ISSN 2081-3430
eISSN 2544-0640

Zeszyty Naukowe
Szkoły Głównej
Gospodarstwa Wiejskiego
w Warszawie

Polityki Europejskie, Finanse i Marketing

nr 27 /76/ 2022

Wydawnictwo SGGW
Warszawa 2022

ZESZYTY NAUKOWE

Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie

SCIENTIFIC JOURNALS

Warsaw University of Life Sciences – SGGW

POLITYKI EUROPEJSKIE, FINANSE i MARKETING

NR 27 (76) 2022

EUROPEAN POLICIES, FINANCE AND MARKETING

NO 27 (76) 2022

Wydawnictwo SGGW
Warszawa 2022

Warsaw University of Life Sciences – SGGW Press
Warsaw 2022

PROJEKT OKŁADKI – Tomasz Tabor
REDAKCJA TECHNICZNA – Tomasz Ruchniewicz

ADRES KORESPONDENCYJNY
Szkoła Głowna Gospodarstwa Wiejskiego
w Warszawie Instytut Ekonomii i Finansów
ul. Nowoursynowska 166, 02-787 Warszawa
tel./fax: 22 593 41 94; e-mail: pefim@sggw.edu.pl

ISSN 2081-3430

Wydawnictwo SGGW
ul. Nowoursynowska 161, 02-787 Warszawa
tel. 22 593 55 20(-25; -27 – sprzedaż)
e-mail: wydawnictwo@sggw.edu.pl
www.wydawnictwosggw.pl

SPIS TREŚCI

Polityki Europejskie,
Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.1

Received: 25.04.2022
Accepted: 12.05.2022

Agnieszka Cyburt,
John Paul II University of Applied Sciences in Biala Podlaska

FINANCIAL INDEPENDENCE OF SMALL COMMUNES IN POLAND'S LUBELSKIE VOIVODESHIP: IMPORTANCE FOR FINANCIAL STABILITY

The aim of the study was to determine the level of financial independence of 81 small communes of Poland's Lubelskie Voivodship (up to 5,000 inhabitants per commune) and to assess its significance for their financial stability. The following methods were used: literature analysis, ratio analysis and diagnostic survey. Financial data from 2017-2021 was adopted for the analysis. 69 heads of communes participated in the conducted survey. It was established that in the opinion of these leaders, income potential and financial independence are important factors affecting the financial stability of small communes, and their low level poses a threat to this stability. Three ratios were used to assess financial independence. The analyses showed that small communes were characterized by a low level of income independence and a high dependence on revenues transferred from the state budget, which is evident in the value of the expenditure independence ratio achieved.

Keywords: financial independence, financial stability, ratio analysis, local government unit
JEL codes: R51, H72

Introduction

It has become increasingly important for governments to seek solutions that help satisfy social needs, especially in the case of local government units that have relatively low levels of economic development. Undoubtedly, Poland's Lubelskie Voivodeship is such a region. Local government units perform public tasks and exercise state authority within the scope set forth by lawmakers, where the principle of independence granted by the law and protected by the law is of key importance. Studying the level of financial independence of local government units, and seeking sustainable ways to build and maintain this independence, is one of the most important challenges of financial management for these entities. Therefore, the aim of this study is to assess the level of financial independence of a group of small communes in Poland, and to determine its importance for ensuring their financial stability. By assessing their level of financial independence, it can then be possible to take measures to better cope with the problem of insufficient financial resources with which Polish local governments are constantly struggling.

The study discusses the issues of defining and measuring the independence and financial stability of local government units. The research was systematized and divided into the following two stages: making calculations with the use of an index analysis, and then conducting a survey of the opinions of the heads of small communes of Poland's Lubelskie Voivodeship on the factors determining financial stability and the sources of threats to this stability. The author is aware of the limitations of this study and wants to point out that possible future work should also consider the problem of income stability and potential.

The essence of financial independence of the local government unit

The independence local governments is legally protected. However, it is not absolute, as they may only act within the limits of the law, as defined by the provisions of Article 16 Paragraph 2 of the Constitution of the Republic of Poland, which states that local governments participate in the exercise of public authority, and perform a significant part of public tasks entrusted to them by law in their own name and on their own responsibility. Therefore, a local government is the basic link of decentralised public administration, so it is necessary to transfer by law at least some public tasks to local oversight. A local government's independence should be treated as one of its basic features. It is a legal principle, with axiological value, the purpose and effect of decentralisation, along with the authority to make independent decisions regarding its own development[1].

The concept of local government independence may be examined from various points of view resulting from the specificity of the rules of how these units function. The areas of independence include: legal, competence (or task-competence), organizational, financial, sociological and political aspects, which are interrelated and should be analyzed together[2]. The essence and scope of independence should be considered in both subjective and objective terms. The subjective relation between the state and the local government units manifests itself in the superiority of the state over local government units. The state bodies decide on the existence of local governments, formulate the principles of their operation, and specify the number of tiers, the system of organization, competences, the scope and types of tasks and the system of financing the tasks, at the same time supervising the activities of local government units.[3] It should be noted that local government independence should not be equated with complete independence from the state, but with a precise definition of the scope of the state administration's interference in the area of local government bodies' independent activities.

In terms of subject matter, independence should be considered in relation to the real sphere of activity, i.e. the tasks to be performed and the financial sphere[4]. In the real sphere of activity, the area of economic independence is determined how local government units

[1] A. Kopańska, Zewnętrzne źródła finansowania inwestycji jednostek samorządu terytorialnego, Difin, Warszawa 2003, s. 10.
[2] M. Kosek-Wojnar, Samodzielność jednostek samorządu terytorialnego w sferze wydatków, Zeszyty Naukowe wyższej Szkoły Ekonomicznej w Bochni 4/ 2006, s. 75.
[3] M. Jastrzębska, Analiza samodzielności finansowej i sytuacji finansowej jednostek samorządu terytorialnego w latach 1999–2003, Finanse Komunalne 5/2004, s. 34–49.
[4] E. Denek, Płaszczyzny rozpatrywania samodzielności samorządu terytorialnego, Zeszyty Naukowe Akademii Ekonomicznej w Poznaniu 7/2001, s. 7–8.

can conduct their economic and financial policy, including budgetary policy. The economic independence of local government units means they have the right to perform public tasks in their own name and on their own responsibility, as well as the right to take their own actions, including the right to conduct business activities and the freedom to choose the organizational and legal forms by which they perform their operational tasks. It is also the power to choose the types of instruments and the scope of their application and influence on entities operating within the territory of a given local government unit[5]. The levels at which the concept of independence of local government units may be examined are presented in Table 1.

Table 1. Levels of independence of local government units

The name of the level	The description of the level	Legal basis
legal	Local government units have legal personality, the independence of local government units is subject to judicial protection.	Art. 165 paragraph 1 of the Constitution of the Republic of Poland, Art. 165 paragraph 2 of the Constitution of the Republic of Poland,
property	Local government units shall enjoy ownership and other property rights.	Art. 165 paragraph 1 of the Constitution of the Republic of Poland,
financial	Local government units shall be provided with a share of public income, depending on the tasks assigned to them. Local government units shall have the right to decide on the structure and amount of income and on the types and extent of expenditures.	Art. 167 paragraph 1 1 of the Constitution of the Republic of Poland,
taxation	Local government units have the right to determine the amount of local taxes and charges to the extent specified in laws.	Art. 168 of the Constitution of the Republic of Poland,
organizational	Local government units have the right to associate, to join international associations of local and regional communities and to cooperate with local and regional communities in other countries.	Art. 172 paragraph 1,2 1 of the Constitution of the Republic of Poland,

Source: Author's own study based on A. Czarny, *Samodzielność dochodowa jednostek samorządu terytorialnego na przykładzie wybranych miast wojewódzkich*, „Folia Pomeranae Universitatis Technologiae Stetinensis, Folia, Oeconomica" 2015, nr 317(78)1, s. 37–46.

Taking into account the definition of the concept of independence, it should be noted that the financial independence of local government units does not mean self-sufficiency in financing or independence in terms of financial management. The activity of local government units is top-down regulated by legal regulations, which allow, to a limited extent, for taking decisions on the issues of raising funds for financing their own and commissioned public tasks. The essence of "self-governance" is the possession of necessary financial resources, and its basis is independence in this sphere. The extent of a local government unit's independence results from decentralisation of the power to influence the sources of income and the power to make independent decisions on the use of financial resources. A local government unit's independence is therefore determined by its financial resources and assets used to perform its tasks. Thus, financial independence

[5] M. Jastrzębska, Samodzielność ekonomiczna i finansowa jednostek samorządu terytorialnego, Ekonomia 13/2004, s. 104

is a kind of eminence and a key value of local governance. It constitutes one of the priority principles of local government finance and its essence is expressed in the process of decentralisation of public finance, which consists in transferring to local government units appropriate financial resources and the authority to disperse them.

Financial independence of local government units should be understood as a specific scope of decision-making independence of local government authorities in the context of their ability to pursue their own fiscal policy in a given area[6]. The literature on this subject distinguishes several types of financial independence (Figure 1).

Figure 1. Types of financial independence

Source: Author's own study based on A. Kobiałka, Samodzielność finansowa jednostek samorządu terytorialnego w Polsce, [w:] Sektor finansów publicznych a rozwój gospodarczy: problemy i dylematy, M. Żukowski (red.), Wydawnictwo KUL, Lublin 2017, s. 233-243.

On the one hand, the financial independence of local government units[7] is closely related to the possibility of free decision-making by local government bodies as regards income and revenue, the size and direction of expenditures and outgoings, as well as the preparation and execution of the unit's budget[8]. It is worth noting that the financial independence of local government units is a broad concept and includes the issues of income independence, including tax independence, revenue independence, expenditure independence and outgoing independence. The concept of local government financial independence should be considered firstly from the point of view of income independence and independence in the field of budget expenditures and management of budget resources.

Financial independence of local governments may also be understood as the right to independent financial management, i.e. collection of statutorily specified incomes, and

[6] M. Poniatowicz, Determinanty autonomii dochodowej samorządu terytorialnego w Polsce, „Nauki o Finansach 1(22)/2015, s. 15-16.

[7] J. Heller, E. Farelnik, Finanse i samodzielność ekonomiczna a ustrój samorządów terytorialnych w Polsce, Studia Regionalne i Lokalne 2(52)/2013, s. 81.

[8] K. Surówka, Samodzielność finansowa samorządu terytorialnego w Polsce, Polskie Wydawnictwo Ekonomiczne, Warszawa 2013, s. 21-27; P. Sołtyk, Finanse samorządowe. Teoria i praktyka. Wydanie 2, Difin, Warszaw a 2020, s. 63; R. Głowicka-Wołoszyn, F. Wysocki, Uwarunkowania społeczno-ekonomiczne samodzielności finansowej gmin województwa wielkopolskiego, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu 346/2014, s. 34-44; F. Wysocki, Metody taksonomiczne w rozpoznawaniu typów ekonomicznych rolnictwa i obszarów wiejskich, Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2010, s. 35.

thus the exercise of so-called income power and the right to dispose of incomes – within the limits specified by law – to implement legally specified tasks (expenditure power). Financial independence cannot be interpreted as full autonomy in the field of income collection and management of acquired funds, but as an authorisation to act within the framework of the law[9]. The literature on the subject also mentions income independence, expenditure independence and mixed independence[10].

Independence with regard to the determination of income sources is referred to as income independence. Expenditure independence is connected with the distribution of income. Mixed independence is identified with both income and expenditure and is the most common. These three types of financial independence condition decision-making independence[11].

Income independence requires not only an appropriate level of income adequate to the tasks performed, but also the ability to make free decisions on tax matters, i.e. both the power to tax specific sources and the ability to influence the amount of tax income, as well as the ability to administer it. The independence of income understood in this way requires that local government units have at their disposal income defined as their own. In theoretical terms, a greater share of own income in total income means a greater scope of independence for the local government. The income independence of local governments is thus directly connected with so-called local tax authority. Apart from the transfer of income and the power to dispose of it, in this case it is also necessary to transfer the power to shape income sources, and in particular to shape taxes constituting a local government's own income. In the economic sense, the income independence of local government units should therefore be understood as a guarantee of sufficient financial resources by the state to carry out public tasks[12].

Providing local communities only with a bundle of competences, without ensuring adequate sources of income, compromises the essence of local government. The transfer of financial resources to local government units without granting them the right to dispose of the accumulated resources should be assessed in a similar way[13]. Expenditure independence, understood as the freedom of spending funds at the disposal of the local government, also plays an important role in the activities of the local government[14] . Expenditure independence means an appropriate scope of decision-making freedom in the scope of: directions of budgetary expenditures, the structure of expenditures by type and the value of budgetary expenditures[15] .

The financial stability of local government units is mainly determined by their income system, which is required to meet two demands that are quite difficult to fulfil simultaneously: stability and flexibility. A solution to the collision of demands for stability

---

9 A. Borodo, Niektóre współczesne problemy prawne finansów samorządu terytorialnego w Polsce, Samorząd Terytorialny 6/2004, s. 6.

10 L. Jańczuk, Samodzielność jednostek samorządu terytorialnego jako podmiotów administracji publicznej w Polsce, Wydawnictwo KUL, Lublin 2013, s. 123.

11 M. Dylewski, B. Filipiak, M. Gorzałczyńska-Koczkodaj, Analiza finansowa …, op. cit., s. 115.

12 M. Miemiec, W. Miemiec, K. Sawicka, Prawo finansów publicznych sektora samorządowego, Wolters Kluwer, Warszawa 2013, s. 55.

13 W. Wójtowicz (red.), Zarys finansów publicznych i prawa finansowego, Wolters Kluwer Polska, Warszawa 2011, s. 100

14 L. Jańczuk, Samodzielność jednostek samorządu …, op. cit., s. 64.

15 M. Poniatowicz, Determinanty autonomii …, op. cit., s. 17.

and flexibility of the income system should be the establishment of clear rules specifying the cases when it is necessary to make changes to compensate local government units for the adverse effects of legislative actions. It seems that the starting point for the construction of these rules should be the adoption – after necessary corrections of the present system of local government financing – of the "zero option", i.e. an assumption that at the moment a new system enters into force, all conditions described above will be fulfilled to ensure that local government units will be able to fulfil the tasks imposed on them[16].

Material and methods

The Lubelskie Voivodeship is one of the less developed regions of Poland and the EU, and the level and dynamics of development in this region is influenced by the dominant share of agriculture in the structure of the economy. In 2020 the share of the voivodship's GDP in Poland's total GDP was 3.7%, which placed it in the 11th position. The value of GDP per capita in the Lubelskie Voivodship is significantly lower than the national average and much lower than the EU average (48% of the EU average). There are as many as three Polish regions among the poorest regions in the EU, including the Lubelskie Voivodeship, which has the worst situation and occupies the 13th position[17].

Table 2. A set of ratios for assessing the level of financial independence of a local government unit

Name of the ratio	Formula	Interpretation of the ratio value
Income Financial Independence Index	$\boldsymbol{IFII = \frac{OI}{TI} * 100}$ IFII - Income Financial Independence Index, OI - Own Income, excluding shares in revenues from state taxes, TI - Total Income.	It informs about independence in generating income. The higher this ratio, the less dependent on funds from the state budget is the unit, and thus on the level of ratios regulating the national economy.
First Degree Expenditure Financial Independence Index (FDEFII)	$\boldsymbol{FDEII_1 = \frac{OI + SiT}{TI} * 100}$ $FDEII_1$- First Degree Expenditure Independence Index, OI - Own Income, SiT - Shares in revenues from state taxes, TI - Total Income.	It informs to what extent a given unit decides on the allocation of its own income, taking into account the shares in revenues from state taxes.
Second Degree Expenditure Financial Independence Index (SDEFII)	$\boldsymbol{SDEFII_2 = \frac{OI + SiT + GS}{TI} * 100}$ $SDEFII_2$- Second Degree Expenditure Financial Independence Index, OI - Own Income, SiT - Shares in revenues from state taxes, GS - General Subsidy, TI - Total Income.	It informs to what extent the unit decides fully and without restrictions on the allocation of its own income, shares in revenues from state taxes and general subsidy.

Source: Author's own study based on M. Kowalczyk, Podstawy analizy ekonomiczno-finansowej w jednostkach samorządu terytorialnego, Difin, Warszawa 2017, s. 122.

[16] E. Malinowska-Misiąg, W. Misiąg, Dostosowanie dochodów do zadań samorządu terytorialnego w Polsce. Praktyka i rekomendacje, Studia BAS 1(65)/2021, s. 21–41.
[17]https://ec.europa.eu/eurostat/documents/2995521/9618249/1-26022019-AP-EN.pdf/f765d183-c3d2-4e2f-9256-cc6665909c80 (dostęp: 24.11.2021).

The research on the levels of financial independence was focused on the small communes of the Lubelskie Voivodeship with populations not exceeding 5,000. All small communes (81 communes) were covered by the research, whereas 69 heads of those communes took part in the diagnostic survey, which accounted for 85% of all communes of that type in the Lubelskie Voivodship. A time horizon of 2017-2021 was taken into account and secondary sources of data from budget reports of the surveyed communes published by the Regional Chamber of Accounts in Lublin (Rb-27, Rb-NDS) were used. The assessment of the level of financial independence was made using ratio analysis that allows to identify processes and phenomena affecting the financial management of a local government unit[18]. Thus, the starting point for making an attempt to assess the financial situation is to define a set of ratios describing various aspects of how a local government unit functions[19]. The catalogue of ratios used for assessing the financial condition of local government units proposed by the Ministry of Finance[20], which includes the income independence ratio, is widely used. The basic method of assessing the financial independence of communes is the use of an appropriate set of ratios. A detailed list of ratios adopted in the assessment of financial independence is presented in Table 2.

