

Financing SMEs in times of the Covid-19 pandemic: OECD countries

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Abstract

This article aims to analyse the access to finance for small and medium-sized enterprises (SMEs) in times of the Covid-19 pandemic between countries in the European Union (EU) and countries outside the EU, both belonging to the *Organisation for Economic Co-operation and Development* (OECD) in 2020. The data was collected from the OECD database, with 21 EU countries and 13 non-EU countries. The variables were outstanding, defaulted and non-performing commercial loans, non-bank financing (factoring and invoicing, leasing and purchasing, investment capital and venture capital), bank loans and interest rates, guarantees and state-guaranteed loans and direct government loans. The SPSS programme was used to process the data and the t-test was used to test the hypotheses. The study concludes that the group of countries most affected by COVID-19 had less capital and risk investment financing, a higher number of SME bankruptcies, higher interest rates, less short and long-term financing and more state-guaranteed loan guarantees, thus confirming the hypothesis formulated. The remaining hypotheses were refuted.

Keywords: Financing, SMEs, Covid 19,

1. Introduction

As a rule, countries' economies are mostly made up of SMEs, which makes them a central element in defining economic policies to leverage these types of companies. They can account for up to 60% of a country's labour force (Ayyagari et al., 2007). The COVID-19 outbreak has had a significant impact on finance among SMEs, where the need for financing has increased even more in times of the COVID-19 pandemic Liu et al. (2022), companies are always faced

with a range of requirements to obtain financing, such as the relationship between entrepreneurs and creditors, financial reports, guarantee or collateral are among the most common requested by creditors (Uchida, 2011). This set of requirements has always led entrepreneurs to seek financing from both more traditional institutions and alternative sources (Mamaro & Sibindi, 2022). According to Serrasqueiro et al. (2023), there is a positive effect of external debt on SME growth, which can be explained by the insufficiency of internally generated funds. COVID 2019 has significantly influenced various aspects of society and the economy, a problem that needs immediate attention in this situation is the increasing difficulties faced by SMEs in obtaining capital, which has raised great concern on the part of multiple stakeholders for the continuity of SMEs (Song et al., 2020). As the impact of COVID-19 in OECD countries has varied, it is crucial to look at SME financing in this particular period of great challenge for humanity, from the point of view of more traditional financiers, as well as at SME financing alternatives.

The sharp contraction in lending to otherwise viable companies leads to a significant increase in the distress rate and policy measures that seek to support the provision of liquidity financing to viable companies will continue to play a role in the recovery from the pandemic (McCann et al., 2023). There is little in the literature on the financing difficulties of SMEs in the OECD in times of crisis from the COVID-19 pandemic, particularly on the issue of the separation of eurozone and non-Eurozone countries, with eurozone countries in terms of financing being governed by the European Central Bank (ECB), and non-EU countries by their central banks. However, the following research problem was defined: which groups of OECD countries have had the greatest difficulties in accessing financing for SMEs in times of Pandemic? Most studies do not analyse by groups of OECD countries belonging to the Eurozone or countries outside the Eurozone, so to fill this gap in the literature, this study contributes by analysing the financing opportunities for SMEs in times of Pandemic in two groups of OECD countries (2020), EU and non-EU.

The following points of the article are structured in 6 points. Point 2 presents the literature review and the hypotheses, preceded by an introduction. Point 3 presents the research methodology. Point 4 deals with the results and discussion of the research to demonstrate the impact of COVID-19 on SME financing. Finally, points 5 and 6 present our conclusions and references.

2. Literature review

2.1. *Background on access to finance for SMEs*

The COVID-19 pandemic has been a decisive factor in the global economic situation, and large economies such as those of the OECD have not been left out of this great challenge for humanity. For SMEs the situation has been much more acute, for example in the European economy the risk of insolvency has grown by 21%, and production and labour costs have contributed significantly to the risk of insolvency for SMEs and they have also experienced a deterioration in their access to finance during this period (Kaya, 2022). During the pandemic, more than 600 positive cases were diagnosed with approximately 6.5 million people during the end of January 2020 to October 2022 (Gur et al., 2023). In the United States, commercial banks are the largest lenders to SMEs and in times of Covid 19, only 42 per cent of these companies have had their financing needs met (Chen et al., 2022). A study carried out in Africa, specifically in Cameroon, revealed that the clauses of debt contracts with banks and microfinance institutions, the time required to apply for a loan from the bank and the nature of the manager's training had a negative influence on the sustainability of Cameroonian SMEs during COVID-19 (Djeudja & Salamon, 2023).

SMEs have experienced numerous situations during the pandemic phase, i.e. reduced demand, difficulties encountered in the supply chain, increased production costs, limited funds to carry out investment activities and market opportunities, so access to finance has still become a vital issue for SMEs (Gur et al., 2023). The most developed economies have more SMEs, but their success is not explained by having many SMEs, but the evolution of the financial system can contribute to economic development by eliminating financing constraints for SMEs (Beck, 2013).

