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**DISTRIBUTION OF STATE AID FOR MEDIUM-SIZED
ENTERPRISES IN POLAND DURING THE COVID-19 CRISIS¹**

Summary

Purpose – The aim of this study has been to provide a rationale for state aid granted to medium-sized enterprises in Poland. The fundamental point raised in the study became the answer to the question of whether the companies that received aid actually needed it.

Research method – In their research, the authors used a comparative analysis of the financial situation of companies that obtained COVID state aid with that of companies not covered by COVID state aid.

Results – The research shows that the aid was provided not only to the companies that needed it. At the same time, more than 30 per cent of medium-sized enterprises that experienced a drop in sales did not receive such assistance. This demonstrates the imperfect distribution of COVID state aid.

Originality/value/implications/recommendations – The value of the research lies in the combined use of COVID state-aid data and information on the financial condition of medium-sized enterprises. The study covers more than 75% of the number of medium-sized enterprises in Poland.

Keywords: COVID-19 state aid, SME, corporate finance.

JEL classification: E65, H12, H84

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1. Introduction

The outbreak of the COVID-19 pandemic significantly changed the operating conditions of businesses, as well as their business prospects. The closure of most industries disrupted production and cut off the flow of services that could not be provided remotely, while the changes in consumer behaviour as a result of the restrictions altered demand patterns [OECD 2021]. However, the impact of the pandemic varied from country to country, but also affected different businesses in various ways [Bloom et al. 2020]. Some entities suffered from the pandemic in the short term. These units experienced a sharp drop in revenue and liquidity problems in the first phase of the crisis, but their operations quickly returned to prepandemic levels once restrictions on mobility were lifted. Other companies experienced shocks throughout the pandemic. Research by Guerrieri et al. [2020] suggests that the negative effect of the pandemic on the condition of businesses was the result of both demand and supply factors. On the one hand, the lockdown and restrictions which were designed to contain the spread of COVID-19 led to temporary closures of many companies, stopped production, and disrupted supply chains, contributed to a supply shock that affected company performance. On the other hand, demand in many sectors of the economy either disappeared or was significantly reduced. In such a situation, the state intervention directed at supporting companies that suffered from the negative effects of the pandemic was justified. Therefore the outbreak of the COVID-19 crisis forced the EU authorities to adopt specific state aid regulations for companies. Adopted in March 2020 and amended several times thereafter, an interim legal framework [*Temporary Framework for State Aid Measures to Support the Economy in the Current COVID-19 Outbreak*, 2020] has made it possible to convert state aid policy into a useful tool for the EU Member States to support those most affected by the pandemic.

The solutions in force in Poland regarding state aid in connection with the pandemic were adopted in the Act of 2 March [National Journal of Laws of 2021, item 2095, hereinafter the Covid Law], which was subject to successive amendments resulting from the changing situation in the country. Based on the provisions of the Covid Law, most aid programmes have been developed to address the negative economic consequences caused by COVID-19, in line with the objectives and conditions of state aid set out in the EU *Temporary Framework*. The main objectives of this assistance were: ensuring quick access to liquidity, particularly necessary for financing working capital; providing financial compensation to entrepreneurs whose projections indicate the impossibility of pursuing a stabilised

financial policy due to debt spikes and financial losses as a result of COVID-19; providing access to capital, in situations of significant capital market disruptions and problems with the valuation of the cost of capital; protecting jobs, with specific solutions that involved differentiating the rules for providing aid according to the size of the company. In fact, this meant different aid programmes for micro, small, and medium-sized enterprises and for large corporations. The scale of emergency state aid to enterprises in Poland due to the COVID-19 pandemic was almost PLN 94 billion in 2020, of which 50% were intended for micro-enterprises, 32% for small enterprises, 15% for medium-sized enterprises and 3% for large enterprises [UOKiK, 2021].

The aim of this paper is to justify the state aid granted to enterprises in Poland by means of the example of medium-sized companies. The fundamental issue addressed in the study became the answer to the question of whether the companies that received the aid actually needed it. The criteria used to justify the state aid were liquidity, profitability, debt ratio, and sales revenue, which directly resulted from the objectives of the Covid aid provided. The analysis was based on the financial data from the BvD ORBIS database and the state aid data from the Office of Competition and Consumer Protection (UOKiK) database.

2. Literature review

Most studies on the impact of the pandemic focus on its effect on the capital market with particular attention to equity market volatility [Narayan, Phan, 2020; Baek et al., 2020], market liquidity [Just, Echaust, 2020] and rates of return [Narayan et al., 2020; Shen et al., 2020].