The basic dependency characterising income independence is the ratio of own (self-generated) income to total income, as it defines a local government units' decision-making freedom. The income independence of local government units may be measured by the following ratios: the share of own income minus the share in income taxes from natural and legal persons in the total income, as local government units have no influence on the level of this income, as well as the share of tax income of local government units in the total income[21] . Expenditure independence may be assessed by establishing a relationship between the following categories: investment expenditures and total expenditures[22]; own income, including the share of taxes constituting the state budget income and total budget income (expenditure independence index of 1st degree)[23]; total own income, including the share of taxes constituting the state budget income, general subsidy and budget income (expenditure independence index of 2nd degree)[24] .

Financial independence of local government units is important for the stability of their finances, as one can talk about the stable finances of local government units when this stability is achieved on a permanent basis or there is a tendency to maintain it. The stability of income potential is crucial and constitutes a starting point for consideration of

[18] M. Dylewski, B.Filipiak, M. Gorzałczyńska-Koczkodaj, Analiza finansowa …, op. cit., s. 117; M., Jastrzębska Polityka budżetowa jednostek samorządu terytorialnego, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2005; J. Jaworski, Metody analizy finansowej w ocenie budżetu gminy, Monitor Rachunkowości i Finansów 4/2009, s. 23.

[19] B. Filipiak, Dylematy pomiaru potencjału finansowego jednostek samorządu terytorialnego– dobór czynników i ich pomiar, Prace Uniwersytetu Ekonomicznego we Wrocławiu 451/2016, s. 75–87.

[20] https://www.gov.pl/web/finanse/wskazniki-do-oceny-sytuacji-finansowej-jednostek-samorzadu-terytorialnego-w-latach-2017-2019 (dostęp: 16.09.2021)

[21] A. Kozera, R. Głowicka-Wołoszyn, F. Wysocki, Samodzielność finansowa gmin wiejskich w woj. Wielkopolskim, Wiadomości Statystyczne 2/2016, s. 74–75.

[22] J. Zawora, Samodzielność finansowa samorządów gminnych Podkarpacia, Zeszyty Naukowe SGGW. Ekonomika i Organizacja Gospodarki Żywnościowej 81/2010, s. 142.

[23] A. Mrówczyńska-Kamińska, A. Kucharczyk, J. Średzińska, Analiza finansowa w jednostkach samorządu terytorialnego na przykładzie Miasta i Gminy Środa Wielkopolska, Zeszyty Naukowe SGGW 89/2011, s. 179.

[24] M. Dylewski, B. Filipiak, M. Gorzałczyńska-Koczkodaj, Analiza finansowa w jednostkach samorządu terytorialnego, MSK Municypium, Warszawa 2004, s. 120.

other dimensions of financial stability, as M. Kosek-Wojnar[25] points out, stressing that the financial stability of communes is a state in which their budget income base is adjusted to the expenditure base.

The empirical research focused on the income aspect of financial stability, based on the possibility of financing own tasks. Quantitative analysis, based on the assessment of ratios for financial independence of small communes, was complemented by qualitative analysis in the form of a diagnostic survey method using the technique of questionnaire surveys among commune heads.

Research results

Research on the opinions of heads of small communes in the Lubelskie Voivodship regarding factors that determine financial stability, and the sources of threats to this stability, was the starting point for further in-depth considerations. The most important factors influencing the level of financial stability of small communes in the Lubelskie Voivodship in the opinion of their leaders are presented in Chart 2.

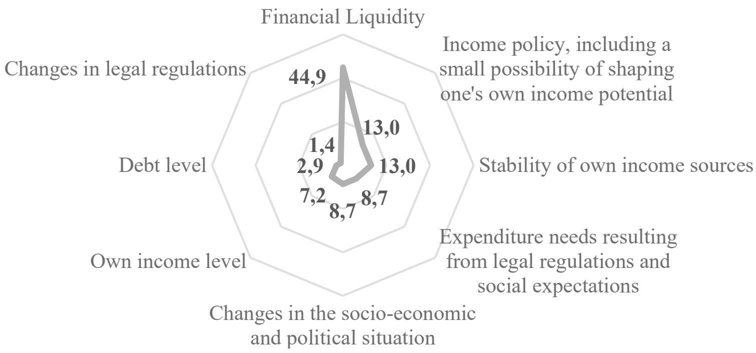


Chart 1. Factors that have the greatest impact on the level of financial stability of the commune in the opinion of the leaders of small communes (% of responses)

Source: Author's own study based on survey research.

On the basis of the obtained results, it may be stated that in the opinion of the leaders of the small communes in the Lubelskie Voivodship, the most important factor influencing the level of financial stability is financial liquidity (nearly 45% of responses), while another very important factor is income policy, income stability and the level of own income, which together constitute 30% of responses. These results underline the importance of income potential which determines both the financial independence of these communes and their level of financial stability.

Leaders of the small communes (up to 5,000 inhabitants) considered budget expenditures that are inadequate to the local income potential as the greatest threat to the financial stability of their units. Nearly half of the provided answers indicate that the income potential determines the level of a commune's expenditure possibilities and its

[25] M. Kosek-Wojnar, Pożyczki z budżetu państwa jako instrument stabilizacji finansowania zadań jednostek samorządu terytorialnego, Finanse, Rynki Finansowe, Ubezpieczenia 2016/6, s. 30.

inadequacy disturbs the financial stability of the unit. It is therefore reasonable to analyse the income potential of these units by determining their level of financial independence.

Using ratio analysis, ratios of financial independence were calculated for all 81 small communes in the Lubelskie Voivodship. The first ratio relates to the level of so-called "pure" own income potential based on own income decreased by participation in taxes belonging to the state budget (PIT and CIT). The communes were classified into three groups according to the value of the IFII index (extremely low, low and medium). The communes with an IFII value below 15% were determined to be units with an extremely low level of income independence; those with an index below 25% were determined to be units with a low level of income independence; and those with an index exceeding 25% were deemed to have a medium level of income independence (close to the average value for all communes in Poland – Chart 3).

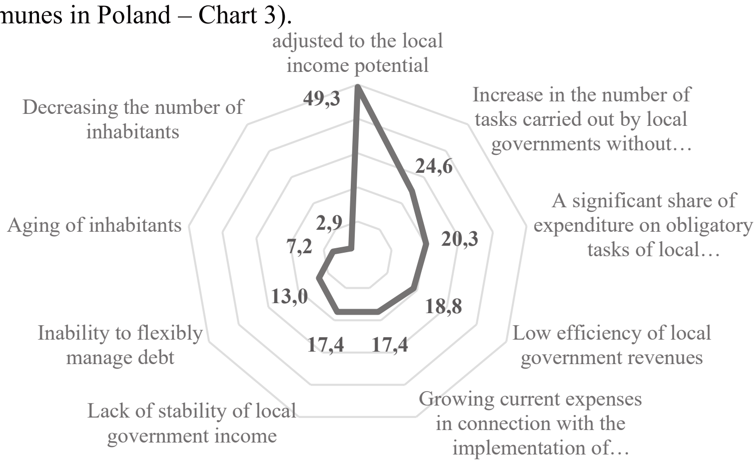


Chart 2. Factors that are the greatest threat to the financial stability of the communes in the opinion of the heads of the small communes

Source: Author’s own study based on survey research.

The obtained results indicate that the level of income potential based on own income decreased by the share in taxes payable to the state budget (PIT and CIT) was changed. The number of communes with an extremely low (less than 15%) level of income independence decreased from 28 communes in 2017 to 17 communes in 2021, and the number of communes with a medium level of income independence index (more than 25%) increased significantly by as many as 11 communes. This indicates a tendency to strengthen the income policy of the small communes in the Lubelskie Voivodeship and an attempt to build a stable income potential based on own income over which the local government unit has influence.

However, it should also be emphasized that in each year the majority (65% in 2021) of the small communes achieved a low level of income independence, as the value of the ratio of the share of own income after excluding PIT and CIT shares in total income ranged from 16 to 25%. This is a very low result (in the literature on the subject, a result below 30% is treated as low) and indicates low fiscal autonomy. It is a worrying phenomenon of low level of income independence, especially as it is this category of income that gives the possibility to exercise so-called tax authority.

Another ratio analyzed is expenditure independence, of which own income is an important determinant. According to the European Charter of Local Government, local communities are entitled to have their own sufficient financial resources, which they can freely dispose of in the exercise of their powers.

	2017	2018	2019	2020	2021
0-15	28	32	18	14	17
16-24	52	47	59	57	52
25 and more	1	2	4	10	12

0-15 16-24 25 and more

Chart 3. Income Financial Independence Index (IFII)

Source: Author's own study based on Implementation of budgets by Lubelskie local government units in the period 2017-2021, budget reports (Rb-27, Rb-NDS) collected by the Regional Accounting Chamber in Lublin, www.lublin.rio.gov.pl (27.10.2021).

The 1st degree expenditure independence ratio (Chart 4) shows the ratio of own income increased by PIT and CIT shares to total income. Taking into account shares in natural and legal persons tax, there were still small communes in the Lubelskie Voivodship whose share of increased own income in total income did not exceed 15%, which significantly limited their freedom in making decisions about expenditures. It is noteworthy that in 2017, more than 85% of all small communes in the Lubelskie Voivodeship achieved a value of the ratio between 16% and 30%, which was below the average value for all communes in Poland (average value for communes in Poland was 34-35%). This indicates a very low level of expenditure independence based on own income, which in turn indicates a lack of freedom in expenditure decisions and low possibilities for financing pro-development activities of these units.

	2017	2018	2019	2020	2021
0-15	2	1	0	1	0
16-30	69	68	74	61	63
31 and more	10	12	7	19	18

0-15 16-30 31 and more

Chart 4. First Degree Expenditure Independence Index (FDEII)

Source: Author's own study based on Implementation of budgets by Lubelskie local government units in the period 2017-2021, budget reports (Rb-27, Rb-NDS) collected by the Regional Accounting Chamber in Lublin, www.lublin.rio.gov.pl (27.10.2021).

After taking into account the amounts of the general subsidy transferred to the small communes in the Lubelskie Voivodeship (Chart 5), it should be stated that this transfer income significantly changed the level of expenditure independence of the surveyed units. The largest group (respectively: 79% in 2017 and 77% of communes in 2021) were the small communes, whose value of the ratio of own income share together with the share in the PIT and CIT taxes and the general subsidy in the total income ranged from 56% to 65%, which means that more than a half of the small communes in the Lubelskie Voivodeship build their financial independence on the basis of funds transferred from the state budget.

	2017	2018	2019	2020	2021
0-55	15	26	17	7	16
56-65	64	51	62	65	62
66 and more	2	4	2	9	3

Chart 5. Second Degree Expenditure Financial Independence Index (SDEFII)

Source: Author's own study based on Implementation of budgets by Lubelskie local government units in the period 2017-2021, budget reports (Rb-27, Rb-NDS) collected by the Regional Accounting Chamber in Lublin, www.lublin.rio.gov.pl (27.10.2021).

This is a disturbing phenomenon as it reveals a lack of full freedom in the process of financial management of those units, shows their dependence on the state budget situation and makes it difficult for those units to build financial stability on their own. However, in the period under review, the communes with the highest 2nd degree expenditure independence that achieved a result above 66% were only 2% in 2017 and nearly 4% in 2021.

Summary

On the basis of the conducted evaluation on the financial independence of small communes (up to 5,000 inhabitants) in the Lubelskie Voivodeship in Poland, it was found that over 85% are characterized by an extremely low level of income independence, reaching a ratio below 25%. The situation was similar in the case of 1st degree expenditure independence (own income increased by PIT and CIT shares), as in 2021 nearly 80% of the small communes recorded a level of expenditure independence lower than the average value for all communes in Poland.

The obtained results show the weakness of the income policy of these units and the failure to make use of fiscal autonomy expressed in the use of tax authority. Only by taking into account the amount of the general subsidy transferred from the state budget were the results of the 2nd degree income independence index changed. This presented a much more favorable situation for the small communes, as more than a half of those units build their expenditure independence using funds transferred from the state budget. The number of communes with the highest value of the 2nd degree expenditure independence index increased in 2020, to as much as 11% of all small communes. Therefore, this result should be treated as a forecast of improvement in the situation of small communes in terms of their financial independence. What is worrying, however, is the fact that to a large extent this independence is built on the basis of transfer income, which makes these units dependent on the socio-economic situation in the country, as reflected in the situation of the national budget. Such a situation confirms the reality of the key threat to the stability of those units' finances as perceived by the heads of small communes, i.e. the inadequacy of income potential to determine the level of those communes' expenditure capacity.

Taking into account the results of the index analysis of the small communes' financial independence and the author's own research using the diagnostic survey method, it should be emphasized that small communes of the Lubelskie Voivodeship noticed their inability to build financial stability without having a stable income base. Therefore, small communes should actively work towards increasing income potential based on their own self-generated income, because it is mainly that category which helps create stable local financial management.

References

Czarny A., Samodzielność dochodowa jednostek samorządu terytorialnego na przykładzie wybranych miast wojewódzkich, Folia Pomeranae Universitatis Technologiae Stetinensis, Folia, Oeconomica 317(78)/2015

Denek E., Płaszczyzny rozpatrywania samodzielności samorządu terytorialnego, Zeszyty Naukowe Akademii Ekonomicznej w Poznaniu 7/2001

Dylewski M., Filipiak B., Gorzałczyńska-Koczkodaj M., Analiza finansowa w jednostkach samorządu terytorialnego, MSK Municypium, Warszawa 2004

Filipiak, B., Dylematy pomiaru potencjału finansowego jednostek samorządu terytorialnego – dobór czynników i ich pomiar, Prace Uniwersytetu Ekonomicznego we Wrocławiu 451/2016

Głowicka-Wołoszyn R., Wysocki F., Uwarunkowania społeczno-ekonomiczne samodzielności finansowej gmin województwa wielkopolskiego, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu 346/2014

Heller J., Farelnik E., Finanse i samodzielność ekonomiczna a ustrój samorządów terytorialnych w Polsce, Studia Regionalne i Lokalne 2(52)/2013

Jańczuk L., Samodzielność jednostek samorządu terytorialnego jako podmiotów administracji publicznej w Polsce, Wydawnictwo KUL, Lublin 2013

Jastrzębska M., Polityka budżetowa jednostek samorządu terytorialnego, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2005

Jastrzębska M., Analiza samodzielności finansowej i sytuacji finansowej jednostek samorządu terytorialnego w latach 1999–2003, Finanse Komunalne 5/2004

Jastrzębska M., Samodzielność ekonomiczna i finansowa jednostek samorządu terytorialnego, Ekonomia 13/2004

Jaworski J., Metody analizy finansowej w ocenie budżetu gminy, Monitor Rachunkowości i Finansów 4/2009

Kobiałka A., Samodzielność finansowa jednostek samorządu terytorialnego w Polsce, [w:] Sektor finansów publicznych a rozwój gospodarczy: problemy i dylematy, M. Żukowski (red.), Wydawnictwo KUL, Lublin 2017

Kopańska A., Zewnętrzne źródła finansowania inwestycji jednostek samorządu terytorialnego, Difin, Warszawa 2003

Kosek-Wojnar M., Samodzielność jednostek samorządu terytorialnego w sferze wydatków, Zeszyty Naukowe Wyższej Szkoły Ekonomicznej w Bochni 4/2006

Kosek-Wojnar M., Pożyczki z budżetu państwa jako instrument stabilizacji finansowania zadań jednostek samorządu terytorialnego, Finanse, Rynki Finansowe, Ubezpieczenia 6/2016

M. Kowalczyk, Podstawy analizy ekonomiczno-finansowej w jednostkach samorządu terytorialnego, Difin, Warszawa 2017

Kozera A., Głowicka -Wołoszyn R., Wysocki F., Samodzielność finansowa gmin wiejskich w woj. Wielkopolskim, Wiadomości Statystyczne 2/2016

Malinowska-Misiąg E., Misiąg W., Dostosowanie dochodów do zadań samorządu terytorialnego w Polsce. Praktyka i rekomendacje, Studia BAS 1(65)/2021

Miemiec M., Miemiec W., Sawicka K., Prawo finansów publicznych sektora samorządowego, Wolters Kluwer, Warszawa 2013
Mrówczyńska-Kamińska A., Kucharczyk A., Średzińska J., Analiza finansowa w jednostkach samorządu terytorialnego na przykładzie Miasta i Gminy Środa Wielkopolska, Zeszyty Naukowe SGGW 89/2011
Sołtyk P., Finanse samorządowe. Teoria i praktyka. Wydanie 2, Difin, Warszaw a 2020
Poniatowicz M., Determinanty autonomii dochodowej samorządu terytorialnego w Polsce, Nauki o Finansach 1(22)/2015
Surówka K., Samodzielność finansowa samorządu terytorialnego w Polsce, Polskie Wydawnictwo Ekonomiczne, Warszawa 2013
Wójtowicz W. (red.), Zarys finansów publicznych i prawa finansowego, Wolters Kluwer Polska, Warszawa 2011
Wysocki F., Metody taksonomiczne w rozpoznawaniu typów ekonomicznych rolnictwa i obszarów wiejskich, Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu, Poznań 2010
Zawora J., Samodzielność finansowa samorządów gminnych Podkarpacia, Zeszyty Naukowe SGGW. Ekonomika i Organizacja Gospodarki Żywnościowej 81/2010
https://ec.europa.eu/eurostat/documents/2995521/9618249/1-26022019-AP-EN.pdf/f765d183-c3d2-4e2f-9256-cc6665909c80
https://www.gov.pl/web/finanse/wskazniki-do-oceny-sytuacji-finansowej-jednostek-samorzadu-terytorialnego-w-latach-2017-2019

Samodzielność finansowa małych gmin województwa lubelskiego i jej znaczenie dla ich stabilności finansowej

Streszczenie

Celem opracowania było ustalenie poziomu samodzielności finansowej 81 małych gmin województwa lubelskiego (do 5 tys. mieszkańców) oraz ocena jej znaczenia dla stabilności finansowej tych jednostek. Zastosowano następujące metody: analizę piśmiennictwa, analizę wskaźnikową oraz sondaż diagnostyczny. Do analizy przyjęto dane finansowe z lat 2017-2021. W badaniu ankietowym przeprowadzonym wśród zarządzających małymi gminami wzięło udział 69 wójtów. Ustalono, że w opinii włodarzy potencjał dochodowy i samodzielność finansowa stanowią ważny czynnik wpływający na stabilność finansową małych gmin, a ich niski poziom stanowi zagrożenie dla wspomnianej stabilności. Wykorzystano trzy wskaźniki służące ocenie samodzielności finansowej. Z przeprowadzonych analiz wynika, że małe gminy charakteryzował niski poziom samodzielności dochodowej i duże uzależnienie od dochodów transferowych przekazywanych z budżetu państwa, co widoczne jest w osiągniętej wartości wskaźnika samodzielności wydatkowej.