Small and medium-sized enterprises are the backbone of the real economy, so when economic conditions and the business environment are affected by restrictions on competition that trigger a decrease in innovation, fewer jobs are created and economic growth slows down (Gur et al., 2023). The COVID-19 pandemic has posed an existential threat to the financial resilience of European SMEs with significant consequences for the European economy (Kaya, 2022). Apergis & Apergis, (2021) argue that COVID 19 has severely hit the industrial sector, where it reports a critical role for banks and governments in supporting SMEs, where interest rate reductions are a satisfactory response from central banks, rescheduling of companies' current loans, moratoriums and new loans. The challenges brought about by COVID 19 is one of the most prominent predictors of the financial response for SMEs Watkins et al. (2007), such that the higher the risk perception of business owners, the more likely are to decrease their intention

to lend, however, from the position of the banking sector, SMEs represent an important segment in their business portfolio (Vo et al., 2022).

2.2 SME financing facilities and hypotheses

The September 2013 G20 summit in Russia declared that its political agenda included economic growth through job creation and quality investment; this agenda quickly took centre stage as the economic policy of several OECD countries, including the US, France and South Korea (Seo, 2017).

Access to finance has always been a challenge for SMEs, but the need to address this issue became more debated after the 2008 global financial crisis, since SMEs are seen as engines of growth and job creation (Ardic et al., 2012).

Restrictions on access to finance can be of various kinds: (i) in quantity, where SMEs receive less funds than requested; (ii) in price, where financing becomes more expensive due to the increase in the interest rate, given the risk associated with the loan; (iii) in loan term, where the SME obtains credit with shorter repayments than expected; and (iv) in guarantees, where financial entities restrict access to credit conditions by demanding bank guarantees or other types of additional guarantees (Elyasiani & Goldberg, 2004; Baas & Schrooten, 2006; José Casasola-Martínez & Cardone-Riportella, 2009; Ono & Uesugi, 2009; apud Corredera-Catalán et al., 2021).

Countries usually have their own legislation that defines the criteria for classifying SMEs, which is based on the number of employees and the volume of sales. Ardic et al. (2012) state that there is no single definition of SMEs, the differences in definitions between countries are not statistically significant in explaining the differences in the volumes of loans to SMEs, the study estimates that on average, loans to SMEs make up 13% of GDP in developed countries and 3% in developing countries. According to statistics from an OECD policy report from June 2000, 60-70% of jobs in OECD countries come from SMEs, and they account for 95% of jobs among all companies (OECD apud Seo, 2017).

SMEs, given their relevance to any country's economy, should merit attention from governments in facilitating the processes of designing financing for SMEs. The result of Seo's study found that relaxing pro-cyclicality in SME lending is an important step that the financial supervisory authorities of most OECD countries could take to ensure that this happens, since most SMEs are used to obtaining external funds through indirect financing methods due to their lack of reputation (Seo, 2017).

Lenders charge higher rates to borrowers who are less likely to repay the loans (Elyasiani & Goldberg, 2004). SMEs find it difficult to obtain commercial bank finance, especially long-term loans, for a number of reasons, including lack of collateral, difficulties in proving creditworthiness, small cash flows, inadequate credit history, high risk premiums, underdeveloped bank-borrower relationships and high transaction costs (Ardic et al., 2012). Although SMEs make a crucial contribution to employment, diversification and productivity in any country in the world and especially in developing countries, they still face significant credit constraints through traditional lending institutions in times of Covid-19 (Charaia et al., 2021). SME financing decisions are largely determined by the attitudes and characteristics of managers and owners, where owner/manager attributes have a greater influence on financing decisions as capital is more concentrated (Rao & Kumar, 2018).

The sustainability of companies is closely linked to their ability to attract external investment, for example in the study by (Owen et al., 2023) where 2,865 were surveyed, 19% of SMEs had sought external finance. The main types of finance sought were bank loans (43 per cent), leasing (35 per cent), credit cards (22 per cent), commercial mortgages (11 per cent), *factoring* (9 per cent), grants (7 per cent), *equity finance* (6 per cent) and *peer-to-peer debt finance* (4 per cent, P2P). The European Commission report concluded that "despite many initiatives in all Member States and at EU level, representations from SMEs and independent research point to the continuing problems faced by SMEs in obtaining access to finance and with regard to its cost. It has been found that one of the most effective ways of helping SMEs to overcome these difficulties is the mutual guarantee scheme, which is a market-orientated response by SMEs to the problems they face (European Commission, 1991).

The pandemic has significantly increased trade credit financing for companies heavily affected by COVID-19, this may be due to the rising cost of bank loans and as a result, companies resort to more flexible and less expensive alternatives (Xie & Tian, 2023). This means that COVID-19 has increased the cost of bank finance, reduced access to bank finance, increased the search for alternative sources of finance, and led several SMEs to go bankrupt, become less productive and default.

In the study on understanding the dynamics of Covid-19 SME financing in the UK, they found that 92.1 per cent of all debt funds provided in this period were guaranteed by the UK government, which differs significantly from the 5 per cent in normal circumstances (Calabrese et al., 2022).

Increased access to finance for SMEs facilitated by the guarantee system, especially in crises as serious as the one caused by the coronavirus pandemic, has an important effect on general

economic well-being in terms of maintaining employment and safeguarding the survival of the companies themselves (Corredera-Catalán et al., 2021).

Numerous studies show that access to finance and the cost of credit not only represent barriers to SME financing, but also restrict SMEs more than large companies (Ardic et al., 2012).

