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THE INFLUENCE OF FINANCIAL CONDITION ON INVESTMENT DECISIONS IN ENTERPRISES IN POLAND *

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Abstract: One of the many factors affecting the economic potential and development of an enterprise are investments. The investment outlays for maintaining or increasing the economic potential decide not only about the development of enterprises, but also their current functioning. While accuracy of investment decisions is very important in investment, so also are the internal conditions that are closely related to the economic condition of the company. The main purpose of the article is to identify the impact of the financial situation and the strength of this impact on investment decisions of enterprises. This has been tested on a sample of over 50 thousand Polish enterprises employing over 9 people that was collected by the CSO's public statistics in Warsaw for the period 1996-2017. The study was conducted using regression and correlation analysis for comparable periods, as well as by taking into account the delay effect, i.e. the impact of the result obtained in year t on investment decisions in year t + 1.

Keywords: investment, net profit, debt, financial situation.

1. Introduction

Enterprise development, understood as the ability to adapt to changing environmental conditions in order to survive and compete, generally means the process of formulating, choosing directions and implementing development activities. Very often these are associated with the need to make investment decisions, which are all kinds of economic outlays on the creation of new and / or reproduction of tangible and intangible economic resources of the enterprise. Therefore, they are not only the basis for development, but also through investment

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decisions of a modernization or reconstruction nature enable maintaining the current or increasing the already existing development potential of the enterprise.

The significant importance of investment decisions in shaping development directions and the way the enterprise continues to function makes these issues key in the company's operations (see Zygmunt, 2013). An expression of this significance are the correlations to the investments and technical progress of enterprises presented in the literature, or ways of measuring the economic effects of investments in the form of such relationships as: investment intensity of an increase in fixed assets, and investment intensity of an increase in employment or technical equipment. These considerations are both theoretical and empirical in nature and are very diverse, including relationships to the investment decisions and the company's financial results (Modigliani, and Merton Miller, 1958) or relationships between investment decisions and the choice of specific sources of financing (see also: Myers, and Majluf, 1984; Harris, and Raviv, 1991; Rajan, and Zingales, 1995; Shyam-Sunder, and Myers, 1999; Gajdka, 2002).

Despite the fact that in both the theory and practice of management, this is not a new issue and the relations to the investments and the financial situation of enterprises are widely known, in the opinion of the Authors of this study, the issues related to the study of determinants of investment decisions of enterprises is not only an interesting issue, but still valid. It is necessary to take into account not only the existing conditions, but also the need to think about new ones. Identifying the strength of these conditions on investment decisions will also be important in this regard. Finally, specific environmental conditions resulting from the regional area of operation will also be significant for entrepreneurial investment decisions. The main purpose of the article aims to identify the impact of the financial situation of enterprises and the strength of this impact on investment decisions of enterprises in Poland in the years 1996-2017. The study was conducted on a sample of over 50 thousand Polish entities employing over 9 people who are covered by public statistics at the Central Statistical Office in Warsaw. In turn, the research period adopted for analysis covers the years 1996-2017, which characterized by strong structural changes related to political changes, Poland's accession to the structures of the European Union and the impact of the global financial crisis of 2008. On the basis of financial data characterizing the activity of the research sample and the obtained research results, an analysis of the relationships to the selected values and financial indicators characterizing the financial condition and development potential of enterprises – and investment decisions and their scale expressed by the value of investment outlays in the analyzed period was made. The study was conducted using regression and correlation analysis for comparable periods, as well as by taking into account the delay effect, i.e. the impact of the result obtained in year t on investment decisions in year $t + 1$.

2. Determinants of enterprises investment decisions

The company's investment decisions relate to its fixed assets and relate to the assessment and selection of investment projects. According to Dziworska (2000) and Marcinek (2004), they are perceived as one of the most difficult decisions made by the company, because they:

- ✓ usually require considerable financial resources,
- ✓ cause relatively long freezes of capital and its low liquidity,
- ✓ have a relatively high risk,
- ✓ determine the level of future benefits,
- ✓ are characterized by the uniqueness of technology,
- ✓ have effects that are spread over time and usually irreversible,
- ✓ make future success or failure dependent on forecasts.

The accuracy of investment decisions has an impact on the entity's competitiveness, its market share, as well as the ability to generate and increase revenues. As a result of wrong decisions regarding the type, size and structure of investment outlays in assets, it may reduce the liquidity and flexibility of the enterprise, and in extreme cases, incur financial problems threatening bankruptcy, including loss of capital (Flis, 2008).