There are still relatively few studies dedicated to the impact of pandemics on firm performance, mainly due to the delays in accessing data from financial statements. Hu and Zhang [2021], using data from quarterly reports for the first three quarters of 2020 from more than 16,000 firms in 107 countries, show that the ROA of a firm is negatively related to the cumulative number of cases of COVID in the countries studied.

The literature contains studies looking at the financial situation of SMEs before [Cowling et al., 2020] and during the COVID-19 pandemic [Thorgren, Williams, 2020]. Cowling et al. [2020] show that only 39% of SMEs in the UK had built up savings in the period before the COVID-19 shock, making government assistance a necessity for many firms to survive the crisis. Thorgren and Williams [2020] found that Swedish SMEs were willing to reduce costs rather

than increase debt to prevent financial distress during COVID-19. This approach had a negative impact on aggregate demand and investment.

The coronavirus pandemic has affected the financial condition of businesses, especially small and medium-sized ones, both on the supply and demand side. On the supply side, businesses have experienced a reduction in labour supply due to staff falling ill, quarantine, and the need for childcare during school closures. Furthermore, interrupted supply chains led to shortages of parts and semifinished products. This has resulted in declines in production capacity utilization. On the demand side, the sudden drop in SMEs' revenues severely affected their ability to operate and caused serious liquidity shortages. In addition, consumers have experienced loss of income, fear of contagion, and increased uncertainty, which in turn reduced spending and consumption. These effects may have been exacerbated with employee redundancies or nonpayment of wages. SMEs are likely to be more susceptible to 'social distancing' than other companies, although a situation where some had a more limited number of suppliers may have protected them from the shock. Initially, this was the case for German SMEs operating mostly through regional supply chains and, therefore, less affected by the events in Asia. However, in general, SMEs had less resilience and flexibility in dealing with the costs of the pandemic. The costs of prevention and the required changes in work processes, such as the shift to teleworking, but also, in many cases, the low level of digitisation and difficulties in accessing technology became a factor significantly affecting the condition of firms in the SME sector. The OECD presented the results of surveys sent to SMEs around the world on the impact of COVID-19 on MSEs and showed that more than half of companies experienced severe revenue losses in the first months of the pandemic [OECD 2020].

The limited financial capacity of SMEs and a frequent lack of specialists whose job is to analyse business risks and propose effective and rapid measures to counteract the crisis created the risk that these companies would quickly lose liquidity. It is sufficient to point out that, in the United States, just before the outbreak of the pandemic, half of small businesses had liquidity for less than 15 days, and even those SMEs that were considered the best had liquidity reserves for a maximum of two months [Federal Reserve Bank of New York, 2020].

Shen et al. [2020], basing on a study of Chinese companies, pointed out the negative impact of the pandemic on their financial condition. At the same time, they emphasised that the negative impact of COVID-19 on company performance is more pronounced when the scale of the company's investment or sales revenue is smaller. Thus, the size of the company is a factor that significantly influences the response to a pandemic [Golubeva, 2021]. Large firms have greater competitive

power compared to small firms due to their larger market share, better access to capital, experience, and operational efficiency [Ichev, Marinic, 2018]. In view of this, smaller companies are more vulnerable to the COVID-19 pandemic than larger ones [Baldwin, Weder di Mauro 2020]. At the same time, Levy [2020] points out that coronavirus-related constraints have boosted the revenues of large technology and pharmaceutical companies, while negatively impacting many smaller firms that are more dependent on the traditional economy.

In such a situation, prompt government support for businesses caught by surprise by the pandemic crisis became essential, especially since actions taken by the SME sector are seen to be most effective when applied in a simultaneous and coordinated manner and supported by government subsidies [Durst, Henschel, 2022]. Lalinsky, Pál [2022] indicate that government support for businesses in the form of wage subsidies has a positive and statistically significant effect, but a relatively mild one compared to the size of the economic shock. Their research also confirms that larger firms, receiving a smaller relative amount of support, have more room to cover their additional liquidity needs through increased trade or related party liabilities, while SMEs face a higher risk of insolvency. A systematic literature review by Dvouletý et al. [2021] indicates that, in the EU countries, government support for enterprises has a positive effect on firm survival, employment, sales volume, labour productivity and total productivity of production factors. However, these authors point out differences due to the different time horizon of the analyses (including short-term and long-term effects) and the importance of factors such as firm size, firm lifespan, region of operation, sector, and extent of support.

