performance in the Central and Eastern

European EU Member Countries" (Szerb *et al.,* 2017), Sauka, A., Chepurenko, A. "Entrepreneurship in Transition Economies: Diversity, Trends, and Perspectives" (Sauka and Chepurenko, 2017).

The above works investigate various aspects of formation of the investment potential of an enterprise and study the factors influencing this process. However, there is no systematization of the aggregate of macroeconomic factors affecting the investment potential of an enterprise, and no mechanisms have been proposed for managing the investment processes at an enterprise that would take into account the influence of the external economic environment. In this regard, the work concerned with the development of a model for optimizing the process of formation of the investment potential of an enterprise based on the analysis of macroeconomic factors of management, is relevant and timely.

3. Research Methodology

To achieve the objective of the study, an analysis of selected macroeconomic factors affecting the investment potential of Polish enterprises was carried out.

The research methodology is based on the use of the following methods: a descriptive statistics method for describing the dynamics of macroeconomic factors affecting the investment potential of an enterprise; the method of grouping statistical data to form groups of analyzed indicators; the method of correlation analysis to assess the dependencies between the analyzed indicators, as well as the regression analysis method to build a model of optimization of the investment potential formation process for an enterprise and ranking the macroeconomic factors of management affecting this process. In the course of the study, it was decided to form four groups of macroeconomic indicators, which, hypothetically, should have a close direct and inverse correlation with the investment potential formation process at Polish enterprises.

The first group includes indicators characterizing the overall development and efficiency of the Polish economy, the second – indicators characterizing inflationary processes, the third – indicators characterizing the dynamics of changes in the volumes of foreign and domestic trade of Poland, and the fourth group is data that allow assessing the level of public debt and the state budget deficit of Poland. The groups of indicators formed in this way make it possible to cover the main macroeconomic factors influencing the investment potential formation process at Polish enterprises. The stepwise research procedure is presented in Figure 1.

Confirming the hypothesis about the influence of selected macroeconomic factors on the investment potential of an enterprise based on correlation analysis and subsequent ranking of these indicators based on regression analysis will allow enterprises: to forecast general trends of the investment climate in the national economy, to assess the intensity of the investment processes at Polish enterprises,

and on this basis to develop a scientific rationale for their investment opportunities (opportunities to form the investment potential of an enterprise), as well as to adjust their investment strategy depending on the state of the macroenvironment.

Figure 1. *Diagram of the research methodology for macroeconomic factors affecting the investment potential of an enterprise*
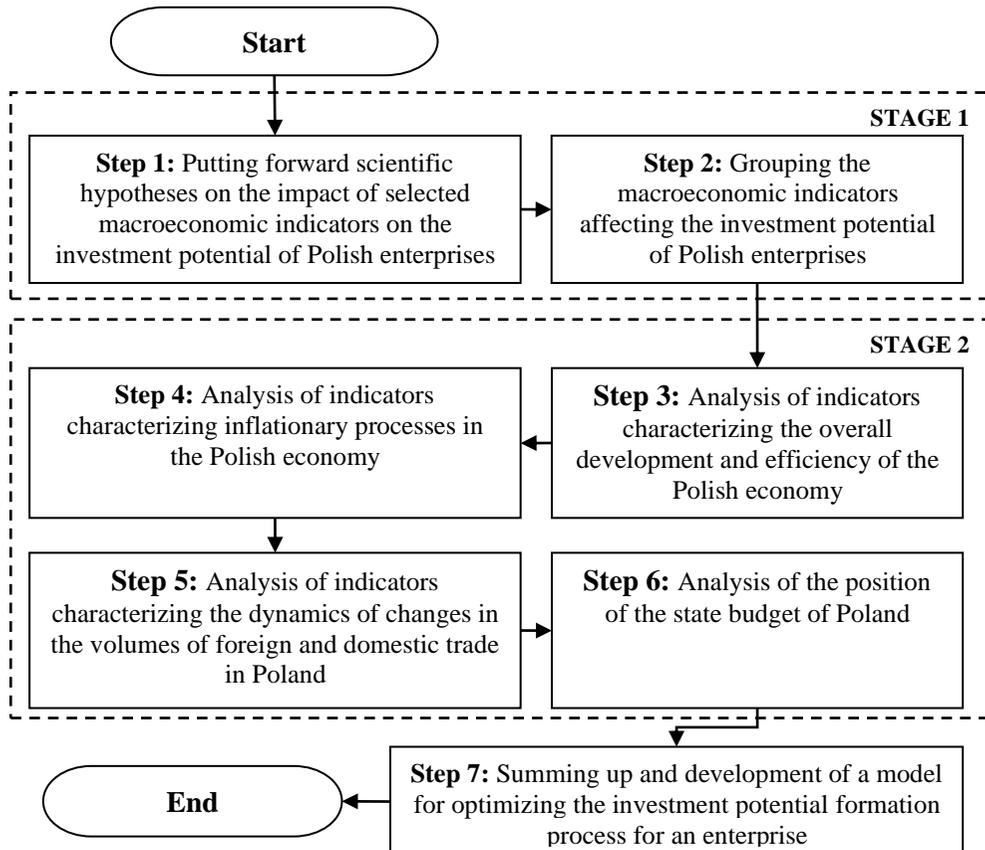
Source: *Developed by the authors.*

4. Analysis of the Selected Macroeconomic Factors Affecting the Investment Potential of Polish Enterprises

Let us study the macroeconomic factors affecting the investment potential of Polish enterprises.The first group of analyzed indicators (group A) is the 32 selected indicators characterizing the overall development and efficiency of the Polish national economy, namely:

➢ dynamics of changes in real GDP (chain growth/reduction rates) (A1, Figure 2);

> ➢ chain rates of changes in GDP per inhabitant by purchasing power parity (PPP), where EC28 = 100 (A2, Figure 2);
> ➢ dynamics of changes in the gross value added in various sectors of the national economy of Poland (A3-A7.12, Table 3);
> ➢ the formed demand and real consumption in the Polish economy (A8-A10, Figure 4 and Figure 5);
> ➢ dynamics of investments in non-current and current assets at Polish enterprises (A11, A11.1 and A11.2, Figure 6);
> ➢ the share of gross expenditure on non-current assets in GDP with distinguishing the privately-owned enterprises and state-owned enterprises (A12-A14, Figure 7).

The need to analyze the dynamics of the above indicators in this study is caused by the following macroeconomic patterns:

1) investment is a prerequisite for economic growth, which is reflected in the increase in real GDP; there is also a back link: GDP growth determines the availability of investment resources for the development of individual business entities and the national economy as a whole;
2) the positive dynamics of changes in the gross value added in various sectors of the national economy indicates an increase in the efficiency of their functioning, which in turn causes an increase in the investment potential of enterprises through the accumulation of their own investment resources;
3) GDP growth causes an increase in real income of enterprises and the population, which forms effective demand and growth in real consumption, which means an increase in the income and investment potential of enterprises;
4) the course of investment processes at enterprises should be accompanied by an increase in the value of current and non-current assets, which in turn is the material basis for increasing production volumes and enterprise income, and hence increasing the investment potential of enterprises.

Analysis of GDP dynamics from 2005 to 2017 shows that the Polish economy is experiencing a stable economic growth (Figure 2). The highest rates of GDP growth were in 2007 – 7.0%, the lowest – 1.4% in 2013. The average annual GDP growth rate in the analyzed period was 3.9%. The graph also shows the impact of the international financial crisis of 2008: the real GDP growth rates in 2008 decreased by 2.8 percentage points compared to 2007, and in 2009 the decline in growth rates was already 4.2 percentage points compared to 2007. The consequences of the financial crisis 2008 were bit until 2013 inclusive. After it the situation began to improve. At the end of the analyzed period (in 2017), the annual growth rate of real GDP amounted to 4.8%. It should be noted that according to the developed regression model, a further increase in the growth rate of the Polish economy is predicted for the period of 2018–2019.