The decisions of enterprises in the investment sphere are reflected in cash flows from business activities in the area of investment activities. This is an expression of the significant importance of this decision area in the activities of each enterprise, because this area is particularly development-oriented. The investment outlays for maintaining or increasing the economic potential of the enterprise decide not only about the future development of economic entities, but also their current functioning, i.e. their operating activities. There are numerous relationships and interdependencies between the two spheres of economic activity (current and developmental). Investments enable the implementation of development directions of activity, which in turn shape the current activity, and the cumulative financial results of current operations create. As a consequence, the basis for further development can come in the form of the possibility of financing it from own sources. On this foundation, it can therefore be concluded that the financial situation of the enterprise should strongly determine investment decisions, and the internal conditions for the implementation of investments in the enterprises are related to its economic and financial condition, both tangible and intangible resources, management methods, innovation, and product quality and services (see also: Skowronek-Mielczarek, 2013). However, it is necessary to go further here and ask the question about how strong this interdependence is, because in the case of negative verification of this statement, it should be considered that investment decisions will be determined at a similar or much stronger level by other determinants, which should also be identified in the decision-making process in the area of investment. In the authors' opinion, this constitutes a research gap, which

they want to fill to some extent in this study, because there are no such studies in the literature on the subject or there are only a few.

In analyzing the relationships to the profitability of enterprises and the level of investment, one should additionally pay attention to some specificity of this relationship, namely the two-way interaction of these economic quantities. Thus, on the one hand, the theory of investment indicates that changes in the amount of profit and return on capital invested are considered to be one of the most important determinants of investment decisions. On the other hand, however, an increase in the capital equipment of enterprises in the form of investment outlays (e.g. in new techniques or technologies) are considered in turn as an important factor affecting the increase of generated revenues, work efficiency, the size of profits and the level of profitability (Molo, 2013).

Taking further into account the determinants of investment decisions, it should also be noted that they are associated with financial decisions regarding the possibility of obtaining financing sources. These determinants are both internal and external. Making a decision depends on the possibilities and terms of financing planned investment projects and the relationship between the cost of capital employed in a given investment and the effects of its implementation. Therefore, in the decision-making process one should recognize own and foreign financial possibilities, which, however, require determination of the company's financial condition. This is due to the fact that the ability to invest is affected by the above-mentioned economic results of the enterprise that are reflected in its accumulation capacity and opportunities to raise the capital required in the investment process on favorable terms. Therefore, the functioning and development of an enterprise requires the preparation and implementation of a financial strategy that will ensure an effective combination of financing and investing processes (Kokot-Stępień, 2015).

Investment determinants, in turn, from outside the business unit are mainly derived from market regulatory mechanisms and government policies. In addition, they are affected by the general condition and economic situation in a given country, as well as the global economic situation. It is also worth emphasizing that the level of the expected demand for the products or services offered is a very large impact on the company's investment activity, as the lack of growth possibilities, even with the desired development of the remaining conditions for investing, hinders the decision to implement a given investment.

3. Analysis of variability economic situation and investment of enterprises

The subject of further considerations undertaken in this study is the analysis of changes in the financial results achieved by enterprises in a group of enterprises employing more than 9 people. The research did not include micro enterprises (0-9 employees) due to the high share

of self-employed entities, i.e. enterprises not carrying out investment activities aimed at improving their competitiveness and increasing productivity, and thus this activity is not related to the results achieved by these units. Therefore, entities subject to mandatory CSO reporting (F-01 and F-02) participated in the research. Data on their activities for the years 1996-2017 were obtained from the Central Statistical Office database in Warsaw and PONT INFO collections. The study was conducted on a population of over 50,000 companies over a period of 21 years, starting from 1996. Data analysis was performed by applying comparative methods of variability of analyzed measures, and the comparative analysis was additionally enriched with statistical linear regression analysis and correlation analysis, taking into account the delay effect.

Apart from the value of investment outlays, the measures adopted in the study are the value of the net financial result and financial ratios in the area of sales profitability, total debt and current liquidity. A positive level of the financial result and its value as a derivative from the realized (sold) production indicates the achieved effects of the conducted activity. It is also a potential source of further reinvestments in development activities. Therefore, this measure proves the investment capacity of the enterprise and its propensity to invest, as it is the basis for refinancing selected directions of development activities reflected in investment projects and reduces the risk of insolvency in the case of involving foreign capital in the financing structure of ventures. The return on sales ratio, which includes the relation of the value of the net financial result to sales revenues, expresses the generated net effect (degree of profitability) from the sale of products or services realized by possessed tangible and intangible production factors in which capital was frozen (investment outlays were allocated). The debt ratio, which is the ratio of total liabilities to the value of total assets, in turn, in addition to equity, reflects the propensity of entrepreneurs to engage foreign capital in financing current and development activities and in particular investment activities. Finally, the current liquidity ratio, which is the ratio of current liabilities to current assets – reflects the company's ability to timely pay its current liabilities. Maintaining this ability is very important in the short term, because if it is lost in the short term, the company will not be able to pay its liabilities in the long term (including foreign capital frozen in the investment project). As a result, the entity will not be willing to engage foreign capital in investment activities characterized by a high risk of capital frost-free or loss, and as a consequence will limit or eventually withhold investment decisions and expenditures (development activities). The measures chosen for the limited framework of this study reflect, therefore, the company's financial position. The obtained results of the research presented in the further part of the study will indicate the degree (strength) of relationships to the measures analyzed in this study and investment decisions.