According to welfare economics views [Harberger, 1971], government support of business intended for firms is legitimised when their situation would be worse without these interventions. Government intervention aimed at providing a net benefit to the economy through business support often faces several problems. In the medium term, business support can lead to 'unnecessary social deadweight loss' when taxpayers' money is spent on firms that would have survived the crisis without state support [Santarelli and Vivarelli, 2002]. In the long run, there is a risk of 'substitution effects': the lack of selection for public support of firms with a chance of surviving means that firms without such a chance survive at their expense. This hinders the reallocation of factors of production [Barrero et al., 2020] and leads to a loss of organisational capital, which disappears when a firm ceases to exist. Hence, when providing state aid, the question arises to what extent it actually reaches the companies that need it now (absence of deadweight loss) and also contributes to the productivity of the economy in the long term (absence of substitution effect). State aid for those entities that will not be able to

survive is debatable, especially when operating in sectors perceived as declining. The rationale for using state aid for different sectors was analysed in the work of Fumagalli et al. [2020]. These assumptions became the basis for the regulation of aid rules in the EU countries.

Financial assistance to companies provided by many countries to minimise the negative effects of COVID-19 used instruments such as subsidies targeted at the sectors most affected by the pandemic, loans, tax concessions and deferrals, and even regulations temporarily abolishing the possibility of company bankruptcy. The aid was particularly targeted at SMEs due to their smaller cash buffers compared to larger companies, their lower use of digital tools and technology, and their overrepresentation in the industries most affected by the pandemic. The measures alleviated the liquidity needs of companies in the face of a sudden drop in sales, while allowing them to resume operations more quickly after closure by maintaining employment. Such an action is justified, since in times of crisis corporate liquidity management policies change [Campello et al. 2010], with companies with weaker financial capabilities suffering the most, as banks and financial institutions are the first to cut their funding [Ivashina, Scharfstein 2010]. Therefore, it is necessary to design liquidity support and employment subsidies targeting only those firms negatively affected by the shock [Motta, Peitz 2020]. Historically low bankruptcy rates in many economies prompt the question of whether these measures have led to the misallocation of resources [Cros et al., 2021; Gourinchas et al., 2020].

Khan [2022] indicates that firms with limited bank financing options were more likely to replace bank credit with government assistance as the main source of financing to manage pandemic-induced liquidity shortfalls and credit risk. This result is in line with Groenewegen et al. [2021], who found that the government assistance for COVID-19 was received mainly by the companies perceived as those in the greatest need of financing.

Bennedsen et al. [2020] find evidence that government support policies announced in Denmark, similar to those in several European countries, were effective in reducing unemployment during the pandemic. These authors also show that the firms with the largest revenue declines were the most likely to use support measures. An assessment of the first months of public aid to Portuguese companies shows that those entities that received public aid were in a relatively more precarious situation, both in terms of business status (closures) and turnover losses during the period under review, as well as liquidity conditions. In July 2020, the liquidity situation improved significantly, with the improvement being more pronounced in those firms that benefited from the aid [Manteu et al. 2020]. The

need to diversify aid is evidenced by the findings of Buchheim et al. [2020], who show that relatively weak firms in precrisis Germany were hit harder and tended to choose more drastic mitigation strategies, in particular reductions in employment and investment. Based on a study of 1151 Dutch firms, it has been shown [Groenewegen et al., 2021] that state aid was mainly directed at better managed entities, which at the same time expected earnings to deteriorate with high uncertainty in their level. This means that aid associated with the COVID-19 pandemic tends to be received by the companies that need it most and is more likely to be viable in the long term, as indicated by the high quality of their management practices. Thus, while the necessity of public assistance to companies in times of pandemic crisis is beyond doubt, it needs to be verified whether the assistance was received by the companies that actually needed it.

3. Methods and data

The subject of these analyses are medium-sized companies in Poland, i.e. those with: 1) a maximum of 249 and no fewer than 50 employees and 2) up to EUR 50 million in turnover or up to EUR 43 million in total assets.

In their research, the authors verified two research hypotheses.

The first hypothesis is that the financial condition of enterprises was taken into account when granting state aid. The testing of this hypothesis aimed to answer the question of whether the distribution of aid was influenced by the current financial condition of enterprises. Admittedly, the financial situation of companies prior to the pandemic did not necessarily translate into the impact of lockdown on a given entity – but it can be assumed that companies that were in a worse position in 2019 were potentially more vulnerable to financial difficulties in 2020.

The adequacy of the state aid provided is verified in the second hypothesis according to which the state aid was received by entities whose situation significantly worsened in relation to those not supported by the aid. Testing this hypothesis allows not only to answer the question of whether the aid was allocated to the relevant enterprises, but also whether its level was not too high. The aid is considered to be too high if it resulted in an improvement of the situation of beneficiaries in relation to companies which did not receive support.

The first hypothesis was tested by comparing key financial ratios between companies covered and not covered by COVID-19 state aid. The second hypothesis was verified by comparing changes in financial ratios in 2019–2020 between these groups of companies.