Hypotheses

H1: The group of countries that were most affected by Covid 19 had more outstanding, defaulted and non-performing commercial loans.

H2: The group of countries that were most affected by Covid 19 had more non-bank financing (factoring, leasing and purchasing, investment capital and venture capital) and there were more SME bankruptcies.

H3: In the group of countries most affected by Covid-19, SMEs had less bank financing and higher interest rates.

H4: In the group of countries most affected by Covid-19, SMEs had more guarantees, state-guaranteed loans and direct government loans.

3. Methods

Since the outbreak of the COVID-19 pandemic, some essential data, such as the results in the World Bank's Global Enterprise Survey, have become even more important for capturing the effects on SMEs. Surveys, therefore, are important data sources for understanding the real impact of the pandemic at the company level (Gur et al., 2023). Several empirical studies have been carried out with the aim of analysing the effects of COVID-19 on SMEs. For example, the study by (Mamaro & Sibindi, 2022) found that although *crowdfunding* is still in its infancy, it increasingly provides a significant amount of funding to African SMEs, but the COVID-19 pandemic has decreased the success of *crowdfunding* due to lower participation in crowdfunding. Yang (2022) found that *private equity and venture capital* (PE/VC) played a positive role in the financial risk of companies during the COVID-19 pandemic. The results of the studies by Gur et al. (2023) show that micro and small companies face more financial difficulties and have less access to formal financing channels than large companies in times of Covid 19, they tend to borrow more from their acquaintances instead of formal credit channels in the banking sector.

Although the impact of the pandemic has been particularly severe for women, the study by Hewa-Wellalage et al. provides a slight female favouritism, with female entrepreneurs up to 2 percentage points more likely to cease debt financing than their male counterparts during the

pandemic based on their gender alone (Hewa-Wellalage et al., 2022). There are several factors that condition SMEs' access to finance in times of Covid-19.

The data in this article is secondary and was collected from the *Organisation for Economic Co-operation and Development* (OECD) database, and is a quantitative study using the deductive method.

The OECD includes 49 countries in its organisation, in which cross-sectional data has been collected from 48 countries. The SME financing data provides a comprehensive framework for monitoring SMEs' access to finance over time, where country profiles present data for a number of key indicators, which measure trends in SME debt and equity financing, creditworthiness and government policy measures. The set of indicators provides policymakers and other stakeholders with a consistent framework to assess whether SMEs' financing needs are being met, to support the design and evaluation of policy measures, and to monitor the implications of financial reforms on SMEs' access to finance (OECD, 2020).

Data was selected from 34 member countries, three of which (Germany, Costa Rica and Iceland) are not in the database, including Norway, which only has data up to 2015, where the OECD database goes up to 2020. For the research, the data was subdivided into two groups, the first with the OECD countries that are members of the European Union consisting of 21 countries (Austria, Belgium, Denmark, Slovakia, Slovenia, Spain, Estonia, Finland, France, Greece, the Netherlands, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Czech Republic, Sweden) and the second from non-EU countries comprising 13 countries (Australia, Canada, Chile, Colombia, Israel, Japan, Korea, Mexico, New Zealand, Switzerland, Turkey, United Kingdom and United States of America), for the year 2020, on access to funding.

For the database, the base currency was the Euro because most of the countries are part of the European Union, the values are represented in millions of Euros, and all values for countries with currencies other than the Euro were converted using the exchange rate for the last month of 2020, obtained from the International Monetary Fund and the European Central Bank (International Monetary Fund, 2020; European Central Bank, 2020).

According to data from the World Health Organisation in the COVID-19 epidemiological report for 2020, 39,588,896 were reported in OECD countries, of which 30.62% were from EU countries and 69.38% from non-EU countries (World Health Organisation, 2020). More recent data from Johns Hopkins University Medicine (2023), the Coronavirus research centre at John Hopkins University, reported data collected from 22/01/2020 to 10/03/2023, where it was found that for the 34 countries selected in this survey, 361 620 404,00 confirmed cases were

detected, in which 62 per cent of the confirmed COVID-19 cases represent countries that are not members of the European Union, the remaining 48 per cent represent countries that are members of the European Union, showing that non-EU countries continue to have a higher percentage than EU countries. This article defined SME financing as the dependent variable, and the independent variables were outstanding, defaulted and non-performing commercial loans, non-bank loans (factoring, leasing and purchases, investment capital and venture capital), interest rates, guarantees, state-guaranteed loans and direct government loans. To compare the means between the two groups of countries, only the Student's t-test was used, following the same methodology as the authors (Civelek et al., 2021; Delić Josip Juraj Strossmayer et al., 2016; Ključnikov et al., 2023; Shava, 2018; Torres-Palacio, 2020).

4. Results and Discussions

Table I shows the descriptive statistics for the results of the study's first hypothesis, which states that according to the literature review, the group of countries that were most affected by Covid 19 had more outstanding, defaulted and non-performing commercial loans.

