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ECONOMIC CONDITIONS OF THE DEMAND FOR INVESTMENT AND WORKING CAPITAL LOANS FOR MICRO-ENTERPRISES – RESEARCH FOR POLAND DURING COVID-19

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ABSTRACT

Aim: The study aims to find an answer to the question of whether and how the economic indicators in the industrial processing, construction, trade, and services sectors reflect changes in the market size related to investments and working capital loans for micro-enterprises. **Methods:** The study used data on investment and working capital loans and data on economic conditions. Monthly data for the years 2019–2021, covering the period of the COVID-19 pandemic, were used for the analyses. The estimation of dynamic models was carried out using the Generalized Method of Moments (GMM). **Results:** The conducted research showed that economic factors play a significant role in shaping the demand for investment and working capital loans in the micro-enterprise sector, but the impact of the economic situation was more significant in the case of investment loans than working capital loans. In periods of economic prosperity, micro-enterprises are more likely to take out investment loans than in periods of economic downturn. Micro-enterprises' propensity to take out working capital loans is more dependent on their current situation and expectations regarding the demand for products and services. **Conclusions:** The research revealed differences in the characteristics of the factors significantly influencing the demand for credit, depending on the sector to which the indicator is concerned. The research shows that access to external financing is crucial for the functioning, survival, and expansion of micro, small, and medium-sized enterprises. The research fills the literature gap by showing how the economic situation in individual industries affects the credit market for the micro-enterprises sector.

Key words: investment loans, working capital loans, micro-enterprises, economic conditions, industries, panel model

JEL codes: J13, J21, J22, I38

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INTRODUCTION

Micro, small and medium-sized enterprises (MSMEs) are the driving force of most countries in the world, contributing to their development [Secinaro et al. 2020, Manzoor et al. 2021], and they play a particularly important role in developing countries [Ndiaye et al. 2018]. In 2021, there were around 22.8 million MSMEs in the EU-27, accounting for 99.8% of all enterprises in the non-financial corporate sector [Muller et al. 2022]. In Poland, micro, small and medium-sized enterprises (MSMEs) account for more than 99% of all companies in operation, and among them, micro-enterprises (MEs) accounted for 96.6% of them at the end of 2021 [GUS 2021]. Previous research shows that these enterprises contribute to the economic development of individual countries in different ways. Among other things, they have a real share in generating their GDP [Ayyagari et al. 2007] and creating jobs in both rural and urban areas, as well as ensuring the desired sustainable development and innovation in the economy [Beck et al. 2015]. Importantly, micro, small and medium-sized enterprises are characterized by greater flexibility of operation in a changing environment than large enterprises [Iaroslav et al. 2022], and thus, they are crucial for the functioning of many dynamically changing economies, among others, due to the ease of introducing technological changes, changes in the revenue structure as well as efficiency in responding to new consumers' needs and preferences [Pilar et al. 2018]. Often, MSMEs are able to efficiently allocate their limited resources to search for market niches that large enterprises are not interested in. They counteract the exclusion of a part of society or create new markets [Tambunan 2008], and at the same time, they complement the offer of large enterprises. The MSME sector also contributes to regional development by spreading investments more evenly, including less developed regions [Taiwo et al. 2013]. By providing opportunities for self-employment and educating managers and low-skilled workers, micro, small and medium-sized enterprises contribute to a decrease in unemployment, limiting economic migration, as well as to a greater use of local resources and mobilization of local savings [Taiwo et al. 2013]. In the context of the entire economy, MSMEs are a complementary element in relation to large companies and the public sector through cooperation with these entities as subcontractors, suppliers or agents. In addition, these enterprises may have an advantage over large entities in terms of response to changing environmental conditions, innovation, and fast information flows [Eniola and Entebang 2015]. Also, in the case of crises, the MSME sector also suffers the effects more rapidly. An example of this is the MSME response to COVID-19. As the research shows, the COVID-19 pandemic caused a huge increase in the level of uncertainty, comparable to that observed during the global financial crisis of 2008–2009 [Czech et al. 2020].