From the BvD Orbis database, 10,950 entities meeting the above criteria were selected. This list does not include entities from the financial sector, municipal companies, cooperatives, and companies from the medical services sector (outpatient clinics and hospitals). The number of medium-sized companies registered in Poland in 2020 was 14433 according to Statistics Poland [GUS 2021]. The 10,950 companies selected represent therefore 75.9% of all medium-sized companies in Poland, which demonstrates the high materiality of the sample studied and the real possibility of drawing conclusions about the entire population. For the list of 10,950 medium-sized Polish companies, information on state aid granted to these entities in 2020 was obtained from the Office of Competition and Competition Protection (UOKiK).

The number of companies that received Covid support was 5,659 companies in 2020, representing 51.7% of the companies surveyed. The information from the financial statements collected in the BvD Orbis database was used for the analysis. Four key ratios were used to assess the financial situation of companies, i.e. ROE, ROA, current ratio, gearing ratio. In selecting the financial conditions indicators, the authors were guided by previous studies on the impact of pandemics on the financial situation of companies [Fornasari, 2022]. In addition, EBIT-based profitability ratios were included to limit the impact of earnings management on the net profit levels of the companies studied.

The descriptive statistics of the data used in the study are shown in Table 1. The table also shows the total Covid-state aid in 2020 provided to the companies surveyed.

TABLE 1

Descriptive statistics of the financial data and indicators used in the research for 2019 and 2020 (thou. PLN or percentages where indicated)

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 50	Pctl. 75	Max
Year: 2019								
ROE using EBIT (%)	7485	20.7	399.4	-16259.1	5.9	16.0	33.5	13 890.9
ROA using EBIT (%)	7490	8.7	19.4	-681.9	2.6	6.8	13.8	351.3
ROE using Net income (%)	10 217	18.8	66.0	-956.9	3.4	12.4	28.4	960.6

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 50	Pctl. 75	Max
ROA using Net income (%)	10 788	7.1	15.6	-98.9	1.0	5.1	12.2	97.8
Current ratio	10 891	2.3	3.1	0.0	1.0	1.5	2.4	79.9
Gearing (%)	8 681	69.2	113.5	0.0	7.3	30.8	81.2	997.0
Sales	10 914	46 490.3	45 054.3	3.0	16 985.0	31 796.5	59 804.8	807 477.0
Total assets	10 678	29 766.1	30 909.6	1.0	8873.0	19 548.0	39 919.2	273 056.0
Year: 2020								
Value of COVID state aid	5 659	1 767.6	1 211.0	0.0	767.2	1 500.0	2 715.2	8 474.7
ROE using EBIT (%)	7 299	32.1	838.5	-32083.3	6.0	17.0	33.5	50400.0
ROA using EBIT (%)	7 305	8.6	25.6	-1049.9	2.7	7.6	14.7	282.0
ROE using Net income (%)	9 318	17.7	62.7	-925.4	3.5	13.6	29.2	953.9
ROA using Net income (%)	9 808	7.5	16.2	-99.7	1.1	6.0	13.6	99.7
Current ratio	9 908	2.4	3.3	0.0	1.1	1.6	2.7	94.0
Gearing (%)	8 204	69.0	112.9	0.0	10.8	32.2	77.8	998.7
Sales	9 928	45 614.9	43 069.9	11.0	15 779.0	31 124.0	59 974.5	228 973.0
Total assets	10 296	31 209.6	31 306.3	27.0	9 581.8	20 889.5	42 210.0	197 635.0

Source: own calculation.

To compare the financial condition of companies that received aid with companies without aid, the nonparametric Wilcoxon rank sum test was used as the variables analysed were not characterised by a normal distribution, which was checked with the Shapiro-Wilk test. Although there is no normal distribution, in Table 1 the authors have included the mean and standard deviation in addition to the medians and quartiles to show the skewness of the distributions of the analysed variables. To assess the relevance of the support, an analysis of sales dynamics in relation to the volume of aid was used. In this way, it was possible

to identify companies that: 1) received adequate aid; 2) received too much aid; 3) received aid although they did not need it.

3. Results

The aim of the analysis was to assess the aid granted by the state in terms of its distribution and amount. The first stage of the assessment is an ex ante analysis, i.e., it aims to answer the question of whether the aid was granted to entities whose condition in the period immediately preceding the pandemic might indicate that they would need such assistance. To carry out this stage of the analysis, the authors used ratios for assessing the financial position of companies such as return on equity (ROE), return on assets (ROA), current ratio (CR), and debt-to-equity ratio (D/E). Taking these criteria into account, the aid provided to entities with clearly worse values of the indicators indicated before the pandemic (in 2019) was considered to be justified. The results of the analysis are presented in Table 2.