Figure 2. *Chain growth rates of real GDP (A1) (candlestick chart, right axis), %
and GDP by PPP per 1 inhabitant, where EC28 = 100 (A2) (area chart, left axis)*
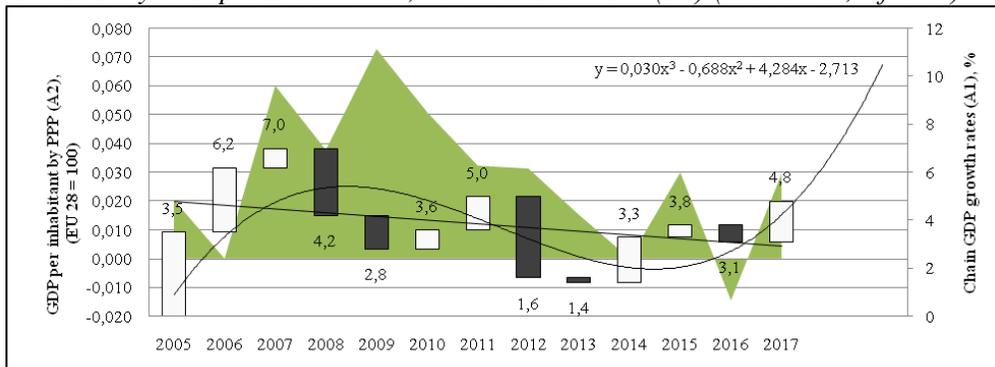
Source: *calculated and compiled by the authors based on data provided by Central
Statistical Office of Poland (Macroeconomic Data Bank).*

An additional indicator characterizing the general state of the Polish economy is the
GDP growth rate by purchasing power parity per 1 inhabitant, where EC28 = 100
(A2) (Figure 2). The analysis of the dynamics of this indicator makes it apparent that
efficiency and competitiveness of the Polish economy is constantly improving
compared to other countries of the European Union (throughout the analyzed period,
with the exception of 2016, the indicator values are above 0). Such a situation
should positively influence the level of investment potential of Polish enterprises.

Next, in order to identify trends in the sectoral development of the Polish economy,
we analyze the dynamics of real gross value added in the following sectors: industry
(A3), construction (A4), agriculture (A5), production (A6.1-A6.3) and non-
production (A7.1-A7.12) infrastructure. Analysis of the statistical data presented in
Figure 3 suggests the following conclusions.

Figure 3. *The dynamics of changes in real gross value added by sectors of the
Polish economy in 2005–2017, as well as the trend line for 2018–2019,
(chain growth rates in%)*

Industry (A3)	Construction (A4)
Agriculture, forestry and fishery (A5)	Transport and warehousing (A6.1)
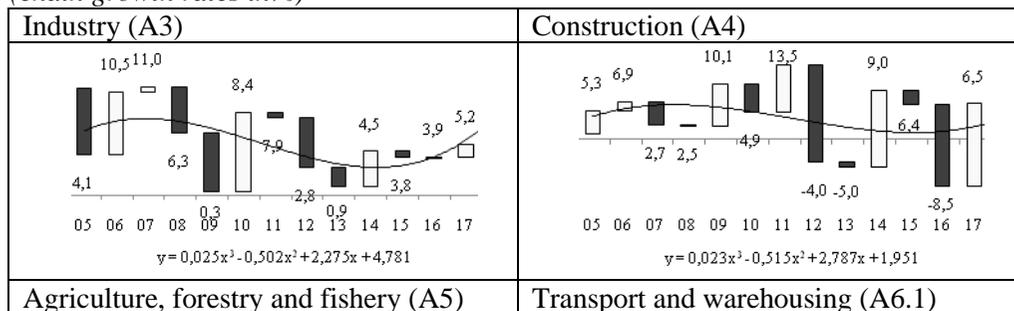
$y = 0{,}044x^3 - 0{,}911x^2 + 5{,}339x - 8{,}042$	$y = -0{,}033x^3 + 0{,}807x^2 - 5{,}729x + 13{,}71$
Water supply, sewage and waste management (A6.2)	Production and delivery of electricity, gas, steam and hot water (A6.3)
$y = -0{,}008x^3 + 0{,}207x^2 - 1{,}540x + 5{,}745$	$y = 0{,}074x^3 - 1{,}696x^2 + 10{,}76x - 13{,}86$
Professional and scientific and technical activities (A7.1)	Trade, repair of motor vehicles (A7.2)
$y = 0{,}011x^3 - 0{,}107x^2 - 0{,}628x + 9{,}169$	$y = 0{,}036x^3 - 0{,}687x^2 + 3{,}178x + 1{,}253$
Hotel and catering business (A7.3)	Information and communication (A7.4)
$y = 0{,}001x^3 + 0{,}133x^2 - 1{,}891x + 8{,}695$	$y = 0{,}025x^3 - 0{,}565x^2 + 4{,}205x - 3{,}725$
Financial and insurance activities (A7.5)	Servicing the real estate market (A7.6)
$y = -0{,}064x^3 + 1{,}451x^2 - 9{,}409x + 21{,}11$	$y = -0{,}001x^3 + 0{,}020x^2 - 0{,}043x + 1{,}822$
Administration (A7.7)	Education (A7.8)
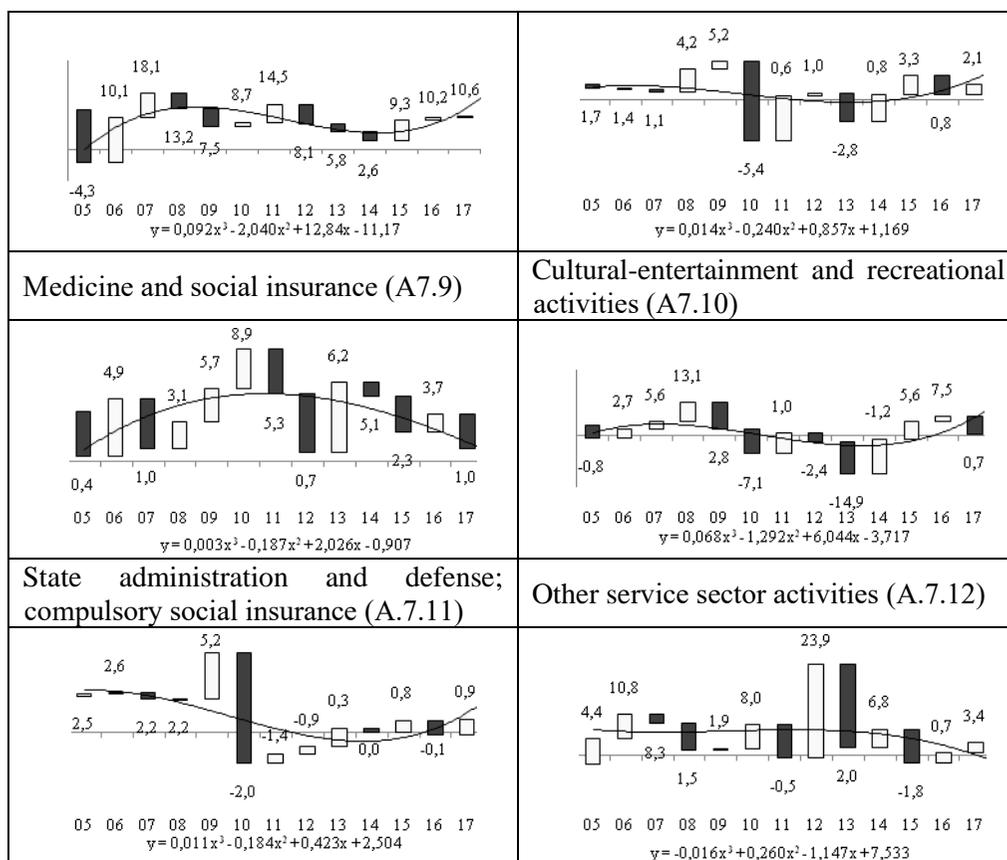
$y = 0,092x^3 - 2,040x^2 + 12,84x - 11,17$	$y = 0,014x^3 - 0,240x^2 + 0,857x + 1,169$
Medicine and social insurance (A7.9)	Cultural-entertainment and recreational activities (A7.10)
$y = 0,003x^3 - 0,187x^2 + 2,026x - 0,907$	$y = 0,068x^3 - 1,292x^2 + 6,044x - 3,717$
State administration and defense; compulsory social insurance (A.7.11)	Other service sector activities (A.7.12)
$y = 0,011x^3 - 0,184x^2 + 0,423x + 2,504$	$y = -0,016x^3 + 0,260x^2 - 1,147x + 7,533$

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

Among the five specified sectors, the most dynamically developing sectors of the national economy of Poland in 2005–2017 were: industry (A3) – average annual growth rates 5.4%, non-production infrastructure (A7) – 4.0%, and construction (A4) – 3.9%. The sectors referred to the production infrastructure (A6) rank fourth in terms of development rates, with average annual growth rate of 2.8%. Agriculture (A5) with the average growth rate of the gross value added 0.1% per year has been the developing least intensively.