The COVID-19 pandemic and the restrictions imposed by the government have caused significant effects on the Polish economy. The macroeconomic indices were observed to have declined in the second quarter of 2020, which coincided with the first lockdown. The economic downturn is evidenced by the analysis of the GDP dynamics, which in the second quarter of 2020 and in the subsequent quarters assumed negative values. The OECD experts point out that COVID-19 has caused adverse effects in many branches of the economy, and the impact of COVID-19 on various sectors of the economy was diversified [Szczepaniak et al. 2020]. COVID-19 has given rise to negative consequences, for instance, in the sector of small and medium-sized enterprises (SMEs). Businesses have experienced dramatic revenue losses. Some SMEs have taken steps to remain operational, for instance, shorter working time of employees, redundancies, suspending some business operations, or temporary closure of business. Some entrepreneurs, however, have been forced to go out of business [Warsame 2020]. Enterprises face such challenges as disruptions in logistic activities, lesser mobility of the staff, growing uncertainty about restrictions and a general decline in the economic potential of national economies. At the same time, the situation has led to an increase in MSMEs' demand for short- and medium-term financing.

Therefore, access to finance for MSMEs to operate and grow is an important issue. According to the literature, the activities of enterprises can be financed with capital from various sources. Assuming the source of capital origin as the division criterion, two main types of sources of financing enterprises are distinguished, i.e., internal and external financing [Abiodun Eniola

and Entebang 2015], and their selection depends on many factors [Forte et al. 2013], as the demand for capital and the availability of various sources of finance vary depending on the phases of the enterprise's life cycle [Berger and Udell 1998]. Many studies confirm the thesis that the basic source of financing for the sector of micro, small and medium-sized enterprises is equity [Piątkowski 2020]. This applies primarily to enterprises at an early stage of development [Huyghebaert and Van de Gucht 2007], and thus primarily micro-enterprises. In a time of economic slowdown, MSMEs begin to replace internal sources of financing with external ones, including investors, trade credit, and bank loans. A bank loan is one of the most popular forms of external financing of enterprises in Poland [Piątkowski 2020] and Europe [Klapper et al. 2002, Abdulsaleh and Worthington 2013, Forte et al. 2013]. Enterprises mainly use working capital and investment loans [Peel and Wilson 1996], which have different applications.

In this context, it is worth noting that the economic situation can be considered as changes in basic economic measures describing the condition of a given economy, such as GDP, interest rates, commodity price index, etc. Importantly, the available analyses confirm the existence of a relationship between the level of macroeconomic measures and the credit market [Calza et al. 2003]. For example, existing studies confirm the relationship between GDP and the level of interest rates and the demand and supply of bank loans [Jiménez et al. 2012], which translates into the value and number of loans granted [Awdeh 2016]. Other studies confirm the relationship between the interest rate on loans and the index of prices of consumer goods and services, and the number and value of loans granted. In addition, there are also analyses in which the authors try to determine the impact of macroeconomic factors on loan repayment [Castro 2013]. They show that the risk of loan default increases with a decrease in GDP and stock price indices, which is due to the fact that higher real GDP growth results in higher income, which has a positive effect on borrowers' ability to service their debt [Macháček et al. 2018]. The opposite situation occurs in the case of an economic slowdown, when the risk of loan default increases because borrowers' incomes decrease, and as a result, they have more problems with servicing their liabilities [Salas and Saurina 2002]. Subsequent studies determine the relationship between the unemployment rate and the share of non-performing loans, according to which the increase in the number of unemployed people reduces the borrowers' ability to service debt and increases the share of non-performing loans [Zeng 2012]. Some studies on the relationship between the level of inflation and the share of irregular loans indicate that as a result of inflation, credit liabilities become cheaper, which improves repayment [Dimitrios et al. 2016]. However, other conducted analyses indicate that the level of non-performing loans increases according to the inflation rate [Wang 2019]. This is probably due to the occurrence of inflation along with the economic slowdown or unemployment growth [Skarica 2014]. Another of the analyzed factors concerns the impact of public debt on the credit market, and in this case, some dependencies were noticed in the conducted research [Beck et al. 2015]. In summary, numerous studies confirm that the availability of loans has a positive impact on the size of GDP [Cappiello et al. 2010] and the economic situation.