Słowa kluczowe: samodzielność finansowa, stabilność finansowa, analiza wskaźnikowa, jednostka samorządu terytorialnego
Kody JEL: R51, H72

Information about the author:

Agnieszka Cyburt, PhD
John Paul II University of Applied Sciences in Biala Podlaska
ul. Sidorska 95/97, Biała Podlaska, Poland
e-mail: a.cyburt@dyd.akademiabialska.pl
ORCID: 0000-0002-7084-6066

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.2

Received: 25.04.2022
Accepted: 12.05.2022

Agnieszka Gałecka
Akademia Bialska Nauk Stosowanych im. Jana Pawła II
Marzena Ganc
Szkoła Główna Gospodarstwa Wiejskiego w Warszawie

FINANCIAL STABILITY OF RURAL MUNICIPALITIES IN POLAND'S LUBLIN VOIVODESHIP IN 2016-2020

The stability of public services and the financial situation of local governments has a significant impact on a nation's economic development. It also affects the long-standing process of political reforms aimed at promoting the efficiency of public sector units, their balanced budgets and financial stability. It is a concept defined in different ways, which is due, among other things, to its multifaceted nature and the lack of precisely defined measures to assess this phenomenon.

The main objective of the paper was to assess the financial stability of rural municipalities in Poland's Lublin voivodeship in 2016-2020. Within the framework of the main objective, ratio analysis and survey research was conducted. The paper was based on the study of literature on the subject, reports on the implementation of budgets in the studied municipalities published by the Regional Chamber of Accounts in Lublin, and a survey questionnaire.

Based on the analyses, it was found that the studied municipalities in 2016-2020 recorded sustainability in terms of fiscal policy, and a stable level of financial liquidity and debt, albeit with a relatively low level of revenue independence. The crisis in 2020 caused by the Covid-19 pandemic caused a significant increase in the current expenditures of local government units compared to revenues, which were less than planned, although it did not significantly worsen the financial performance of the surveyed municipalities. In the opinion of the respondents (heads of rural municipalities), the vast majority of rural municipalities in the Lublin voivodeship were financially stable and the Covid-19 pandemic generally did not have a significant impact on their levels of stability.

Keywords: financial stability, rural municipalities, ratio analysis, financial liquidity
JEL codes: H71, H72

Introduction

One of the most important concepts in many academic fields and disciplines, most notably in economics and finance, is that of stability. In economic literature, stability is generally considered in several contexts:

- microeconomic (individual stability of an entity, institution, market) and macroeconomic (systemic stability, i.e. the entire economic system);
- static (current state) and dynamic (as a certain process of seeking balance);

- short-term and long-term (short-term and long-term stability)[1].

In financial literature, the concept of financial stability was probably first used in 1994 by the Bank of England, to describe the objectives of central bank activity not related to ensuring price stability or the efficient functioning of the financial system[2]. Over time, a number of terms and characteristics of financial stability have emerged in the financial literature. Financial stability should be perceived not only as the absence of crisis[3] but, first and foremost, as a certain constant process of seeking and striving for equilibrium[4]. It is a state in which a certain economic system performs its functions in a continuous and effective manner, even when there are unexpected and unfavourable disturbances of a significant scale[5]. Therefore, maintaining the stability of the financial system is a necessary condition for the smooth functioning of the market economy and economic growth[6]. Some authors also emphasize the close relationship between stability and liquidity and define financial stability as the absence of tendency to loss of liquidity and, consequently, to insolvency[7].

In the context of local government, financial stability is most often identified with the ability to settle liabilities (fiscal sustainability)[8], and the ability to finance its own tasks and effectively meet the needs of the local community[9]. Therefore, it can be stated that financial stability is the state of:

- carrying out transactions related to the tasks of the unit with the guarantee that they will be paid on time and not adversely affect the budget,
- enabling the realisation of certain functions set for the unit,
- efficient allocation of financial resources,
- the effective identification and management of risks[10].

The financial stability of local government units depends mainly on a properly constructed financing system, and therefore the source of the weakness of local government finances may be a shortage of funds, as well as the lack of a rational system of managing them in accordance with the theory of sustainable finance[11]. The public sector entity is financially

[1] K. Wójtowicz: Uwarunkowania i pomiar stabilności fiskalnej jednostek samorządu terytorialnego. Wydawnictwo UMCS, Lublin 2019, p. 24-30.
[2]M. Iwanicz- Drozdowska: Definicje i determinanty stabilności finansowej. Część edukacyjna: stabilność finansowa od A do Z. Bank i Kredyt nr. 1, 2011, p. 3.
[3] S.S. Poloz: Financial stability: A worthy goal, but how feasible? Journal of Banking and Finance, 30(12), 2006s. 3421-3427.
[4] G.J. Schinasi: Defining financial stability, IMF Working Paper No. 187, 2004, p. 34.
[5] J. Osiński (red.): Raport o stabilności systemu finansowego. NBP, Warszawa 2016, p. 5.
[6] K. Kluza, S. Kluza: Finanse publiczne a stabilność systemu finansowego w: Finanse publiczne (red. M. Ziolo), Polska Akademia Nauk 2021, p. 122.
[7] A. Crockett: Why is financial stability a goal of public policy. Economic Review no. 4, 1997, s. 8; M. Iwanicz-Drozdowska: Zarzadzanie finansowe bankiem. PWE, Warszawa 2005, p. 15.
[8] C. Burnisde: Fiscal Sustainability in Theory and Practice. The World Bank, Washington 2005, p. 11-16.
[9] L. Klank: Stabilność finansowa jednostek samorządu terytorialnego, Teoria stabilności finansowej. Test praktyki XXI wieku, t. XV, z. 9, cz. III, Łódź – Warszawa 2014, p. 71-72; M. Jastrzębska: Alternatywne sposoby finansowania jednostek samorządu terytorialnego. Finanse Komunalne 24(12), 2017, p. 34.
[10] B. Z. Filipiak: Wykorzystanie statystyki publicznej do oceny stabilności finansowej jednostek samorządu terytorialnego. Wiadomości Statystyczne 11(666), 2016, p. 14.
[11] A. Cyburt, A. Gałecka: Rola nadwyżki operacyjnej w budowaniu stabilności finansowej i potencjału inwestycyjnego jednostek samorządu terytorialnego. Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing 23(72), 2020, s. 19.

sustainable when it can generate sufficient income to perform its core functions and deliver services at an acceptable level[12].

There is no unequivocal definition of financial stability in Polish legal regulations, although the Public Finance Act contains some references to elements allowing for its preservation (Art. 217, 222, 242, 243, 254, 260) [13]. From the point of view of measuring financial stability in local government units, the determination of the individual debt ratio (Art. 243), which is used to control the entity in meeting its obligations on an ongoing basis, is important. It is worth emphasizing that in recent years the method of its calculation has been subject to gradual changes aimed at strengthening financial security, and thus increasing the financial stability of local government units.

As far as municipalities are concerned, financial stability is sometimes equated with maintaining a balanced budget, i.e. matching budget revenue with expenditures[14]. In the absence of such a match, one speaks of financial destabilization of the unit, which is conditioned by internal factors, associated with dysfunctions in the conduct of financial management by local authorities, as well as external factors, such as instability of economic conditions, or limitations imposed by the state in the scope of financial independence of the unit[15].

To sum up, three important dimensions of financial stability of local government units can be distinguished, i.e. revenue-related (consisting in financing the unit's own tasks), service-related (providing public services at the level expected by citizens) and debt-related (connected with settling liabilities)[16]. The lack of an unambiguous definition of this concept, as well as a number of financial and non-financial factors influencing the financial stability of local governmental units, causes methodological difficulties in its measurement and the assessment of the obtained results. In connection with the above, addressing this issue seems to be important, the more so in that it does not receive enough attention in the literature.

Material and methodology of research

The main objective of the study is to assess the financial stability of rural municipalities in Poland’s Lublin voivodeship in 2016-2020. The selection of this voivodeship was deliberate, dictated by the fact that it is one of the poorest regions of Poland, characterized by a low level of development and economic potential. The Lublin voivodeship is also the region with one of the highest unemployment rates in Poland. In December 2020 the registered unemployment rate was 8.2%, while the national average was 6.2%. To achieve the objective, the method of literature analysis and critique was used, as well as a ratio

[12] Recomended Practice Guideline. Reporting on the Long-Term Sustainability of an Entity’s Finances, International Public Sector Accounting Standards, International Federation of Accountants, New York 2015, s. 207

[13] Ustawa z dnia 27 sierpnia 2009r. o finansach publicznych, Dz. U.2009 Nr 157, poz. 1240, art. 243 ze zm.

[14] M. Kosek- Wojnar: Pożyczki z budżetu państwa jako instrument stabilizacji finansowania zadań jednostek samorządu terytorialnego. Finanse, Rynki Finansowe, Ubezpieczenia 84(2), 2016, p. 30

[15] K. Bal, A. Piaszczyk: Stabilność finansowa jednostek samorządu terytorialnego w aspekcie perspektywy finansowej na lata 2014-2020. Zeszyty Naukowe Wyższej Szkoły Ekonomii i Informatyki w Krakowie No 13, 2017, p. 13-14.

[16] A. Wichowska, A Ostrowska: Stabilność finansowa gmin na przykładzie gmin województwa warmińsko-mazurskiego. Studia Prawno-Ekonomiczne T. CIX, 2018, p. 342.

analysis based on historical data from the budget reporting of the studied municipalities. The selection of ratios to determine financial stability was purposeful and resulted from the availability of empirical data. The selected ratios made it possible to characterise four areas of financial stability: budget balance, financial independence, short-term solvency and long-term solvency (Table 1).

Table 1. Selected measures for assessing financial stability of rural municipalities in Lublin voivodeship

Lp.	Name of the ratio	Structure of the ratio
Budget Balance Ratio		
1	Total revenue to total expenditure ratio	total revenue / total expenditure
2	Coverage ratio of current expenditure to current revenue	current revenue/current expenditure
Financial Independence Ratio		
3	Revenue independence ratio	own revenue / total revenue
4	Operating surplus to total revenue ratio	operating surplus/total revenue
5	Self-financing ratio	(operating surplus+ property revenue)/property expenditure
Short-term Solvency (financial liquidity) Ratio		
6	Cash-based liquidity ratio	realized budget incomes and revenues / realized budget expenditures and outgoings
7	Accrual-based liquidity ratio	(realized budget revenue+ income+ receivables)/ (realized budget expenditures + outgoings + due liabilities)
Long-term Solvency Ratio		
8	Total liabilities to total revenue ratio	total liabilities/total revenue
9	The ratio of share of due liabilities in total liabilities	payable liabilities/ total liabilities

Source: authors' own work on the basis of: A. Czarny: Stabilność finansowa w odniesieniu do samodzielności dochodowej w jednostkach samorządu terytorialnego na przykładzie województw. Folia Pomeranae Universitatis Technologiae Stetinensis. Oeconomica 93, 2018, p. 29-45; K. Wójtowicz: Uwarunkowania i pomiar stabilności fiskalnej jednostek samorządu terytorialnego. Wydawnictwo UMCS, Lublin 2019, p. 289-292.

The study covered all rural municipalities in the Lublin voivodeship, i.e. 165 units. The time scope of the study covered the period 2016-2020. The study took into account financial data contained in annual reports on the execution of budgets of local government units published by the Regional Chamber of Accounts in Lublin.

The ratio analysis was complemented by the obtained opinions of the heads of rural municipalities in the Lublin voivodeship concerning the assessment of the level of financial stability. Research using the diagnostic survey method was conducted in 2021 among the representatives of the executive body of rural municipalities (heads of rural municipalities). The CATI-computer-assisted telephone interviewing technique was used. Answers to the questions were given by heads of 71 rural municipalities, which accounted for 43% of all units of this type in the studied voivodeship.

Results of the survey

The analysis of stability of the surveyed rural municipalities in the Lublin voivodeship began with the dimension of budget balance and financial independence (Table 2). First, the ratio of revenue to expenditure of the surveyed municipalities was determined. A predominance of expenditures over revenue was found in 2017, 2018 and 2020, while the opposite situation was found in 2016 and 2019. In the period under study, a decrease in the analysed ratio by 7.23 p.p. was recorded, which is an undesirable situation. The lack of coverage of all expenditures with the achieved revenue in 2020 was caused, among others, by their increase caused by the Covid-19 pandemic.

Analysing the degree of coverage of current expenditures with current revenue in the surveyed municipalities found that in each of the studied years this ratio reached a value above 100%, which means that current expenditures were covered with current revenue. This proves the ability to generate an operating surplus, and thus the financial independence and sustainability of the fiscal policy of the studied municipalities. The decrease in the analysed ratio in 2020 in relation to 2019 was caused by a higher increase in current expenditure, including expenditure on counteracting the effects of the pandemic (increase of 14%), than current revenue (increase of 6%).

Between 2016 and 2020, the average value of the revenue independence ratio was relatively low at 28.23%. It should be noted that own revenue comes from sources located on the territory of a given local government and its level results from the internal economic potential of the unit. Most municipalities in the Lublin voivodeship (94 municipalities) are small, so-called "liliput" municipalities, where the population does not exceed 5,000, which is reflected in the level of own (self-generated) revenue. The highest level of independence was recorded in the year 2020, when 30.13% of all revenue of rural municipalities in the Lublin voivodship was self-generated revenue. It is worth noting that in that year, 56 out of 165 rural municipalities had a higher-than-average level of the analysed ratio. The highest revenue independence was recorded in Puchaczów municipality - 61.96%, which is the richest municipality in the Lublin voivodship with a large number of business entities, while the lowest was in Aleksandrów municipality - 15.0%. In 2020, compared to 2016, an increase in financial independence of more than 6.5% was found, which should be evaluated positively.

The ratio of the share of operating surplus, which is the difference in the current part of the budget (current revenue - current expenditure) in the revenue of the studied municipalities, determines the level of budget flexibility. In the analysed period this ratio was at a relatively stable level (about 8-9%), except for the last year, when a significant decrease to 3% was recorded. In 2020, the situation of local government units was characterised by uncertainty, especially after the temporary collapse of PIT revenues in April 2020, which was caused by the COVID-19 pandemic and the possibility of a later payment of tax advances, as well as the application of tax reliefs, which are a form of assistance to entrepreneurs. Nevertheless, the positive value of the analysed ratio shows a certain "fiscal slack", indicating that the units generated a positive operating result, thus had financial surpluses, which they could allocate e.g. to early repayment of liabilities or to implementation of projects serving the needs of the local community.

The self-financing ratio, which informs about the degree of financing investments with own funds, ranged from 77.71% in 2020 to 128.27% in 2016. It is worth noting that in rural municipalities in Lublin voivodeship over the course of the studied years, there was an increase in property revenue (the highest in 2020 - by more than 29% compared to 2019). This means selling off assets, and this may be a worrying phenomenon. The decrease in the self-financing ratio in the last year was caused by a decrease in the level of operating surplus with a simultaneous increase in property expenditure by 20%. This indicates that investments are financed to a lesser extent with own funds. It should be noted that the increase in property expenditures was due to government support for investment tasks through the establishment of the Government Fund for Local Investment (RFIL) in July 2020, a programme under which government funds went, among others, to municipalities for investments close to people. The support did not have to be paid back, and came from the COVID-19 Fund[17].

Table 2. Selected ratios of financial stability in terms of budget balance and financial independence of rural municipalities in Lublin voivodeship in 2016-2020 (%)

Name of the ratio	Year					Change 2016-2020 (p.p)
	2016	2017	2018	2019	2020	
Total revenue to total expenditure ratio	102,80	99,79	95,59	100,96	95,57	-7,23
Coverage ratio of current expenditure to current revenue	110,17	109,91	110,46	110,9	103,58	-6,59
Revenue independence ratio	28,27	27,07	27,08	28,6	30,13	1,86
Operating surplus to total revenue ratio	8,91	8,54	8,39	8,74	3,00	-5,91
Self-financing ratio	128,27	98,51	81,06	105,03	77,71	-50,56

Source: authors' own work based on data from the Regional Chamber of Accounts in Lublin.

Table 3 presents selected ratios for the studied municipalities characterizing short-term solvency – which is a synonym of financial liquidity – and long-term solvency – which is a unit's ability to meet all financial liabilities in future periods. Upon analysing short-term solvency of rural municipalities in Lublin voivodship, two measures were taken into consideration: namely cash-based liquidity ratio and accrual-based liquidity ratio. It can be concluded that the surveyed local government units, in 2016-2019, had the ability to cover expenses and debits by the generated income and revenue as evidenced by the financial liquidity ratio above unity. In the analysed period this measure was at a similar, stable level from 1.04 to 1.05. The situation changed in 2020, when a decrease in liquidity was recorded due to a significant increase in budget expenditures in comparison with revenues. In contrast, the accrual-based liquidity ratio, which takes into account not only revenue, income, expenditure and outgoings but also receivables and payables, was at a higher level (from 1.68 in 2020 to 1.94 in 2016). This shows that the municipalities under study had a higher level of receivables than payables due at the end of the financial year. In 2020, compared to 2016, there was a decrease in the value of this ratio by 13.4%.

