CREDIT FINANCING OF MICRO-ENTERPRISES AND FARMERS BY COMMERCIAL AND COOPERATIVE BANKS IN POLAND: DOES THE USE OF INVESTMENT AND WORKING CAPITAL LOANS CHANGE DURING THE COVID-19 PANDEMIC?¹

Summary

Purpose – The paper aims to assess the credit financing of microenterprises and farmers by commercial and cooperative banks in pre-COVID-19 and COVID-19 subperiods.

Research method – In the study, we apply the Kruskal-Wallis test and Wilcoxon rank-sum pairwise comparison test with the adjustment based on the Benjamini and Hochberg method to check whether there are significant differences in median values of banking loan categories for microenterprises and farmers among commercial and cooperative banks in the pre-COVID-19 and COVID-19 periods.

Results – We observe that microenterprises mostly use commercial banks, while farmers depend majorly on cooperative banks. Additionally, farmers use investment loans more often than microenterprises. We show a significant decline in loan sales and enquiries among microenterprises and farmers during COVID-19. Moreover, we observe the median values of all analysed categories show significant differences between commercial and cooperative banks. It concerns both investment and working capital loans.

¹ Article received on 13.10.2022, accepted on 10.06.2023.
Originality/value/implications/recommendations – Our contribution is that we analyse this issue from the perspective of leading suppliers offering banking loans, i.e., commercial and cooperative banks. We detect whether analysed banking loan categories differ significantly in the group of microenterprises and farmers across commercial and cooperative banks in Poland in the above-mentioned periods. To our knowledge, there are no similar studies. The results of our study might be helpful for banking institutions and policymakers in the context of a potential future pandemic or crisis situation.

Keywords: microenterprise, farmer, banking loan, credit financing, COVID-19 pandemic.

JEL classification: G21, G32, L25, Q14

1. Introduction and literature review

Micro small and medium-sized enterprises (SMEs) are viewed as the backbone and the engines of national economies worldwide, contributing to their development [Aghion et al., 2007, pp. 732–734; Manzoor et al., 2021, pp. 1–2; Secinaro et al., 2020, pp. 48–49]. SMEs contribute to economic growth in various ways: contributing to the production of GDP, creating jobs in rural and urban areas, and ensuring the desired sustainability and innovation in the economy [Ayyagari et al., 2007, pp. 415–434; Beck et al., 2015, pp. 525–550]. SMEs also contribute to regional development through their activities in the country, causing a more even distribution of investments in less developed regions [Taiwo et al., 2013, pp. 18–22].

The legislation of the European Union treats agricultural holdings as enterprises [European Commission Regulation, 2014]. Due to the structure of Polish farming, most of agricultural farms are classified as microenterprises. Due to the structure of Polish agriculture and the number of farmer business activities, agricultural farms’ importance in the Polish economy is substantial.

Our study focuses on microenterprises and farmer business activity in Poland, particularly on the issue of financing the business activity. Access to finance acts as a critical element in SMEs’ development and survival [Hartšenko, Sauga, 2013, pp. 10–11]. Simultaneously, access to finance belongs to the main continuous challenges and obstacles for SMEs functioning, which limits their growth opportunities [Manzoor et al., 2021, pp. 1–18; Rizhamadze, Ābeltina, 2021, pp. 115–126]. The activities of enterprises can be financed with capital from various sources. There are two primary sources of capital in enterprises, i.e., internal and external [Dyłewski, 2016, pp. 27–29]. In the paper, we deal with external
financing. A banking loan is the most popular form of external financing for European enterprises [Sierpińska-Sawicz, 2018, pp. 342–343], including Poland [Domańska-Szaruga, Mazurek, 2021, p. 81; Koziół, Pitera, 2018, pp. 152–153]. Due to the intended financing use, working capital and investment loans are distinguished [Heropolitanska et al., 2020, p. 64]. In the study, we conduct an analysis of both above-mentioned forms of banking loans.