Summing up, it can be said that indicators describing the economic situation have an impact on the credit market, which is confirmed by many international studies. However, there are no studies showing how the economic situation and the economic situation in individual industries affect the credit market for the sector of micro-enterprises. And as research shows, access to external financing is crucial for the functioning, survival and expansion of micro, small and medium-sized enterprises [Temelkov et al. 2018]. Therefore, the aim of the research was to find an answer to the question of whether and how economic indicators in manufacturing, construction, trade and services affect changes in the size of micro-enterprises related to the investment and working capital loan market in Poland. At the same time, taking into account the above, the following research hypotheses were formulated:

H_1 – The general level of the economic situation has a positive effect on the value of loans granted to micro-enterprises.

H_2 – The increase in the general level of the economic situation has a stronger impact on the increase in the demand for investment loans than on working capital loans among micro-enterprises.

H_3 – The increase in the value of loans granted to micro-enterprises depends mainly on the economic situation in the sector of industrial production and services.

RESEARCH METHODOLOGY

The use of dynamic panel models in economic research is gaining more and more supporters. Research conducted with the use of dynamic panel models concerns determining the determinants of economic growth (e.g., the Solow-Swan model) or estimating models based on the production function (Cobb-Douglas). Therefore, to assess the relationship between the studied factors, dynamic panel data models were used – econometric models estimated on the basis of panel data, where it is assumed that the dependent variable is affected, in addition to the explanatory variables, by lagged levels of the dependent variable and immeasurable constants over time and object-specific factors known as group effects [Bhattarai 2019].

The dynamic panel model has the following form [Arellano and Bond 1991]:

$$y_{it} = \gamma y_{i,t-1} + x_{it}^{T}\beta + u_{it} = \gamma y_{i,t-1} + x_{it}^{T}\beta + \alpha_i + \varepsilon_{i,t},$$

$$i = 1, \dots, N, t = 1, \dots, T$$

where, $\varepsilon_{i,t} \sim N(0, \sigma\varepsilon^2)$ for all i, t, α_i – group effect, random or non-random. Whereas if α_i is random, then $\alpha_i \sim N(0, \sigma\alpha^2)$, $[x_{kit}]_{\boldsymbol{Kx^1}}$ $\boldsymbol{s}$ is a vector of explanatory variables with $\boldsymbol{K}$ coordinates, β is a vector of parameters ($\boldsymbol{Kx1}$), the same for all i and t.

The estimation of dynamic models was carried out using the Generalized Method of Moments (GMM), which allows the estimation of model parameters directly from the conditions of the moments. In the literature on the subject, it is assumed that both the form and the number of moment conditions used during estimation depend on the assumptions made regarding the level of correlation between the variables and the components [Bhattarai 2019]. Assuming no autocorrelation of the random term, in the process of estimating the parameters of the models, the assumption of strict exogeneity of the variables can be made, which excludes a correlation with current values, with lagging values, as well as with future values. It is more restrictive than the alternative assumptions of weak exogeneity of variables (there is a correlation with current values, but there is not any with lagged values), and also from the assumption of endogeneity of variables (there is a correlation with current values and with lagged ones, but there is not any with future values). Structural parameters of dynamic panel models were estimated using the Generalized Method of Moments (GMM) [Arellanoand and Bond 1991, Blundell and Bond 1998].

The study with regard to data on the micro--enterprise loan market is based on monthly data from the Polish Credit Information Bureau (BIK), the main source of credit and economic information in Poland, which collects and provides data on individual customers and entrepreneurs. The data on the economic situation are based on the results of the economic situation survey conducted using the economic situation test method by the Central Statistical Office (GUS). The research conducted by the Central Statistical Office in the form of a survey is of a qualitative nature. Due to the simple methodology and relatively short form, it enables a more comprehensive assessment of the situation of the enterprise sector. In the study, using more detailed indicators describing the economic situation in individual sectors from the Central Statistical Office economic situation survey, the most important variables affecting the value and share of overdue loans in the micro-enterprise sector were identified.

Monthly data for the years 2019–2021, covering the period of the COVID-19 pandemic, were used for the analyses.