The industry showed a constant growth in gross value added in 2005–2017, and an uptrend is predicted for 2018–2019. (Figure 3, A3). The situation in the construction looks less stable in 2005–2017, however, after the collapse of 2016, the trend is upward, this sector has been intensively developing since 2017 (Figure 3, A4). Also, a fairly stable growth is observed in the sectors of the production infrastructure (Fig. 3. A6.1-A6.3.). The highest average annual growth rates are observed in transport (A6.1) – 3.4%, followed by water supply (A6.2) – 2.7% and energy industry (A6.3) – 2.2%. However, the uptrend for 2018-2019 is predicted only for the energy industry.

The situation in the industries referred to non-production infrastructure (Figure 3. A7.1-A7.10), looks rather non-uniform. The most stable situation with a fairly high development rate is observed in such sectors as administration (Figure 3. A7.7) – the average annual growth rate of value added in 2005–2017 accounted for 8.8%, information and communication (Figure 3. A 7.4) – 6.0%, as well as the hotel and catering business (Figure 3. A 7.3) – 4.6%.

A positive trend emerges for these sectors in 2018–2019 as well. The sector of scientific and technical activities is developing quite dynamically with a high average growth rate of the added value (5.2% per year) (Figure 3. A 7.1). The least stability is observed in the financial sector (Figure 3. A7.5), though this sector shows a rather high average annual growth rate of the value added – 5.7%. This situation can be explained by the very specifics of financial and insurance activities.

The situation in agriculture (Figure 3. A5) is rather unstable, a slight increase in the value added is replaced by a significant decrease almost every year during the entire analyzed period (2005–2017). A positive trend develops for 2018–2019 – real gross value added is expected to increase.

Thus, the results of the above analysis afford the conclusion that the overall situation in various sectors of the national economy of Poland contributes to the formation of investment potential at enterprises. With that, such sectors as "Administration" (A 7.7), "Information and communication" (A7.4), "Financial and insurance activities" (A 7.5), "Industry" (A3), "Professional and scientific and technical activities" (A7.1) are generators of the development of the Polish economy.

Of the above sectors of economy, the industrial sector is especially noteworthy. This is due to the fact that the structure of the industrial sector determines the directions, prospects and rates of development of the entire system of the national economy and, accordingly, specific enterprises, as the links building this system. While investigating the structure of industry, one should pay attention, first of all, to the development dynamics in the processing industry and extractive industry. The main development pathway of the national economy depends on the development dynamics of these particular sectors, specifically, whether the country's economy will be resource-based or high-tech. Taking into account the fact that the branches of the processing industry (high-tech industries) are more profitable and cost efficient by their economic nature, their development determines a favorable investment climate in the country (since high sector profitability is the main factor attracting temporarily surplus funds). Moreover, due to a wide range of suppliers of various kinds of production resources and a wide range of consumers of manufactured products, the development of high-tech industries includes a multiplier of economic growth, first in related industries, and then in the entire system of the national economy. This in turn creates macroeconomic opportunities for the formation of the investment potential of enterprises.

Dynamics of changes in the real gross value added by industrial sectors of the Polish economy in 2005–2017, as well as the trend line for 2018–2019, indicates a stable development of the processing industry in Poland (value added in this sector is characterized by a constant annual increase, and the average annual growth rate in 2005–2017 was 7.0%). At the same time, the situation in the extractive industry is characterized by the development of negative trends: during 2005–2017, gross value added in this branch decreased almost every year, and the average annual reduction of this indicator was 2.5%; the trend line is also negative for 2018–2019 (Figure 4). Thus, we can conclude about the high-tech direction of the development of the Polish economy, which is an external factor that has a positive effect on the formation of the investment potential of enterprises.

Figure 4. *The dynamics of changes in the real gross added value of the industrial sectors of the Polish economy in 2005–2017, and the trend line for 2018–2019, (chain growth rates in %)*
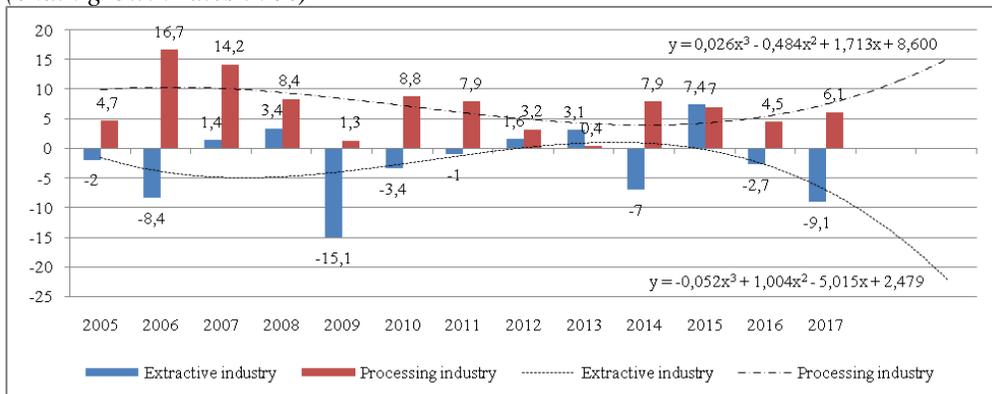
Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

The level of effective demand in the country is of particular importance in the process of forming the investment potential of enterprises (A8); it has two components: 1 – population consumption (A9) and 2 – investment of enterprises (A11). This mechanism looks like this: a high level of effective demand and real consumption of the population predetermines the build-up of production and sales of products, which in turn is a source of increase in enterprises' own investment resources.

The analysis of demand and consumption throughout 2005–2017 evidences their constantly increasing level (a slight drop in demand is observed only in 2009 (0.2%), 2012 (0.5%) and 2013 (0.6%), but this can be explained by the consequences of the global financial and economic crisis of 2008). These indicators have an uptrend for 2018–2019, which indicates the creation of a favorable macroeconomic environment for the investment development of Polish enterprises (Figure 5).

Figure 5. *Chain growth rates of demand (A8) and consumption (A9) in the Polish economy in 2005–2017 (%), and the demand/consumption trend line (A10) for 2018–2019*

	05	06	07	08	09	10	11	12	13	14	15	16	17
Demand (A8)	2,4	7,2	9,3	5,3	-0,2	4,2	4,2	-0,5	-0,6	4,8	3,3	2,3	4,9
Consumption (A9)	2,1	4,9	5,0	6,2	3,6	2,8	2,0	0,5	0,8	2,8	2,8	3,5	4,5
Demand/consumption ratio (A10)	1,1	1,5	1,9	0,9	-0,1	1,5	2,1	-1,0	-0,7	1,7	1,2	0,7	1,1

Trend line equation: $y = 0,003x^3 - 0,051x^2 + 0,097x + 1,328$

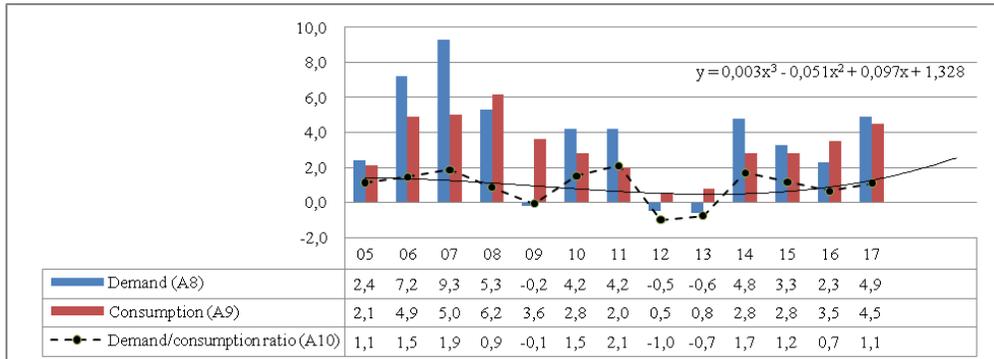**Source:** *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

For a more detailed analysis of this macroeconomic factor affecting the investment potential of Polish enterprises, we first examine the components of population consumption (A9) (Figure 6), and then the investments of enterprises (A11) (Figure 7).