The value of investment outlays adopted for the conducted analysis includes aggregate values designated for the purchase of land, machinery and equipment or means of transport. The cumulative value also did not make a distinction to the new capital expenditures and those of a current nature, as it was found that each capital expenditure incurred affects the ability of

enterprises to develop their business, or at least to maintain their current potential, which largely contributes to its ability to survive and compete. As indicated earlier in the opinion of the Authors, a certain research gap is the lack of research and presentation of research results in the field of detailed analysis of the relationships between the analyzed financial variables that determine the economic situation of enterprises and their investment decisions. In connection with the above, the article attempts to carry out a detailed analysis of the relations to the studied values and investment decisions made for periods t and $t + 1$ (delay effect).

Observation of changes in the amount of investment outlays incurred in enterprises in Poland indicates their increase throughout the entire period of analysis. It is worth pointing out that the value of investments in 2017 was more than four times higher compared to the value of 1996. Corporate investments were characterized by large fluctuations and a significant decrease in value at the end of the 90s, followed by a further increase in value since 2004. Analysis of the pace of change indicates a weakening growth tendency, and even negative values in 2001-2003, 2009-2010, 2012 and 2016.

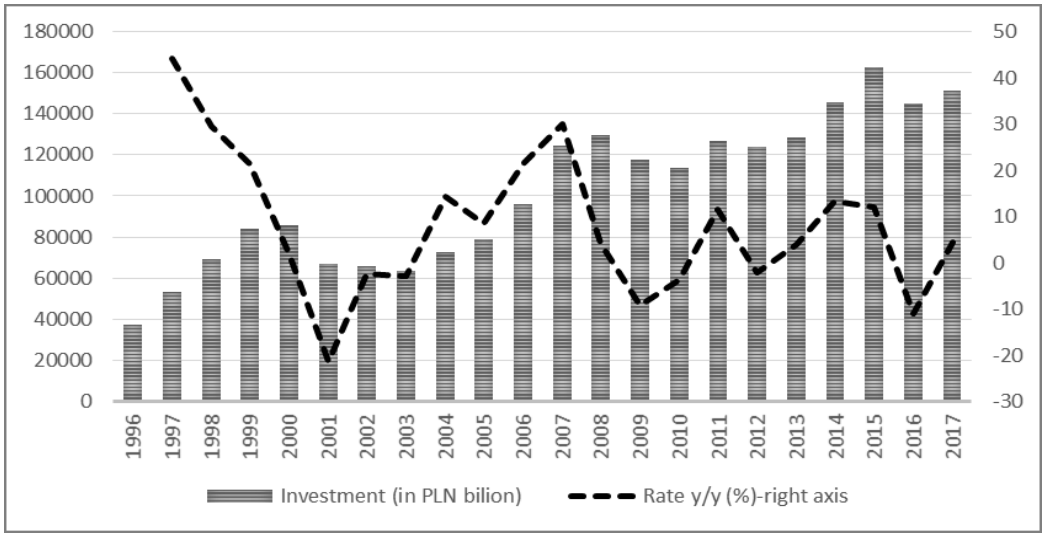

Figure 1. Investment volume (in PLN billion) and rate of change (previous year = 100, in%) of enterprises in Poland in 1996-2017. Source: own elaboration on the basis of figures: *System Gospodarka*, Pont Info Warszawa, http://www.pontinfo.com.pl; *Wyniki finansowe przedsiębiorstw niefinansowych*, GUS Warszawa, http://stat.gov.pl/publikacje; *Podmioty gospodarki narodowej*, GUS Warszawa, http://stat.gov.pl/publikacje.

The financial result of the surveyed enterprises was measured by net profit, which is the basic measure of the achieved effects and profitability in absolute terms, for which the impact on investments should be most visible. Significant fluctuations in the amount of aggregate net profit in the whole group of enterprises are visible in the analyzed period. In the years 2001-2002, the net profit of all surveyed entities was negative (there was a loss), while since 2003, there has been a dynamic increase in the value of the financial result towards positive value (profit). In 2017, the net financial result was over fifteen times higher than in 1996. The pace of changes in the value of the measure being measured y/y indicates a slowdown in the increase in its value since 2005.