The following variables determining the level of the economic situation in Poland and the factors included in it were used in the research, in accordance with the methodology adopted by the Central Statistical Office [GUS 2022]:

- general synthetic indicator of the economic situation of the Central Statistical Office (SI),
- synthetic indicator of the economic situation in the industrial processing sector (SI_M),
- synthetic indicator of the economic situation in the construction sector (SI_C),
- synthetic indicator of the economic situation in the retail sector (SI_RT),

- synthetic indicator of the economic situation of the service sector (SI_S),
- current portfolio of domestic and foreign orders [state] in the industrial processing sector (C_M),
- current stock of finished products in the industrial processing sector (S_M),
- expected production in the industrial processing sector (EP_M),
- current portfolio of orders on the domestic and foreign market [state] in the construction sector (C_C),
- expected employment in the construction sector (EE_C),
- sales of goods in the last three months in the retail sector (SG_RT),
- current stock of goods in the retail sector (S_RT),
- the expected amount of goods sold in the retail sector (EQ_RT),
- general situation of the entity in the last three months in the service sector (GS_S),
- demand for services in the last three months in the service sector (D_S),
- expected demand in the services sector (ED_S).

Data on the economic situation were used to estimate the diversification of the demand for external financing in the form of investment and working capital loans of enterprises from the micro-enterprise sector. The estimation of the models was carried out on the basis of the defining data, which described the effective demand for ME loans, realized in the form of loan agreements:

- the value of launched investment loans granted to borrowers with the status of micro-entrepreneurs (PLN thousand) (S_KI_V),
- value of working capital loans granted to borrowers with the status of microentrepreneurs (PLN thousand) (S_KO_V),
- value of investment and working capital loans launched granted to borrowers with the status of micro-entrepreneurs (PLN thousand) (S_T_V).

Table 1 presents descriptive statistics characterizing the variables studied, while Table 2 contains correlation coefficients between the variables studied.

The results indicate the ascendancy of statistically significant relationships between the variables considered.

Table 1. Descriptive statistics

Specification	Average	Median	Minimum	Maximum	Standard Deviation	Standard Error
S_KI_V	341 560.10	331 418.74	156 182.95	538 381.84	90 268.61	15 044.77
S_KO_V	711 346.93	728 150.84	439 432.91	986 806.46	120 926.60	20 154.43
S_T_V	1 052 907.03	1 069 226.48	620 763.16	1 393 518.07	195 417.27	32 569.54
SI	95.07	102.30	50.00	107.80	14.92	2.49
SI_M	101.06	106.35	63.40	112.90	12.28	2.05
SI_C	104.77	105.35	74.00	116.80	10.01	1.67
SI_RT	94.53	101.60	42.30	112.20	16.88	2.81
SI_S	85.57	96.30	27.60	102.60	19.65	3.28
C_M	0.41	0.70	–2.60	1.70	1.06	0.18
S_M	0.75	0.70	–1.70	2.80	0.97	0.16
EP_M	–0.93	–0.70	–6.10	0.10	1.16	0.19
C_C	0.86	0.85	–0.70	1.90	0.76	0.13
EE_C	–0.16	–0.10	–3.60	0.70	0.80	0.13
SG_RT	–0.55	0.05	–5.20	0.80	1.48	0.25
S_RT	–0.04	–0.20	–2.60	3.00	1.17	0.19
EQ_RT	–0.62	–0.25	–6.90	0.90	1.67	0.28
SG_S	–1.10	–0.25	–5.80	0.20	1.60	0.27
D_S	–1.02	–0.20	–5.60	0.30	1.56	0.26
ED_S	–1.05	–0.50	–5.90	0.10	1.27	0.21

Source: own elaboration.

Interestingly, during the analyzed period, there was a positive relationship between demand and investment and working capital loans, which could indicate that micro--enterprises in difficult economic conditions tried to obtain funds in various ways to implement the projects they started. In the case of investment loans for micro-