Consumption (A9) is divided into two components: consumption in the household sector (A9.1) and consumption in the public sector (A.9.2). Figure 6 presents the chain rates of changes in the volumes of these indicators. Both indicators for have an uptrend throughout 2005–2017 (the exception is 2011–2012, in this period there is a slight drop in consumption in the public sector). Also, both indicators have an uptrend line for 2018–2019. It should be noted that the growth rates of consumption in the household sector and in the public sector differ from each other in some years (Figure 6. indicator A 9.3), but this does not significantly affect the overall positive trend. Thus, we can conclude that the Polish economy has developed a positive trend of growth in the population consumption, which also creates additional opportunities for the formation of the investment potential of enterprises.

In today's fast-paced world, investment is an essential factor in the functioning of any enterprise. Even Aristotle argued, "Who does not develop, he rolls back". This statement is particularly relevant in our time – in the period of rapidly changing technologies and global competition. The basis for the development of any enterprise is investment. The investment realized at the enterprise contribute to maintaining its competitiveness in the market and expanding its production capabilities, which, in turn, causes the growth of the company's income, and hence the growth of its investment potential.

Next, let's study the dynamics of investment of enterprises (A11). Investments realizable at an enterprise are divided into two large groups: investment in non-

current assets (A 11.1) and investment aimed at the growth of the current assets of an enterprise (A 11.2) (Figure 7).

Figure 6. *Chain growth rates of consumption in the household sector (A9.1, %) and consumption in the public sector (A.9.2, %) in 2005–2017, and their ratio (A9.3 = A9.1/A9.2)*
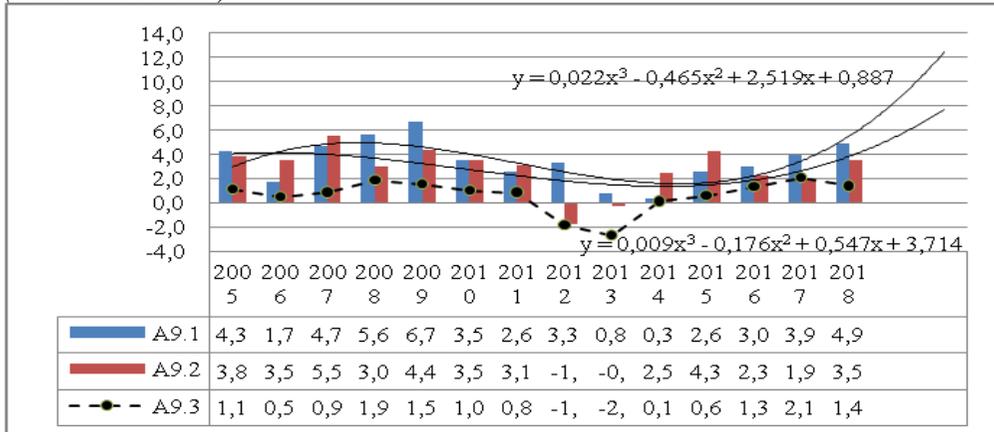

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
A9.1	4,3	1,7	4,7	5,6	6,7	3,5	2,6	3,3	0,8	0,3	2,6	3,0	3,9	4,9
A9.2	3,8	3,5	5,5	3,0	4,4	3,5	3,1	-1,	-0,	2,5	4,3	2,3	1,9	3,5
A9.3	1,1	0,5	0,9	1,9	1,5	1,0	0,8	-1,	-2,	0,1	0,6	1,3	2,1	1,4

In chart: $y = 0,022x^3 - 0,465x^2 + 2,519x + 0,887$

$y = 0,009x^3 - 0,176x^2 + 0,547x + 3,714$

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

Analysis of the data presented in Figure 7, allows for the following conclusions: the average annual investment growth rates at enterprises (A 11) in 2005–2017 amounted to 5.3%, which indicates a high intensity of investment processes at Polish enterprises. However, it should be noted the high amplitude of fluctuations in the chain rates of investment growth by year. So, in 2006, the annual investment growth at enterprises amounted to 16.3%, in 2007 – 25.3, and only 2.7% in 2008, and a decrease in growth rates by 12.6% in 2009. Then, in 2010–2011, there is an increase in this indicator, and in 2010–2013 – fall again. This situation can be explained by the consequences of the global financial and economic crisis of 2008. Since 2014, there has been an increase in investment activity of enterprises (with the exception of 2016), with an uptrend for 2018–2019 (positive trend).

When considering the structure of investment processes at Polish enterprises (Figure 7, indicators A11.1 and A11.2), it can be concluded that the growth of non-current assets is much slower than the growth of the current assets of enterprises. So, the average annual growth rate of investment in current assets amounted to 125.9% in 2005–2017, and only 5.1% in non-current assets. Since 2017, the situation has changed: the rate of investment in current assets is decreasing and growing in non-current assets. The trend of these indicators for 2018–2019 looks similar to the situation in 2017. Thus, the dynamics of indicators demonstrates that Polish enterprises had being intensively increasing the production volumes since 2005 at the available production capacities, which allowed them to form a certain investment potential by 2017–2018 due to an increase in operating income.

Figure 7. *The dynamics of changes in the volume of investment in current and non-current assets of Polish enterprises for the period of 2005–2017, and the trend line for 2018–2019, (chain growth rates, %)*
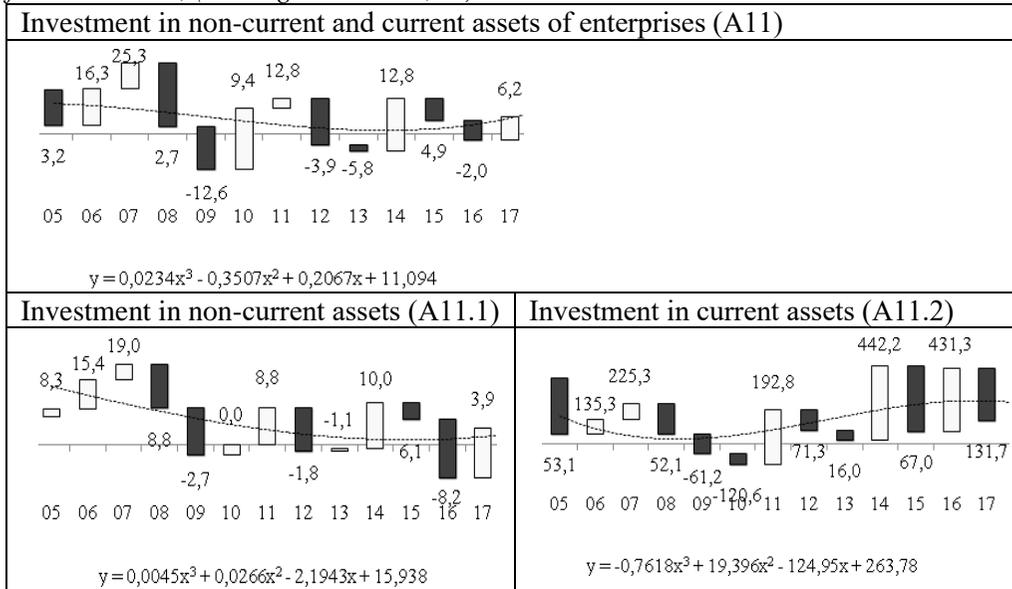
Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

An important indicator characterizing the material basis for the development of the national economy is the share of investment in non-current assets in a country's GDP. Figure 8 shows the dynamics of this indicator in Poland in 2005–2017, as well as a forecast for 2018–2019, separately for privately-owned enterprises (A12) and state-owned enterprises (A13). The analysis of these indicators for 2005–2017 shows the following:

> ➤ the share of investment in non-current assets in the country's GDP in the privately-owned enterprises throughout the entire period is quite high (13.8% on the average) and does not significantly fluctuates by year. The indicator has an uptrend;
> ➤ the share of investment in non-current assets in the country's GDP in the state-owned enterprises is 2.3 times lower on average than in privately-owned enterprises (indicator A14) and ranges from 8.0% in 2011 to 3.4% in 2017. The indicator has a downtrend for 2018–2019.