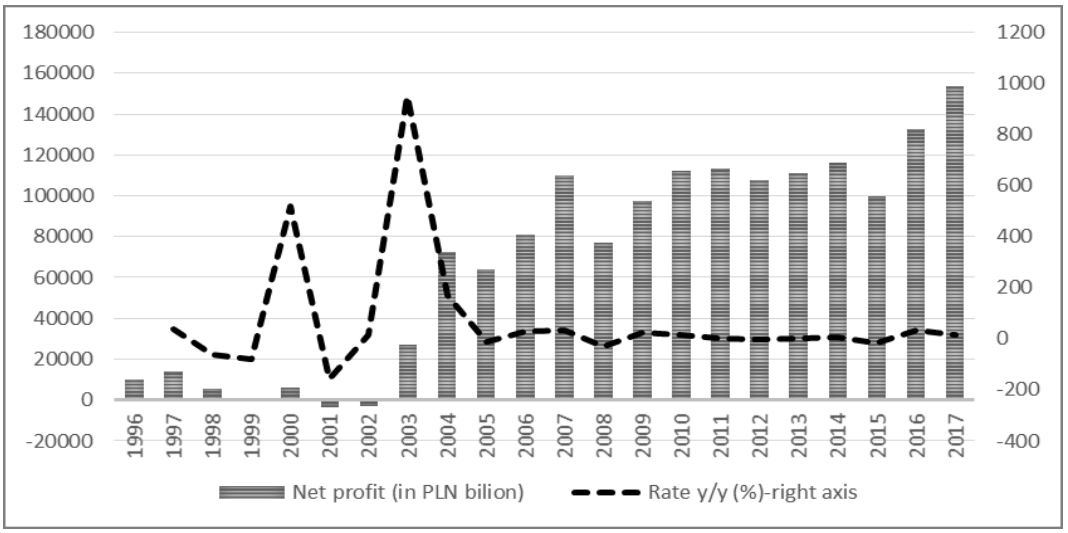

Figure 2. Net profit (in PLN billion) and rate of change (previous year = 100, in%) of enterprises in Poland in 1996-2017. Source: see Figure 1.

Return on sale achieved by enterprises in Poland was characterized by fluctuations with a clear period of growth from 2001 to 2004. The highest level of the indicator in the entire analyzed period was formed in 2007. Therein, the level of profitability from sales was different than the investment value or net financial result. This may indicate a low level of correlation between profitability and subsequent investment decisions. Analysis of the pace of change also indicates its wide variation and reduction of the indicator value in as many as six years.

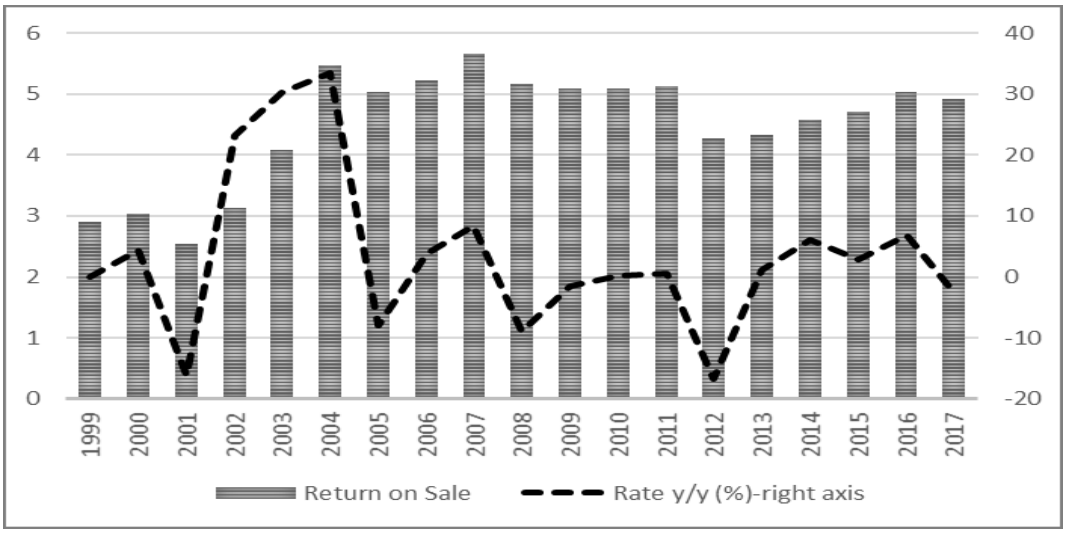

Figure 3. Return on sale and rate of change (previous year = 100, in%) of enterprises in Poland in 1999-2017. Source: see Figure 1.