TABLE 2

**Financial ratios in 2019 of companies covered and not covered
by COVID-19 state aid in 2020**

Ratio	Without aid	With aid	Mann-Whitney test	
	Median	Median	Z	p
ROE (EBIT)	16.89	15.22	3.649	0.0003
ROA (EBIT)	7.55	6.16	4.682	0.0000
ROE	12.96	11.94	3.101	0.0019
ROA	5.44	4.79	1.903	0.0570
CR	1.54	1.38	5.713	0.0000
D/E	22.99	38.63	-10.717	0.0000

Source: own calculation.

On the basis of the values presented in Table 2, it can be concluded that companies that received state aid in 2020 were characterised by statistically significantly worse profitability and liquidity performance in 2019. At the same time, these companies had significantly higher levels of total debt. Therefore, it can be

concluded that the supported entities were in a significantly worse financial situation than unaided companies. However, the results presented in Table 2 are highly aggregated and do not allow for a more accurate assessment of the distribution of aid provided. In particular, on its basis, it is not possible to answer the question of whether the aid reached only those entities characterised by the worst financial situation, or whether it also reached companies whose financial situation before the pandemic was good. To obtain information on which entities were targeted, quartile analysis was carried out. Regardless of the method of determining the profitability ratios (EBIT versus net profit), the conclusions of the analyses remain the same.

Analysing the quartile distribution of aid between enterprises ranked according to individual financial condition parameters, it can be seen that the aid was distributed very evenly between entities characterised by various levels of profitability with a slight predominance of entities with a low level of profitability. Slightly greater variation can be seen for entities ranked by their current liquidity ratio. This analysis shows that aid was granted more often to entities characterised by lower liquidity. The largest, although still small, variation in the distribution of aid can be seen in the analysis of the overall debt level ratio. The data in Table 3 shows that the aid was most often received by the entities with the highest level of indebtedness. Therefore, it can be concluded that the debt ratio was the most important indicator among those surveyed while deciding on the aid to be granted.

TABLE 3

**Quartile analysis of financial ratios in 2019 of companies
that received COVID-19 state aid**

Quartile	ROE (EBIT)	ROA (EBIT)	ROE	ROA	CR	D/E
1	23%	23%	26%	25%	26%	21%
2	28%	30%	25%	27%	27%	23%
3	29%	26%	25%	25%	24%	28%
4	21%	21%	24%	24%	23%	28%

Source: own calculation.

Summarizing the analysis conducted so far, it can be concluded that although on average the aid was allocated to entities in a worse financial situation, both companies in a relatively bad and good situation were covered to a similar extent. These conclusions are in line with the results obtained by Kluzek [2021], who,

examining state aid to SMEs from Poznań, indicated that in many cases the granted state aid made it possible for the enterprise to survive, however, some of those examined benefited from the aid, but from an economic point of view, this support was not justified. However, this distribution of aid does not necessarily mean that the support has been misaddressed. Indeed, it can be seen that supporting entities that are not prognostic for survival is as unjustified as helping entities that are financially sound [Santarelli and Vivarelli, 2002]. Moreover, assuming that the support was preventive in nature, helping entities in a better financial position seems a legitimate solution in many cases. The good situation of a company before the pandemic did not mean that the type of entity was not particularly vulnerable to a pandemic shock due to the nature of its business. Therefore, in the second stage of the study, the authors carried out an ex-post analysis. The aim of this part of the study was to answer the question of whether the aid was actually allocated to entities whose financial condition was more affected during the pandemic. To this end, the authors calculated and compared the median of changes in financial condition indicators between 2020 and 2019 in the group of companies covered and not covered by state aid (Table 4).

TABLE 4

Median of differences (2020/2019) of the financial ratios studied

Ratio	Without aid	With aid	Mann-Whitney test	
	Median	Median	Z	p
ROE (EBIT)	0.13	-1.57	5.729	0.0000
ROA (EBIT)	0.83	-0.48	9.901	0.0000
ROE	0.83	-0.40	6.845	0.0000
ROA	1.04	-0.13	11.521	0.0000
CR	0.084	0.081	2.939	0.0033
D/E (Gear)	-1.2	4.95	-20.911	0.0000
Sales	0.03	-0.07	27.011	0.0000

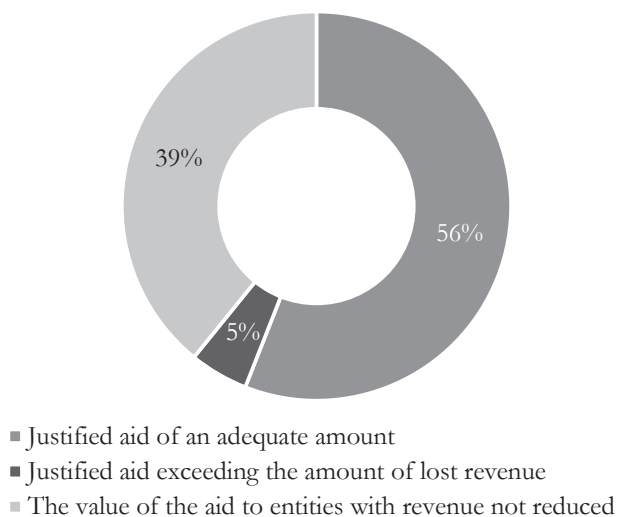
Source: own calculation.