In 2016-2020, the average debt burden on budget revenue of rural municipalities in Lublin voivodeship was at the level from 17.32% to 19.65%. The highest level of this ratio was found in 2018 and the lowest in 2020. In the studied period, a relatively similar level of the total debt ratio was recorded, which should be assessed positively. In addition, the ratio of the share of due liabilities in total liabilities in the analysed group of units did not exceed 1%. The highest level of due liabilities in rural municipalities in Lublin voivodship

[17] Uchwała nr 102 Rady Ministrów z dnia 23 lipca 2020 r. w sprawie wsparcia na realizację zadań inwestycyjnych przez jednostki samorządu terytorialnego (M.P. poz. 662)

was recorded in 2016, which translated into a relatively high level of the ratio. In this period, 28 municipalities at the end of the financial year showed the occurrence of due liabilities, which was indicative of their failure to meet their financial liabilities on time and a threat to the financial stability of these units. These were mainly liabilities to non-financial enterprises and households, which resulted from lower-than-planned budget revenues. In the last year covered by the analysis, only 0.11% of all liabilities of rural municipalities in Lublin voivodeship were due liabilities, i.e. those which had not been settled on time (11 out of 165 municipalities showed due liabilities at the end of the year). The decrease of the ratio of due liabilities in total liabilities is a positive phenomenon.

Table 3. Selected ratios of short-term and long-term solvency of rural municipalities in Lublin voivodeship in 2016-2020

Name of the ratio	Year					Change 2016-2020
	2016	2017	2018	2019	2020	
Cash-based liquidity ratio	1,05	1,05	1,04	1,05	1,00	-0,05
Accrual-based liquidity ratio	1,94	1,87	1,78	1,84	1,68	-0,26
Total liabilities to total revenue ratio (%)	18,64	17,61	19,65	18,97	17,32	-1,32
The ratio of share of due liabilities in total liabilities (%)	0,43	0,10	0,34	0,36	0,11	-0,32

Source: authors' own work based on data from the Regional Chamber of Accounts in Lublin.

As a supplement to the financial stability ratio analysis, surveys were carried out among representatives of the executive bodies of rural municipalities in Lublin voivodeship in 2021. Chart 1 presents the opinions of the heads of municipalities on the financial stability of their units. The vast majority of the respondents (70.4%) declared that their municipality had been financially stable for a long time and that there were no disturbances in this respect, whereas 18 heads of municipalities replied that they were in the process of building financial stability. Only 3 municipalities indicated financial destabilisation, one of which was long-term. Such a high percentage of financially stable municipalities may attest to the efficient execution of financial management by local authorities.

Among the most important criteria for assessing financial stability, the respondents indicated long-term solvency (more than 40%), budgetary solvency understood as flexibility (ability to react properly to environmental stimuli) and financial independence (21.2%). Less important in assessing the financial stability of municipalities were solvency in public services and liquidity, with 12.7% and 11.3% respectively. Seven heads of municipalities considered intergenerational equity, i.e. not transferring the financial effects of current liabilities to subsequent generations, as the most important criterion for assessing the financial stability of local government units, while three pointed to economic growth (Chart 2).

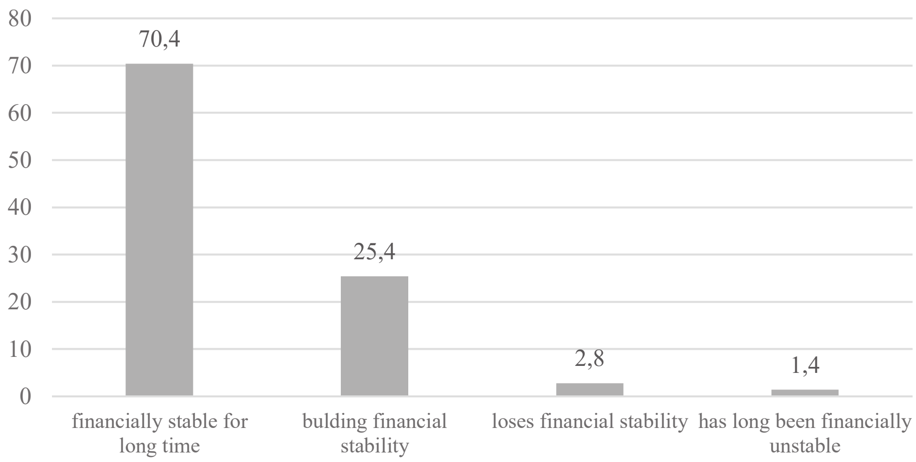


Chart 1. The opinion of heads of rural municipalities on the level of financial stability of their municipalities (%)

Source: authors' own study.

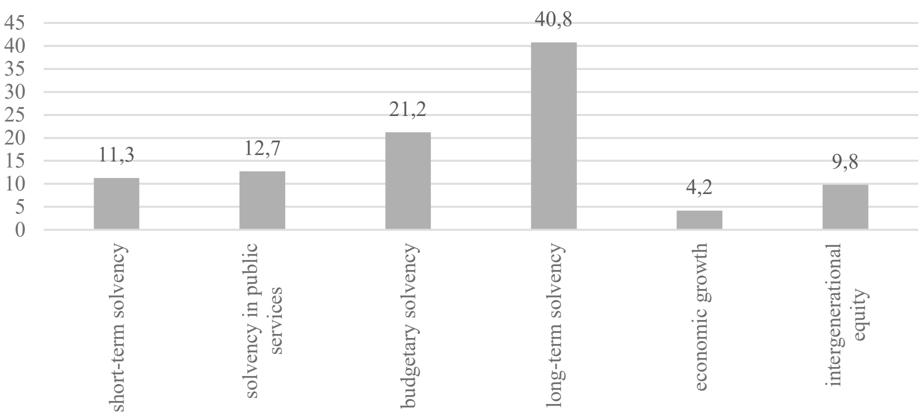
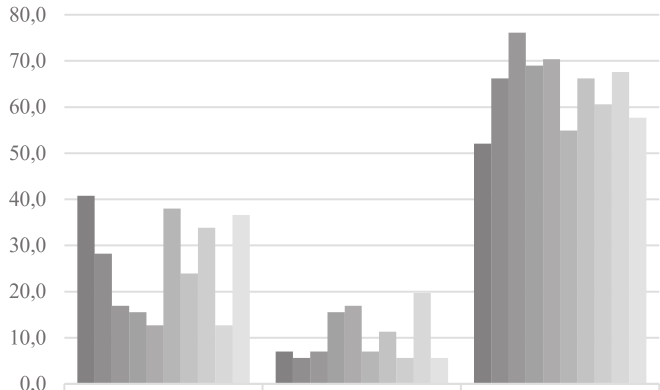


Chart 2. The most important criteria for assessing financial stability in the opinion of heads of rural municipalities in Lublin voivodeship (%)

Source: authors' own study.

Chart 3 presents respondents' answers to the question concerning the impact of the Covid-19 pandemic on selected factors shaping the financial stability of their municipalities. Most heads indicated no impact of the pandemic on financial stability, indicating that in the case of rural municipalities the crisis was not as noticeable as, for example, in larger cities. The most frequently was indicated negative impact of the pandemic on the revenue of municipalities and residents, social ties, the labour market situation and the expenditure of municipalities. Some respondents perceived a positive impact of the pandemic, e.g. on municipality management, decision-making independence, as well as the financial liquidity of municipalities, which may have resulted from a certain relaxation of rules, e.g. in terms of balancing the operating budget and incurring liabilities, aimed at facilitating the functioning of local governments in times of crisis related to the pandemic.



	negative imapct	positive impact	no impact
revenue of municipality	40,8	7,0	52,1
expenditure of municipality	28,2	5,6	66,2
debt of municipality	16,9	7,0	76,1
financial liquidity of municipality	15,5	15,5	69,0
decision-making independence	12,7	16,9	70,4
revenue of residents	38,0	7,0	54,9
number of enterprises	23,9	11,3	66,2
labour market situation	33,8	5,6	60,6
municipality management	12,7	19,7	67,6
social ties	36,6	5,6	57,7

Chart 3. Impact of the Covid-19 pandemic on selected factors shaping financial stability in the opinion of heads of rural municipalities in Lublin voivodeship (%)

Source: authors' own study.

In conclusion, on the basis of the conducted analyses, it can be stated that the crisis caused by the pandemic and lockdown has not significantly affected the financial stability of rural municipalities. However, it is necessary to continue monitoring the financial situation of the units, as the possible negative effects of the crisis may only become apparent in the long term.

Summary and conclusions

Maintaining financial stability of local government units is an important economic problem, especially at the lowest level of administrative division, i.e. in municipalities, which should perform their functions continuously and effectively. The study attempts to assess the financial stability of rural municipalities in Poland's Lublin voivodeship in 2016-2020. Based on the analysis, the following conclusions were formulated:

1. In the studied period both revenues and expenditures of rural municipalities in the Lublin voivodeship increased, although the rate of growth varied. Revenue exceeded expenditure only in 2016 and 2019. Analysing the degree of coverage

of current expenditures with current revenue, it can be noted that in 2016-2020 the revenue collected by municipalities covered expenditures related to the implementation of public tasks, which indicates the sustainability of fiscal policy and financial independence.

2. The revenue independence of the surveyed units was at a low level, although it increased slightly in 2020 compared to 2016. The relatively low level of independence was caused, among others, by a high percentage of so-called "lilliput" municipalities, in which a small share of own revenue in financing public tasks was recorded. Small units have fewer opportunities to obtain tax revenues, and thus are more dependent on transfer revenues. It is worth noting that the vast majority of rural municipalities in this region recorded a lower-than-average revenue independence, which is a disturbing phenomenon.
3. Rural municipalities in the Lublin voivodeship in 2016-2019 did not have problems with short-term solvency. The analysed financial liquidity ratios were above 1.0, both on a cash and accrual basis. In addition, the results achieved during the period were at similar levels, indicating financial stability in the area of short-term solvency. Financial liquidity declined in 2020, due to a higher increase in budget expenditure, among other things, related to counteracting the effects of the pandemic, compared to revenue, which was lower than planned.
4. In 2016-2020, the debt burden on budget revenues of rural municipalities in Lublin voivodeship was at a similar level and did not exceed 20%. In the studied period, a decrease in the level of debt was found, which may improve the financial stability of the units, but on the other hand may cause a limitation of their development. In addition, a low share of due liabilities in total liabilities was recorded, which is a desirable situation, proving the absence of problems with financial liquidity and fiscal stability of the studied units. It is worth mentioning that in 2020 only 7% of all rural municipalities in Lublin voivodship reported due liabilities at the end of the budget year.
5. In the opinion of heads of rural municipalities in Lublin voivodeship, the vast majority of units had been financially stable for a long time. Moreover, respondents did not perceive any significant impact of the Covid-19 pandemic on factors shaping the units' ability to finance their own tasks, maintain short- and long-term solvency or provide adequate quality of public services in a continuous and effective way.

In conclusion, it is important to continuously monitor the financial situation of individual units and to build stability on a multi-year basis. The information on financial stability should be used by local government authorities to make specific financial and developmental decisions, to pursue an effective fiscal policy and to meet the needs of society both in the short and long term.

References

Bal K., Piaszczyk A.: Stabilność finansowa jednostek samorządu terytorialnego w aspekcie perspektywy finansowej na lata 2014-2020, Zeszyty Naukowe Wyższej Szkoły Ekonomii i Informatyki w Krakowie nr 13, 2017

Burnisde C.: Fiscal Sustainability in Theory and Practice. The World Bank, Washington 2005

Crockett A.: Why is financial stability a goal of public policy, Economic Review No. 4, 1997

Cyburt A., Gałecka A.: Rola nadwyżki operacyjnej w budowaniu stabilności finansowej i potencjału inwestycyjnego jednostek samorządu terytorialnego. Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing 23(72), 2020
Czarny A.: Stabilność finansowa w odniesieniu do samodzielności dochodowej w jednostkach samorządu terytorialnego na przykładzie województw, Folia Pomeranae Universitatis Technologiae Stetinensis. Oeconomica 93, 2018
Filipiak B. Z.: Wykorzystanie statystyki publicznej do oceny stabilności finansowej jednostek samorządu terytorialnego, Wiadomości Statystyczne 11(666), 2016
Iwanicz- Drozdowska M.: Definicje i determinanty stabilności finansowej. Część edukacyjna: stabilność finansowa od A do Z, Bank i Kredyt nr 1, 2011
Iwanicz- Drozdowska M.: Zarzadzanie finansowe bankiem, PWE, Warszawa 2005
Jastrzębska M.: Alternatywne sposoby finansowania jednostek samorządu terytorialnego, Finanse Komunalne 24(12), 2017
Kluza K., Kluza S.: Finanse publiczne a stabilność systemu finansowego w: Finanse publiczne (red. M. Ziolo), Polska Akademia Nauk 2021
Kosek- Wojnar M.: Pożyczki z budżetu państwa jako instrument stabilizacji finansowania zadań jednostek samorządu terytorialnego, Finanse, Rynki Finansowe, Ubezpieczenia 84(2), 2016
L. Klank: Stabilność finansowa jednostek samorządu terytorialnego, Teoria stabilności finansowej, Test praktyki XXI wieku, t. XV, z. 9, cz. III, Łódź – Warszawa 2014
Osiński J. (red.): Raport o stabilności systemu finansowego, NBP, Warszawa 2016
Poloz S.S.: Financial stability: A worthy goal, but how feasible? Journal of Banking and Finance, 30(12), 2006
Recommended Practice Guideline. Reporting on the Long-Term Sustainability of an Entity's Finances, International Public Sector Accounting Standards, International Federation of Accountants, New York 2015
Schinasi G.J.: Defining financial stability, IMF Working Paper No. 187, 2004
Uchwała nr 102 Rady Ministrów z dnia 23 lipca 2020 r. w sprawie wsparcia na realizację zadań inwestycyjnych przez jednostki samorządu terytorialnego (M.P. poz. 662)
Ustawa z dnia 27 sierpnia 2009r. o finansach publicznych, Dz. U.2009 Nr 157, poz. 1240, art. 243 ze zm.
Wichowska A., Ostrowska A.: Stabilność finansowa gmin na przykładzie gmin województwa warmińsko-mazurskiego, Studia Prawno-Ekonomiczne T. CIX, 2018
Wójtowicz K.: Uwarunkowania i pomiar stabilności fiskalnej jednostek samorządu terytorialnego, Wydawnictwo UMCS, Lublin 2019

Stabilność finansowa gmin wiejskich województwa lubelskiego w latach 2016-2020

Streszczenie

Stabilność usług publicznych oraz sytuacja finansowa samorządów lokalnych ma istotny wpływ na rozwój gospodarczy kraju, jak również trwający od lat proces reform politycznych zmierzających do promowania wydajności jednostek sektora publicznego, ich zrównoważonych budżetów oraz stabilności finansowej. Jest to pojęcie różnie definiowane, co wynika m.in. z jego wieloaspektowości oraz braku precyzyjnie określonych miar do oceny tego zjawiska.

Celem głównym pracy była ocena stabilności finansowej gmin wiejskich województwa lubelskiego w latach 2016-2020. W ramach celu głównego przeprowadzono analizę wskaźnikową oraz badania ankietowe. Artykuł powstał w oparciu o studia literatury przedmiotu, sprawozdania z wykonania budżetów badanych gmin publikowane przez Regionalną Izbę Obrachunkową w Lublinie oraz kwestionariusz ankiety.

Na podstawie przeprowadzonych analiz stwierdzono że badane gminy w latach 2016-2020 odnotowały trwałość w zakresie polityki fiskalnej, stabilny poziom płynności finansowej i zadłużenia, aczkolwiek stosunkowo niski poziom samodzielności dochodowej. Kryzys w 2020 roku wywołany pandemią Covid-19 spowodował znaczny wzrost wydatków bieżących jednostek samorządu terytorialnego w porównaniu do dochodów, które były mniejsze niż planowano, aczkolwiek nie wpłynął na znaczne pogorszenie wyników finansowych badanych gmin. W opinii ankietowanych (wójtów) zdecydowana większość gmin wiejskich województwa lubelskiego była stabilna finansowo a pandemia Covid-19 na ogół nie miała istotnego wpływu na jej poziom.

Słowa kluczowe: stabilność finansowa, gminy wiejskie, analiza wskaźnikowa, płynność finansowa
Kody JEL: H71, H72

Information about the authors:

Dr Agnieszka Gałecka
Akademia Bialska Nauk Stonowanych im Jana Pawła II
(Bialska Academy of Applied Sciences, John Paul II)
ul. Sidorska 95/97, 21-500 Biała Podlaska
e-mail: a.galecka@dyd.akademiabialska.pl
ORCID: 0000-0002-7603-8086

Dr Marzena Ganc
Szkoła Główna Gospodarstwa Wiejskiego w Warszawie
(Warsaw University of Life Sciences)
ul. Nowoursynowska 166, 02-787 Warszawa
e-mail: marzena_ganc@sggw.edu.pl
ORCID: 0000-0002-5267-7940

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.3

Received: 30.09.2021
Accepted: 18.05.2022

Małgorzata Garstka,
Jan Kochanowski University

ACCESSIBILITY OF FINANCIAL INFORMATION IN RELATION TO CHANGES IN SIZE OF ENTITIES CAUSED BY THE COVID-19 CRISIS

The consequences of the Covid-19 pandemic on the quality and scope of financial information prepared by accounting are complex. The scope of the financial statement and the obligation to audit depend on the classification of units based on their size. The required scope is narrower for micro and small entities than it is for larger organizations. The crisis may have influenced the size of entities and by that their classification and the scope of information that they need to disclose. The goal of this article is to verify whether post-pandemic demands for information, assuming it will be the same as pre-pandemic, can be fulfilled. The accessibility of information is connected with the level of security of engaging in business activities. Making changes in the criteria of an entity's inclusion as an SME and in its obligation to audit can be one solution for the problem of insufficient information. The methodology used in this study is analysis of regulations and deductive reasoning. It showed that the effects of the pandemic, particularly the increase in the number of micro and small entities, can limit the accessibility of information. This article contributes to the scientific literature by displaying and justifying the need to verify the classification criteria of businesses and other entities.