According to the data on covid 19, the countries analysed 64% of the cases were detected in non-EU countries and 36% of the cases in EU countries. Outstanding commercial loans to SMEs were only observed in 2020 in 18 EU countries and 12 non-EU countries, with an average of €340,414.5567 million going to EU countries and €307,169.6928 million to non-EU countries. Taking into account the value of the standard deviation of the two groups, it shows that there is a greater dispersion of the data in relation to the average in the EU countries. The average of total non-performing loans for EU countries was 4,076.3995 million euros, representing 8.646% of total SME short-term loans, and for non-EU countries it was 2.5120 million euros, representing 0.077% of total SME short-term loans. The standard deviation shows that the average of the total non-performing loans for non-EU countries is less dispersed than the data.

The average of non-performing loans to SMEs for EU countries was 3,293.7831 million euros, representing 6.986% of total short-term loans to SMEs, and for countries outside the EU it was 3.0511 million euros, representing 0.093% of total short-term loans to SMEs. The standard deviation shows that the average of total non-performing loans for SMEs in countries outside the EU is less dispersed than the data for the countries in question.

Table I: Descriptive statistics for the country groups (appendix)

The t-test presented in **Table II** showed that EU countries had on average more outstanding commercial loans (X2) than non-EU countries $t(28)=0.093$, $p>0.05$. The same occurred when analysing non-performing loans (X5), which on average were higher in EU countries than in non-EU countries $t(18)=0.082$, $p>0.05$. For non-performing loans (X25), the t-test shows that EU countries had more non-performing loans on average than non-EU countries $t(20)=0.827$, $p>0.05$.

Table II: Independent samples test (appendix)

Table III shows the descriptive statistics of the results of the second hypothesis, which states that according to the theory, the group of countries that have been most affected by Covid 19 have had more non-bank financing (investment capital and venture capital, *leasing* and purchases, *factoring and invoices*) and there have been more SME bankruptcies.

The average for investment and venture capital was 36,906.0787 million euros for EU countries and 11,945.893 million euros for non-EU countries, and there was also less dispersion of the average in relation to the data in non-EU countries. The average for financial leasing and purchases was higher in non-EU countries at around 40,592.8402 million euros and there was less dispersion of the data in relation to the average in the group of EU countries. The average number of SME bankruptcies for EU countries was 4,511.1412 companies and 3,434.6425 companies went bankrupt in non-EU countries, while the dispersion of the average number of SME bankruptcies in relation to the data was lower in non-EU countries. As for the *factoring* and invoicing financing modality, the average for EU countries was 21,332.1683 million euros higher than in the non-EU group and there was less dispersion of the average in non-EU countries in relation to the average.

Table III: Group statistics (appendix)

Table IV of the t-test shows that EU countries had on average more investment and risk capital (X9) than non-EU countries $t(29)=0.784$, $p>0.05$. The same test shows that when analysing leasing and purchases (X11), non-EU countries had a higher average value than EU countries, $t(7.016)= -1.004$ $p < 0.05$. On average, EU countries had more companies go bankrupt (X23) than non-EU countries, $t(23)=0.339$, $p>0.05$. Another non-banking indicator analysed was factoring and invoicing (X28), the results presented by the t-test show that on average the

countries of the European Union had more financing than the countries outside the European Union.

Table IV: Independent samples test (appendix)

Table V presents the descriptive statistics of the results of the third hypothesis, according to which the review of theory supports that the group of countries that were most affected by Covid 19, SMEs had less bank financing and higher interest rates. The average interest rate for SMEs in EU countries was 2.6024%, while for non-EU countries there was an average of 5.2127. As for the standard deviation of the average interest rate in relation to the data, there was greater dispersion in non-EU countries. There was more access to short-term loans for SMEs in EU countries with 47,145.74118 million euros, while short-term loans for SMEs in the non-EU group totalled 3,258.6639 million euros. The standard deviation in this variable shows greater dispersion of the data in relation to the average in the non-EU group. As for long-term loans for SMEs, there was less access to this type of financing in non-EU countries and a lower standard deviation.

Table V: Group statistics (appendix)

The t-test shown in **Table VI** shows that EU countries had lower interest rates (X6) on average than non-EU countries $t(10.658) = -2.165$ $p < 0.05$. Another indicator analysed by the t-test was short-term (X20) and long-term (X21) loans, for both cases on average EU countries granted more loans to SMEs than non-EU countries. For X20 $t(20) = 0.596$ $p > 0.05$, while for X21 $t(21) = 0.533$ $p > 0.05$.

Table VI: Independent samples test

Table VII presents the descriptive statistics of the results of the fourth hypothesis, which according to the literature, the countries that were most affected by Covid 19, SMEs had more guarantees, state-guaranteed loans and direct government loans. The average number of state loan guarantees for SMEs in EU countries was 20,792.4432 million euros, while non-EU countries had an average number of state loan guarantees in the order of 52,096,967.9102 million euros, with the latter group having the highest standard deviation. As for variable X16 - state-guaranteed loans to SMEs, the EU countries had fewer guaranteed loans and the standard

deviation was lower, which means that the non-EU countries had a higher average number of guaranteed loans and a greater distance between the data and the average. Contrary to the two averages of the variables analysed in this hypothesis, SMEs in EU countries had more direct loans from the state with 4,647.2490 million euros and there was also a greater dispersion of the data in relation to the average.