The analyses carried out show that, despite the aid received, the companies covered by the aid were characterised by unfavourable trends in basic financial indicators, such as ROE, ROA, or the level of total debt. During the same period,

the unaided entities recorded an improvement in profitability and a reduction in debt levels. Only the level of the liquidity ratio increased in both groups, but the improvement in liquidity in the aided group was lower than in the unaided group, and the difference between the two was statistically significant. The analysis of the changes in indicators to evaluate the financial situation in 2019–2020 may indicate that aid was provided to entities whose condition deteriorated relatively during the pandemic period.

However, it should be noted that the aid granted has only had an indirect impact on most of the indicators analysed so far. The compensation of companies for lost sales revenue would have to be considered as a direct objective of the state aid. Answering the question of whether state support was allocated to enterprises that lost revenue as a result of the pandemic and whether the amount of support provided was adequate seems to be far more important. The first step of the analysis is to assess the distribution of aid between companies that actually experienced a decrease in sales and those whose sales dynamics during the pandemic were positive.

CHART 1
Distribution of state aid values according to the adequacy criterion



Source: own calculation.

The analysis shows that only 61% of the value of the aid was received by the companies with an actual drop in sales in 2020. On the contrary, 39% of the value of the aid was received by the companies whose sales were not affected by the

pandemic. At the same time, it should be noted that some of the aid was excessive. Although it was granted to entities that required assistance, it was higher than the decrease in sales recorded by them. It can therefore be concluded that just over half of the aid granted (approximately 56%) was properly addressed.

Similar conclusions are reached by analysing the distribution of support by number of entities (Table 5). The analysis shows that approximately 48% of all enterprises required support. Assistance was provided to approximately 52% of the companies covered by the survey. However, among the entities in need of assistance, only 64% (31% of the total surveyed population) received support. This was due to the fact that 40% of all companies that did not experience a drop in sales received undue aid.

TABLE 5

**Adequacy of COVID-19 state aid according to the criterion
of the number of entities**

	Companies that experienced a drop in sales	Companies that did not experience a drop in sales	Total
Non-aided firms	18%	31%	48%
Aided firms	31%	21%	52%
Total	48%	52%	100%

Source: own calculation.

The analyses carried out show that although most of the aid was allocated to entities in need, the level of support provided to entrepreneurs seems relatively low. The total amount of aid provided covered the aggregate decrease in revenues of the surveyed entities only in about 22%. Taking into account the fact that a significant part of the aid was received by companies not in need of assistance or was transferred to companies with a decrease in revenue lower than the support received, the value of the aid effectively granted slightly exceeds 12% of the decrease in revenue shown by the entities analysed.

5. Conclusions

The assessment of the distribution of state aid to medium-sized enterprises during the COVID-19 pandemic is ambiguous. A positive assessment of the

assistance provided is supported by the fact that, prior to the pandemic, the average values of the basic indicators for assessing the financial situation of assisted enterprises were worse than the corresponding values for nonassisted entities. This means that, primarily, companies in a worse financial situation and, therefore, more vulnerable to the negative effects of the pandemic crisis, were supported. Unsurprisingly, despite being assisted, these companies saw their financial situation deteriorate in 2020 compared to nonassisted companies. Therefore, it is impossible to conclude that support was provided in a completely random manner. Consequently, there were no grounds for rejecting the first hypothesis. At the same time, an analysis of the median of changes in financial condition indicators between 2020 and 2019 in the group of companies covered and not covered by state aid, indicates that aid was allocated to companies whose financial condition deteriorated in 2020 in relation to companies that did not receive aid. This result confirms the second hypothesis of the research. However, the distribution of the aid was far from perfect. This is evidenced by the fact that more than one third of the companies that experienced a drop in sales did not receive such assistance. However, the reservation should be made here that it is not known why those with negative sales dynamics did not receive support – i.e. whether they did not apply for support themselves or whether their applications were rejected. The fact that more than 40% of the aid was received by companies that did not require aid or received more than the reported reduction in sales also has a negative impact on the evaluation of the distribution of state aid. The imperfect distribution of the aid meant that the full potential of the support provided was not used. At the same time, by supporting entities that did not require aid, the SME competition conditions were distorted, which contradicts the assumptions of state aid. This research indicates that the COVID-19 pandemic was an unusual shock whose effects were difficult to predict. Therefore, although aid was intended for those who may have required the most support, it was also often received by companies that did not need it. It appears that, in order to avoid inadequate aid, donors should be able to adjust its distribution *ex post*. A solution to this problem may be the use of repayable forms of assistance such as repayable subsidies or loans. However, in the case of entities genuinely in need of support, institutions distributing aid should have the possibility of conditionally waiving the repayment of aid based on financial situation indicators.