Keywords: SMEs, financial information, quality of information, financial statement
JEL codes: M14

Introduction

The COVID-19 pandemic is a global crisis like no other in current times. It has had a negative impact on many sectors of the economy through its effect on global trade, interest rates, financial market liquidity, economic activity. It is visible in financial statements and generally in accounting. The consequences of the Covid-19 pandemic on financial statement reporting are complex and have resulted in challenges for management. This article covers some of the key implications of the Covid-19 pandemic for financial information connected with the classification of organizations, the scope of financial statements and the obligation to audit these statements. This paper is an initial theoretical attempt to investigate whether the Covid-19 crisis, which may influence the size of entities[1], should result in changes in regulations describing criteria for classifying Small and Medium-Sized enterprises (SMEs).

[1] Serhan Cevik makes the first empirical attempt in the literature to investigate whether the risk of infectious diseases affects demand for physical cash[1] or not, and shows, using empirical analysis, that the spread of infectious diseases lowers demand for physical cash. Many people have not even considered what he sought to prove, which is that "while the transactional constraints imposed by the coronavirus pandemic could become a catalyst for the use of digital technologies around the world, electronic payment methods may not be universally

There is no certainty as to how owners of SMEs will behave. If they decide that their company will fulfill the criteria of SMEs and want to benefit from that fact, they will be able to use many kinds of simplification. It depends not solely on the scale of activity. There are also some other factors, which are behavioral and should be predicted. However, the paper concentrates on this first factor only.

The European Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises[2] indicates two criteria: staff headcount and financial ceilings. The category of SMEs is made up of units which meet two out of three criteria: employ fewer than 250 persons; and/or have an annual turnover not exceeding 50 million EUR; and/or have an annual balance sheet total not exceeding 43 million EUR. Microenterprises should have fewer than 10 persons and annual turnover and annual balance sheet totals not exceeding two million EUR. For small enterprises it is 50 persons and 10 million EUR.

The second Act that needs to be taken into account is Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. The goal of this Directive is to harmonize the requirements throughout the European Union. Member States can impose more extensive requirements than those prescribed by the Directive but they can do that only on medium-sized and large undertakings. States are only allowed to demand a limited number of additional disclosures that are explicitly required by national tax legislation and strictly necessary for tax collection.

The Directive introduces the following categories of undertakings and groups[3]:

- micro-undertakings - undertakings which on their balance sheet dates do not exceed the limits of at least two of the following three criteria:
  - total assets of the balance sheet at the end of the financial year: 350 000 EUR;
  - net revenue for the year: 700 000 EUR;
  - average number of employees during the financial year: 10.
- small undertakings - undertakings which on their balance sheet dates do not exceed the limits of at least two of the following three criteria:
  - total assets of the balance sheet at the end of the financial year: 4 000 000 EUR;
  - net revenue for the year: 8 000 000 EUR;
  - average number of employees during the financial year: 50.
- medium-sized undertakings - undertakings which are not micro or small undertakings and which on their balance sheet dates do not exceed the limits of at least two of the following three criteria: (a)the total assets of the balance sheet

available in every country owing to financial and technological bottlenecks" S. Cevik: Dirty money: Does the risk of infectious disease lower demand for cash? International Finance First published: November 6, 2020. https://doi.org/10.1111/infi.12383. Retrieved from https://onlinelibrary.wiley.com/doi/10.1111/infi.12383. (2020, December 12).

[2] Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises. OJ L 124, 20.05.2003, p. 36-41. Retrieved from https://eur-lex.europa.eu. (2020, December 12), Article 2.

[3] Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. OJ L 182, 29.6.2013, p. 19–76. Retrieved from https://eur-lex.europa.eu. (2020, December 12), Article 3.

at the end of the financial year: 20 000 000 EUR; (b)net revenue for the year: 40 000 000 EUR; (c)average number of employees during the financial year: 250.

- large undertakings - undertakings which on their balance sheet dates exceed at least two of the three following criteria:
  - balance sheet total: 20 000 000 EUR;
  - net turnover: 40 000 000 EUR;
  - average number of employees during the financial year: 250.

Member States may define thresholds exceeding those mentioned above, but these should not exceed EUR 6 000 000 for the balance sheet total and EUR 12 000 000 for the net turnover.

The Polish act on accounting defines[4] micro units as i. a. those which in the fiscal year for which the financial report shall be prepared, and in the year preceding the financial year, did not exceed at least two of three criteria:

- total assets of the balance sheet at the end of the financial year: 1 500 000 PLN;
- net revenue from the sale of goods and products for the year: 3 000 000 PLN;
- average number of employees during the financial year: 10.

Small units are, among others,[5] units which in the fiscal year for which the financial report shall be prepared, and in the year preceding the financial year, did not exceed at least two of the following three criteria:

- total assets of the balance sheet at the end of the financial year: 25 500 000 PLN;
- net revenue from the sale of goods and products for the year: 51 000 000 PLN;
- average number of employees during the financial year: 50.

It is important to note that the approval authority must take a decision regarding the preparation of financial statements which, after applying certain simplifications, can lead to reduced requirements. For SMEs there are a few possibilities to simplify and reduce the required information in their financial statements.

Considering the definition of SMEs, there are three criteria according to which an enterprise can be classified as a micro, small or medium sized unit:

1. total assets of the balance sheet at the end of the financial year;
2. net revenue from sales for the year;
3. average number of employees during the financial year.

All these criteria may be affected by COVID-19 – due to the crisis, each can be lower than usual for individual enterprises. As a result, they can be classified (or re-classified) as small or micro, based on existing criteria. Due to this possibility and specified profits, it is likely that the authorities will approve the preparation of financial statements in a shorter form, more often than was approved in the past .

It should be underlined that the decision to adopt the status of micro or small entity is in fact a decision to prepare a simplified financial statement, since the law states that such an entity is one that meets the above-mentioned criteria and for which the authority approving the financial statement has decided to draw it up using the simplifications. It means that, firstly, it is only after the decision has been made that the entity is classified as micro or small unit. Secondly, the decision is essentially about the shape of the financial statements, i. a. the scope of information for their users. As a result of the application of

[4] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 3.1a.

[5] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 3.1c.

the mentioned regulations, an entity's financial statement is limited in terms of the scope of components as well as its details.
According to International Accounting Standards, a complete set of financial statements consists of[6]:

- a statement of financial position as at the end of the period;
- a statement of profit and loss and other comprehensive income for the period;
- a statement of changes in equity for the period;
- a statement of cash flows for the period;
- notes, comprising a summary of significant accounting policies and other explanatory information; and
- a statement of financial position as at the beginning of the preceding comparative period when an entity applies an accounting policy retrospectively or makes a retrospective restatement of items in its financial statements, or when it reclassifies items in its financial statements.

The Polish Accounting Act states that the financial statement includes the balance sheet, the profit and loss account and the notes, including an introduction to the financial statements as well as additional information and explanations[7]. The audited financial statement must also include the statement of changes in equity and the cash flow statement[8]. Selected entities should accompany the financial statement with a management report[9].

Based on the provisions of the Polish Act on Accounting, the micro and small entity never has to prepare two elements of the report[10]: the statement of changes in equity and the cash flow statement, even if its report is audited[11]. The micro entity does not have to prepare additional information, provided that it submits supplementary information to the balance sheet. Nor does it need to provide a management report, provided that it presents information on the acquisition of its own shares in the notes or as supplementary information to the balance sheet[12]. The decision to use the simplified reporting also has consequences for the accounting rules e.g.[13] a micro entity cannot measure its assets and liabilities at fair value and at amortized cost, and both micro and small entities must consider whether to use optional simplifications in the measurement and valuation of assets and liabilities, income and expenses. It must also record its choice in its accounting

---

[6] International Accounting Standard 1 Presentation of Financial Statements: IFRS. Retrieved from https://www.ifrs.org/issued-standards/list-of-standards/ias-1-presentation-of-financial-statements/. (2020, December 12)
[7] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 45.1.
[8] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 45.3.
[9] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 45.4.
[10] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 48a and 48b.
[11] A. Kaczmarczyk: Micro units as a new category of enterprises in accounting standards [in:] Accounting theory and history, Kamela-Sowińska, A. (Ed.). The Poznań University of Economics and Business, Poznań 2015, p. 66; W. Fałowski: Amendments to the Accounting Act resulting from the implementation of the Directive 2013/34/UE of 26 June 2013 r. Accountants Association in Poland, Warsaw 2016, p. 32.
[12] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 48.3.
[13] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 28a.

policies. The indicated optional simplifications are in the following accounting areas: leasing, production cost, financial instruments and deferred tax.

The financial statements may be divided into those that are subject to mandatory audit and those that are not. Auditing the financial statement is not obligatory for SMEs. The Polish Act on Accounting states that the annual financial statements of joint-stock companies and other entities, which have met at least two of the following three conditions, are audited – provided that they continue operations. These conditions are[14]:

- average number of employees was at least 50 people,
- total assets of the balance sheet as at the end of the financial year constituted the equivalent in Polish currency of at least 2 500 000 EUR,
- net revenue from sales of goods and products and financial operations for the financial year was the equivalent in Polish currency of at least 5 000 000 EUR.

The usefulness of financial statements derives from their relevant and faithful representation but is also dependent on the information needs of their users. The revised Conceptual Framework for Financial Reporting was issued by the International Financial Reporting Standard Foundation in March 2018, and is effective for annual financial statement periods beginning on or after 1 January 2020, with earlier application permitted[15]. The Conceptual Framework defines the following: the objective of a general purpose financial statement; the qualitative characteristics of useful financial information; a description of the reporting entity and its boundary; definitions of an asset, a liability, equity, income and expenses and guidance supporting these definitions; criteria for including assets and liabilities in financial statements (recognition) and guidance on when to remove them (derecognition); measurement bases and guidance on when to use them; concepts and guidance on presentation and disclosure; concepts relating to capital and capital maintenance. Relevance and faithful representation are the fundamental qualitative characteristics of useful financial information and the guiding concepts that apply throughout the revised Conceptual Framework. The IFRS Foundation defines that the users of financial statements are an entity's existing and potential investors, lenders and other creditors. Those users must rely on a financial statement for the majority of the financial information they need. The Polish Act on Accounting, however, lacks this information.

Taking into account the increase in the number of micro and small entities, more information that is less useful because of its narrower scope and lack of audit, will appear on the market. It is obvious that financial statements are still the basic source for macro and micro analysis, and that the macro and micro data may not have the necessary qualitative characteristics. The question is what should be done if this situation arises. Perhaps a reduction of governmental criteria in relation to statistics for describing undertakings is necessary – otherwise, a general acceptance of reduced information and, consequently, an acceptance of an increase in risk regarding business activity can be expected.

---

[14] Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12), Article 64.1.

[15] International Financial Reporting Standards: Project Summary providing a high-level introduction to the revised Conceptual Framework. Retrieved from https://www.ifrs.org/news-and-events/2018/03/iasb-completes-revisions-to-its-conceptual-framework. (2020, December 12).

It is worth mentioning that there is another way to define small and medium entities. On 9 July 2009, the International Accounting Standards Board issued an IFRS for SMEs[16]. The IASB standard does not contain a limit on the size of an entity that may use the IFRS for SMEs. The IFRS for SMEs is the first set of international accounting requirements developed specifically for small and medium-sized entities. This standard has simplifications that reflect the need of users of SME financial statements and cost-benefit considerations. IASB defines SMEs as those that do not have public accountability and who publish general purpose financial statements for external users. Examples of external users include owners who are not involved in managing the business, existing and potential creditors, and credit rating agencies. General purpose financial statements are those that present fairly the financial position, operating results, and cash flows for external capital providers and others.

An entity has public accountability if:

- its debt or equity instruments are traded in a public market or it is in the process of issuing such instruments for trading in a public market, or
- it holds assets in a fiduciary capacity for a broad group of outsiders as one of its primary businesses.

The standard does not require any approval by the owners of an SME for it to be able to use the IFRS for SMEs. Listed companies, no matter how small, cannot use the IFRS for SMEs. This area – IFRS regulations of accounting for SMEs – seems to not be affected the Covid-19 crisis.

Research methodology

The methodology used in this paper is the analysis of regulations and of the consequences of the Covid-19 pandemic on financial statements, as well as basic deduction. It is used to indicate potential changes in the number of SMEs as a factor influencing the scope of financial information. The theoretical analysis indicates that there are three factors which determine which entities can be included in the SME category – all of which can be affected by the COVID-19 pandemic. Furthermore, it indicates that the scope of information in financial statements is narrower for SMEs. The message that emerges from the COVID-19 crisis is that there will be a lack of information, or it will be unverified.

Results

The number of enterprises is systematically growing in Poland[17]. There is also a slow structural transformation in the enterprise sector, which exhibits a decrease in the share of small and medium-sized enterprises. Small companies account for a significant percent of the Polish enterprise sector. On the other hand, the share of medium-sized companies is less than one percent and the share of large companies is less than half a percent of the Polish enterprise sector. As can expected, their contribution to GDP creation is quite the opposite. Despite its smaller number, large companies have a significant share in GDP creation, accounting for about 25%.

---

[16] Deloitte Touche Tohmatsu Limited: IFRS for SMEs. 9 July 2009. IASB. Retrieved from https://www.iasplus.com/en/standards/other/ifrs-for-smes#link12. (2020, December 12).

[17] Polish Agency for Enterprise Development: Small and medium-sized enterprises in Poland, Poland: Polish Agency for Enterprise Development. Retrieved from https://www.parp.gov.pl/component/publications/publications/?query=msp&type=2&series=&publisher=&year=&language=&sort=year-desc&topic=&page=1. (2020, December 12). p. 5.

It is important for the purpose of this article to show the place in the economy of businesses by size at the moment of the implementation of Directive 2013/34/EU in Poland. The definition of a micro entity based on the criteria of income and employment, adopted in accounting, would be met by about 22 thousand entities, or about 1% of the Polish enterprise sector at that time[18]. A few years later, in 2018, the sector grew by a few percent and, as in previous years, was dominated by micro units, whose number has increased the most in recent years. The share of small, medium and large entities was 2.4%, 0.7% and 0.2% of all enterprises, respectively[19].

The majority (99.8%) of all enterprises operating in the European Union are micro, small and medium-sized enterprises[20]. This also applies to Poland, although the structure of the SME sector itself is slightly different from the EU as a whole. Poland has a slightly higher share of micro-enterprises than the EU average, which also has twice the share of small companies. The share of medium entities in the SME structure in Poland is similar to the EU average. As far as large enterprises are concerned, their percentage in Poland is at the level of the EU average (0.2%). Most of the jobs in Poland (nearly 69%) and in the EU (nearly 67%) are created in the SME sector, and in Poland, the largest number of jobs are in microenterprises (36%) and the smallest in small companies (14.5%)[21].

The size of an enterprise is one of the criteria for acquiring different forms of EU support. When assessing which enterprises may benefit from funding programs aimed at promoting SMEs or helping their existence during the COVID-19 crisis, the definitions are crucial. The same can be said in the case of European Commission policy in relation to SMEs. It is focused on five priority areas, covering[22]:

- “the promotion of entrepreneurship and skills;
- the improvement of SMEs' access to markets;
- cutting red tape;
- the improvement of SMEs' growth potential, and;
- strengthening dialogue and consultation with SMEs’ stakeholders”.

These selected data already show that the SME sector is important. The small share of medium and large entities means that even small changes in their numbers are felt. Covid-19 may further contribute to the change of this structure – so the question arises: in which direction are the changes going to be? The aim of this article is to highlight one possible directions of change, and its effect in view of the dangers should it become a reality.

A reduction in the number of large and medium-sized entities in the context of disclosure and the audit obligations means an increase in simplified financial statements

[18] Legislation paper 1045, explanatory memorandum. Retrieved from http://www.sejm.gov.pl/Sejm8.nsf/druk.xsp?nr=1045. (2020, December 12).

[19] Statistics Poland. Activity of non-financial enterprises in 2018. Retrieved from https://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiebiorstwa-niefinansowe/dzialalnosc-przedsiebiorstw-niefinansowych-w-2018-roku,2,15.html. (2020, December 12), p. 18.

[20] Polish Agency for Enterprise Development: Sector MSP in Poland and EU. Poland: Polish Agency for Enterprise Development. Retrieved from https://www.parp.gov.pl/component/publications/publications/?query=msp&type=2&series=&publisher=&year=&language=&sort=year-desc&topic=&page=1. (2020, December 12), p. 12.

[21] Polish Agency for Enterprise Development: Sector MSP in Poland and EU. Poland: Polish Agency for Enterprise Development. Retrieved from https://www.parp.gov.pl/component/publications/publications/?query=msp&type=2&series=&publisher=&year=&language=&sort=year-desc&topic=&page=1. (2020, December 12), p. 6.

[22] Structural business statistics. Retrieved from https://ec.europa.eu/eurostat/web/structural-business-statistics/small-and-medium-sized-enterprises. (2020, December 12).

and unaudited financial information being given to the public. Thus, the shift of entities from large and medium-sized, for which the information requirements are greater, to small and micro entities, for which the information requirements are smaller, would lead to a qualitative change of the financial information that is available. Also, there would be less public information, since small and medium-sized units can benefit from simplification to a greater extent than large enterprises. The available information will be less useful because the only entities subject to an audit are those which are the largest – this is due to the fact that the fundamental qualitative characteristics of useful financial information are relevance and faithful representation.

The coronavirus has quickly advanced on a global scale. The uncertainty arising from the current environment may decrease the reliability of information, including estimates and projections. For example, the ongoing concern can be performed up to the date on which the financial statements are issued and relates to at least the first twelve months after the balance sheet date. Many enterprises were affected by the COVID-19 pandemic during 2020, so the effects will be seen in financial statements on this year at the earliest. Significant changes in data and ongoing concerns will occur, too. "There may be changes to the entity's objectives, strategy, organizational structure, governance arrangements and business model"[23]. Certain areas may present heightened risks of material misstatement: internal control, fraud risk, noncompliance with laws and regulations, accounting estimates[24].