Additionally, an essential issue in financing business activity is the structure of suppliers offering the loans. In Poland, according to banking law, banks might operate in the following legal forms: state-owned banks, joint-stock companies, and cooperatives. Apart from the regulations resulting from banking law [Ustawa, 1997], banks in the form of joint stock companies are subject to the provisions of the Commercial Companies Code. Due to the primary goals of business, i.e., profit maximization and shareholder value creation, banks in the form of joint stock companies are called commercial banks [Fiordelisi, Molyneux, 2010; Owsiak, 2015]. Due to their size and number, commercial banks play a dominant role in the banking sector. In the legal sense, cooperative banks are cooperatives, and their formation and operation are regulated by the provisions of the banking law, the act on the functioning of cooperative banks, their association and affiliating banks, and the cooperative law. It is conditioned by the necessity to simultaneously adjust the activities of cooperative banks to the cooperative and banking law. The only Polish state bank is BGK, whose role is not to finance enterprises directly. Cooperative banks operate based on self-help and mutual support combined with activity to benefit their members, markets, and community [Idasz-Balina et al., 2020, pp. 1–2]. Cooperative banks act locally as an engine for business, accounting for around one-fifth of the total bank deposits and loans in the European Union [Fiordelisi, Mare, 2014, p. 1]. According to Janc [2004], cooperative banks often fulfil vital functions and tasks of the banking system that commercial banks are unable or unwilling to perform. Cooperative banks are usually conservative and follow a more straightforward structure than commercial banks. Cooperative banks typically concentrate on lending-based retail banking for SMEs [Lang et al., 2016]. Poland’s cooperative banking is vital for local communities and the entire economy. These banks are often the only supplier of financial services in rural areas [Siudek, 2011; Kata, 2019, pp. 173–174], including farmer business activities.

We assess the banking loan financing of microenterprises and farmers during the COVID-19 pandemic period in relation to the corresponding pre-COVID-19 period. The novel coronavirus pandemic has smashed the world economy [Laing, 2020, pp. 580–582], including the Polish one [Czech et al., 2020, pp. 24–51]. By halting economic activity, it has hurt businesses and pushed many of them toward
bankruptcy [Didier et al., 2021]. Zimny [2022, p. 109] claims that the COVID-19 pandemic has affected the financial results of enterprises mainly through restrictions reducing the demand for goods and services and due to changes in costs incurred. Wellalage et al. [2022] observe that COVID-19 has resulted in substantial constraints for SMEs worldwide. Recent works provide evidence that the novel coronavirus has hit SMEs more severely than large companies [Fabeil et al., 2020; Corredera-Catalán, 2021; Khan, 2022]; given their relative financial instability and disadvantageous position during periods of economic downturn [Berg and Schrader, 2012; Demirgüç-Kunt et al., 2020]. Bartik et al. [2020] claim that SMEs dependency on banking loans has particularly intensified their difficulties during the pandemic time. Small enterprises are more conservative in crisis periods, considering the demand for external financing [Vermoesen et al., 2013, pp. 433–448]. Moreover, Bigsten et al. [2003, pp. 104–125] and Cowling et al. [2012, pp. 778–800] show that micro or small firms are much less likely to get a banking loan than large enterprises, particularly during crisis periods. Zając et al. [2021, pp. 486–491] reveal a significant decline in the value and number of banking loans (investment and working capital loans) for microenterprises and farmers during the COVID-19 period. Additionally, they find that the pandemic substantially reduced the number of loan enquiries.

In the paper, we assess credit financing of microenterprises and farmers in the pre-COVID-19 and COVID-19 periods. Our contribution is that we analyse this issue from the perspective of leading suppliers offering banking loans, i.e., commercial and cooperative banks. We detect whether analysed banking loan categories differ significantly in the group of microenterprises and farmers across commercial and cooperative banks in Poland in the above-mentioned periods. To our knowledge, there are no similar studies. The results of our study might be helpful for banking institutions and policymakers in the context of a potential future pandemic or crisis situation.

The remainder of our paper is structured as follows. The next section presents the study’s aim and hypotheses and describes the material and research methods. The subsequent section sets out the empirical findings and discussion. The last section summarises and presents the main conclusions.

2. Methodology

Our paper aims to assess the credit financing of microenterprises and farmers by commercial and cooperative banks in pre-COVID-19 and COVID-19 sub-
periods. We focus on investment and working capital loans, in detail banking loans’ number and value, and the number of banking loan enquiries.

To achieve the aim of the study, we formulate the following research hypotheses:

**H1:** Microenterprises’ number and value of banking loan sales and number of banking loan enquiries in commercial and cooperative banks significantly differ in the pre-COVID-19 and COVID-19 periods.

**H2:** Farmers’ number and value of banking loan sales and number of banking loan enquiries in commercial and cooperative banks significantly differ in the pre-COVID-19 and COVID-19 periods.