The level of indebtedness of Polish enterprises in the initial phase of the analysis (1998-2003) increased significantly, and then stabilized with a slight upward trend that has continued since 2007. This tendency can be observed on the basis of the course of the rate of change of the indicator value. The highest level of debt throughout the entire analysis period was observed in 2003.

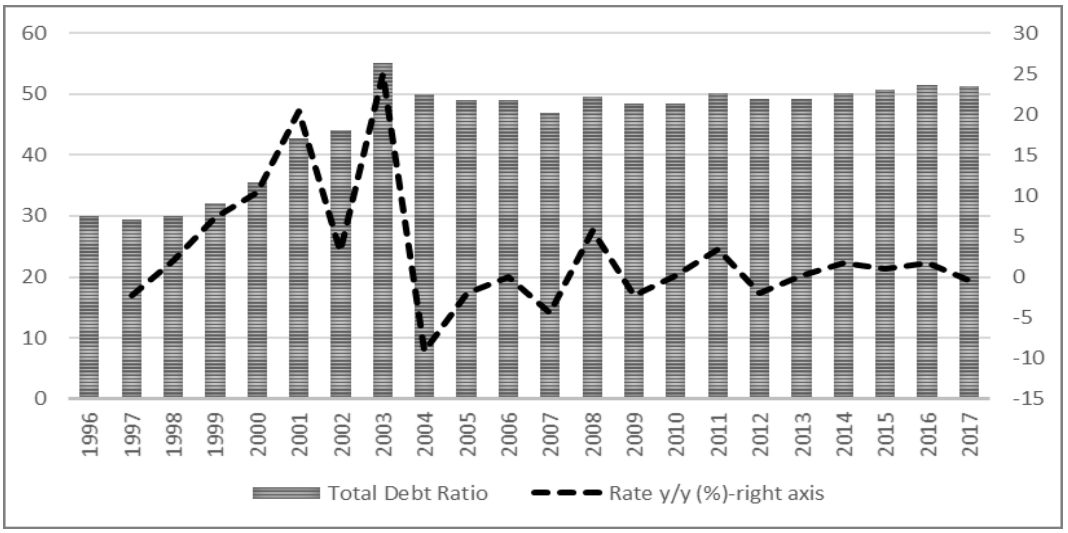

Figure 4. Total Debt Ratio and rate of change (previous year = 100, in%) of enterprises in Poland in 1996-2017. Source: see Figure 1.

The analysis of the current liquidity ratio for enterprises in Poland in the years 1996-2017 indicates its deterioration from 1997 to 2001 and its subsequent improvement with an upward trend outlined until 2014. We have seen a slight decrease in the current liquidity level of enterprises since 2014. It should be noted, however, that the lowest values of the indicator formed in the years 1999-2002 were higher than the 1.0 level, assuming higher values than 1.4 since 2009. The rate of change in the value of the current liquidity ratio indicates its high volatility.

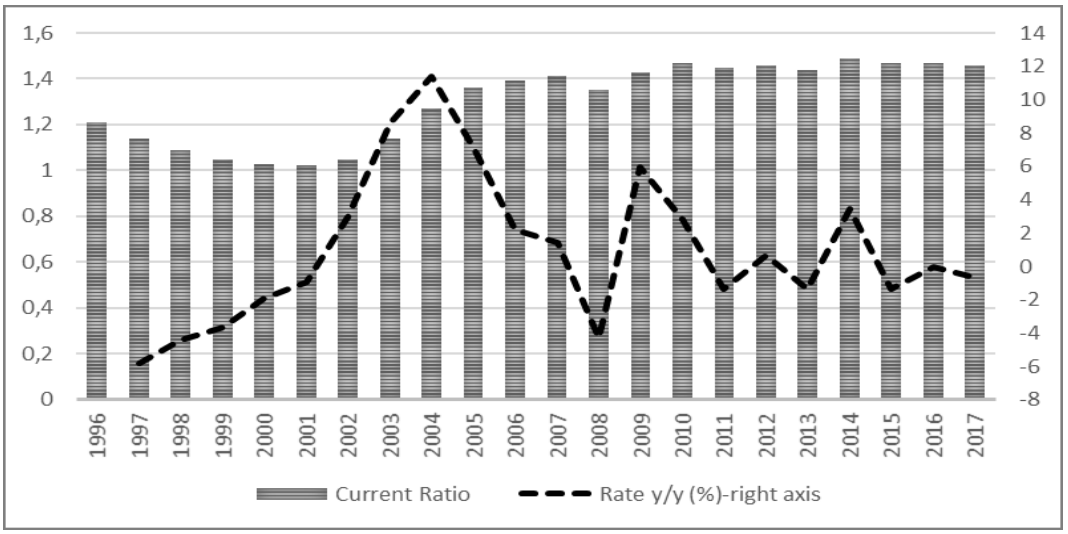

Figure 5. Current Ratio and rate of change (previous year = 100, in%) of enterprises in Poland in 1996-2017. Source: see Figure 1.