The International Federation of Accountants gives examples of risks that may be heightened in the current environment, including[25]:

- inappropriate objectives or ineffective execution of strategies,
- a failure to recognize the need for change or lack of expertise to deal with the changes,
- reduction or expansion of the business,
- loss of financing,
- regulatory requirements resulting in increased legal exposure,
- incentives and pressures on management,
- increased risks of fraud.

Covid-19 may arguably result in a decrease of income and cash flow. However, it is possible that "the financial impact of COVID-19 will likely put enormous pressure on corporations' financial results and present potential challenges for individual employees"[26]. The first one is obvious, while second one may be a factor of fraud.

Taking into account the SME criteria, it seems that it will be possible to observe a reduction in all criteria, of which there is a limited set: assets, turnover, persons employed. A decrease in the number of employees, as well as the reaction of governments, can be seen. The reaction goes in two ways: to secure jobs or to avoid intervention in the job market and control inflation. The relationship between unemployment and inflation is the

[23] C. Arnold: Summary of Covid-19 Audit Considerations. June 3, 2020. Retrieved from https://www.ifac.org/knowledge-gateway/supporting-international-standards/discussion/summary-covid-19-audit-considerations#ac-planning-eorisk-identification-and-assessment. (2020, December 12).

[24] B. Dohrer & C. Mayes: 4 key COVID-19 audit risks for 2020 year ends. Journal of Accountancy. AICPA. June 5, 2020. Retrieved from https://www.journalofaccountancy.com. (2020, December 12).

[25] C. Arnold: Summary of Covid-19 Audit Considerations. June 3, 2020. Retrieved from https://www.ifac.org/knowledge-gateway/supporting-international-standards/discussion/summary-covid-19-audit-considerations#ac-planning-eorisk-identification-and-assessment. (2020, December 12).

[26] Deloitte Touche Tohmatsu Limited: Forensic Focus on COVID-19 (Part 1). Retrieved from https://www2.deloitte.com/nl/nl/pages/finance/articles/forensic-focus-on-covid-19.html. (2020, December 12).

following: when unemployment goes down, inflation picks up, and vice versa. Based on criteria that refer to the number of people employed in each enterprise, the main classes are:

- micro enterprises: with less than 10 persons employed;
- small enterprises: with 10-49 persons employed;
- medium-sized enterprises: with 50-249 persons employed;
- large enterprises: with 250 or more persons employed.

Many jobs were lost as a result of the COVID-19 pandemic. It is obviously important how governments react to changes in employment and how they choose to protect employees and businesses. It is difficult to precisely estimate long-term unemployment and to say how inflation will evolve. Generally, predictions are not very optimistic. The International Labor Organization said that worrisome figures show growing signs of a global economic recession and predict that "the virus and the subsequent economic shocks will impact the world of work across three key dimensions:

1. the quantity of jobs (both unemployment and underemployment);
2. the quality of work (e.g., wages and access to social protection); and
3. the effects on specific groups who are more vulnerable to adverse labour market outcomes"[27].

"ILO estimates indicate a rise in global unemployment of between 5.3 million ("low" scenario) and 24.7 million ("high" scenario) from a base level of 188 million in 2019" [28]. The coronavirus outbreak constitutes a challenge for the European economy and, as the EU declared, it is necessary to protect jobs and workers[29]. Nevertheless, the possibility of a bad scenario must be taken into account, where the employment criteria could soon be downgraded and be fulfilled by more entities, which would reach lower levels in classification of enterprises. In this way, they will be re-classified as small or micro.

A decrease of income and assets is another bad scenario. "The COVID-19 pandemic has created a widespread economic slowdown and has affected different sectors of the economy"[30]. This is, among other things, the result of distortions on the labour market, but, above all, on the economic market. Many enterprises will have lower income only because of the pandemic crisis, affecting all areas of their operations – from supply to sales. There are certain industries that have been drastically reduced, such as tourism, transport, retail and entertainment, and those that are particularly supported to survive. "The implications for financial statements include not only the measurement of assets and liabilities but also disclosure and possibly an entity's ability to continue as a going

[27] International Labour Organisation: COVID-19 and the world of work: Impact and policy responses. 18 March 2020., ILO Monitor 1st Edition. Retrieved from https://ilo.org/global/topics/coronavirus. (2020, December 12), p. 3.

[28] International Labour Organisation: COVID-19 and the world of work: Impact and policy responses. 18 March 2020., ILO Monitor 1st Edition. Retrieved from https://ilo.org/global/topics/coronavirus. (2020, December 12), p. 3.

[29] Jobs and economy during the coronavirus pandemic. Retrieved from https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_en#flexibilityundertheeusfiscalrules. (2020, December 12).

[30] R. Shohini: Economic impact of Covid-19 pandemic July 2020 Roy, PY-2020.07.26. Retrieved from https://www.researchgate.net/publication/343222400_ECONOMIC_IMPACT_OF_COVID-19_PANDEMIC. (2020, December 12), p. 16.

concern"[31]. Six key areas of focus for organizations due to COVID-19 impacts to business were indicated[32]:

- crisis management and response,
- workforce,
- operations and supply chain,
- finance and liquidity,
- tax, trade and regulatory,
- strategy and brand.

It means that COVID-19 has had a significant impact on all parts of business, and, as a result, business activity has slowed. The economic uncertainty even makes planning company liquidation impossible. An entity's sales and revenue might decline rapidly and lead to bankruptcy. "The implications, including the indirect effects from lower economic activity, should be considered by all entities, not just those in the territories most significantly affected"[33]. Governments have reacted to the impact of COVID-19 and Poland, like other countries, has prepared specific support for businesses, including tax rebates; however, entities must meet certain requirements.

The IASB and other institutions of accountants and auditors are paying attention to the possibility of revenue decline and, at the same time, the possibility of aggressive accounting in this area. The pressure on deliberate income formation may result in overstatement of revenue… "to make up for decreased consumer spending, companies may endeavour to deliberately fabricate revenue to boost bottom lines and show how management was able to persevere in a challenging customer/ business environment"[34]. Businesses may also take actions, e.g. reducing their stated revenue in order tol allow them to meet requirements of government support plans, such as having a certain drop in income over time. Considering the possibility of obtaining this support and, at the same time, reducing accounting obligations, companies will most likely go in that direction.

Decrease of assets is obviously the result of a decrease in revenue and employment. However, it is also the result of a fall in the valuation of assets which, during the pandemic crisis, deprived them of the opportunity to obtain the future economic benefit embodied in an asset. Going concern assessments by management will often be influenced by the lack of reliable judgment related to future cash flows. The current circumstances make all assessments in the financial statement more difficult. Companies may be forced to obtain necessary information in new ways which will probably be very unreliable.

The protection of Polish businesses, jobs and consumers includes:

- "Time-constrained legal provisions against takeover to protect Polish companies against buyout by investors from outside of Europe and the OECD;
- budgetary support for local governments;
- facilitations with regards to tender procedures;
- subsidies to the interest on bank credits for companies, granted from the State Treasury;

[31] PriceWatherhouseCoopers: A look at current financial reporting issues. 20 April 2020. Retrieved from https://www.pwc.com. (2020, December 12), p. 2.
[32] PriceWatherhouseCoopers: COVID-19: Impacts to business. Retrieved from https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19.html. (2020, December 12).
[33] PriceWatherhouseCoopers: A look at current financial reporting issues. 20 April 2020. Retrieved from https://www.pwc.com. (2020, December 12), p. 2.
[34] Deloitte Touche Tohmatsu Limited: Forensic Focus on COVID-19 (Part 1). Retrieved from https://www2.deloitte.com/nl/nl/pages/finance/articles/forensic-focus-on-covid-19.html. (2020, December 12).

- credit holidays for those who have lost employment or their main source of income after March 13th, 2020;
- support for maintaining jobs by adjusting the work market to the challenges caused by COVID-19;
- tax aids, including the right to write off donations granted to, among others, homes for single mothers, dormitories, shelters for the homeless or social welfare homes”[35].

Conclusions

As Otmar Issing noted, according to Jean Monnet, Europe always needs a crisis to make progress in integration. He thinks that “the COVID-19 crisis seems to deliver a case to go forward”[36]. It is therefore possible that there will be progress in accounting, too. It should be decided if regulators ought to reduce the criteria in order to ensure safe existence of entities by having efficient and adequate information. The second problem is the scope of disclosure in financial statements and usefulness of information available on the market. The increasing number of SMEs results in less data and information. When it comes to reliability of information, it should be said that the lack of audit causes uncertainty.

If there is still demand for pre-pandemic amounts of information, it will not be fulfilled. This is connected with the level of security of engaging in business activity. Making changes in the criteria of an entity’s inclusion to SMEs, and of its obligation to audit financial statements, can be the solution for this problem. A road map for accounting deriving from this article will be as follows:

Firstly, taking into account that potential changes in the scale of SMEs are a decisive factor for the scope of financial information, as was shown in this paper using the analysis of the regulations, it should be considered whether the current scope is still efficient.

Secondly, assuming that the crisis may decrease the size of entities and increase the number of SMEs, as was previously mentioned, it should be researched whether the classification of units is still correct or whether regulations describing the criteria of classification of SMEs should be changed.

Thirdly, due to the fact that the size of a company determines the obligation of auditing of financial statements, regulators must react to the decreasing number of entities obliged to conduct auditing.

References

Accounting Act 1994. Journal of Laws of 2019 item 351. Retrieved from http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19941210591. (2020, December 12).

Arnold C.: Summary of Covid-19 Audit Considerations. June 3, 2020. Retrieved from https://www.ifac.org/knowledge-gateway/supporting-international-standards/discussion/summary-covid-19-audit-considerations#ac-planning-eorisk-identification-and-assessment. (2020, December 12).

---

[35] KPMG: Government and institution measures in response to COVID-19. 30 September 2020. Retrieved from https://home.kpmg/xx/en/home/insights/2020/04/poland-government-and-institution-measures-in-response-to-covid.html. (2020, December 12).

[36] O. Issing: The COVID-19 crisis: A Hamilton moment for the European Union? International Finance 2020;23:340–347. https://doi.org/10.1111/infi.12377. First published: 28 July 2020. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/infi.12377, (2020, December 12), p. 340.

Cevik S.: Dirty money: Does the risk of infectious disease lower demand for cash? International Finance First published: November 6, 2020. https://doi.org/10.1111/infi.12383. Retrieved from https://onlinelibrary.wiley.com/doi/10.1111/infi.12383. (2020, December 12).
Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises. OJ L 124, 20.05.2003, p. 36-41. Retrieved from https://eur-lex.europa.eu. (2020, December 12).
Deloitte Touche Tohmatsu Limited: IFRS for SMEs. 9 July 2009. IASB. Retrieved from https://www.iasplus.com/en/standards/other/ifrs-for-smes#link12. (2020, December 12).
Deloitte Touche Tohmatsu Limited: Forensic Focus on COVID-19 (Part 1). Retrieved from https://www2.deloitte.com/nl/nl/pages/finance/articles/forensic-focus-on-covid-19.html. (2020, December 12).
Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. OJ L 182, 29.6.2013, p. 19–76. Retrieved from https://eur-lex.europa.eu. (2020, December 12).
Dohrer B., & Mayes, C.: 4 key COVID-19 audit risks for 2020 year ends. Journal of Accountancy. AICPA. June 5, 2020. Retrieved from https://www.journalofaccountancy.com. (2020, December 12).
Fałowski W.: Amendments to the Accounting Act resulting from the implementation of the Directive 2013/34/UE of 26 June 2013 r. Accountants Association in Poland, Warsaw 2016.
International Accounting Standard 1 Presentation of Financial Statements: IFRS. Retrieved from https://www.ifrs.org/issued-standards/list-of-standards/ias-1-presentation-of-financial-statements/. (2020, December 12).
International Financial Reporting Standards: Project Summary providing a high-level introduction to the revised Conceptual Framework. Retrieved from https://www.ifrs.org/news-and-events/2018/03/iasb-completes-revisions-to-its-conceptual-framework. (2020, December 12).
International Labour Organisation: COVID-19 and the world of work: Impact and policy responses. 18 March 2020., ILO Monitor 1st Edition. Retrieved from https://ilo.org/global/topics/coronavirus. (2020, December 12).
Issing O.: The COVID-19 crisis: A Hamilton moment for the European Union? International Finance 2020;23:340–347. https://doi.org/10.1111/infi.12377. First published: 28 July 2020. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/infi.12377. (2020, December 12)
Jobs and economy during the coronavirus pandemic. Retrieved from https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_en#flexibilityundertheeusfiscalrules. (2020, December 12).
Kaczmarczyk A.: Micro units as a new category of enterprises in accounting standards [in:] Accounting theory and history, Kamela-Sowińska, A. (Ed.). The Poznań University of Economics and Business, Poznań 2015.
KPMG: Government and institution measures in response to COVID-19. 30 September 2020. Retrieved from https://home.kpmg/xx/en/home/insights/2020/04/poland-government-and-institution-measures-in-response-to-covid.html. (2020, December 12).
Legislation paper 1045, explanatory memorandum. Retrieved from http://www.sejm.gov.pl/Sejm8.nsf/druk.xsp?nr=1045. (2020, December 12).
Polish Agency for Enterprise Development: Sector MSP in Poland and EU. Poland: Polish Agency for Enterprise Development. Retrieved from https://www.parp.gov.pl/component/publications/publications/?query=msp&type=2&series=&publisher=&year=&language=&sort=year-desc&topic=&page=1. (2020, December 12).
Polish Agency for Enterprise Development: Small and medium-sized enterprises in Poland, Poland: Polish Agency for Enterprise Development. Retrieved from https://www.parp.gov.pl/component/publications/publications/?query=msp&type=2&series=&publisher=&year=&language=&sort=year-desc&topic=&page=1. (2020, December 12).

PriceWaterhouseCoopers: A look at current financial reporting issues. 20 April 2020. Retrieved from https://www.pwc.com. (2020, December 12).
PriceWaterhouseCoopers: COVID-19: Impacts to business. Retrieved from https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19.html. (2020, December 12).
Shohini R.: Economic impact of Covid-19 pandemic July 2020 Roy, PY-2020.07.26. Retrieved from https://www.researchgate.net/publication/343222400_ECONOMIC_IMPACT_OF_COVID-19_PANDEMIC. (2020, December 12).
Statistics Poland. Activity of non-financial enterprises in 2018. Retrieved from https://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiebiorstwa-niefinansowe/dzialalnosc-przedsiebiorstw-niefinansowych-w-2018-roku,2,15.html. (2020, December 12).
Structural business statistics. Retrieved from https://ec.europa.eu/eurostat/web/structural-business-statistics/small-and-medium-sized-enterprises. (2020, December 12).

Dostęp do informacji finansowej w następstwie zmian wielkości przedsiębiorstw spowodowanych kryzysem COVID-19

Streszczenie
Konsekwencje pandemii wirusa Covid-19 dla jakości i zakresu informacji finansowej generowanej przez rachunkowość są złożone. Zakres sprawozdania finansowego oraz obowiązek badania zależą od klasyfikacji jednostek dokonywanej ze względu na ich wielkość. Zakres ten jest węższy dla jednostek małych i mikro. Kryzys może wpłynąć na wielkość podmiotów, a tym samym na ich miejsce w tej klasyfikacji i zakres ujawnianych przez nie informacji. Celem jest wstępna weryfikacja tego czy - jeśli po pandemii nadal będzie takie zapotrzebowanie na informacje jak dawniej, zostanie ono zaspokojone. Dostęp do informacji wiąże się z poziomem bezpieczeństwa prowadzenia działalności gospodarczej. Rozwiązaniem problemu braku wystarczającej informacji może być wprowadzenie zmian w kryteriach zaliczania podmiotów do MSP oraz w obowiązku badania sprawozdań finansowych. Zastosowana metodologia to analiza regulacji i wnioskowanie. Pozwoliła ona stwierdzić, że skutki pandemii w postaci rosnącej liczby jednostek mikro i małych mogą ograniczyć dostęp do informacji. Wartością dodaną artykułu jest wskazanie i uzasadnienie potrzeby weryfikacji kryteriów klasyfikacji jednostek.

Słowa kluczowe: MSP, informacja finansowa, jakość informacji, sprawozdanie finansowe.
Kody JEL: M14

The publication was sponsored by Jan Kochanowski University in Kielce, SMGR.RN.20.098.

Information about the author:

Małgorzata Garstka - Doctor of Economics
Jan Kochanowski University in Kielce
Wydział Prawa i Nauk Społecznych
Katedra Ekonomii i Finansów
ul. Uniwersytecka 15, 25-406 Kielce
e-mail: malgorzata.garstka@ujk.edu.pl
ORCID: 0000-0002-0971-0274

Polityki Europejskie,
Finanse i Marketing
27 (76) 2022

DOI 10.22630/PEFIM.2022.27.76.4

Received: 09.05.2022
Accepted: 27.05.2022

Grażyna Michalczuk
Urszula Konarzewska
Uniwersytet w Białymstoku

SOCIALLY RESPONSIBLE INVESTING AS THE DIRECTION OF CAPITAL MARKET DEVELOPMENT

Socially responsible investing (SRI) is becoming an increasingly fast-growing segment of the capital market. It refers to transactions in which the investment objective is determined not only by financial criteria (expected rate of return and risk) but also by non-financial aspects related to environmental, social and corporate governance (ESG) issues.

The aim of the article is to diagnose socially responsible investing in the capital markets in spatial terms. An additional aim is to identify the strategies implemented by investors in individual markets.

The classical methods of research were used in this article, such as the study of the literature concerning socially responsible investing and the method of desk research based on documents showing global trends in socially responsible investing in terms of value and investment strategies used by investors.

Referring to statistics, it can be seen that socially responsible investing becomes a significant form of locating funds in a global capital market. In 2020, the global value of the SRI market amounted to over USD 35 trillion. However, it is not a homogeneous market, as evidenced by the varying rates of development of socially responsible investing in different regions of the world. It is also a market that evolves in terms of the investment strategies used. This is reflected in moving away from making investment decisions mainly with the use of negative/exclusionary screening to investments made on the basis of ESG integration.