Table VII: Group statistics (appendix)

When analysing the indicators in **table VIII**, which reports on government loan guarantees for SMEs (X15), using the t-test, on average European Union countries had fewer government loan guarantees than countries outside the European Union, $p(9) = -1$ $p < 0.05$. Similar results were identified when analysing state-guaranteed loans (X16), where on average SMEs received more government support in non-EU countries compared to EU countries $p(7.20) = -0.948$ $p < 0.05$. Conversely, we found that EU countries on average granted more direct government loans to SMEs than non-EU countries, according to the data provided by the t-test $p(8) = 0.33$ $p > 0.05$.

Table VIII: Independent samples test (appendix)

5. Conclusions

This research used the t-test to analyse the impact/affect of COVID on access to finance for SMEs in the year 2020, in EU and non-EU countries belonging to the OECD in the respective period, using as main variables, outstanding commercial loans, non-performing loans, factoring, leasing, and purchasing, investment and venture capital, bankruptcies, bank financing, interest rate, state guarantees, state guaranteed loans and direct state loans. The main results of the above were as follows:

Data from the Federal Reserve Banks, (2020), concluded that among SMEs that had applied for financing in the previous 12 months, 46 per cent would need to take out an additional loan as a result of the pandemic crisis. European Central Bank (2020) data says that the availability of commercial credit for both domestic and international transactions fell by 20 per cent. EU countries were less affected by COVID-19 compared to non-EU countries, however, SMEs in EU countries had more outstanding commercial loans, more non-performing loans and more non-performing loans compared to non-EU countries, thus refuting the first hypothesis.

When the investment capital and venture capital indicator was analysed, EU countries provided more of this type of financing to SMEs than non-EU countries. The variable of financial leasing and purchases met the hypothesis, but when the degree of bankruptcy of SMEs was analysed, it was higher on average in EU countries, which did not meet the hypothesis. Lastly, the results for factoring and purchases contradicted the hypothesis.

Governments around the world have reduced monetary policy in response to the pandemic crisis, for example, the European Central Bank linked to the Eurozone countries has relaxed collateral standards, requirements for financial institutions operating in the Eurozone, in order to maintain the flow of credit to companies and provided more attractive lending options to banks. In the case of the USA, the government has taken similar measures to the ECB in lowering the federal funds rate, and has introduced various policies to guarantee the availability of credit for SMEs (OECD, 2020).

The variable interest rates, short-term loans and long-term loans, confirm our hypothesis that in the group of countries that have been most affected by COVID there have been higher interest rates and less short- and long-term financing.

When analysing state support in terms of guarantees and guaranteed loans, the countries least affected by COVID had more government support in these two variables, thus validating the hypothesis, while in the case of the direct state loan indicator, SMEs had more direct state loans in the countries least affected by COVID, contradicting the hypothesis.

The main limitations of this study were the balancing of the data, where some countries did not have data in the survey, belonging to both the EU and non-EU country groups. Of the variables selected for analysis, there is missing data in both groups of countries. The COVID-19 data refers to the total number of cases notified up to the year 2023,

Future lines of research include studying the impact of direct state funding on SMEs, analysing access to finance for micro and large enterprises in times of Covid in OECD countries. The comparative study between continents of access to financing for SMEs in times of COVID-19, the impact of financing and its costs in the period before, during and after Covid on the capital structure of SMEs.

References

- Apergis, E., & Apergis, N. (2021). The impact of COVID-19 on economic growth: evidence from a Bayesian Panel Vector Autoregressive (BPVAR) model. *Applied Economics*, 53(58), 6739-6751. <https://doi.org/10.1080/00036846.2021.1946479>