The Act on Entrepreneurs Law [Entrepreneurs Law, 2018] indicates that a microenterprise is an enterprise that, in at least one of the last two fiscal years, met the following conditions, i.e., employed an average of fewer than ten employees and achieved an annual net turnover from the sales or the total value of assets not exceeding the PLN equivalent of EUR 2 million. According to Statistics Poland data [Statistics Poland, 2022], the number of microenterprises (excluding agricultural holdings) in 2021 in Poland amounted to 2.29 million. According to the EU classification of enterprises, farmer business activities are also recognised as enterprises. According to the 2020 General Agricultural Census results, there are 1.32 million farms in Poland. Hence, both microenterprises and farms are vibrant groups of borrowers for the financial sector.

In our study, we focus on investment and working capital loans. Investment loans are intended to finance expenditures that create new or increase the existing fixed assets. Working capital loans finance the company’s day-to-day operations, including purchasing goods and materials, and increase the company’s current assets.

We analyse the loans, considering their sales number, sales value (sales volume) in PLN million, and a number of loan enquiries at commercial and cooperative banks. The number of banking loan enquiries is based on a number of requests for a credit report for a given business entity in BIK. Data for loan sales value are presented in real terms. To calculate the real sales value of banking loans, we adjust the nominal sales value by dividing it by the monthly price indices of consumer goods and services. The monthly index of consumer goods and services is based on surveys of retail market prices for consumer goods and services and surveys on average household expenditures for these goods and services. It is calculated in accordance with the Classification of Individual Consumption by Purpose, adapted for the use of the Harmonised Indices of Consumer Prices (HICP). Data on monthly indices of consumer goods and services come from Statistics Poland.
We use monthly data from Polish Credit Information Bureau (BIK), the primary source of credit and economic information in Poland, which collects and provides data on individual customers and entrepreneurs. BIK gathers complete information on the credit obligations of consumers and entrepreneurs, cooperating in this area with commercial banks, cooperative banks, Credit and Savings Unions (Spółdzielcze Kasy Oszczędnościowo-Kredytowe), and other financial establishments authorised to grant consumer credits.

We compare the pre-COVID-19 subperiod from April 2018 to March 2020 with the COVID-19 period from April 2020 to March 2022. The division into pre-COVID-19 and COVID-19 periods is based on the Stringency Index value. The Stringency index characterises the stringency of the government's anti-COVID-19 policy and is developed by the Blavatnik School of Government (Oxford University). The index provides a systematic cross-national and cross-temporal measure of tracking the severity level of government responses to the novel coronavirus pandemic. The index ranges from 0 to 100 [Hale et al., 2020]. The higher index level is related to the more stringent anti-COVID-19 policy. The highest value of the stringency index for Poland was observed in April 2020.

By applying the Kruskal-Wallis test [Kruskal, 1952; Kruskal, Wallis, 1952] and Wilcoxon rank-sum pairwise comparison test [Wilcoxon, 1992] with the adjustment based on the Benjamini and Hochberg method [Benjamini, Hochberg, 1995], we assess the existence of significant differences in the median values of banking loan categories for microenterprises and farmers both in commercial and cooperative banks in the pre-COVID-19 and COVID-19 periods. The description of qualitative variables applied in the analysis is presented in Table 1. In the Kruskal-Wallis test, monthly values of banking loan categories represent the quantitative variable.

**TABLE 1**

The description of qualitative variables applied in the Kruskal-Wallis and Wilcoxon rank-sum pairwise comparison tests

<table>
<thead>
<tr>
<th>Qualitative variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1_PC</td>
<td>microenterprises (M) at commercial banks (B1) during the pre-COVID-19 period (PC)</td>
</tr>
<tr>
<td>MB1_C</td>
<td>microenterprises (M) at commercial banks (B1) during the COVID-19 period (C)</td>
</tr>
<tr>
<td>MB2_PC</td>
<td>microenterprises (M) at cooperative banks (B2) during the pre-COVID-19 period (PC)</td>
</tr>
</tbody>
</table>
The null (H0) and alternative (H1) hypotheses in the Kruskal-Wallis test are as follows (Hecke, 2012; Ostertagová et al., 2014):

H0: All k population medians are the same.
H1: At least two population medians differ.