Table 2. Correlation matrix

Specification	S_KI_V	S_KO_V	S_T_V	SI	SI_M	SI_C	SI_RT	SI_S	C_M	S_M	EP_M	C_C	EE_C	SG_RT	S_RT	EQ_RT	SG_S	D_S	ED_S
S_KI_V	1.000	0.706	0.899	0.724	0.730	0.599	0.711	0.706	0.659	0.573	0.616	0.559	0.568	0.642	0.515	0.654	0.690	0.683	0.673
S_KO_V	0.706	1.000	0.945	0.724	0.675	0.705	0.725	0.739	0.693	0.335	0.654	0.705	0.623	0.693	0.403	0.713	0.709	0.711	0.727
S_T_V	0.899	0.945	1.000	0.782	0.755	0.713	0.777	0.783	0.733	0.472	0.689	0.695	0.648	0.725	0.487	0.743	0.757	0.755	0.761
SI	0.724	0.724	0.782	1.000	0.981	0.918	0.972	0.990	0.956	0.637	0.873	0.835	0.888	0.923	0.662	0.877	0.972	0.971	0.933
SI_M	0.730	0.675	0.755	0.981	1.000	0.862	0.938	0.946	0.925	0.737	0.860	0.747	0.869	0.863	0.667	0.850	0.922	0.921	0.905
SI_C	0.599	0.705	0.713	0.918	0.862	1.000	0.878	0.929	0.928	0.325	0.884	0.937	0.944	0.874	0.416	0.882	0.900	0.897	0.912
SI_RT	0.711	0.725	0.777	0.972	0.938	0.878	1.000	0.969	0.884	0.586	0.882	0.783	0.866	0.922	0.733	0.891	0.944	0.940	0.937
SI_S	0.706	0.739	0.783	0.990	0.946	0.929	0.969	1.000	0.959	0.564	0.849	0.877	0.871	0.945	0.645	0.864	0.988	0.988	0.924
C_M	0.659	0.693	0.733	0.956	0.925	0.928	0.884	0.959	1.000	0.560	0.767	0.912	0.835	0.908	0.533	0.785	0.964	0.963	0.845
S_M	0.573	0.335	0.472	0.637	0.737	0.325	0.586	0.564	0.560	1.000	0.359	0.254	0.352	0.510	0.686	0.370	0.585	0.589	0.439
EP_M	0.616	0.654	0.689	0.873	0.860	0.884	0.882	0.849	0.767	0.359	1.000	0.691	0.965	0.749	0.486	0.953	0.771	0.767	0.964
C_C	0.559	0.705	0.695	0.835	0.747	0.937	0.783	0.877	0.912	0.254	0.691	1.000	0.770	0.859	0.322	0.753	0.879	0.878	0.781
EE_C	0.568	0.623	0.648	0.888	0.869	0.944	0.866	0.871	0.835	0.352	0.965	0.770	1.000	0.790	0.452	0.905	0.815	0.809	0.931
SG_RT	0.642	0.693	0.725	0.923	0.863	0.874	0.922	0.945	0.908	0.510	0.749	0.859	0.790	1.000	0.564	0.767	0.958	0.958	0.812
S_RT	0.515	0.403	0.487	0.662	0.667	0.416	0.733	0.645	0.533	0.686	0.486	0.322	0.452	0.564	1.000	0.428	0.660	0.650	0.548
EQ_RT	0.654	0.713	0.743	0.877	0.850	0.882	0.891	0.864	0.785	0.370	0.953	0.753	0.905	0.767	0.428	1.000	0.785	0.784	0.976
SG_S	0.690	0.709	0.757	0.972	0.922	0.900	0.944	0.988	0.964	0.585	0.771	0.879	0.815	0.958	0.660	0.785	1.000	0.999	0.857
D_S	0.683	0.711	0.755	0.971	0.921	0.897	0.940	0.988	0.963	0.589	0.767	0.878	0.809	0.958	0.650	0.784	0.999	1.000	0.857
ED_S	0.673	0.727	0.761	0.933	0.905	0.912	0.937	0.924	0.845	0.439	0.964	0.781	0.931	0.812	0.548	0.976	0.857	0.857	1.000

Source: own elaboration.

Table 3. Models of the value of launched investment and working capital loans granted for micro-enterprises depending on the general economic situation indicator

Specification	S_KI_V (model 1)		S_KO_V (model 1)		S_T_V (model 1)	
	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
S_KI_V (t–1)	–0.122749	0.0465**	–	–	–	–
S_KO_V (t–1)	–	–	0.0581228	0.0419**	–	–
S_T_V (t–1)	–	–			0.0134885	0.08329*
SI	0.0172316	>0.0001***	0.00854119	>0.0001***	0.0108959	0.0000***

Significance level at: *10%, **5%, ***1%.
Source: own elaboration.