References

- Act of 2 March 2021 on specific solutions related to preventing, counteracting, and combating COVID-19, other infectious diseases and crisis situations caused by them, National Journal of Laws of 2021, item 2095.
- Barrero J.M., Bloom N., Davis S.J., 2020, *COVID-19 is also a reallocation shock*, “Bureau of Economic Research”, No. 27137.
- Baek S., Mohanty S.K., Glambsosky M., 2020, *COVID-19 and stock market volatility: An industry level analysis*, “Finance Research Letters”, No. 37, p. 101748.
- Baldwin R., Weder di Mauro B., 2020, *Economics in the time of COVID-19*, CEPR Press.
- Bennedsen M., Larsen B., Schmutte I., Scur D., 2020, *Preserving job matches during the COVID-19 pandemic: firm-level evidence on the role of government aid*, GLO Discussion Paper Series 588, Global Labor Organization GLO.
- Bloom N., Bunn P., Chen S., Minzen P., Smietanka P., 2020, *The economic impact of coronavirus on UK businesses: early evidence from the decision maker panel*, <https://cepr.org/voxeu/columns/economic-impact-coronavirus-uk-businesses-early-evidence-decision-maker-panel> [date of access: 20.09.2022].
- Buchheim L., Dovern J., Krolage C., Link S., 2020, *Firmlevel expectations and behavior in response to the COVID-19 crisis*, “CESifo Working Paper”, No. 8304.
- Campello M., Graham J.R., Harvey C.R., 2010, *The real effects of financial constraints: Evidence from a financial crisis*, “Journal of financial Economics”, No. 97, pp. 470–487.
- Cowling M., Brown R., Rocha A., 2020, *Did you save some cash for a rainy COVID-19 day? The crisis and SMEs*, “International Small Business Journal: Researching Entrepreneurship”, No. 38(7), pp. 593–604, DOI: 10.1177/0266242620945102
- Cros M., Epaulard A., Martin P., 2021, *Will Schumpeter catch COVID-19?*, “CEPR Press Discussion Paper”, No. 15834, <https://cepr.org/publications/dp15834> [date of access: 20.09.2022].
- Durst S., Henschel T. (eds.), 2022, *Crisis management for small and medium-sized enterprises (SMEs): Strategies for external crises*, Springer International Publishing, DOI: 10.1007/978-3-030-91727-2.
- Dvouletý O., Srhoj S., Pantea S., 2021, *Public SME grants and firm performance in European Union: A systematic review of empirical evidence*, “Small Business Economics”, No. 57(1), pp. 243–263, DOI: 10.1007/s11187-019-00306-x.
- Federal Reserve Bank of New York, 2020, *Can small firms weather the economic effects of COVID-19?*, Federal Reserve Bank of New York, <https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/20191211-ced-minority-owned-firms-report.pdf> [date of access: 20.09.2022].
- Fornasari T., 2022, *Covid-19 State Aid in the European Tourism Sector*, “International Journal of Business Research Management”, No. 13(2), pp. 43–65.
- Fumagalli Ch., Motta M., Peitz M., 2020, *Which role for state aid and merger control during and after the Covid crisis?*, “Journal of European Competition Law, Practice”, Vol. 11, Issue 5–6, pp. 294–301, DOI: 10.1093/jeclap/lpaa036.