A calculation of the test statistic in the Kruskal-Wallis test is presented below:

\[
H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(N + 1), N = \sum_{i=1}^{k} n_i
\]

where \( R_i \) is the sum of the ranks calculated for each group \( i \) \( (i = 1, 2, ..., k) \), \( n_i \) is the size of \( i \) group, \( N \) is the number of observations in all \( k \) groups. \( H \) is approximately \( \chi^2 \) distributed, with the number of degrees of freedom which equals \( k-1 \). The coefficient \( 12/(N(N+1)) \) is a suitable normalization factor.

The quantitative variable in the Kruskal-Wallis test refers to the banking loan number, banking loan value (in PLN million), and banking loan enquiries. We conduct two separate Kruskal-Wallis tests and Wilcoxon rank-sum pairwise comparison tests for investment and working capital loans.

### 3. Research results

The outbreak of the COVID-19 pandemic led to the rapid and severe restrictions introduced by the Polish government to decrease the novel coronavirus contagion substantially. However, these anti-COVID-19 measures have resulted in a temporary lockdown of the entire economy and limited economic activity...
of enterprises. Based on Kauko et al. [2021], who reveal that the COVID-19 pandemic has triggered a substantial decline in banks’ new lending, we assume in the paper that the pandemic might have contributed to the significant change in new banking loan sales and enquiries among microenterprise and farmers in Poland.

We distinguish two two-year pre-COVID-19 and COVID-19 subperiods to detect the significant changes in banking loan categories. The month with the highest level of anti-COVID-19 restrictions is our starting date for the COVID-19 subperiod. As a measure of the government policy severity, we use the stringency index developed by Oxford University. The index reached the highest level, i.e., ca. 86, in April 2020. Table 2 presents Kruskal-Wallis test results:

**TABLE 2**

<table>
<thead>
<tr>
<th>Test results</th>
<th>Sales (number)</th>
<th>Sales (value in PLN million)</th>
<th>Enquiries (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investment loans</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chi square</td>
<td>168.43</td>
<td>135.71</td>
<td>161.18</td>
</tr>
<tr>
<td>p-value</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td><strong>Working capital loans</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>chi square</td>
<td>173.69</td>
<td>156.19</td>
<td>183.79</td>
</tr>
<tr>
<td>p-value</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Source: authors’ own elaboration based on BIK data.

We detect statistically significant differences in median values of all three analysed loan measures between at least two out of eight distinguished categories (qualitative variables), both in case of investment and working capital loans. Additionally, we conduct a pairwise comparison based on Wilcoxon rank-sum pairwise comparison test to verify whether the significant differences in median values refer to all distinguished categories or selected ones. Table 3 presents the Wilcoxon rank-sum pairwise comparison tests results for investment loans.


### Table 3

<table>
<thead>
<tr>
<th>Test results</th>
<th>Sales (number)</th>
<th>Sales (value in PLN million)</th>
<th>Enquiries (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1_PC and MB1_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MB2_PC and MB2_C</td>
<td>&lt; 0.001</td>
<td>0.005</td>
<td>0.757</td>
</tr>
<tr>
<td>FB1_PC and FB1_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB2_PC and FB2_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>0.566</td>
</tr>
<tr>
<td>MB1_PC and MB2_PC</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB1_PC and FB2_PC</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MB1_C and MB2_C</td>
<td>&lt; 0.001</td>
<td>0.051</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB1_C and FB2_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Source: authors’ own elaboration based on BIK data.

In the group of microenterprises, we reveal significant differences in median values across all categories in commercial banks and two categories (sales values and enquiries) in cooperative banks, when comparing the pre-COVID-19 and COVID-19 periods. Regarding the median values of banking loan categories for farmers, we found significant differences in all categories in commercial banks and two categories (sales number and value) in cooperative banks. Additionally, Table 4 and Figure 1 indicate that during the COVID-19 period, banking loan sales levels were notably lower than those in the corresponding pre-COVID-19 period. In both periods, the median values of all analysed categories show significant differences between commercial and cooperative banks. This suggests that credit financing for microenterprises and farmers differs between the two analysed groups of banks, irrespective of the research period.