This situation indicates a sufficiently high material potential for the development of the Polish economy. The locomotives of this development are the privately-owned enterprises. For its part, the state stimulates this development by supporting investment processes in the state-owned enterprises.

Figure 8. *The share of gross expenditure on non-current assets in GDP of privately-owned business entities (A12) and separately – of the state-owned business entities (A13) in 2005–2017, and the trend line for 2018–2019 (the dotted line represents the A12/A13 ratio (A14))*

The chart contains trend line equations:

$$y = 0{,}016x^3 - 0{,}312x^2 + 1{,}508x + 12{,}72$$

$$y = -0{,}001x^3 - 0{,}041x^2 + 0{,}772x + 4{,}722$$

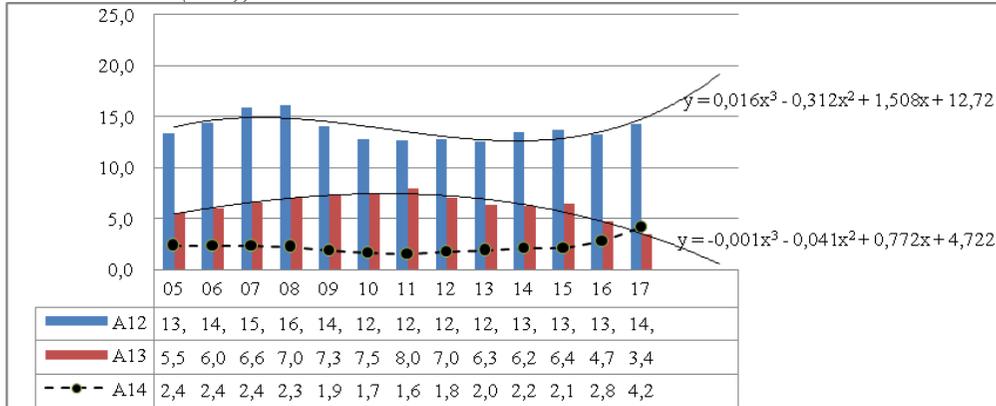|	05	06	07	08	09	10	11	12	13	14	15	16	17
A12	13,	14,	15,	16,	14,	12,	12,	12,	12,	13,	13,	13,	14,
A13	5,5	6,0	6,6	7,0	7,3	7,5	8,0	7,0	6,3	6,2	6,4	4,7	3,4
A14	2,4	2,4	2,4	2,3	1,9	1,7	1,6	1,8	2,0	2,2	2,1	2,8	4,2

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

The second group of indicators (group B) is represented by six indicators characterizing inflationary processes in the Polish economy – these are the price index for consumer goods and services (B1), price index for industrial products (B2), price index for construction and installation products (B3), and price indices for agricultural products (B4, B5, B6) (Figure 9).

Since the inflation rate determines the financial stability in the system of national economy and the overall investment climate in the country, the accounting of this indicator is extremely important in assessing factors affecting the prospects for the formation of the investment potential of enterprises. According to economic theory, in order to ensure the effective functioning of the national economy, the Central Bank must prevent both high level of inflation processes and deflation. High rates of inflation depreciate cash, reduce the real income of enterprises and households, and thereby inhibit investment processes. Negative inflation rates (deflation) incline households and enterprises to carry over their consumer and investment decisions to future periods, as this can reduce their costs; this also adversely affects the entire national economic system and the process of building the investment potential of a particular enterprise.

The obtained results of analysis of the dynamics of price indices in the Polish economy allow us to conclude that the downtrend of inflationary processes prevailed during 2005–2016. It should be noted that deflationary processes started to develop in 2012–2013 in all sectors of the Polish economy, which is an inhibiting factor in the development of the national economy. In 2017, there is a moderate increase in prices for consumer and industrial goods (in the range from 0.6 to 2.9%) and quite significant for agricultural products (sector average 11.6%).

Figure 9. *The dynamics of changes in price indices in the Polish economy in 2005–2017, and the trend line for 2018–2019, %*

Code	Indicator	The dynamics of factor values in 2005–2017 and forecast for 2018–2019
B1	Price index for consumer goods and devices	$y = 0{,}019x^3 - 0{,}462x^2 + 2{,}921x - 1{,}733$
B2	Price index for industrial products	$y = 0{,}033x^3 - 0{,}760x^2 + 4{,}737x - 4{,}969$
B3	Price index for construction and installation products	$y = 0{,}033x^3 - 0{,}682x^2 + 3{,}425x - 1{,}276$
B4	Price index for agricultural products	$y = 0{,}095x^3 - 2{,}054x^2 + 12{,}20x - 13{,}87$
B5	Price index for the products of vegetable origin	$y = 0{,}103x^3 - 2{,}278x^2 + 13{,}54x - 14{,}05$
B6	Price index for the products of animal origin	$y = 0{,}088x^3 - 1{,}870x^2 + 11{,}22x - 13{,}84$

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

An uptrend is forecasted for 2018–2019 as well. Provided that inflationary processes are regulated by the Central Bank (preventing the inflation flywheel from spinning up), this trend can positively affect the process of accumulating the investment potential of enterprises.

The third group of analyzed factors characterizes the dynamics of changes in the volume of foreign (C) and domestic (D) trade. In total, the third group included 8 indicators. When analyzing the dynamics of foreign trade, the following indicators were taken into account: the dynamics of the volumes of export (C1) and import (C2) operations; change in the volume of export-import operations in relation to GDP (C3) and reserves of the Polish Central Bank (C4); balance of export-import operations (C5) (Figure 10).

Figure 10. *The dynamics of export and import of goods in the Polish economy (chain growth rates, %), and the trend line for the trade balance indicator for 2018–2019*
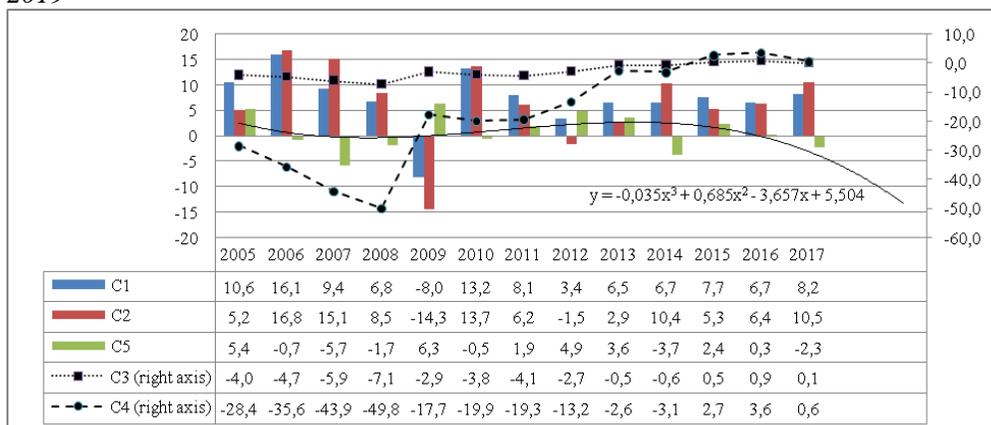
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
C1	10,6	16,1	9,4	6,8	-8,0	13,2	8,1	3,4	6,5	6,7	7,7	6,7	8,2
C2	5,2	16,8	15,1	8,5	-14,3	13,7	6,2	-1,5	2,9	10,4	5,3	6,4	10,5
C5	5,4	-0,7	-5,7	-1,7	6,3	-0,5	1,9	4,9	3,6	-3,7	2,4	0,3	-2,3
C3 (right axis)	-4,0	-4,7	-5,9	-7,1	-2,9	-3,8	-4,1	-2,7	-0,5	-0,6	0,5	0,9	0,1
C4 (right axis)	-28,4	-35,6	-43,9	-49,8	-17,7	-19,9	-19,3	-13,2	-2,6	-3,1	2,7	3,6	0,6