-enterprises, it was noted that the highest correlation coefficient occurred for the variable SI_M, which indicated the importance of economic concurrency in the manufacturing sector. For investment loans for micro-enterprises, the highest correlation coefficient was noted for the variable SI_S, which indicated the state of economic prosperity in the service sector. This indicates the crucial importance of these variables.

Results

Table 3 presents the results of the estimation of the model determining the value of financing for micro-enterprises launched by banks in Poland depending granted on the general synthetic index of the economic situation (SI). The research results indicate that regardless of the type of financing granted (S_KI_V – model 1; S_KO_V – model 1), the level of SI significantly affected the amount of support for these enterprises by banks. At the same time, SI influenced the change in the volume of granted investment loans more than twice as strongly (S_KI_V – model 1). The regression coefficient was 0.0172316 compared to the change in the volume of working capital loans granted (S_KO_V – model 1), and the regression coefficient was 0.00854119. The stronger impact of AI on investment loans could be due to the fact that working capital loans can perform various functions: in times of prosperous economy, they allow to increase revenues and improve results, while in times of economic downturn, they can be a kind of collateral enabling survival, protecting against loss of financial liquidity. As a result, the demand for this type of loan may be less sensitive to changes in the economic situation. These results allowed for a positive verification of Hypothesis 1 (H_1) and Hypothesis 2 (H_2). This may indicate that micro-enterprises make their demand for investment and current assets dependent on the state

Table 4. Models of the value of launched investment and working capital loans granted for micro-enterprises depending on industry indicators of the economic situation

Specification	S_KI_V (model 2)		S_KO_V (model 2)		S_T_V (model 2)	
	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
S_KI_V (t–1)	–0.12546	0.28170	–	–	–	–
S_KO_V (t–1)	–	–	–0.09722	0.49760	–	–
S_T_V (t–1)	–	–	–	–	–0.07215	0.63380
SI_M	0.01114	0.0330**	–0.01076	0.0624*	–0.07215	0.63380
SI_C	–0.00534	0.50920	–0.00178	0.55760	–0.00354	0.51880
SI_RT	0.00003	0.98830	0.00535	0.0001***	0.00385	0.0087***
SI_S	0.00877	>0.0001***	0.01004	0.0158**	0.00919	0.0094***

Significance level at: *10%, **5%, ***1%.
Source: own elaboration.

of the economic situation, which significantly affects their functioning. This is confirmed by the results of the model developed for the total value of investment and working capital loans for micro-enterprises (S_T_V – model 1), in which, as in the partial models, the level of the general economic situation index was the same.

Table 4 estimates the value of launched investment and working capital loans granted for micro-enterprises, taking into account the economic situation in four main areas of business activity, i.e., industrial production (SI_M), construction (SI_C), retail sales (SI_RT) and services (SI_S). In the case of the value of investment loans granted, two factors determining the economic situation in the industrial production sector (SI_M) and services (SI_S) were significant, and both had a positive impact on the level of investment loans granted to micro-enterprises (S_KI_V – model 2). This could have been due to the fact that micro-enterprises most often operated in this area, and the improvement of the economic situation resulted in an increase in investments resulting from an increase in orders for their products and services. In addition, enterprises operating in the production and services sector have a higher share in the structure of fixed assets, which are financed with long-term capital, for example, in the form of investment loans. This is probably why, in times of prosperity in these sectors, the increase in corporate investment has a significant impact on the value of investment loans granted. In the model for S_KO_V (model 2), the levels of the economic situation in industrial production and services were crucial as well, but additionally, the situation in retail sales was important. This could be due to the fact that micro-enterprises, as a rule, when conducting their activities in a period of good market conditions, used working capital loans in order to maintain financial liquidity, but also to conduct current investments. A significant difference in the estimated models (S_KI_V – model 2, S_KO_V – model 2) was also the fact that in the case of S_KI_V (model 2) the economic situation in industrial production had a positive impact on the value of working capital loans granted, and in the

Table 5. Models of the value of launched investment and working capital loans granted for micro-enterprises depending on the factors determining the economic situation

