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Evaluation of the effectiveness of state aid offered to enterprises during the COVID-19 pandemic

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Abstract

The COVID-19 pandemic in Poland resulted in the government imposing restrictions on business activity in order to limit the mobility of citizens and thus limit the spread of the virus. As a result of the restrictions, businesses were in some cases deprived of the possibility to make a living. The government of the Republic of Poland applied public aid directed to entrepreneurs under the name "Anti-Crisis Shield" in order to maintain employment, maintain economic activity of enterprises and their liquidity. The following article will present the results of statistical research aimed at answering whether the state aid related to COVID-19 was sufficient and whether it served its purpose.

1. Introduction

In Poland, the COVID-19 pandemic began in March 2020. As a result, the government initiated measures to contain the spread of the SARS-COV-2 virus. These measures were focused on restricting social mobility by limiting economic activity. The authorities of the Republic of Poland decided to pursue a lockdown policy in order to maintain the capacity of the health service. Maintaining the capacity of the health service is aimed at preventing a situation in which people in need of health care are unable to receive it. The lockdown policy is based on the restriction or prohibition of

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business activities in particular industries. As a result of this policy, entities that are restricted from doing business are prevented from offering their services or goods to consumers, which consequently leads to a reduction in their revenues. The reduction of revenue in a situation where these businesses incur fixed costs will lead to the loss of their liquidity and ultimately to bankruptcy. The policy results in the need to help industries that are cannot operate in times of the pandemic. In such a case, state aid is the compensation offered to companies for the constraints on their ability to do business. The state aid is provided at both the central and local government levels. The restrictions that have been introduced by the government of the Republic of Poland so far vary in intensity and from 20 March 2020 various companies and institutions are subject to them. Businesses that have been out of business for the longest time are e.g. catering establishments, hotels, gyms, cultural facilities, which was the reason for examining the economic activity in these industries.

The purpose of this study is to examine the effectiveness of the state aid commonly known as the "Anti-Crisis Shield" granted during the COVID-19 pandemic. In the study, the effectiveness of the state aid programme will be assessed after conducting a quantitative survey based on the classification of Polish Classification of Activities (PKD). The assessment of the effectiveness of state aid is a major concern in view of the possibility of another pandemic similar to the COVID-19 or another wave of the current pandemic. The assessment of aid effectiveness can provide a starting point for employing similar mechanisms in the future or for abandoning them in case they have not proven to be adequate.

The paper presents the theoretical assumptions of state aid and the position against such intervention. The paper also provides a a definition of state aid, which is in force in Poland and stems from the Treaty on the Functioning of the European Union, of which Poland is a member. The next part of the paper outlines the elements of state aid offered to entrepreneurs by the government and gives a review of the literature on the criteria of the effectiveness assessment. In its final part, the article describes the structure of PKD along with the description of selected PKD sections that were subject to the survey and presents the results of the survey.

1.1. State aid

State aid or, more broadly, interventionism is viewed differently by representatives of different schools of economics. Two approaches to interventionism can be distinguished. The first one supports state interventionism for various reasons. The author who most influenced the development of this position in modern economics was John Maynard Keynes. In his work "The General Theory of Employment, Interest and Money" he stressed the necessity of state interventionism in the face of crisis [1]. In his work, he challenged Say's Law, which states that supply creates demand. According to J. M. Keynes, a situation in which consumer spending and investment spending are falling requires state intervention. Interventionism should focus mainly on stimulating demand. In his work J.M. Keynes introduced the term of investment multiplier, which means that the state's allocation of money for investments, even unprofitable ones, leads to the generation of more money for consumption in the future, which in turn boosts investment, and thus the economy recovers from recession. In addition, J.M. Keynes stated that debt is necessary during a recession. The debt accumulated during the crisis would be repaid during the period of economic growth. According to Keynes's theory, the purpose of interventionism can be described as smoothing out the business cycle fluctuations in order to achieve more steady economic growth.