The above-presented results are in line both research hypotheses. However, our study for banking loan enquiries in cooperative banks does not confirm the existence of significantly different numbers between pre-COVID-19 and COVID-19 periods.
Changes in levels of investment loan categories considering microenterprises and farmers at commercial and cooperative banks between the pre-COVID-19 and COVID-19 periods (based on average values in two corresponding periods)

<table>
<thead>
<tr>
<th>Variable</th>
<th>MB1</th>
<th>MB2</th>
<th>FB1</th>
<th>FB2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (number)</td>
<td>-22.67</td>
<td>-30.50</td>
<td>-33.34</td>
<td>-29.77</td>
</tr>
<tr>
<td>Sales (values)</td>
<td>-38.74</td>
<td>-18.87</td>
<td>-31.35</td>
<td>-23.28</td>
</tr>
<tr>
<td>Enquiries (number)</td>
<td>-37.51</td>
<td>-4.42</td>
<td>-85.13</td>
<td>4.74</td>
</tr>
</tbody>
</table>

Source: authors’ own elaboration based on BIK data.

In the case of microenterprises in cooperative banks and farmers in both analysed banks, the number of investment loans granted during the COVID-19 period decreased by approx. 30%. However, the value of banking loans given to microenterprises and farmers dropped much more in commercial banks than in cooperative banks, by over 30% and around 20% percent, respectively. A greater decline in the value than the number of loans granted to micro-entrepreneurs in commercial banks during the COVID-19 period may mean both the tightening of the criteria for granting loans and a reduction in the average level of financing by banks. Interestingly, the number of credit inquiries dropped substantially at commercial banks and hardly changed at cooperative banks. It might indicate that the offer of investment loans for micro-enterprises and farmers in cooperative banks during the COVID-19 period was relatively more attractive than commercial banks.

FIGURE 1

Boxplots on investment loan categories considering microenterprises and farmers at commercial and cooperative banks during the pre-COVID-19 and COVID-19 periods

Source: authors’ own elaboration based on BIK data.
Figure 1 depicts that microenterprises mostly use commercial banks, while farmers depend majorly on cooperative banks. Interestingly, despite the overall lower number of farmers than micro-entrepreneurs, the farmers use investment loans more often than microenterprises (considering the number of loan sales). However, the average value of such a loan is substantially lower than in the group of microenterprises (Figure 1). We reveal that in the COVID-19 period, the share of cooperative banks in investment financing for both farmers and microenterprises increased. Table 5 depicts the Wilcoxon rank-sum pairwise comparison tests for working capital loans.

Wilcoxon rank-sum pairwise comparison tests reveal significant differences in all the analysed credit categories in both commercial banks and cooperative banks between the pre-COVID-19 and COVID-19 periods (Table 5).
TABLE 5

Wilcoxon rank-sum pairwise comparison test results for working capital loans categories (p-value)

<table>
<thead>
<tr>
<th>Test results</th>
<th>Sales (number)</th>
<th>Sales (value in PLN million)</th>
<th>Enquiries (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1_PC and MB1_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MB2_PC and MB2_C</td>
<td>&lt; 0.001</td>
<td>0.048</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB1_PC and FB1_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB2_PC and FB2_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MB1_PC and MB2_PC</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB1_PC and FB2_PC</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>MB1_C and MB2_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>FB1_C and FB2_C</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Source: authors' own elaboration based on BIK data.

Furthermore, Table 6 and Figure 2 illustrate that during the COVID-19 period, the levels of loan sales and enquiries were lower than in the corresponding pre-COVID-19 period. In line with the results for investment loans for the group of microenterprises and farmers (Table 3), in both analysed periods, the median values of all analysed categories show significant differences between commercial and cooperative banks. This suggests that the patterns of credit financing for microenterprises and farmers vary between the two types of banks analysed, regardless of the analysed period. The above-presented results confirm first and second research hypotheses.

TABLE 6

Changes in levels of working capital loans categories considering microenterprises and farmers at commercial and cooperative banks between the pre-COVID-19 and COVID-19 periods (based on average values in two corresponding periods)

<table>
<thead>
<tr>
<th>Variable</th>
<th>MB1</th>
<th>MB2</th>
<th>FB1</th>
<th>FB2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (number)</td>
<td>-28.84</td>
<td>-28.20</td>
<td>-26.43</td>
<td>-40.10</td>
</tr>
<tr>
<td>Sales (values)</td>
<td>-31.70</td>
<td>-11.41</td>
<td>-34.42</td>
<td>-38.12</td>
</tr>
<tr>
<td>Enquiries (number)</td>
<td>-59.94</td>
<td>-20.37</td>
<td>-54.38</td>
<td>-31.12</td>
</tr>
</tbody>
</table>