The trend line equation shown in the figure:

$$y = -0,035x^3 + 0,685x^2 - 3,657x + 5,504$$

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

Analysis of these indicators allows for the following conclusions. During 2005–2017, a steady increase in export and import operations is observed in the Polish economy (with the exception of 2009 in exports, 2009 and 2012 in imports). The average annual growth rates for exports (C1) during this period amounted to 7.3%, and for imports (C2) – 6.6%. The share of export-import operations in the country's GDP (C3) and reserves of the Polish Central Bank (C4) also has a positive trend. Such dynamics indicates a high degree of openness of the Polish economy, its integration into the world economic system, which is a factor contributing to the stable economic development of the national economic system, and has a positive effect on the investment potential of enterprises. It should be noted that 6 out of 13 analyzed periods have a positive balance on export-import operations (C5), which causes an increase in the profitability of the national economic system and creates

additional opportunities for the growth of the investment potential of Polish enterprises.

Next, we analyze the dynamics of changes in the volume of domestic trade in Poland (D1) with a breakdown into consumer (D2) and industrial goods (D3) (Figure 11).

Figure 11. *The dynamics of domestic trade in Poland: sales volume in the Polish economy (D1), separately for consumer (D2) and industrial goods (D3) in 2005–2017, and the trend line for the indicator D1 for 2018–2019, (chain growth rates %)*

$y = 0.0308x^3 - 0.5824x^2 + 3.027x - 0.7224$

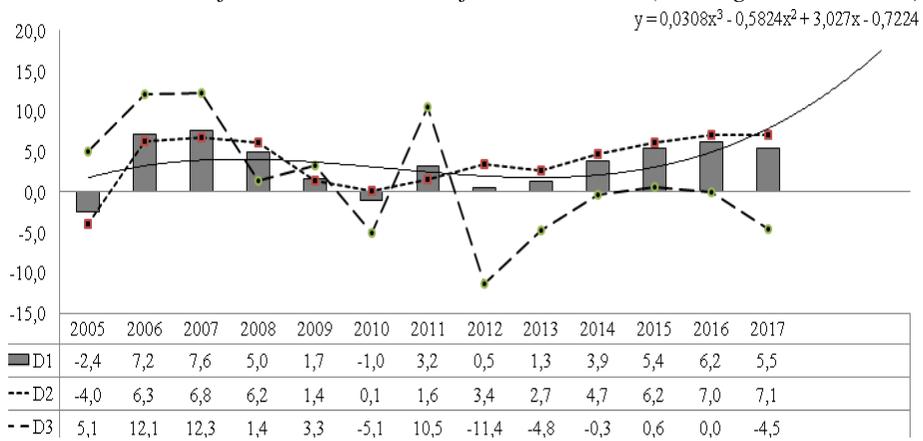|	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
D1	-2,4	7,2	7,6	5,0	1,7	-1,0	3,2	0,5	1,3	3,9	5,4	6,2	5,5
D2	-4,0	6,3	6,8	6,2	1,4	0,1	1,6	3,4	2,7	4,7	6,2	7,0	7,1
D3	5,1	12,1	12,3	1,4	3,3	-5,1	10,5	-11,4	-4,8	-0,3	0,6	0,0	-4,5

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

The data presented in Figure 11 indicate a rather high dynamism in the development of domestic trade in Poland. During the entire analyzed period (with the exception of 2005 and 2010), a growth in the volumes of Poland's domestic trade is observed. The average annual growth rate in 2005–2017 amounted to 3.4% in total for domestic trade (D1), 3.8% for consumer goods (D2) and 1.5% for industrial goods (D3). A further increase in the volume of Polish domestic trade is forecasted for 2018-2019, which should have a favorable effect on the formation of the internal resources of enterprises.

The fourth group of factors of the development of Polish economy (E) consists of 5 indicators characterizing the position of the state budget of Poland.

According to statistics, the public debt (E1) of Poland throughout 2005–2017 was at the level of 50% of the country's GDP (Figure 12). At the same time, there has been a positive downward trend since 2014 in the share of public debt in the country's GDP. This situation contributes to the stabilization of the financial situation in the country, which is an essential condition for the development of investment processes, both at the macro and at the micro level.
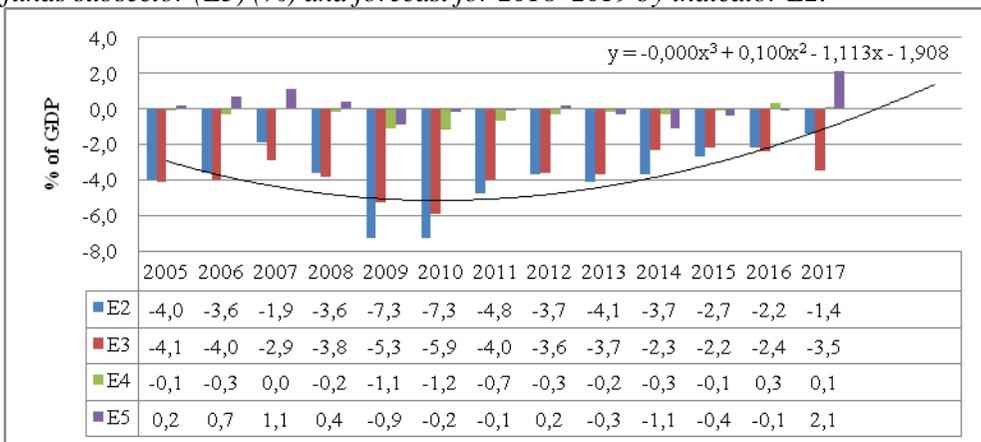
The reason for this amount of public debt in Poland is the budget deficit. According to statistical data, a budget deficit of government institutions and self-government bodies is observed almost throughout the entire analyzed period (E2-E4) (Figure 13). Until 2008 inclusive, the only surplus subsector was the social insurance funds subsector. The maximum value of the budget deficit at the level of -7.3% of GDP was observed in 2009 and 2010, the minimum value of the deficit at the level of -1.4% of GDP was recorded in 2017. The data of the government subsector at the local level and social insurance fund are characterized by the least volatility.

Figure 12. *The share of public debt of government institutions and self-government bodies (E1) in 2005–2017, and the trend line for 2018–2019 (% of GDP)*
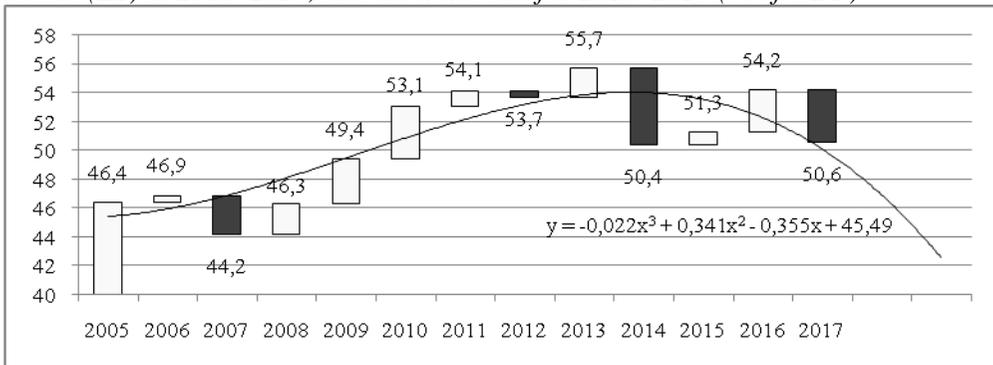
Source: Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).