4. Financial situation of enterprises and their investment decisions

In the light of the observed diversity of the measures being analyzed, it will be reasonable to relativize the course of the measures measuring the financial situation of enterprises, identifying the direction of their changes and correlating with investment outlays incurred by enterprises in Poland in the years 1996-2017. The correlation analysis was carried out using a linear regression model indicating the level of matching of the studied quantities economic or financial indicators and their impact on investment decisions made by the enterprises covered by the survey. The analysis covered the variability of the net result value, as well as the values of return on sales, current liquidity and total debt. Then, the regression analysis of the measures in question was made with investment outlays in comparable periods (in period t) and taking into account the delay effect (in period $t + 1$). Based on the results of the research undertaken, it can be implied that the analysis of the interdependence of the coefficients measured with the capital expenditure in comparable periods indicates positive relationships with different intensities and interdependencies. Taking into account the delay effect of the analysis, it can be stated that a stronger impact of a change in individual analyzed measures on the size of investments was noted, except for the level of debt, for which the intensity of the impact slightly decreased.

The analysis of the impact of the volatility of the net financial result indicates an increase in the value of investment outlays with a simultaneous increase in the net financial result, while the increase in the net result by PLN 1 was accompanied by an increase in investment value of PLN 0.60 (in comparable periods) and PLN 0.62 (from delay effect). Taking into account statistical fit measures, one can state their high values – and a very high level of correlation of variables (strong dependence). Bearing in mind the delay effect, the level of matching of the measures measured increases significantly, indicating that only less than 17% of the variable (investment) is not described by the change in the net financial result. The value of the correlation coefficient for these two variables is 0.865 for comparable periods and 0.9135 for the delay, which is a very high result indicating a very strong upward correlation between these variables. Based on the results obtained, it can be clearly stated that there is a strong correlation between the net financial result achieved - and subsequent investment decisions, which in the case of these two variables confirms the correctness of the theorem put forward by the Authors in chapter 2 of this study. Therefore, the higher the value of the financial result achieved by enterprises, the greater the propensity of entrepreneurs to make decisions on incurring capital expenditure, seeing in the financial result the main and additionally own source of investment financing.

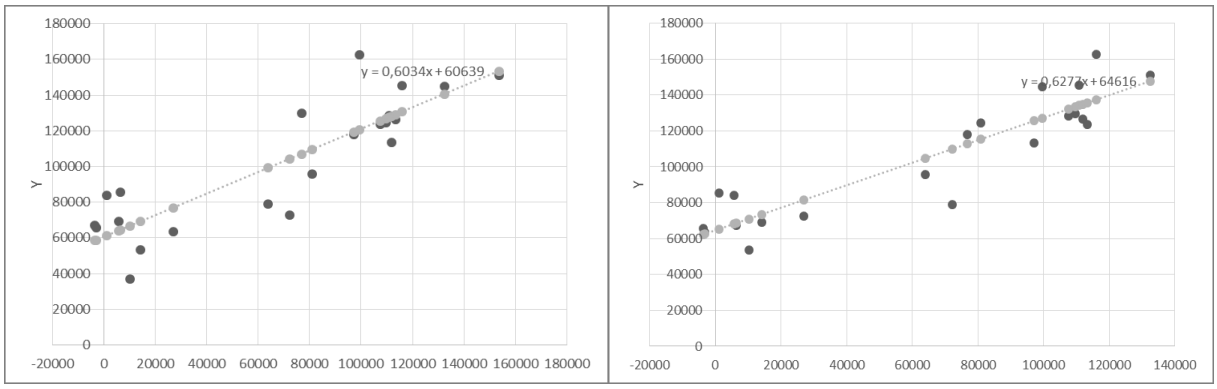

Figure 6. The relationship between net profit and investment of enterprises in Poland in 1996-2018; (without delay – left panel; with delay – right panel). Source: see Figure 1.

The analysis of the impact of the variability of the profitability ratio on sales is, in turn, characterized by a low level of matching of the studied variables, and the correlation coefficient was at an average level. However, after considering the effect of delaying the impact of sales profitability on investment decisions, an increase in the value of both matching and the level of correlation to the level assessed as high was found. Pearson's correlation values indicate a correlation between variables at a level lower than the net financial result, but nevertheless assessed as average/high. It should also be emphasized here that the assessment of the direction of the impact examined indicates a direct proportional correlation, as it was characterized by a change of PLN 17.061 million in the case of investment outlays with a 1% increase in the rate of return. The correlation assessment, allowing for the delay effect, indicates an even greater increase in the value of the examined interdependence, by PLN 20,121 million in the case of investment outlays with a 1% change in the return on sales.