An opposing approach to interventionism has existed since the time of Adam Smith. Interventionism has been criticised by liberals (most of whom are representatives of the Austrian School of Economics), supporters of classical economics, the pre-war Krakow School and by monetarists. The first criticism of the elements of interventionism was made by Adam Smith in his work "Investigations into the Nature and Causes of the Wealth of Nations". In the works of Krakow School, objections to interventionism can be found in the works of Adam Heydel, the most prominent member of this school [2]. The Austrian School of Economics postulates a practically complete withdrawal of government from economic life, which makes almost all the representatives of the Austrian School critics of interventionism. The well-known critics of Keynes and his theory coming from the Austrian School were Friedrich
Hayek [3], Ludwig von Mises [4]. But the most famous criticism of interventionism proposed by Franklin Delaney Roosevelt in his New Deal economic policy is contained in Murray Rothbard's work "The Great Depression in America" [5]. Criticism of interventionism arises on many different levels. Basically, three strands of criticism of state interference can be distinguished [6]. The first approach is based on the assumption that the economy is too complex for a human being to influence it through various forms of state intervention in the market without bringing about negative effects on the economy. The second contradictory approach, which is the most popular, refers to the theoretical and empirical effects of interventionism [7] [8]. The representatives of this approach stress the negative effects of state interference in the market, such as increased inflation, reduced efficiency of the economy, prolonged crisis, and the emergence of crises on a larger scale but with less frequency. The third strand of criticism towards interventionism emphasises the relationship between economic freedom and individual freedom [9]. This approach seems to be justified especially given the words of J.M. Keynes himself, who claimed that his theories were better suited to the conditions of a totalitarian state.

In the case of Poland state aid is defined by the European Union documents, mainly by the Treaty on the Functioning of the European Union. In this document state aid is defined as: "any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods, in so far as it affects trade between Member States, must be incompatible with the internal market". In addition, the European Commission outlined the main criteria defining state aid [10][11][12]:

- the support is granted by the State or through State resources,
- it confers an advantage on undertakings which they would not have obtained under market conditions,
- the support distorts or threatens to distort competition,
- the support is selective, i.e. it favours certain undertakings or the production of certain goods or economic sectors,
- it affects trade between Member States.

1.2 Anti-Crisis Shield

In the case of the COVID-19 pandemic, the state aid has taken the name of the Anti-Crisis Shield and its successive versions of it have been announced regularly. The shield itself consists of several separate sections, but for the purposes of this publication we are interested in the support of enterprises. In this respect, the shield has a number of elements, but given the range of companies surveyed, the most important are [13]:

- Micro companies which employ no more than 9 workers will receive a loan of PLN 5,000. The loan paid out by the Labour Fund is non-refundable if the company does not lay off its employees over the next 3 months.
- If a term of a working capital loan taken out by a company comes to an end, the entrepreneur will be able to renew it automatically. Thanks to the regulations of the Financial Supervision Commission, banks will calculate creditworthiness based on financial data as of the end of 2019.
- By the end of 2020, micro-, small and medium-sized enterprises had the opportunity to obtain a loan with de minimis guarantee of up to PLN 3.5 million. The amendment allowed the guarantee to cover up to 80 per cent of the loan amount.
- Medium and large companies can obtain capital increase or bond financing from the PFR Investment Fund - with a total value of PLN 6 billion.
- The loss incurred in 2020 is deductible by taxpayers from the income earned in 2019. To do so, taxpayers

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† These words are found in the introduction to the German edition of "The General Theory of Employment, Interest and Money", which was written by J. M. Keynes himself, and in the original they read: "Trotzdem kann die Theorie der produktion als ganzes, die den Zweck des folgenden Buches Bildet, viel leichter den Verhältnissen eines totalen Staates angepasst werden als die Theorie der Erzeugung und Verteilung einer Gegeben, unter Bedingungen des freien Wettbewerbes und eines grossen Masses von Laisser-faire erstellten Produktion." (John Maynard Keynes, Allgemeine Theorie der Beschäftigung, des Zinses und des Feldes, Dunker und Humblot, Berlin 1936, 9)
file a correction to their 2019 return. This is available for those whose income earned in 2020 falls by at least 50 per cent compared to the income earned in 2019. A loss of up to PLN 5 million is deductible from 2019 income (the excess will be deductible in subsequent years).

- The taxpayer does not bear the fee for deferring the tax payment deadline or spreading the tax payment into instalments, or deferring or spreading into instalments the payment of tax arrears with interest. Also in the cases of: contributions to be collected by Social Insurance Fund; concluding an agreement on deferring the date of payment of contributions; or an agreement on splitting the due amount into instalments, the entrepreneurs will be exempt from the necessity to pay the prolongation fee.
- Micro, small and medium-sized companies which have benefited from the support from EU funds can count on more favourable terms of capital repayment. New rules have been introduced, which include, among others, additional grace period in repayment, 4-month loan holidays, reduction of loan interest rates and no interest charge.
- Entrepreneurs who have taken out a loan to develop their tourism or tourism-related business can apply for more favourable repayment terms due to loss of liquidity. Business owners can apply for an extension of the repayment grace period, credit holidays, or a reduction in interest rates.