Figure 13. *The share of budget deficit/surplus in GDP in 2005–2017: the sectors of government institutions and self-government bodies (E2); subsector of government institutions at the central level (E3) and at the local level (E4); social insurance funds subsector (E5) (%) and forecast for 2018–2019 by indicator E2.*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
E2	-4,0	-3,6	-1,9	-3,6	-7,3	-7,3	-4,8	-3,7	-4,1	-3,7	-2,7	-2,2	-1,4
E3	-4,1	-4,0	-2,9	-3,8	-5,3	-5,9	-4,0	-3,6	-3,7	-2,3	-2,2	-2,4	-3,5
E4	-0,1	-0,3	0,0	-0,2	-1,1	-1,2	-0,7	-0,3	-0,2	-0,3	-0,1	0,3	0,1
E5	0,2	0,7	1,1	0,4	-0,9	-0,2	-0,1	0,2	-0,3	-1,1	-0,4	-0,1	2,1

Source: Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).

It should be emphasized that a positive trend in reducing the share of the budget deficit in the country's GDP is observed in the analyzed period from 2009 up to 2017, and the same trend is forecasted for 2018–2019. Thus, the situation in the budget sphere of Poland is fairly stable, which has a positive effect on the development of the national economy, and therefore on the investment potential of Polish enterprises.

5. Optimization Model of the Investment Potential Formation Process of an Enterprise
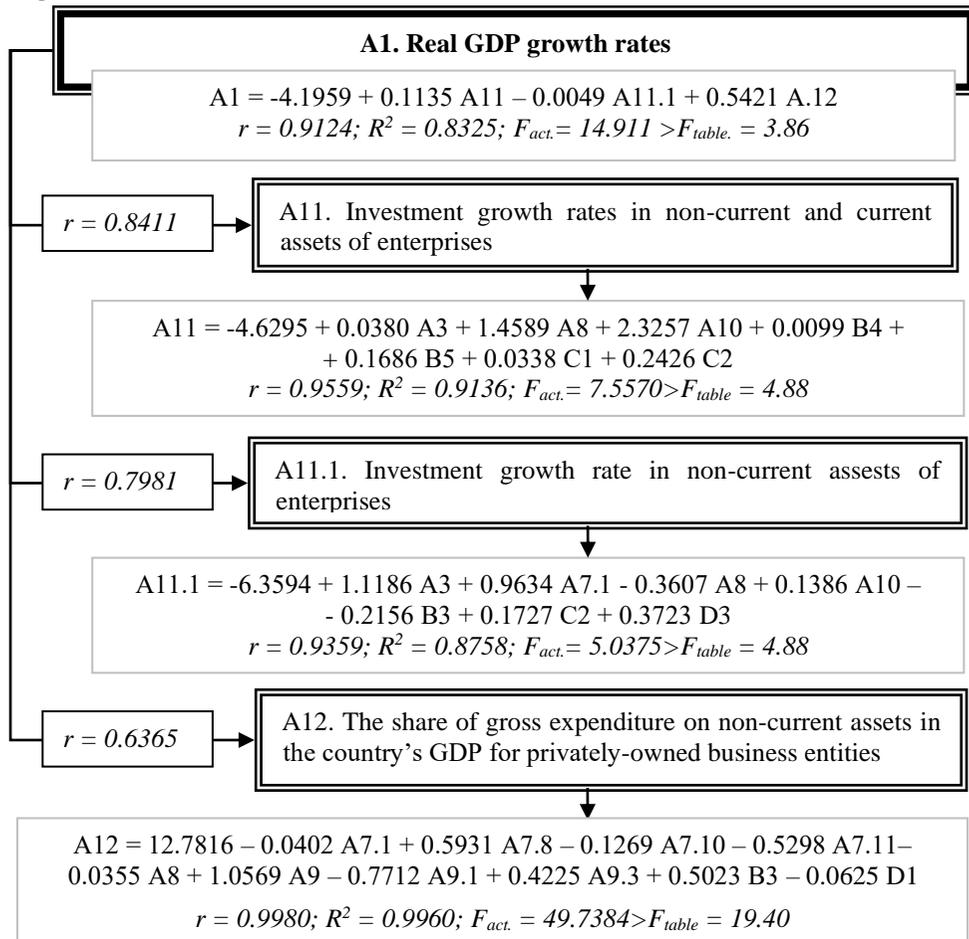
Basing on the results of the study, the authors developed an economic-mathematical model for optimizing the investment potential formation process of an enterprise (Figure 11). The proposed model is based on the results of a search for a correlation ratio between all the macroeconomic indicators analyzed above and the postulate: "The real GDP growth rates in the country are a decisive factor in the investment potential formation process of enterprises". The developed model reflects the relationship between growth rates of real GDP (A1), investment growth rates in non-current and current assets of enterprises (A11) (correlation coefficient r = 0.8411), investment growth rates in non-current assets of enterprises (A11.1) (correlation coefficient r = 0.7981) and the share of gross expenditure on non-current assets in the country's GDP for privately-owned business entities (A12) (correlation coefficient r = 0.6365). The model is characterized by a high degree of reliability, since all the necessary criteria are met: the multiple correlation coefficient for the presented equation (A1) is 0.9124, the coefficient of determination is 0.8325, and F-test is 14.911 with a tabular value of 3.86 (Figure 11, equation A1).

This model also describes the relationship between the selected indicators (A11, A11.1 and A12) and the factors affecting these indicators (Figure 11, equation A11, equation A11.1 and equation A12).

Thus, indicator A11 "Investment growth rates in non-current and current assets of enterprises" has a high level of correlation with the industrial development rates (A3), developed demand in the socio-economic system (A8), the demand to consumption ratio (A10), price index for agricultural products in general (B4) and products of vegetable origin (B5), as well as an increase/decrease in the volume of exports (C1) and imports (C2) of goods. The correlation coefficients between these indicators are presented in Table 1. It should be noted that Table 1 shows all the significant correlation coefficients of the indicator A11 with other variables being analyzed at a confidence level above 0.05, and such indicators as the price index for construction and installation products (B3) and chain growth/decrease rates of retail sales of industrial goods (D3) were removed from the final model due to optimization of the model by F-test.

Table 2 presents the correlation ratio of indicators affecting the factor A11.1 "Investment growth rates in non-current assets of enterprises".

Figure 14. *Optimization model of the investment potential formation process of an enterprise*

> **A1. Real GDP growth rates**
>
> A1 = -4.1959 + 0.1135 A11 – 0.0049 A11.1 + 0.5421 A.12
> $r = 0.9124; R^2 = 0.8325; F_{act.} = 14.911 > F_{table.} = 3.86$

$r = 0.8411$ → **A11. Investment growth rates in non-current and current assets of enterprises**

> A11 = -4.6295 + 0.0380 A3 + 1.4589 A8 + 2.3257 A10 + 0.0099 B4 +
> + 0.1686 B5 + 0.0338 C1 + 0.2426 C2
> $r = 0.9559; R^2 = 0.9136; F_{act.} = 7.5570 > F_{table} = 4.88$

$r = 0.7981$ → **A11.1. Investment growth rate in non-current assests of enterprises**

> A11.1 = -6.3594 + 1.1186 A3 + 0.9634 A7.1 - 0.3607 A8 + 0.1386 A10 –
> - 0.2156 B3 + 0.1727 C2 + 0.3723 D3
> $r = 0.9359; R^2 = 0.8758; F_{act.} = 5.0375 > F_{table} = 4.88$

$r = 0.6365$ → **A12. The share of gross expenditure on non-current assets in the country's GDP for privately-owned business entities**