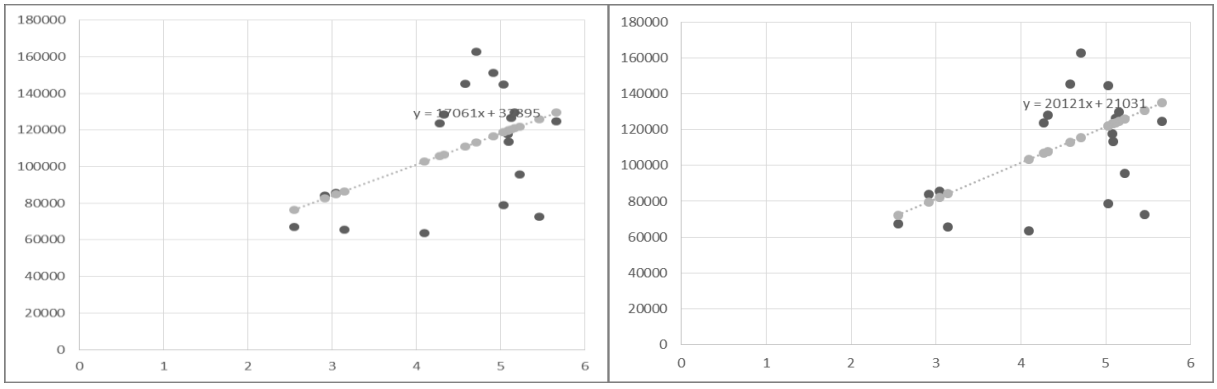

Figure 7. The relationship between return on sales and investment of enterprises in Poland in 1999-2018; (without delay – left panel; with delay – right panel). Source: see Figure 1.

In the case of examining the relationship to the impact of the level of debt on the amount of investment expenditure incurred by enterprises in Poland, there was also a positive correlation, but with a lower level of variable matching and a lower correlation, which indicates the lower statistical significance of the analyzed interdependence. Interestingly, considering the effect of delaying the impact, the level of matching and the value of variable correlation decreases. An important from the point of view of the conducted analysis is the indication that the increase

in the level of general debt does not result in a decrease in the value of investment outlays incurred by enterprises, but on the contrary, their increase. This proves that entrepreneurs use foreign sources to finance investment projects, but to a lesser extent than from own sources, in particular, the net financial result. However, the tendency to supplement capital investment needs with external sources is the greater, the greater the value of the net financial result achieved in a given period, perceived as the basic and safe source of refinancing investment projects. The delay effect also indicates that entrepreneurs do not adopt a wait-and-see attitude in this case, making the decision on the involvement of foreign sources in financing the investment dependent on the financial result achieved in the next period.

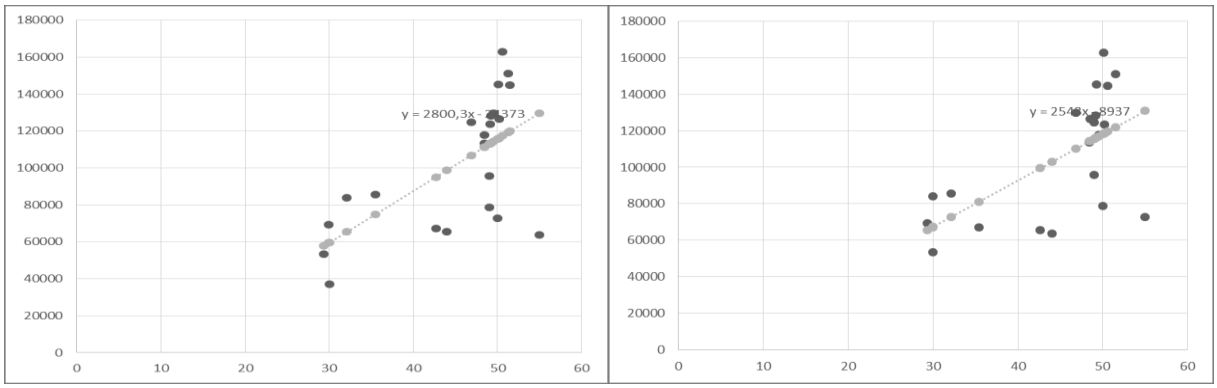

Figure 8. The relationship between total debt ratio and investment of enterprises in Poland in 1996-2018; (without delay – left panel; with delay – right panel). Source: see Figure 1.