„The Anti-Crisis Shield is financed with state resources in which the main actor is the Polish Development Fund. In addition, the aid is selective, and it causes an imbalance in the internal market, as entities operating abroad do not receive it. As a result, the announced Anti-Crisis Shield fulfils all criteria presented by the EC, and therefore, by definition, is state aid in the meaning of the TFEU.

2. Theoretical Background

2.1. Literature review

With regard to the evaluation of effectiveness of state aid, the literature refers to such concepts as effectiveness and efficiency. Effectiveness determines the extent to which aid objectives have been achieved, while in the case of efficiency, the need to evaluate outcomes is emphasised [14]. It is also proposed to introduce subcategories of the effectiveness criterion, referred to as the sustainability criterion and the utility criterion. The sustainability criterion helps to determine whether the changes caused by the impact of the aid are permanent and will persist after the support ends. The criterion of usefulness makes it possible to assess to what extent the aid was sufficient and responded adequately to the needs of the beneficiaries. The efficiency criterion differs from the effectiveness criterion in that it also takes into account the costs incurred as a result of the intervention [15].

2.2. Criteria for assessing effectiveness

The criteria for assessing effectiveness are not clearly defined in the literature and there is discretion on the subject, but the literature specifies that the scope of the assessment is determined most strongly by the following aspects [16]:

- the function of evaluation,
- the timing of the study,
- the scope of the study,
- the research paradigm.

In connection with the objectives of the Anti-Crisis Shield set by the Ministry of Labour and Technology Development, i.e. maintaining employment, ensuring financial liquidity for enterprises and maintaining economic activity, it was decided that the criterion for assessing effectiveness would be the number of enterprises registered in the REGON system and the number of entities deregistered from it. The effectiveness of the Anti-Crisis Shield will be determined on the basis of the results of a study involving a comparison of two periods of time. The Anti-Crisis Shield will be considered effective if the following conditions are met:

- The increase in the number of businesses deregistered from the surveyed PKD sections in the second period will not exceed 20% in relation to the first period,
- There will be no decrease in the number of entities registered in the surveyed PKD sections in the second period.
The effectiveness of the Shield will be established for each of the PKD sections and in total, including those not distinguished in the survey.

3. The study

3.1. Polish Classification of Activities (PKD)

The statistical research made use of the data of the Central Statistical Office (GUS), and more specifically of the database called "monthly information about national economy entities in the REGON register". Polish Classification of Activities (PKD) is a classification which is a conventionally adopted, hierarchically structured set of socio-economic activities that are carried out by economic entities and is related to the National Official Business Register (REGON) [17]. In this classification, economic entities are ranked according to PKD sections (from A to U) which include PKD divisions. The allocation of the PKD division depends on the type of activity the entity performs. This study focuses on the total number of entities in the register and in the PKD sections 55, 56, 79, 93, 96. A more detailed analysis is not possible, because GUS in its publications limits itself to PKD sections and divisions. The individual divisions of PKD comprise:

Division 55 – hotels and similar accommodation, holiday and other short-stay accommodation, camping grounds (including trailer parks) and tent fields, other accommodation,
Division 56 – restaurants and other food service establishments, mobile food service establishments,
Division 79 – activities of travel agents and tour operators, tourist brokers, tour operator activities, other reservation service and related activities, activities of tour operators and tourist guides, tourist information activities, other reservation service activities n.e.c.,
Division 93 - Sports activities, operation of sports facilities, operation of sports clubs, operation of fitness centres, other sports-related activities, entertainment and recreation activities, amusement parks and theme parks, other entertainment and recreation activities,
Division 96 - laundry and dry-cleaning of textiles and fur, hairdressing and other beauty treatment, funeral and related activities, fitness activities, other personal service activities n.e.c..