> A12 = 12.7816 – 0.0402 A7.1 + 0.5931 A7.8 – 0.1269 A7.10 – 0.5298 A7.11–
> 0.0355 A8 + 1.0569 A9 – 0.7712 A9.1 + 0.4225 A9.3 + 0.5023 B3 – 0.0625 D1
> $r = 0.9980; R^2 = 0.9960; F_{act.} = 49.7384 > F_{table} = 19.40$

Source: *Developed by the authors.*

Table 1. *The table of correlation dependence of the indicators affecting the factor A11*

	A11	A3	A8	A10	B3	B4	B5	C1	C2	D3
A11	1.0000									
A3***	0.9055	1.0000								
A8***	0.9184	0.9033	1.0000							
A10***	0.8253	0.7525	0.8209	1.0000						
B3*	0.5887	0.7102	0.7474	0.3753	1.0000					
B4*	0.606	0.673	0.517	0.387	0.507	1.000				

	0.7358	0.8120	0.6348	0.5173	0.5241	0.9170	1.0000		
B5**	0.7359	0.8124	0.6344	0.5173	0.5247	0.9171	1.0000		
C1**	0.7017	0.7274	0.6101	0.5465	0.2277	0.3786	0.5632	1.0000	
C2***	0.8427	0.8232	0.8154	0.6671	0.4125	0.4636	0.6174	0.9162	1.0000
D3*	0.5868	0.5970	0.6358	0.6592	0.5910	0.2811	0.3866	0.2480	0.2961	1.0000

*(0.5529) $p < 0.05$; ** (0.6835) $p < 0.01$; *** (0.8010) $p < 0.001$*
Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

Table 2. *The table of correlation dependence of the indicators affecting the factor A11.1*

	A11.1	A3	A7.1	A8	A10	B3	C2	D3
A11.1	1.0000							
A3**	0.7230	1.0000						
A7.1*	0.5818	0.0537	1.0000					
A8***	0.8184	0.9033	0.3280	1.0000				
A10*	0.6635	0.7525	0.1124	0.8209	1.0000			
B3*	0.6834	0.7102	0.4051	0.7474	0.3753	1.0000		
C2*	0.5970	0.8232	0.0591	0.8154	0.6671	0.4125	1.0000	
D3**	0.7062	0.5970	0.2349	0.6358	0.6592	0.5910	0.2961	1.0000

*(0.5529) $p < 0.05$; ** (0.6835) $p < 0.01$; *** (0.8010) $p < 0.001$*
Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

Table 3 presents the correlation ratio of indicators affecting the factor A12 "The share of gross expenditure on non-current assets in the country's GDP for privately-owned business entities".

Table 3. *The table of correlation dependence of the indicators affecting the factor A12*

	A12	A7.1	A7.8	A7.11	A7.10	A8	A9	A9.1	A9.3	B3	D1
A12	1.0000										
A7.1*	0.6478	1.0000									
A7.8*	0.5560	0.6644	1.0000								
A7.11*	0.5971	0.5736	0.7096	1.0000							
A7.10**	0.7209	0.3972	0.7352	0.3895	1.0000						
A8*	0.6563	0.3280	0.0340	0.0650	0.4541	1.0000					

A9***	0.8924	0.4373	0,4385	0.4942	0.7328	0.7202	1.0000			
A9.1***	0.8692	0.3972	0.4666	0.3788	0.8035	0.7388	0.9649	1.0000		
A9.3*	0.5809	0.2483	0.1821	0.4417	0.4153	0.4378	0.7172	0.5933	1.0000	
B3***	0.8537	0.4051	0.2817	0.3558	0.5783	0.7474	0.7198	0.7651	0.2854	1.0000
D1*	0.6004	0.3340	0.3678	0.1832	0.5981	0.6331	0.6646	0.7178	0.4746	0.5352	1.0000

*(0.5529) p < 0.05; ** (0.6835) p < 0.01; *** (0.8010) p < 0.001

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

According to the obtained results of the correlation-regression analysis, the indicators describing the model can be ranked as follows (Table 4).

Table 4. *Ranking of macroeconomic factors affecting the investment potential of an enterprise*

Indicator code	Indicator name	Elasticity coefficient, %
Ranking of factors affecting real GDP growth rates (A1)		
A12	The share of gross expenditure on non-current assets in the country's GDP for privately-owned business entities	0.54
A11	Investment growth rates in non-current and current assets of enterprises	0.11
A11.1	Investment growth rates in non-current assets of enterprises	0.01
Ranking of factors affecting the share of gross expenditure on non-current assets in a country's GDP for privately-owned business entities (A12)		
A9	Growth rates of consumption	1.06
A9.1	Growth rates of consumption in the household sector	0.77
A7.8	Growth rates of gross value added in the education sector	0.59
A7.11	Growth rates of gross value added in the sector "Public administration and defense; compulsory social insurance"	0.53
B3	Price index for construction and installation products	0.50
A9.3	The ratio of consumption growth rates in the household sector to consumption growth rates in the public sector	0.42
A7.10	Growth rates of gross value added in the sector "Cultural-entertainment and recreational activities"	0.12
D1	Growth rates of domestic trade	0.06
A8	Growth rates of demand	0.04
A7.1	Growth rates of gross value added in the sector "Professional and scientific and technical activity"	0.04
Ranking of factors affecting the investment growth rates in non-current and current assets of enterprises (A11)		
A10	Growth rates of demand to consumption ratio	2.33
A8	Growth rates of demand	1.46
C2	Growth rates of import	0.24

B5	Price index for products of vegetable origin	0.17
A3	Growth rates of gross value added in the "Industry" sector	0.04
C1	Growth rates of export	0.03
B4	Price index for agricultural products	0.01
Ranking of factors affecting the investment growth rates in non-current assets of enterprises (A11.1)		
A3	Growth rates of gross value added in the "Industry" sector	1.16
A7.1	Growth rates of gross value added in the sector "Professional and scientific and technical activity"	0.97
A8	Growth rates of demand	0.36
D3	Growth rates of domestic trade in industrial goods	0.37
B3	Price index for construction and installation products	0.22
C2	Growth rates of import	0.17
A10	Growth rates of volumes to consumption ratio	0.14

Source: *Calculated and compiled by the authors based on data provided by Central Statistical Office of Poland (Macroeconomic Data Bank).*

6. Conclusions and Policy Implications

The results of the carried out research suggest to the following conclusions:

1. The dynamics of the selected macroeconomic indicators for 2005–2017 and their forecast for 2018–2019 indicates the sustainable development of the Polish economy, which creates favorable external economic factors for Polish enterprises and contributes to the process of formation of their investment potential. Also, the conducted studies allowed taking the economic growth in the country (the indicator "Real GDP growth rates") as the main indicator that determines the availability of the investment potential of enterprises.

2. The results of the correlation analysis allowed us to identify three factors that most affect the economic growth in the country ("The share of gross expenditure on non-current assets in the country's GDP for privately-owned business entities", "Investment growth rates in non-current and current assets of enterprises" and "Investment growth rates in non-current assets of enterprises") and on this basis to develop a model for optimizing the investment potential formation process for an enterprise.

3. Of the above indicators of the model, "The share of gross expenditures on non-current assets in the country's GDP" has the greatest impact on the formation of the investment potential of enterprises. The elasticity coefficient suggests that with increase in this indicator by 1%, the country's GDP may increase by 0.54%. This can be explained as follows: an increase in this indicator reflects an increase in the production capacity of enterprises which are the basis for expanding the production volume, increasing revenues, profits and profitability of enterprises' economic activities; this ultimately constitutes the country's GDP and the prospects for

sustainable development of the national socio-economic system including the investment potential of enterprises.

In turn, the factors that have the greatest influence on the increase in the share of investment expenditures in the country's GDP are consumption in the national economy as a whole and consumption in the household sector. The decisive factor contributing to the increase in investment in non-current and current assets of enterprises is the growth rate of gross value added in industry.

4. Thus, the model developed by the authors and the resulting rating of macroeconomic factors influencing the process of formation of investment resources can be the scientific rationale for the process of optimization and intensification of investment processes (development processes) in Polish enterprises.

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