- Ardic, O. P., Mylenko, N., & Saltane, V. (2012). Access to Finance by Small and Medium Enterprises: A Cross-Country Analysis with A New Data Set. *Pacific Economic Review*, 17(4), 491-513. <https://doi.org/10.1111/j.1468-0106.2012.00596.x>
- Ayyagari, M., Beck, T., & Demirguc-Kunt, A. (2007). Small and medium enterprises across the globe. *Small Business Economics*, 29(4), 415-434. <https://doi.org/10.1007/s11187-006-9002-5>
- Baas, T., & Schrooten, M. (2006). Relationship banking and SMEs: A theoretical analysis. *Small Business Economics*, 27(2-3), 127-137. <https://doi.org/10.1007/s11187-006-0018-7>
- Beck, T. (2013). Bank Financing for SMEs - Lessons from the Literature. *National Institute Economic Review*, 225(1). <https://doi.org/10.1177/002795011322500105>
- Calabrese, R., Cowling, M., & Liu, W. (2022). Understanding the Dynamics of UK Covid-19 SME Financing. *British Journal of Management*, 33(2), 657-677. <https://doi.org/10.1111/1467-8551.12576>
- Charaia, V., Chochia, A., & Lashkhi, M. (2021). Promoting fintech financing for SME in S. Caucasian and baltic states, during the COVID-19 global pandemic. *Business, Management and Economics Engineering*, 19(2), 358-372. <https://doi.org/10.3846/bmee.2021.14755>
- Chen, B., Zhang, C., & Saydaliev, H. B. (2022). Does bank complexity during the COVID-19 crisis alter the financing mechanism for small and medium-sized enterprises? *Economic Analysis and Policy*, 75, 705-715. <https://doi.org/10.1016/j.eap.2022.06.018>
- Civelek, M., Ključnikov, A., Fialova, V., Folvarčn, A., & Stoch, M. (2021). Major obstacles in innovative activities of family-owned SMEs: Evidence from Czechia. *Economics and Sociology*, 14(2), 137-149. <https://doi.org/10.14254/2071>
- Corredera-Cataln, F., di Pietro, F., & Trujillo-Ponce, A. (2021). Post-COVID-19 SME financing constraints and the credit guarantee scheme solution in Spain. *Journal of Banking Regulation*, 22(3), 250-260. <https://doi.org/10.1057/s41261-021-00143-7>
- Delić Josip Juraj Strossmayer, A., Oberman Peterka Josip Juraj Strossmayer, S., & Kurtović, I. (2016). *IS THERE A RELATIONSHIP BETWEEN FINANCIAL LITERACY, CAPITAL STRUCTURE AND COMPETITIVENESS OF SMEs?* <http://www.hnb.hr/publikac/istrazivanje/i-012.pdf>
- Djeudja, R., & Salamon, Y. (2023). Business climate and sustainability of Cameroonian small and medium enterprises in times of COVID-19. *African Journal of Economic and Management Studies*, 14(3), 399-419. <https://doi.org/10.1108/AJEMS-05-2022-0214>
- Elyasiani, E., & Goldberg, L. G. (2004). Relationship lending: A survey of the literature. *Journal of Economics and Business*, 56(4), 315-330. <https://doi.org/10.1016/j.jeconbus.2004.03.003>
- European Central Bank (2020). *ECB Economic Bulletin, Issue 4 / 2020*.
- European Central Bank (2020). *Euro foreign exchange reference rates*.
- European Commission (1991). *Commission of the european communities communication from the commission the role of mutual guarantee systems in the financing op sme in the european community*.
- Federal Reserve Banks (2020). *2020-sbcs-employer-firms-report (1)*.
- Gur, N., Babacan, M., Aysan, A. F., & Suleyman, S. (2023). Firm Size and Financing Behaviour during COVID-19 Pandemic: Evidence from SMEs in Istanbul. *Borsa Istanbul Review*, 23(4), 804-817. <https://doi.org/10.1016/j.bir.2023.02.001>

- Hewa-Wellalage, N., Boubaker, S., Hunjra, A. I., & Verhoeven, P. (2022). The gender gap in access to finance: Evidence from the COVID-19 pandemic. *Finance Research Letters*, 46. <https://doi.org/10.1016/j.frl.2021.102329>
- International Monetary Fund. (2020). *Representative Exchange Rates for Selected Currencies for December 2020* (imf.org).
- Johns Hopkins University Medicine. (2023, December 17). *CORONARIVUS RESOURCE CENTRE*. <https://coronavirus.jhu.edu/region>
- José Casasola-Martínez, M., & Cardone-Riportella, C. (2009). . *Introducción "Too important to fail": ¿Favorecen las relaciones bancarias la situación crediticia de las PYMEs españolas?** "Too Important to Fail": Do Banking Relationships Improve Spanish SmEs Credit Conditions? 12-29.
- Kaya, O. (2022). Determinants and consequences of SME insolvency risk during the pandemic. *Economic Modelling*, 115. <https://doi.org/10.1016/j.econmod.2022.105958>
- Ključnikov, A., Civelek, M., Durda, L., Fialová, V., & Folvarčná, A. (2023). The role of executive characteristics in their evaluation of financial conditions of European SMEs. *E a M: Ekonomické a Management*, 26(2), 69-86. <https://doi.org/10.15240/tul/001/2023-2-005>
- Liu, Y., Zhang, Y., Fang, H., & Chen, X. (2022). SMEs' line of credit under the COVID-19: evidence from China. *Small Business Economics*, 58(2), 807-828. <https://doi.org/10.1007/s11187-021-00474-9>
- Mamaro, L. P., & Sibindi, A. B. (2022). Entrepreneurial Financing in Africa during the COVID-19 Pandemic. *Journal of Risk and Financial Management*, 15(11). <https://doi.org/10.3390/jrfm15110511>
- McCann, F., McGeever, N., & Yao, F. (2023). SME viability in the COVID-19 recovery. *Small Business Economics*, 61(3), 1053-1074. <https://doi.org/10.1007/s11187-022-00723-5>
- OECD, C. for E. Sme. L. D. and T. (CFE) (2020). *Financing SMEs and Entrepreneurs: An OECD Scoreboard* .
- Ono, A., & Uesugi, I. (2009). Role of collateral and personal guarantees in relationship lending: Evidence from Japan's sme loan market. *Journal of Money, Credit and Banking*, 41(5), 935-960. <https://doi.org/10.1111/j.1538-4616.2009.00239.x>
- Owen, R., Botelho, T., Hussain, J., & Anwar, O. (2023). Solving the SME finance puzzle: an examination of demand and supply failure in the UK. *Venture Capital*, 25(1), 31-63. <https://doi.org/10.1080/13691066.2022.2135468>
- Rao, P., & Kumar, S. (2018). Reflection of owner's attributes in financing decisions of SMEs. *Small Enterprise Research*, 25(1), 52-68. <https://doi.org/10.1080/13215906.2018.1428908>
- Seo, J. Y. (2017). A Study of Effective Financial Support for SMEs to Improve Economic and Employment Conditions: Evidence from OECD Countries. *Managerial and Decision Economics*, 38(3), 432-442. <https://doi.org/10.1002/mde.2838>
- Serrasqueiro, Z., Pinto, B., & Sardo, F. (2023). SMEs growth and profitability, productivity and debt relationships. *Journal of Economics, Finance and Administrative Science*, 28(56), 404-419. <https://doi.org/10.1108/JEFAS-01-2022-0018>
- Shava, H. (2018). Impact of gender on small and medium-sized entities' access to venture capital in South Africa. *South African Journal of Economic and Management Sciences*, 21(1). <https://doi.org/10.4102/sajems.v21i1.1738>