Specification	S_KI_V (model 3)		S_KO_V (model 3)		S_T_V (model 3)	
	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
S_KI_V (t–1)	**–0.02889**	**0.08488***				
S_KO_V (t–1)			**–0.23262**	**0.083084 ***		
S_T_V (t–1)					**–0.11940**	**0.05435****
C_M	**13.52200**	**<0.0001*****	**16.70790**	**<0.0001*****	**15.72690**	**<0.0001*****
S_M	–0.00692	0.968	–0.15794	0.2716	–0.09400	0.5142
EP_M	–0.00621	0.9375	**0.05449**	**0.0154****	–0.03737	0.2103
C_C	–0.00424	0.984	–0.02349	0.8366	0.00602	0.9622
EE_C	**0.41380**	**0.0143****	0.02400	0.7384	**0.10926**	**0.052***
SG_RT	0.09882	0.5303	–0.06747	0.6417	–0.05328	0.6658
S_RT	–0.29085	0.1844	0.15564	0.3473	0.00411	0.9823
EQ_RT	0.08838	0.2793	**0.07061**	**0.0457****	**0.07620**	**0.0732***
GS_S	**0.22931**	**0.0604***	–0.05012	0.6613	0.03622	0.7407
D_S	–0.58809	0.1422	**–0.78282**	**0.0058*****	**–0.66942**	**0.0302****
ED_S	**0.85952**	**0.0141****	**0.83305**	**0.0032*****	**0.78528**	**0.0043*****

Significance level at: *10%, **5%, ***1%.

Source: own elaboration.

case of the S_KO_V (model 2) model it had a negative impact, which could mean that the development of the industrial production sector is financed mainly with investment loans and working capital loans, and also that working capital loans are treated by this sector as a form of securing business continuity and liquidity, which explains the decrease in their value in times of economic prosperity and their increase in times of economic downturn in this sector. The importance of the economic situation in the retail and services sector is indicated by the aggregated model of the value of launched loans granted for micro-enterprises (S_T_V – model 2), where these factors (SI_RT, SI_S) were statistically significant. These results confirm hypothesis 3 (H_3).

Table 5 estimates models for the value of launched investment and working capital loans granted, taking into account the elements that make up the level of the economic situation. According to the calculations, the value of launched investment loans was affected by four factors, i.e., C_M, EE_C, GS_S and ED_S. On the other hand, the value of working capital loans was affected by the following factors of the economic situation: C_M, EP_M, EQ_RT, D_S and ED_S. In both cases, the current portfolio of domestic and foreign orders in the industrial processing sector (C_M) and the expected demand in the services sector (ED_S) were important, which indicates that micro-entrepreneurs, to a large extent, analyzing the demand for investment and working capital loans, take into account the economic situation regarding orders and demand for goods and services, as well as predictions in this regard. It is worth emphasizing the different specificity of factors in individual sectors, which most likely result from their characteristics and market conditions. In the case of processing, most likely due to high competition, micro-enterprises report demand for an investment loan when the number of orders is sufficient. In the case of the construction or services sector, micro-enterprises make these decisions earlier on the basis of predictions, and this may be due to the greater demand for manufactured goods or services. In the case of services, this may also be due to a shorter production cycle, as well as the fact that micro-enterprises in this sector compete more with each other in terms of service delivery time. In the case of the value of investment loans granted to micro-enterprises, the estimated model additionally indicated that the value of expected employment in the construction sector (EE_C) and the general situation of the entity in the last three months in the services sector (GC_S) were significant, which indicates that these enterprises tried to predict long-term behavior in the economy and development opportunities. The importance of the factor related to the expected employment in the construction sector may mean that in this sector, micro-enterprises decide to invest only when they have evidence of the lack of a significant barrier preventing the operation of the enterprise. In the model determining the value of working capital loans granted to micro-entrepreneurs, apart from C_M and ED_S, there are variables defining the expected production in the industrial processing sector (EP_M), the expected amount of goods sold in the retail sales sector and the demand for services in the last three months in the services sector (D_S). The significance of these factors is consistent with the use and characteristics of working capital loans. This indicates that micro-enterprises were guided by the current and near-term situation in the services and processing market when making decisions on financing their operations with a working capital loan. The model developed for the total value of loans granted to micro-enterprises indicated the similar importance of factors determining the economic situation in individual industries, as was the case in the models developed for investment and working capital loans.