Keywords: socially responsible investing, socially responsible investing strategies, capital market
JEL codes: G11, M14, O16

Introduction

The issue of socially responsible investing in the field of social sciences is being explored by many researchers. This is determined by the development of the concept of corporate social responsibility (CSR), and the transference of its assumptions into capital markets[1]. Increasingly, investment portfolios are being built by selecting companies based not only on their financial performance but also on how well their activities comply with social, environmental, and ethical standards.

[1] G. Michalczuk, U. Konarzewska: Komunikowanie działań CSR w procesie społecznie odpowiedzialnego inwestowania. Polityki Europejskie, Finanse i Marketing, 2018, nr 19 (68), p. 132.

The multiplicity of factors considered within the process of investing according to principles of corporate social responsibility is the characteristic of socially responsible investing (SRI).

Table 1. Approaches to defining socially responsible investing (SRI)

Author/Institution	Definition
According to Authors	
E.T. Cheah et al.	Philosophy and practice of making strategic investment decisions by integrating financial and non-financial considerations, including personal values, societal demands, environmental concerns and corporate governance issues.
L. Renneboog et.al.	An investment process that integrates social, environmental, and ethical considerations into investment decision making. Unlike conventional types of investments, socially responsible investments apply a set of investment screens to select or exclude assets based on ecological, social, corporate governance or ethical criteria, and often engage in the local communities and in shareholder activism to further corporate strategies towards the above aims.
K. Heese	A form of investing that promotes social as well as financial objectives.
C. Revelli, J.L. Viviani	A recent form of investment including respect for ethical values, environmental protection, and improvement of social conditions or 'good' governance.
J. Kłobukowska	An investment process involving the investor's financial resources, focusing on the SEE (Social, Environment, Ethical) and/or ESG (Environmental, Social, Governance) factors to achieve the preferred financial and non-financial effects through the special investment strategies.
According to Institutions	
Global Sustainable Investment Alliance (GSIA)	An investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management.
European Sustainable Investment Forum (Eurosif)	A long-term oriented investment approach which integrates ESG factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in order to better capture long term returns for investors, and to benefit society by influencing the behaviour of companies.
The Forum for Sustainable and Responsible Investment (US SIF)	An investment discipline that considers environmental, social and corporate governance (ESG) criteria to generate long-term competitive financial returns and positive societal impact.
The Responsible Investment Association Australasia (RIAA)	A broad-based approach to investing which factors in people, society and the environment, along with financial performance, when making and managing investments.
Responsible Investment Association Canada (RIA Canada)	A type of investing that generally refers to the incorporation of environmental, social, and governance factors (ESG) into the selection and management of investments.
Principles for Responsible Investment (PRI)	A strategy and practice to incorporate environmental, social and governance (ESG) factors in investment decisions and active ownership.
Warsaw Stock Exchange	An investment strategy of funds owned by individuals or institution, which seeks to maximize both financial return and social good.

Source: Authors' own elaboration based on: E.T. Cheah, F. Jamali, J.E.V. Johnson, M.C. Sung: Drivers of Corporate Social Responsibility Attitudes: The Demography of Socially Responsible Investors. British Journal of Management, 2011, Vol. 22, p. 305; L. Renneboog, J.T. Horst, C. Zhang: Socially responsible investments: Institutional aspects, performance, and investor behavior. Journal of Banking & Finance, 2008, No. 32, p. 1723; K. Heese: The development of Socially Responsible Investment in South Africa: experience and evolution of SRI in global markets. Development Southern Africa, 2005, Vol. 22, No. 5, p. 729; C. Revelli, J.L. Viviani: The Link Between SRI and Financial Performance: Effects and Moderators. Management international / International Management / Gestiòn Internacional, 2013, No. 17(2), p. 105; J. Kłobukowska: Społecznie odpowiedzialne inwestowanie na rynku kapitałowym w Polsce. Stan i perspektywy rozwoju. Wydawnictwo naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2019., pp. 34-35; GSIA: Global Sustainable Investment Review 2020, p. 7, Eurosif:

European SRI Study 2018, p. 12; US SIF: Getting Started in Sustainable Investing. A Guide for Individual Investors, p. 1; RIAA: Responsible investment explained, https://responsibleinvestment.org/what-is-ri/ri-explained/ [access: 12.04.2022]; RIA Canada: 2020 Canadian Responsible Investment Trends Report, p. 7; Principles for Responsible Investment: What is responsible investment?; https://www.unpri.org/an-introduction-to-responsible-investment/what-is-responsible-investment/4780.article [access: 12.04.2022]; Warsaw Stock Exchange, Socially-Responsible Investing, http://respectindex.pl/socially_responsible_investing [access: 12.04.2022].

Many definitions of socially responsible investing can be found in the literature, which confirms that there is still no common position on defining the SRI concept. Definitions are developed both by researchers and regulatory institutions dealing with this issue. Table 1 contains a list of examples of approaches to defining socially responsible investing.

Summing up the presented approaches to defining socially responsible investing, it can be concluded that the essence of this concept is making investment decisions based on both financial and non-financial parameters. That means incorporating social and environmental aspects into the investment process, assuming at the same time achievement of measurable financial benefits[2]. Some researchers also point to the religious beliefs that may guide investors[3].

Thus, socially responsible investing is a link between financial effects and non-economic indicators[4]. The traditional financial criteria, such as rate of return and risk, are supplemented by non-financial factors[5]. Therefore, it should be emphasized that this type of investing does not put social, environmental or ethical issues above economic ones[6].

An important factor determining the development of socially responsible investing in capital markets is the change of motives that guide investors when building their investment portfolio. As with traditional investments, they seek financial benefits by investing in socially responsible companies with a view to gaining a competitive advantage and, consequently, increasing the value of these companies. This is indicated by research, carried out, among others, by L. Abramson and D. Chung[7], J. Derwall et al.[8], N. Guenster et

[2] T. Jedynak: Rozwój koncepcji inwestowania społecznie odpowiedzialnego w Polsce i na świecie. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie, 2011, nr 875, p. 18.

[3] L. Dziawgo: Zielony rynek. Ekologiczna ewolucja rynku finansowego. Polskie Wydawnictwo Ekonomiczne, Warszawa 2010, p. 16.

[4] J. Kłobukowska: Społecznie odpowiedzialne..., op. cit., p. 26.

[5] D. Urban: Zarys koncepcji inwestowania społecznie odpowiedzialnego. Acta Universitatis Lodziensis, 2011, nr 261, p. 496; R. Sparkes: Socially Responsible Investment: A Global Revolution. John Wiley & Sons Ltd, Chichester, 2002, p. 22.

[6] W. Rogowski, A. Ulianiuk: Społecznie odpowiedzialne inwestowanie (SRI) – próba charakterystyki Część III: Efektywność inwestycji społecznie odpowiedzialnych (SRI). Studia i Prace Kolegium Zarządzania i Finansów SGH, 2012, nr 114, p. 64.

[7] L. Abramson, D. Chung: Socially Responsible Investing Viable for Value Investors? The Journal of Investing, 2000, Vol. 9, No. 3, pp. 73-80.

[8] J. Derwall, N. Guenster, R. Bauer, K. Koedijk: The Eco-Efficiency Premium Puzzle. Financial Analyst Journal, 2005, Vol. 61, No. 2, pp. 51-63.

al.[9], M. Statman[10], C.C. Geczy, R.F. Stambaugh, D. Levin[11], L. Renneboog, J.T. Horst, C. Zhang[12], as well as J.E. Humphrey et al.[13] However, the specificity of socially responsible investing is focusing also on other criteria, not only financial ones[14]. This is indicated by numerous studies conducted in this area. One example is the research carried out by Schroders in April 2020 on a group of more than 23,000 investors from 32 countries around the world. Almost half of the respondents (47%) indicated that they are interested in socially responsible investing due to the wider environmental impact of such investing. On the other hand, about 42% of investors indicated the probability of achieving a higher rate of return. This shows that more investors prioritise the possibility of positive influence on environmental issues over the possibility of achieving a higher rate of return. It should also be mentioned that one-third of the respondents indicate social principles as a motive for socially responsible investing[15].

In addition to the financial aspect related to achieving an above-average rate of return, Beal, Goyen and Phillips point to the non-wealth returns and contribution to social change[16]. Chatterji, Levine and Toffel mention four motives[17]:

1. Financial – based on the belief that superior corporate social responsibility performance leads to superior financial performance,
2. Deontological – based on ethical investing (avoid investments in companies that act irresponsibly),
3. Consequentialist – seeking to direct funds to raise the cost of capital for misbehaving companies and lower it for socially responsible companies,
4. Expressive – related to basing the social identities of the investors in part on their investments and associations with good causes, and thus to making efforts to invest in companies widely perceived to be "socially responsible".

Statman[18] and Glac[19] indicate improving the image or social reputation by announcing social involvement as a motive of socially responsible investing. Interesting research on motivation for socially responsible investing has been carried out by Doś and Foltyn-

[9] N. Guenster, R. Bauer, J. Derwall, K. Koedijk: The Economic Value of Corporate Eco-Efficiency. European Financial Management, 2011, Vol. 17, No. 4, pp. 679-704.
[10] M. Statman: Socially Responsible Indexes. The Journal of Portfolio Management, 2006, Vol. 32, No. 3, pp. 100-109.
[11] C.C. Geczy, R.F. Stambaugh, D. Levin: Investing in Socially Responsible Mutual Funds. Working paper, The Wharton School, University of Pennsylvania, Philadelphia, March 2005.
[12] L. Renneboog, J.T. Horst, C. Zhang: Socially Responsible Investments: Institutional Aspects, Performance, and Investor Behavior. Journal of Banking and Finance, 2008, No. 32.
[13] J.E. Humphrey, D.D. Lee, Y. Shen: Does it cost to be sustainable? Journal of Corporate Finance, 2012, Vol. 18, No. 3, pp. 626-639.
[14] A. Riedl, P. Smeets: Why Do Investors Hold Socially Responsible Mutual Funds? CESifo Working Paper Series No. 4403, July 2017, p. 32.
[15] Schroders: Global Investor Study. The rise of the sustainable investor, https://www.schroders.com/en/sysglobalassets/_global-shared-blocks/gis-2020/theme-2/schrodersgis2020_t2_full-report_za.pdf [access: 12.04.2022], p. 9.
[16] D.J. Beal, M. Goyen, P. Phillips: Why Do We Invest Ethically? The Journal of Investing, 2005, Vol. 14, No. 3, p. 69.
[17] A.K. Chatterji, D.I. Levine, M.W. Toffel: How Well Do Social Ratings Actually Measure Corporate Social Responsibility? Journal of Economics & Management Strategy, 2009, Vol. 18, No. 1, p. 130.
[18] M. Statman: What do investors want? The Journal of Portfolio Management, 2004, Vol. 30, No. 5, pp. 153-161.
[19] K. Glac: Understanding Socially Responsible Investing: The Effect of Decision Frames and Trade-off Options. Journal of Business Ethics, 2009, No. 87, pp. 41-55.

Zarychta[20]. On the basis of literature studies, they identified, apart from the financial aspect, the following motives: ethical, investor's preferences, willingness to influence socio-economic system, creating investor's image, and psychological (emotional). It is quite a broad spectrum of non-economic motivators. Very interesting literature research has also been conducted by K. Marcinek[21], who analysed the motives of socially responsible investing from the perspective of different groups of investors. He also attempted to generalise by identifying the following motives: psychosocial motives (values, beliefs, altruism, philanthropy), legal motives, motives related to the management of the institution, and motives related to financial benefits.

This change in investment motives affects not only the development of socially responsible investing in the capital markets. It is also reflected in the selective choice of the investment portfolio, which is conditioned by the preferred SRI strategy. The developed strategies constitute a set of rules, principles and procedures for making investment decisions by socially responsible investors. These strategies are also a basis for practical implementation of the concept of socially responsible investing in capital markets.

It should be emphasized that these strategies have evolved as a consequence of changes in capital markets. Initially, non-financial aspects were taken into account by investors exclusively within the framework of simple negative screening, consisting of creating a set of criteria eliminating the possibility to invest in assets of companies that carry out activities incompatible with investors' value systems. Over time, the range of strategies used by investors has been extended[22].

According to the classification proposed by Global Sustainable Investment Alliance (GSIA)[23], seven strategies of socially responsible investing can be distinguished[24]: ESG integration, Corporate engagement & shareholder action, Norms-based screening, Negative/exclusionary screening, Best-in-class/positive screening, Sustainability themed/thematic investing, Impact investing and community investing[25].

---

[20] A. Doś, M. Foltyn-Zarychta: Motywy inwestowania społecznie odpowiedzialnego – przegląd wybranych badań. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 2017, nr 478, pp. 113-121.

[21] K. Marcinek: Inwestycje społecznie odpowiedzialne – motywacja inwestorów, Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, 2016, nr 286, pp. 72-95.

[22] A. Adamska, T. J. Dąbrowski, A. Grygiel-Tomaszewska: Społecznie odpowiedzialne inwestowanie w Polsce na tle sytuacji w wybranych krajach Unii Europejskiej. Nauki o Finansach Financial Science, 2015, nr 2 (23), pp. 73-95; M. Remlein: Społecznie odpowiedzialne inwestowanie – analiza europejskiego i polskiego rynku w przekroju strategii inwestowania. Zeszyty Teoretyczne Rachunkowości, 2017, tom 92 (148), pp. 113-129.

[23] Global initiative bringing together organisations from all over the world that are working on the issue of socially responsible investing. It aims to integrate the SRI concept into financial systems and the investment chain to achieve a situation in which all regions of the world will be covered by vigorous membership-based institutions supporting the development of this form of investing. Currently, the Global Sustainable Investment Alliance comprises seven member institutions: European Sustainable Investment Forum - Eurosif, The Forum for Sustainable and Responsible Investment - US SIF, The Responsible Investment Association Australasia - RIAA, Responsible Investment Association Canada - RIA Canada, UK Sustainable Investment and Finance Association - UKSIF, Dutch Association of Investors for Sustainable Development – VBDO, Japan Sustainable Investment Forum – JSIF (GSIA: Global Sustainable Investment Review 2020, pp. 1-3).

[24] GSIA: Global Sustainable Investment Review 2020, p. 7.

[25] Socially responsible investment strategies have been developed not only by the GSIA, but also by other regulatory institutions such as European Sustainable Investment Forum (Eurosif), Principles for Responsible Investment (PRI), and European Fund and Asset Management Association (EFAMA). Many of these strategies are similar or even identical to the methodology used by GSIA. Discrepancies can be found only in the naming and minor definitional differences. This is particularly evident in the case of strategies developed by Eurosif, an

Socially responsible investing is an interesting alternative to traditional investing in capital markets. Therefore, it is very important to conduct studies in this field. Currently, these studies concern various issues, including the development of the concept of socially responsible investing, factors that determine this development, motives for investing, evaluation of the efficiency of socially responsible investments, research on the level of development of the SRI market, and identification of strategies that investors use. The last aspect is undoubtedly important. It allows to assess whether socially responsible investing is the direction of capital market development or whether it is only a temporary fashion.

The aim of the article is to diagnose socially responsible investing in capital markets in spatial terms. An additional aim is to identify the strategies implemented by investors in individual markets.

Research methodology

The studies on socially responsible investing are cognitively limited, especially in spatial terms. Therefore, the scientific articles, both Polish and foreign, use the analysis of secondary data (desk research) published, among others, by Eurosif, GSIA, and US SIF. Examples include studies conducted by T. Jedynak[26]; D.M. Krupa[27]; A. Adamska, T.J. Dąbrowski, A. Grygiel-Tomaszewska[28]; M. Remlein[29]; L.E. Donath, R. Ioan, T. Mandimutsira[30]; P. Waring, T. Edwards[31].

The research conducted in the article focuses on showing trends related to socially responsible investing, which determines the direction of the development of capital markets in spatial terms. This is currently a significant issue because the determinant of the functioning of capital markets is the need for investment and directing the flow of funds to those companies that ensure the most effective use of funds.

Specifically, this research sought to answer the following questions:

1. What is the value of socially responsible investments globally and in individual regions of the world?
2. What is the proportion of socially responsible investments relative to the total value of assets under management globally and in individual regions of the world?

---

organisation that aims to support the development of this form of investing in the European market. Similar to GSIA, Eurosif distinguishes seven strategies of socially responsible investing: ESG integration, Engagement & voting, Norms-based screening, Exclusions, Best in class, Sustainability themed, Impact investing (More on SRI strategies: G. Michalczuk, U. Konarzewska: Strategie inwestowania społecznie odpowiedzialnego na rynku kapitałowym in: M. Wasilewski, S. Zabolotnyy (eds.): Kierunki Ewolucji Rynku finansowego. Wydawnictwo SGGW w Warszawie, Warszawa 2019, pp. 105-114; J. Kłobukowska: Społecznie odpowiedzialne inwestowanie na rynku europejskim. Polityki Europejskie, Finanse, Marketing, 2014, nr 11(60), pp. 78-88).

[26] T. Jedynak: Fundusze inwestycyjne na rynku inwestycji społecznie odpowiedzialnych. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie, 2016, nr 2(950), pp. 23-40.

[27] D. M. Krupa: Fundusze inwestycyjne odpowiedzialnie społecznie. Annales Universitatis Mariae Curie-Skłodowska, 2012, vol. XLVI, pp. 307-316

[28] A. Adamska, T. J. Dąbrowski, A. Grygiel-Tomaszewska: Społecznie odpowiedzialne inwestowanie w Polsce..., op. cit., pp. 73-95.

[29] M. Remlein: Społecznie odpowiedzialne inwestowanie..., op. cit., pp. 113-129.

[30] L. E. Donath, R. Ioan, T. Mandimutsira: Evaluating the Performance of Socially Responsible Investment Funds. Scientific Annals and Business, 2018, Vol. 65, No 3, pp. 139-158.

[31] P. Waring, T. Edwards: Socially Responsible Investment: Explaining its Uneven Development and Human Resource Management Consequences. Socially Responsible Investment, 2008, Vol. 16, No. 3, pp.135- 145.