The last relationship studied is the impact of the current liquidity level and investment outlays. Statistical analysis of the interdependence of these variables indicates a positive (directly proportional) correlation at the level of 165.339 million PLN investment growth with an increase in the liquidity ratio by 1. Upon including the effect of delayed impact – this value increases to the level of 169.912 million PLN. The relationship to the current liquidity and investments is statistically significant, forming the value of variable matching at a high level (0.649 and 0.786). The correlation of variables is also very high and its level increases after bring to bear the effect of delaying the impact (0.805 and 0.886). Therefore, their current ability to timely settle their current liabilities is equally important in making investment decisions for entrepreneurs. This means that entrepreneurs are highly aware of the need to maintain this ability, which additionally translates into a greater propensity to engage foreign capital in development activities, as a complement to investment capital needs.

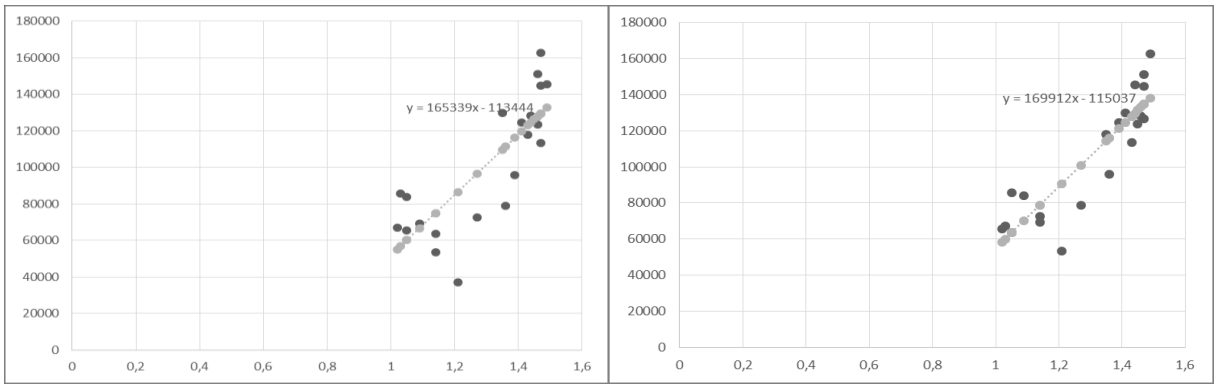

Figure 9. The relationship between current ratio and investment of enterprises in Poland in 1996-2018; (without delay – left panel; with delay – right panel). Source: see Figure 1.

The analysis of the interdependence of selected measures with respect to the value of investment outlays clearly indicates that there is a high correlation between the financial results achieved by enterprises and their subsequent investment decisions. The financial result and current liquidity have the strongest impact on investment decisions, where the R2 ratio was at a statistically significant level (Table 1). The lowest level of correlation was recorded between return on sales, where only 25% of the investment value was explained by return on sales. In all the analyzed measures, an increase in the significance of the correlation with them and the value of investment outlays was noted after taking into account the delay effect. Only in the case of enterprises' debt level, there was no increase in interdependence when allowing for the delay. The analysis allows for an unequivocal statement that there is a strong correlation with the results achieved or the ability to settle liabilities and investment outlays in the comparable and subsequent year of the analysis.

Table 1.
Correlation coefficients of selected variables and the investment expenditures of enterprises in Poland in the years 1996-2017

Indicators	Number of Observations	Relations without delay		Relations with delay	
		R^2	r_{xy}	R^2	r_{xy}
Net profit	22	0,74832	0,86505	0,83455	0,91353
Return on sales	19	0,24999	0,49999	0,35715	0,59762
Total debt ratio	22	0,39752	0,63049	0,38027	0,61666
Current Ratio	22	0,64927	0,80577	0,78613	0,88664

Source: see Figure 1.

5. Conclusions

A comparative analysis of selected financial indicators determining the economic situation of enterprises in Poland and their impact on investment decisions made by these enterprises indicates that the financial situation of enterprises is a strong determinant of changes in the value of investment expenditure. Based on the conducted research, it was found that the increase in the net financial result obtained and the increase in the current financial liquidity of

enterprises strongly determines the investment outlays of enterprises resulting in their increase. An important fact to note is the fact that there is a positive correlation between the value of all measures being measured and investment decisions made throughout the analysis period. This confirms not only the correctness of the hypothesis adopted in the study, it also indicates the existence of a relationship between the financial situation of the enterprise and its impact on investment decisions made. In the article, based on only selected measures, it is additionally underlined how strong this relationship (dependence) is. According to the authors, this does not mean, however, not to undertake further work towards seeking and researching other determinants and the strength of their impact on investment decisions of enterprises, thus constituting a contribution to further in-depth research in this area.

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