CONCLUSIONS

The conducted research showed that economic factors play a significant role in shaping the demand for investment and working capital loans in the micro--enterprise sector, which stays in line with research done by Peel and Wilson [1996] and Cappiello et al. [2010] but the impact of the economic situation was greater in the case of investment loans than working capital loans. This may partly result from the two functions of working capital loans: in times of economic prosperity, allowing to raise capital to increase the scale of operations and generate additional income, and in times of economic

downturn as a kind of collateral enabling survival and maintaining liquidity. The research results also indicate that in periods of economic prosperity, micro-enterprises are more likely to take out investment loans than in periods of economic downturn, which confirms the results achieved by Temelkow [2018]. In addition, research shows that the propensity of micro-enterprises to take out working capital loans is more dependent on their current situation and expectations regarding the demand for products and services. The research revealed differences in the characteristics of the factors significantly influencing the demand for credit, depending on the sector to which the indicator is concerned. Banks and other financial institutions can use the results of the conducted research to predict the demand for credit for micro-enterprises, which will contribute to the modification of pricing and risk policies and, as a result, the improvement of financial ratios. Verifying whether the economic indicators relevant to the level of demand for investment and working capital loans among Polish micro-enterprises are different at the level of economic activity departments operating within the sector will be a challenge for future research. In addition, in the longer term, we would like to assess the impact of changes in selected economic indicators on the share of non-serviced loans in total loans granted to micro-enterprises.

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KONIUNKTURALNE UWARUNKOWANIA ZAPOTRZEBOWANIA NA KREDYTY INWESTYCYJNE I OBROTOWE DLA MIKROPRZEDSIĘBIORSTW – BADANIA DLA POLSKI W CZASIE COVID-19

STRESZCZENIE

Cel: Celem badań było znalezienie odpowiedzi na pytanie, czy i w jaki sposób wskaźniki koniunktury gospodarczej w przetwórstwie przemysłowym, budownictwie, handlu i usługach odzwierciedlają zmiany wielkości związanych z rynkiem kredytów inwestycyjnych i obrotowych wśród mikroprzedsiębiorstw. **Metody:** W badaniu wykorzystano miesięczne dane dotyczące kredytów inwestycyjnych i obrotowych oraz dane dotyczące koniunktury gospodarczej. Do analiz wykorzystano dane za lata 2019–2021 obejmujące okres pandemii COVID-19. Do estymacji modeli dynamicznych wykorzystano uogólnioną metodę momentów (GMM). **Wyniki:** Przeprowadzone badania wykazały, że czynniki ekonomiczne charakteryzujące koniunkturę gospodarczą odgrywają istotną rolę w kształtowaniu popytu na kredyty inwestycyjne i obrotowe w sektorze mikroprzedsiębiorstw, przy czym wyniki przeprowadzonych badań wykazały, że wpływ koniunktury gospodarczej na popyt na kredyty w sektorze mikroprzedsiębiorstw był większy w przypadku kredytów inwestycyjnych niż obrotowych. Co ważne w okresach dobrej koniunktury gospodarczej mikroprzedsiębiorstwa chętniej zaciągają kredyty inwestycyjne niż w okresach dekoniunktury, co wskazuje na to, że skłonność mikroprzedsiębiorstw do zaciągania kredytów obrotowych jest uzależniona od ich aktualnej sytuacji i oczekiwań co do kształtowania się popytu na ich produkty i usługi. **Wnioski:** Badania wykazały, że w sekatorze mikroprzedsiębiorstw występuje istotne zróżnicowanie czynników wpływających na popyt na kredyt inwestycyjne i obrotowe w zależności od branży. Z badań wynika, że dostęp do finansowania zewnętrznego jest kluczowy dla funkcjonowania, przetrwania i ekspansji mikroprzedsiębiorstw. Przeprowadzone badania umożliwiły wypełnienie luki literaturowej, wskazując zależność sytuacji gospodarczej w poszczególnych branżach na rynek kredytów inwestycyjnych i obrotowych w sektorze mikroprzedsiębiorstw.

Słowa kluczowe: kredyty inwestycyjne, kredyty obrotowe, mikroprzedsiębiorstwa, warunki ekonomiczne, branże, model panelowy