- Song, H., Yang, Y., & Tao, Z. (2020). How different types of financial service providers support small- and medium- enterprises under the impact of COVID-19 pandemic: from the perspective of expectancy theory. *Frontiers of Business Research in China*, 14(1). <https://doi.org/10.1186/s11782-020-00095-1>
- Torres-Palacio, P. (2020). The reduction of production lead time using holonic manufacturing: experiment and analysis. *Journal of Manufacturing Technology Management*, 31(3), 648-668. <https://doi.org/10.1108/JMTM-03-2019-0097>
- Uchida, H. (2011). What Do Banks Evaluate When They Screen Borrowers? Soft Information, Hard Information and Collateral. *Journal of Financial Services Research*, 40(1), 29-48. <https://doi.org/10.1007/s10693-010-0100-9>
- Vo, A. H. K., Truong, T. T. T., & Huynh, K. D. (2022). THE IMPACT OF COVID-19 ON FINANCING DECISIONS OF SMEs IN VIETNAM. *Asian Academy of Management Journal*, 27(2), 163-187. <https://doi.org/10.21315/aamj2022.27.2.8>
- Watkins, R. E., Cooke, F. C., Donovan, R. J., MacIntyre, C. R., Itzwerth, R., & Plant, A. J. (2007). Influenza pandemic preparedness: Motivation for protection among small and medium businesses in Australia. *BMC Public Health*, 7. <https://doi.org/10.1186/1471-2458-7-157>
- World Health Organisation (2020). *COVID-19 Weekly Epidemiological Update Global epidemiological situation*. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>
- Xie, W., & Tian, H. (2023). The effect of the COVID-19 pandemic on corporate trade credit financing. *Economics Letters*, 232. <https://doi.org/10.1016/j.econlet.2023.111339>
- Yang, S. (2022). Are private equity and venture capital helping small and medium-sized enterprises during the COVID-19 pandemic? Evidence from China. *Economic Analysis and Policy*, 76, 1-14. <https://doi.org/10.1016/j.eap.2022.07.007>

Table I: Descriptive statistics for the country groups

	Country Group	N	Average	Standard Deviation	Average standard error
X2 - Commercial loans to outstanding companies, SMEs	EU countries	18	340414,5567	1090028,44378	256922,16809
	Countries outside the EU	12	307169,6928	701446,48736	202490,15915
X5 - Non-performing loans, total (% of total loans to companies)	EU countries	19	4706,3995	14099,69303	3234,69142
	Countries outside the EU	10	2,5120	1,75566	,55519
X25 - Non-performing loans, SMEs (% of total loans to SMEs)	EU countries	13	3293,7831	11850,91342	3286,85200
	Countries outside the EU	9	3,0511	2,18651	,72884

Table II: Independent samples test

		Levene's test for equality of									
		variances		t-test for Equality of Means							
		Z	Sig.	T	df	Significance		Average	Standard error	95% Difference	Confidence
								difference	of difference	Interval	
						Unilateral					
						p	Bilateral p			Bottom	Superior
X2 - Commercial loans to outstanding companies, SMEs	Equal variances assumed	,094	,761	,093	28	,463	,926	33244,86383	356425,24276	-696859,14895	763348,87661
	Equal variances not assumed			,102	27,989	,460	,920	33244,86383	327125,76329	-636853,79166	703343,51932
X5 - Non-performing loans, total (% of total loans to companies)	Equal variances assumed	5,607	,025	1,046	27	,152	,305	4703,88747	4497,65592	-4524,54020	13932,31515
	Equal variances not assumed			1,454	18,000	,082	,163	4703,88747	3234,69147	-2091,94710	11499,72205
X25 - Non-performing loans, SMEs (% of total loans to SMEs)	Equal variances assumed	3,244	,087	,827	20	,209	,418	3290,73197	3980,57549	-5012,60302	11594,06695
	Equal variances not assumed			1,001	12,000	,168	,337	3290,73197	3286,85208	-3870,70344	10452,16737

Table III: Group statistics

	Country Group	N	Average	Standard Deviation	Average standard error
X9 - Investment capital and venture capital	EU countries	18	36906,0787	109830,33383	25887,25794
	Countries outside the EU	13	11945,9893	37124,77994	10296,56136
X11 - Finance leases and purchases	EU countries	9	4150,4816	3701,11931	1233,70644
	Countries outside the EU	8	40592,8402	102587,60199	36270,19452
X23 - Bankruptcies, SMEs	EU countries	17	4511,1412	8260,72886	2003,52104
	Countries outside the EU	8	3434,6425	4939,50071	1746,37722
X28 - Factoring and invoicing	EU countries	9	21332,1683	32771,41580	10923,80527
	Countries outside the EU	5	16664,5895	26809,72701	11989,67441