Source: authors' own elaboration based on BIK data.
**FIGURE 2**

Boxplots on working capital loan categories considering microenterprises and farmers at commercial and cooperative banks during the pre-COVID-19 and COVID-19 periods

Source: authors' own elaboration based on BIK data.
The number of working capital loans granted to farmers during the COVID-19 period decreased the most, i.e., by 40%. Moreover, the decrease in the number of loans given to microenterprises in both groups of banks was almost identical (28%). In contrast, the reduction in the number of loans granted to farmers was lower in commercial banks than in cooperative banks. The value of banking loans granted to microenterprises by cooperative banks during the COVID-19 period decreased by 11%, while in the case of the other three analysed groups, this decrease amounted to over 30%. The number of working capital loan inquiries of microenterprises and farmers dropped substantially in both analysed banks during the pandemic period, however, the decrease was visibly greater in commercial banks than cooperative banks. It follows that the cooperative banks limited the financing of day-to-day operations of farmers more than the financing of microenterprises. It could have resulted from a stricter approach to financing a better-known group of clients and an attempt to diversify credit risk by limiting the financing of the core group of clients and opening up to entities with a lower share in the loan portfolio. Comparably to the results for investment loans, Figure 2 results show that in the case of working capital loans, microenterprises mostly use commercial banks, while farmers depend majorly on cooperative banks.

Our results indirectly correspond to Bigsten et al. [2003] and Cowling et al. [2012] who showed that micro or small firms are much less likely to get a banking loan than large enterprises, particularly during crisis periods. Moreover, we are in line with Zając et al. [2021] who reveal a significant decline in the sales number, sales value and number of banking loan enquiries during the COVID-19 period.

In our opinion, a decrease in credit financing of micro-enterprises and farmers by commercial and cooperative banks during the COVID-19 pandemic could be determined by various factors.

A decrease in credit financing of micro-enterprises and farmers by commercial and cooperative banks in Poland during the COVID-19 pandemic could be attributed to various factors. The pandemic-induced economic uncertainty may have shifted banks’ risk perception, leading to a reduction in credit provision to these sectors deemed riskier. Simultaneously, microenterprises and farmers could have reduced their credit demand in response to unstable business conditions and operational disruptions. Banks, aiming to maintain liquidity and fortify their balance sheets amidst the crisis, might have curtailed their credit offerings. Regulatory changes aimed at bolstering the resilience of the banking sector during this period could have further impacted lending behaviour. Additionally, issues related to banking loan repayment difficulties from existing borrowers, leading to a surge in non-performing loans, might have discouraged banks from issuing new credit.
4. Conclusions

Microenterprises are an essential element and driving force of the economy. Moreover, due to the structure of agriculture in Poland, the role of farmer business activity is also crucial. COVID-19 has hit the economy with numerous individuals hampering businesses, including microenterprises and farmers.

In the article, we focus on the issue of the external financing of enterprises. We assess the changes in banking loan financing of microenterprises and farmers during the COVID-19 pandemic. We focus on investment and working capital loans, in detail the changes in loans’ number and value and the number of loan enquiries. We compare the credit financing of microenterprises and farmers at commercial and cooperative banks, i.e., two leading suppliers offering financial capital in the form of a banking loan. We collate the banking loan categories in the pre-COVID-19 subperiod from April 2018 to March 2020 with the COVID-19 period from April 2020 to March 2022.

We observe that microenterprises mostly use commercial banks, while farmers depend majorly on cooperative banks. Additionally, farmers use investment loans more often than microenterprises. We show a decline in loan sales and enquiries among microenterprises and farmers during the COVID-19 pandemic. It concerns both investment and working capital loans. Additionally, the median values of all analysed categories show significant differences between commercial and cooperative banks. It implies that the patterns of credit financing for microenterprises and farmers vary between the two analysed types of banks, regardless of the analysed period.

COVID-19’s economic uncertainty may have driven Polish commercial and cooperative banks to reduce credit financing for microenterprises and farmers, perceiving these sectors as riskier. Simultaneously, these businesses might have reduced their credit demand due to volatile conditions and operational disruptions. Banks, focusing on liquidity preservation and balance sheet strength, may have scaled back credit provision.

Verifying if the changes in the level of banking loan categories among Polish microenterprises are sector-specific poses a challenge for future research. Moreover, in the long-run perspective, we would like to assess the impact of monetary policy, particularly changes in interest rates, on the credit market for microenterprises and farmers.
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