3.2. Methods

The information comes from the GUS database "monthly information on national economy entities in the REGON register". The study concerns two analogous periods in the years 2019-2021. The first period covers a full calendar year from 1 March 2019 to 29 February 2020. The second period covers a full calendar year from 1 March 2020 to 28 February 2021. The periods were selected due to the absence of restrictions on business activity in the first period and significant restrictions on that activity and public aid in the second period. Due to this division of the periods under study, they are comparable and the number of variables between them is kept to a minimum. The statistical survey takes into account two features examined in the given periods. The first one is the number of National Economy Entities (excluding natural persons running individual farms) by sections and divisions of the Polish Classification of Activities (PKD) and National Economy Entities (excluding natural persons running individual farms) deregistered from the REGON register by sections and divisions of the Polish Classification of Activities (PKD). The research is of quantitative character. In the surveyed periods the quantity and the change dynamics of both these features have been examined. As regards the number of registered business entities, three points in time have been established, by means of which the dynamics of growth in the number of National Economy Entities has been determined. These points are 1 March 2019, 1 March 2020 and 1 March 2021. The study has the nature of a mid-term survey conducted throughout the aid programme timeframe. In addition, the range of study is limited to the effectiveness criterion, because the sustainability criterion can be examined only after the programme has ended, which is not the case.

The study covers the total of economic entities (further referred to as Total) and the PKD sections No 55, 56, 79, 93, 96. The sections of PKD distinguished in the study have been described earlier in the article. The PKD divisions have been chosen due to the length and severity of restrictions on economic activity in these fields, and thus the effectiveness of the Anti-Crisis Shield should be most evident there.
3.3 Study results

For clarity, the results are presented in tabular form.

|                      | Total     | PKD 55    | PKD 56    | PKD 79    | PKD 93    | PKD 96    |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 01 March 2019        | 4 391 166 | 39 194    | 98 967    | 13 277    | 51 506    | 123 020   |
| 01 March 2020        | 4 524 638 | 41 191    | 101 647   | 13 714    | 53 234    | 132 542   |
| 01 March 2021        | 4 679 766 | 44 197    | 107 179   | 13 957    | 54 748    | 139 641   |
| Absolute growth 2019/2020 | 133 472 | 1 997     | 2 680     | 437       | 1 728     | 9 522     |
| Absolute growth 2020/2021 | 155 128 | 3 006     | 5 532     | 243       | 1 514     | 7 099     |
| Percentage growth 2019/2020 | 3.04%   | 5.10%     | 2.71%     | 3.29%     | 3.35%     | 7.74%     |
| Percentage growth 2020/2021 | 3.43%   | 7.30%     | 5.44%     | 1.77%     | 2.84%     | 5.36%     |

Fig. 1. Quantity and absolute and percentage change of registered business entities in total and by selected PKD divisions.

When looking at the number of registered businesses, it is clear that the number of registered entities has been increasing in both periods, but the growth dynamics has been fluctuating. In 3 out of 5 examined PKD divisions the dynamics has decreased, while in 2 out of 5 it has increased. The increase of dynamics, although insignificant, can be also seen in the total number of economic entities. The falling growth dynamics of newly registered business entities in the PKD 79, PKD 93 and PKD 96 divisions implies that citizens regard the situation in those divisions as deteriorating, since entrepreneurs are less inclined to enter these particular markets. On the other hand, the situation is reversed in the economy in general and in the PKD divisions 55 and 56, as the rate of new registrations has increased.

|        | Total  | PKD 55 | PKD 56 | PKD 79 | PKD 93 | PKD 96  |
|--------|--------|--------|--------|--------|--------|---------|
| Period I | 234 576 | 2 882  | 6 490  | 638    | 1 774  | 7 238   |
| Period II | 160 184 | 2 515  | 4 553  | 529    | 1 360  | 5 510   |
| PI/PII  | 68.29% | 87.27% | 70.15% | 82.92% | 76.66% | 76.13%  |

Fig. 2. Quantity and percentage change of business entities deregistered from the REGON system by PKD divisions.
In the case of deregistered businesses, a downward trend can be clearly seen. In the researched industries, the decrease in the number of deregistered businesses ranges from 12.73% to 29.85%, while the average decrease in the number of all the deregistered entities amounts to 31.71%. It follows that the number of deregistered entities from the selected PKD divisions is higher than the average for the whole economy. It appears that the aid for these divisions is less effective than for the entire economy.