- Golubeva O., 2021, *Firms' performance during the COVID-19 outbreak: International evidence from 13 countries*, "Corporate Governance: The International Journal of Business in Society", No. 21(6), pp. 1011–1027, DOI: 10.1108/CG-09-2020-0405.
- Gourinchas P.O., Kalemli-Ozcan Ş., Penciakova V., Sander N., 2020, *COVID-19 and SME Failures*, "NBER Working Paper", No. 28418.
- Groenewegen J., Hardeman S., Stam E., 2021, *Does COVID-19 state aid reach the right firms? COVID-19 state aid, turnover expectations, uncertainty and management practices*, "Journal of Business Venturing Insights", Vol. 16, e00262, DOI: 10.1016/j.jbvi.2021.e00262.
- Guerrieri V., Lorenzoni G., Straub L., Werning I., 2020, *Macroeconomic implications of COVID-19: Can negative supply shocks cause demand shortages?*, "NBER Working Paper", No. 26918.
- GUS, 2021, *Działalność przedsiębiorstw niefinansowych w 2020 roku*, Warszawa, 2021.
- Hu S., Zhang Y., 2021, *COVID-19 pandemic and firm performance: Cross-country evidence*, "International Review of Economics, Finance", No. 74, pp. 365–372.
- Ichev R., Marinic M., 2018, *Stock prices and geographic proximity of information: evidence from the Ebola outbreak*, "International Review of Financial Analysis", Vol. 56, pp. 153–166.
- Ivashina V., Scharfstein D., 2010, *Bank lending during the financial crisis of 2008*, "Journal of Financial Economics", No. 97, pp. 319–338.
- Harberger A.C., 1971 *Three basic postulates for applied welfare economics: an interpretive essay*, "Journal of Economic Literature", No. 9(3), pp. 785–797.
- Khan S.U., 2022, *Financing constraints and firm-level responses to the COVID-19 pandemic: International evidence*, "Research in International Business and Finance", No. 59, pp. 101545, DOI: 10.1016/j.ribaf.2021.101545.
- Kluzek M., 2021, *State aid for SMEs during the pandemic in Poland*, "Annales Universitatis Mariae Curie-Skłodowska. Sectio H, Oeconomia", Vol. 55(4), pp. 23–35, DOI: 10.17951/h.2021.55.4.23-35.
- Just M., Echaust K., 2020, *Stock market returns, volatility, correlation and liquidity during the COVID-19 crisis: Evidence from the Markov switching approach*, "Finance Research Letters", Vol. 37, 101775, DOI: 10.1016/j.frl.2020.101775.
- Lalinsky T., Pál R., 2022, *Distribution of COVID-19 government support and its consequences for firm liquidity and solvency*, "Structural Change and Economic Dynamics", No. 61, pp. 305–335, DOI: 10.1016/j.strueco.2022.03.008.
- Levy D.L., 2020, *COVID-19 and global governance*, "Journal of Management Studies", No. 58, pp. 562–566, DOI: 10.1111/joms.12654.
- Manteu C., Monteiro N., Sequeira A., 2020, *The short-term impact of the COVID-19 pandemic on Portuguese companies*, Occasional Paper 03, Banco de Portugal.
- Motta M., Peitz M., 2020, *State aid policies in response to the Covid-19 shock: observations and guiding principles*, "Intereconomics", Vol. 55, Issue 4, pp. 219–222, DOI: 10.1007/s10272-020-0902-4.
- Narayan P.K., Phan D.H.B., Liu G., (2020), *COVID-19 lockdowns, stimulus packages, travel bans, and stock returns*, "Finance Research Letters", Vol. 38, 101732, DOI: 10.1016/j.frl.2020.101732.

- Narayan P.K., Phan D.H.B., 2020, *Country responses and the reaction of the stock market to COVID-19 – a preliminary exposition*, “Emerging Markets Finance and Trade”, No. 56(10), pp. 2138–2150, DOI: 10.1080/1540496X.2020.1784719.
- OECD, 2021, *Strengthening economic resilience following the COVID-19 crisis: a firm and industry perspective*, OECD Publishing, Paris, DOI: 10.1787/2a7081d8-en.
- OECD, 2020, *Coronavirus (COVID-19): SME policy responses*, OECD, Paris, <https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-044440101> [date of access: 20.09.2022].
- Santarelli E., Vivarelli M., 2002, *Is subsidizing entry an optimal policy?*, “Industrial and Corporate Change”, No. 11(1), pp. 39–52, DOI: 10.1093/icc/11.1.39.
- Shen H., Fu M., Pan H., Yu Z., Chen Y., 2020, *The impact of the COVID-19 pandemic on firm performance*, “Emerging Markets Finance and Trade”, No. 56(10), pp. 2213–2230, DOI: 10.1080/1540496X.2020.1785863.
- Temporary Framework for State aid measures to support the economy in the current COVID-19 outbreak*, [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020XC0320\(03\)&from=PL](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020XC0320(03)&from=PL) [date of access: 20.09.2022].
- Thorgren S., Williams T.A., 202, *Staying alive during an unfolding crisis: How SMEs ward off impending disaster*, “Journal of Business Venturing Insights”, Vol. 14, e00187, DOI: 10.1016/j.jbvi.2020.e00187.
- UOKiK, 2021, *Raport o pomocy publicznej w Polsce udzielonej przedsiębiorcom w 2020 roku*, Warszawa, https://uokik.gov.pl/raporty_i_analizy2.php [date of access: 20.09.2022].