Table IV: Independent samples test

		Levene's test for equality of										
		variances		t-test for Equality of Means								
		Z	Sig.	t	df	Significance		Average	Standard error of	95%	Difference	Confidence
								difference	difference	Interval		
						Unilateral p	Bilateral p				Bottom	Superior
X9 - Investment capital and venture capital	Equal variances assumed	2,348	,136	,784	29	,220	,439	24960,08933	31817,32232	-40113,64141	90033,82007	
	Equal variances not assumed			,896	22,023	,190	,380	24960,08933	27859,81514	-32814,06005	82734,23871	
X11 - Finance leases and purchases	Equal variances assumed	5,568	,032	-1,069	15	,151	,302	-36442,35856	34078,40470	-109078,75878	36194,04165	
	Equal variances not assumed			-1,004	7,016	,174	,349	-36442,35856	36291,17030	-122217,19236	49332,47524	
X23 - Bankruptcies, SMEs	Equal variances assumed	,276	,604	,339	23	,369	,738	1076,49868	3176,68251	-5494,96978	7647,96713	
	Equal variances not assumed			,405	21,362	,345	,689	1076,49868	2657,80548	-4445,00743	6598,00479	
X28 - Factoring and invoicing	Equal variances assumed	,868	,370	,271	12	,396	,791	4667,57881	17242,00295	-32899,51844	42234,67606	
	Equal variances not assumed			,288	9,964	,390	,779	4667,57881	16219,79698	-31490,02544	40825,18306	

Table V: Group statistics

	Country Group	N	Average	Standard Deviation	Average standard error
X6 - Interest rate, SME	EU countries	21	2,6024	,98229	,21435
	Countries outside the EU	11	5,2127	3,93539	1,18656
X20 - Short-term loans, SMEs	EU countries	18	47145,7418	144510,99342	34061,56780
	Countries outside the EU	4	3258,6639	4628,33552	2314,16776
X21 - Long-term loans, SMEs	EU countries	19	258556,7776	926077,01757	212456,63861
	Countries outside the EU	4	7251,8030	8189,18896	4094,59448

Table VI: Independent samples test

		Levene's test for		equality of		variances		t-test for Equality of Means			
		Z	Sig.	t	Df	Significance		Average difference	Standard error of difference	95% Difference Confidence Interval	
						Unilateral p	Bilateral p			Bottom	Superior
X6 - Interest rate, SME	Equal variances assumed	20,024	<,001	-2,911	30	,003	,007	-2,61035	,89680	-4,44186	-,77884
	Equal variances not assumed			-2,165	10,658	,027	,054	-2,61035	1,20577	-5,27466	,05397
X20 - Short-term loans, SMEs	Equal variances assumed	1,058	,316	,596	20	,279	,558	43887,07798	73653,73000	-109751,91056	197526,06652
	Equal variances not assumed			1,285	17,155	,108	,216	43887,07798	34140,09041	-28092,59897	115866,75494
X21 - Long-term loans, SMEs	Equal variances assumed	,873	,361	,533	21	,300	,600	251304,97458	471665,01411	-729576,11885	1232186,06801
	Equal variances not assumed			1,183	18,013	,126	,252	251304,97458	212496,09171	-195109,01678	697718,96594

Table VII: Group statistics

	Country Group	N	Average	Standard Deviation	Average standard error
X15 - State loan guarantees, SMEs	EU countries	14	20792,4432	47702,41368	12749,00632
	Countries outside the EU	10	52096967,9102	164694142,24516	52080860,67825
X16 - Loans guaranteed by the State, SMEs	EU countries	11	48040,3402	83915,37512	25301,43758
	Countries outside the EU	8	685754,6193	1900415,57414	671898,36977
X17 - Direct state loans, SMEs	EU countries	7	4647,2490	11058,32234	4179,65298
	Countries outside the EU	3	2187,5812	3602,54046	2079,92770

Table VIII: Independent samples test

		Levene's test for equality									
		of variances		t-test for Equality of Means							
		Z	Sig.	t	df	Significance		Average	Standard error of	95% Difference Confidence Interval	
						Unilateral p	Bilateral p	difference	difference	Bottom	Superior
X15 - State loan guarantees, SMEs	Equal variances assumed	7,214	,013	-1,194	22	,123	,245	-52076175,46696	43614379,31512	-142526862,10194	38374511,16803
	Equal variances not assumed			-1,000	9,000	,172	,343	-52076175,46696	52080862,23868	-169891268,87254	65738917,93862
X16 - Loans guaranteed by the State, SMEs	Equal variances assumed	6,824	,018	-1,124	17	,138	,277	-637714,27910	567430,40886	-1834887,79505	559459,23685
	Equal variances not assumed			-,948	7,020	,187	,374	-637714,27910	672374,58462	-2226716,30624	951287,74803
X17 - Direct state loans, SMEs	Equal variances assumed	,857	,382	,366	8	,362	,724	2459,66784	6724,49128	-13047,03685	17966,37254
	Equal variances not assumed			,527	7,888	,306	,613	2459,66784	4668,57561	-8332,66731	13252,00300