The effectiveness of the anti-crisis shield is presented in a table below (Fig.3), taking into account the aforementioned conditions which the Anti-Crisis Shield must meet in order to be considered effective. The first condition will be met when the increase in the number of deregistered entities falls below 20%. For the second condition to be met, the growth in the number of business entities must be greater than 0 in the second period.

| Condition | Total | PKD 55 | PKD 56 | PKD 79 | PKD 93 | PKD 96 |
|-----------|-------|--------|--------|--------|--------|--------|
| Condition I | -31.71% | -12.73% | -29.85% | -17.08% | -23.34% | -23.87% |
| Condition II | 3.43% | 7.30% | 5.44% | 1.77% | 2.84% | 5.36% |

Fig. 3. Number of business entities deregistered from the REGON system by PKD divisions.

In the absence of other data (the CSO either fails to collect such data or it does but refrains from publishing them), it is not possible to assess the state aid programme effectiveness in terms of e.g. revenue, profitability or financial liquidity of the groups of entities covered by the survey. The analysis of effectiveness in terms of maintaining employment in particular PKD divisions is impossible given the current data, as the GUS does not publish data on employment in particular divisions. The only possibility to analyse employment would be to determine it on the basis of the number of entities in a given group classified by employment size, but such analysis would be unrealistic.

4. Summary

The purpose of state aid programme referred to as the Anti-Crisis Shield was to induce entrepreneurs to maintain economic activity, retain employment and keep the financial liquidity of their businesses in order to counteract the effects of the COVID-19 crisis. Initially, it was expected that the number of entities in operation will drop or that the growth rate in the number of enterprises in the selected PKD divisions as well as in the whole economy will slow down. Unexpectedly, such a situation did not occur, and in some PKD divisions the rate of establishing new entities accelerated. The results of this study allow for the conclusion that the Anti-Crisis Shield caused a distortion of the pre-pandemic economic system. This distortion consists in discouraging entities from deregistering from PKD. This may result in the emergence of inactive businesses, which would have been suspended or deregistered in the time preceding the pandemic.

The results of the study have shown that the Anti-Crisis Shield, given the results of quantitative research, is effective both in all the PKD divisions under study and in the total number of entities classified in the PKD. However, the degree of effectiveness differs depending on the PKD division under study. The Shield has been the least effective in helping to maintain business operation in PKD 79 and PKD 55, yet it still satisfies the conditions specified in point 2.2, where the programme's effectiveness is defined. In addition, attention should be drawn to the steady upward trend in the number of registered entities.

The decrease in the number of deregistered businesses leads to the conclusion that the Anti-Crisis Shield has been effective, but it is also important to note that the number of entities deregistered from REGON fell in the period in which the freedom to conduct business was restricted compared to the year when such restrictions were not imposed. This observation leads to two hypotheses:

- Enterprises are artificially kept alive and are not deregistered as would be the case in a normal market situation where businesses fail as a result of competition on the free market.
The Anti-Crisis Shield has led to a situation where there are entities in PKD that are not in business, but yet are not being deregistered for various reasons. One of these reasons may be the exemption from the obligation to pay contributions to the Social Insurance Fund, which reduces the costs of running a business and makes the business owner keep it registered in the hope of being able to resume operations on the pre-pandemic conditions.

However, confirmation or rejection of the above hypotheses requires an ex-post analysis[18] which is going to be conducted after the pandemic has ended, when more data will be available and the market situation will have normalised. The above hypotheses will be corroborated when, after the Anti-Crisis Shield state aid programme has come to an end, the economy will witness a large scale deregistration of Polish businesses. In the above-mentioned circumstances, the economy will be cleared of unprofitable companies which are artificially sustained due to the government support and there is no incentive to deregister them, as was the case before the pandemic when an owner of a registered company was burdened with costs such as social insurance contributions.

What is more, the analysis of the effectiveness and efficiency of state aid in specific PKD divisions requires additional data that GUS does not collect or fails to make it publicly available. If the information on employment, revenue, profitability and financial liquidity of economic entities was accessible, the analysis could be run on multiple levels, and thus more reliable, accurate and thorough. However, taking into account the available data from the Polish Classification of Activities and the fulfillment of the set effectiveness criteria, it should be stated that the Polish state aid offered to enterprises during the COVID-19 pandemic is effective, although it leaves a few questions to be answered after the end of the pandemic and following an ex-post analysis which will examine the sustainability criterion, as this particular issue remains the main element of uncertainty as regards the Anti-Crisis Shield.

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