3. What strategies are most commonly used in the process of socially responsible investing globally and in individual regions of the world?

Answering the research questions posed above required the application of the method of desk research, which consists of assembly, collation and analysis of information which is already published[32]. The desk research conducted in this article consisted of analysing the data published by the Global Sustainable Investment Alliance (GSIA). One limitation was the inability to use data published by Eurosif due to fact that the last available data refers to 2017. The analysis allowed to present the development of this form of investing both globally and in the cross-section of individual regions of the world. It also made it possible to show the investors' preferences regarding the strategies used in the process of investing in accordance with the principles of corporate social responsibility.

Results

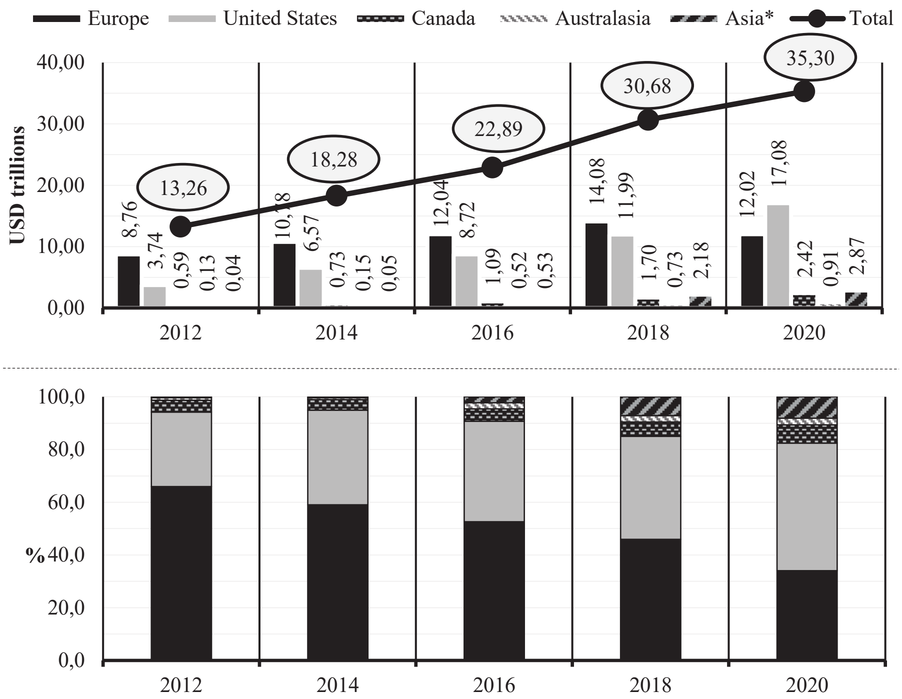
Socially responsible investing is becoming a significant form of investing funds in global capital market. At the beginning of 2020, the value of this type of investment amounted to USD 35.30 trillion, which is an increase of 54.2% compared to 2016 (USD 22,89 trillion), and more than 160% compared to 2012 (USD 13.26 trillion). However, the global market of socially responsible investing is not homogeneous, as evidenced by data on individual regions (Chart 1).

The United States had the largest share of the socially responsible investments market in 2020 (USD 17.08 trillion), accounting for 48.4% of the global market. A characteristic feature of this market is also its high growth rate. The value of such investments in the United States in 2020 was 95.9% higher than in 2016 (USD 8.72 trillion) and 356.7% higher compared to 2012 (USD 3.74 trillion).

In 2020, the second-largest market in terms of socially responsible investments was Europe (USD 12,02 trillion), accounting for 34% of the global market. However, it should be noted that between 2012 and 2018, Europe was the leader in this respect. It was also a market characterized by a stable growth rate. In contrast, between 2018 and 2020, there was a decrease of 15% in the value of socially responsible investments. The reasons for this can be found in the changed measurement methodology resulting from a different approach to defining socially responsible investments, which was introduced into European Union legislation under the "Action Plan: Financing Sustainable Growth" [33].

[32] M. Armstrong: A Handbook of Management Techniques: A Comprehensive Guide to Achieving Managerial Excellence and Improved Decision Making. 3rd Edition, Kogan Page Ltd, London, 2006, p. 53.

[33] Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions: Action Plan: Financing Sustainable Growth, Brussels, 8.3.2018 COM(2018) 97 final.



* 2018 and 2020 data for Asia includes only Japan's SRI market

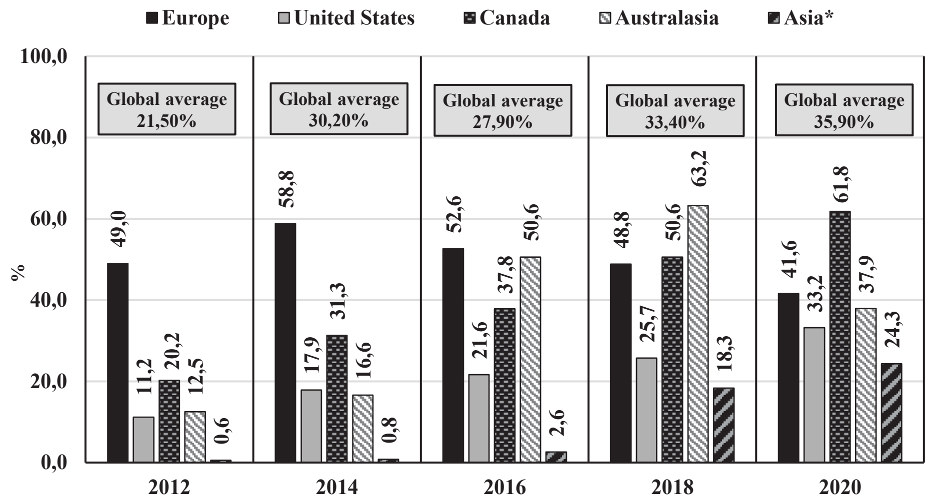
Chart 1. Socially responsible investments by region between 2012 and 2020

Source: Authors' own elaboration based on: GSIA: Global Sustainable Investment Review 2012, pp. 9-10; GSIA: Global Sustainable Investment Review 2014, pp. 7-8, GSIA: Global Sustainable Investment Review 2016, pp. 7-8; GSIA: Global Sustainable Investment Review 2018, pp. 8-9, GSIA: Global Sustainable Investment Review 2020, pp. 9-10.

The share of other regions in the global market of socially responsible investments significantly differs from the results achieved by Europe and the United States. Nevertheless, these are the markets where dynamic development of this form of investing, can be observed. In 2020, the value of the socially responsible investments in Canada amounted to USD 2.42 trillion, which is an increase of 122% compared to 2016 (USD 1.09 trillion), and 310.2% compared to 2012 (USD 0.59 trillion). Similar trends can be observed in Asia, in which Japan's SRI market plays a leading role. Its value in 2020 was USD 2.87 trillion. This represents an increase of 441.5% compared to 2016 when the total value of socially responsible investments in the entire Asian market amounted to USD 0.53 trillion.

An increasing interest in socially responsible investing among investors is also visible in Australasia. In 2020, the value of this SRI market was estimated at USD 0.91 trillion, which means an increase of 75% compared to 2016 (USD 0.52 trillion) and 600% compared to 2012 (USD 0.13 trillion). The slower growth rate in recent years in comparison to Canada and Japan is due to more stringent criteria that needs to be met by investments in this region in order to be considered socially responsible, as defined and measured by *Responsible Investment Association Australasia* (RIAA)[34].

The varying rates of development of socially responsible investing in different regions of the world can also be seen when analysing the size of the SRI market relative to the total value of assets under management (Chart 2).



* 2018 and 2020 data for Asia includes only Japan's SRI market

Chart 2. The proportion of socially responsible investments relative to the total value of assets under management

Source: Authors' own elaboration based on: GSIA: Global Sustainable Investment Review 2012, pp. 9-10; GSIA: Global Sustainable Investment Review 2014, pp. 7-8, GSIA: Global Sustainable Investment Review 2016, pp. 7-8; GSIA: Global Sustainable Investment Review 2018, pp. 8-9, GSIA: Global Sustainable Investment Review 2020, pp. 9-10.

The proportion of socially responsible investments to the total value of assets under management in Europe was relatively stable between 2014 and 2020. In contrast, a significant increase can be observed in the United States. In 2012, this proportion was 11.2%. This compares with 33.2% in 2020. Even more dynamic changes can be observed in other regions of the world. The Canadian market is particularly interesting. In 2012, socially responsible investments represented 20.2% of the total value of assets under management in this region. However, in 2020 this percentage was already over 60%. The SRI market in Australasia is also developing intensively. In 2012, this type of investment represented

[34] An organisation with over 450 members, including financial institutions, insurance companies, investments funds, financial advisers, consultants, researchers, and individuals, directed at the development of socially responsible investing in Australia and New Zealand, among others through influencing policy and regulation regarding socially responsible investing, delivering tools, supporting investors in the process of socially responsible investing, and activities for improvement in responsible investment practice through education, benchmarking and promotion of best practice in this respect (The Responsible Investment Association Australasia: About RIAA, https://responsibleinvestment.org/about-us/ [access: 19.11.2021 r.].

12.5% of the total value of assets under management in this region. In 2018, it was already 63.2%.

The increase in the value of socially responsible investments could also be observed in previous years. This is confirmed by research carried out, among others, by T. Jedynak[35] for the years 1995-2014 and U. Gierałtowska[36] for the years 2002-2016. Results of these studies have also shown spatial differentiation in the value of socially responsible investments and the pace of their growth in individual capital markets.

A characteristic feature of the global market of socially responsible investments is also the diversity in terms of strategies used by investors (Chart 3).

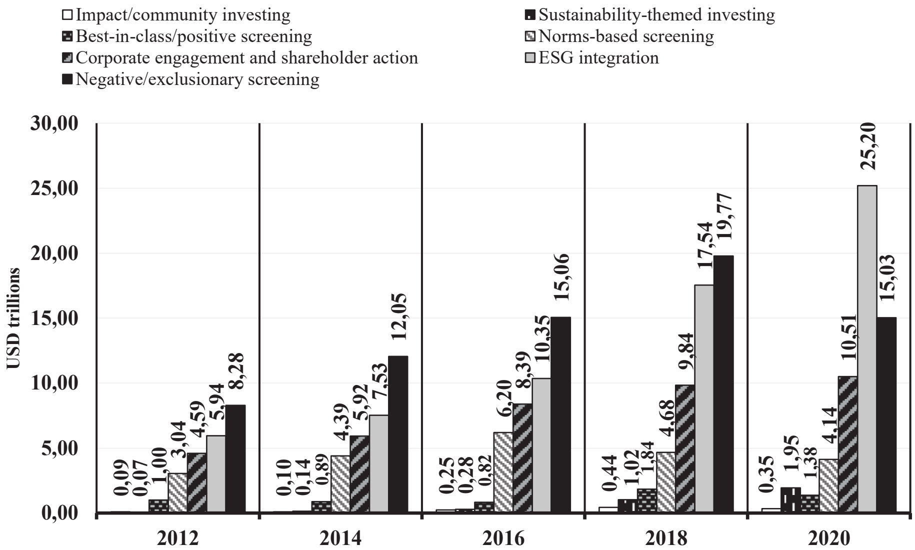


Chart 3. The global value of socially responsible investments by strategies between 2012 and 2020
Source: Authors' own elaboration based on: GSIA: Global Sustainable Investment Review 2012, pp. 9-10; GSIA: Global Sustainable Investment Review 2014, pp. 7-8, GSIA: Global Sustainable Investment Review 2016, pp. 7-8; GSIA: Global Sustainable Investment Review 2018, pp. 8-9, GSIA: Global Sustainable Investment Review 2020, pp. 9-10.

Between 2012 and 2018, investors based their decisions mainly on negative/exclusionary screening. It relies on excluding from investment portfolios those companies whose activity is disadvantageous from an ethical or social point of view. In 2012, the value of funds invested with the application of this strategy amounted to USD 8.28 trillion. In 2016 and 2018, it was respectively USD 15.06 trillion and USD 19.77 trillion. However, in 2020 there was a decrease in the value of investments based on negative/exclusionary screening when compared to 2018. At the same time, there was a noticeable increase in the value of investments made on the basis of ESG integration, which consists of the inclusion

[35] T. Jedynak: Fundusze inwestycyjne na rynku ..., op. cit., pp. 23-40.
[36] U. Gierałtowska: Inwestowanie społecznie odpowiedzialne - nowy trend na rynku kapitałowym, Finanse, Rynki Finansowe, Ubezpieczenia, 2017, nr 6(90), pp. 23-36.

of environmental, social and governance factors into traditional portfolio analysis. Investments based on this strategy reached USD 25.20 trillion in 2020, which means an increase of 143.5% compared to 2016 (USD 10.35 trillion), and 324.2% compared to 2012 (USD 5.94 trillion).

Corporate engagement & shareholder action was the third most commonly used SRI strategy in 2020. It focuses on influencing the behaviour of companies in order to increase their commitment to social, ethical and environmental issues. The value of investments made on the basis of this strategy was USD 10.51 trillion, which is an increase of 25.3% compared to 2016 (USD 8.39 trillion), and 129% compared to 2012 (USD 4.59 trillion). Between 2012 and 2020, investors were least likely to use strategies such as best-in-class/positive screening, sustainability-themed/thematic investing, as well as impact investing and community investing. However, in recent years a significant increase in the value of investments in shares of companies that contribute to solving important problems in the area of sustainable development should be noted. Investments based on sustainability-themed/thematic investing reached USD 1.95 trillion in 2020, which means an increase of approximately 600% compared to 2016 (USD 0.28 trillion).

The diversity in terms of strategies used by investors can be noticed by analysing the SRI market not only from a global perspective but also from the perspective of different regions of the world. In Europe, negative/exclusionary screening is a dominant strategy for socially responsible investing. A large part of the investment is also made based on corporate engagement & shareholder action, ESG integration, and norms-based screening. Socially responsible investors in Europe are least likely to use strategies such as sustainability-themed/thematic investing, best-in-class/positive screening, as well as impact investing and community investing. Different trends in the investment decision-making process can be observed in other regions, where ESG integration plays a dominant role. It is particularly important for the SRI market in the United States. It should be emphasized, however, that negative/exclusionary screening also played a large role in investor decision-making between 2012 and 2018. A significant decline in interest in this strategy occurred only in 2020. It is also interesting to note that investors from this region show a complete lack of interest in making investments on the basis of norms-based screening. Australasia is the least diverse market in terms of strategies used during the process of socially responsible investing. Investors from this region locate their funds mainly with the use of ESG integration, and with a small share of negative/exclusionary screening, impact investing and community investing, sustainability-themed/thematic investing, and best-in-class/positive screening[37].

Conclusions

The need for investment is the fundamental factor enabling the functioning of capital markets. A properly functioning market can accurately identify investment needs and set the direction of cash flow between different market segments. This is determined by searching for suitable directions of investments, taking into account economic conditions. In recent

[37] GSIA: Global Sustainable Investment Review 2014, p. 30, GSIA: Global Sustainable Investment Review 2016, p. 27; GSIA: Global Sustainable Investment Review 2018, p. 25, GSIA: Global Sustainable Investment Review 2020, p. 30.

years a new trend in investing, in which economic parameters (rate of return and risk) are supplemented by factors related to social, environmental, and corporate governance issues, can be observed.

In 2020, the global value of socially responsible investments amounted to over USD 35 trillion. There was an increase of 160% compared to 2012. Almost half of the socially responsible investments are realised in the United States. It is also a market characterised by a high growth rate. In the analysed period, it was over 356%. The European market is the second-largest, which accounts for about one-third of the global SRI market. Although other markets have a smaller share, dynamic development of this form of investing can be observed. An example is Australasia, where the value of socially responsible investments increased by more than 600% during the period considered.

The development of the SRI market is also evidenced by the growing proportion of socially responsible investments to the total value of assets under management. In 2020, the global average was approximately 36%. The Canadian market is particularly interesting, where socially responsible investments represented more than 60% of the total value of assets under management in this region.

The market of socially responsible investments is characterised not only by value growth but also by diversification in strategies that investors use. They have the possibility of building an investment portfolio based on various criteria. Between 2012 and 2018, investors based their decisions mainly on negative/exclusionary screening. However noticeable changes occurred in 2020 when there was an increase in the value of investments made on the basis of ESG integration.

In conclusion, the presented statistics confirm that socially responsible investing is becoming an important segment of capital markets. It can become a mainstream investment strategy, as indicated by U. Gierałtowska[38]. On the one hand, it is dictated by the growing social, environmental, and governance requirements introduced by regulatory institutions around the world. On the other hand, it is caused by factors, such as the COVID-19 pandemic and the looming climate crisis, that increasingly influence investors to look not at short-term profits achieved regardless of the consequences, but at the broader implications of investments and long-term goals.

References

Abramson L., Chung D.: Socially Responsible Investing Viable for Value Investors? The Journal of Investing, 2000, Vol. 9, No. 3.

Adamska A., Dąbrowski T.J., Grygiel-Tomaszewska A.: Społecznie odpowiedzialne inwestowanie w Polsce na tle sytuacji w wybranych krajach Unii Europejskiej. Nauki o Finansach Financial Science, 2015, nr 2 (23).

Armstrong M.: A Handbook of Management Techniques: A Comprehensive Guide to Achieving Managerial Excellence and Improved Decision Making. 3rd Edition, Kogan Page Ltd, London, 2006.

Beal D.J., Goyen M., Phillips P.: Why Do We Invest Ethically? The Journal of Investing, 2005, Vol. 14, No. 3.

Chatterji A.K., Levine D.I., Toffel M.W.: How Well Do Social Ratings Actually Measure Corporate Social Responsibility? Journal of Economics & Management Strategy, 2009, Vol. 18, No. 1.

[38] U. Gierałtowska: Inwestowanie społecznie odpowiedzialne..., op. cit., pp. 23-36.

Cheah E.T., Jamali F., Johnson J.E.V., Sung M.C.: Drivers of Corporate Social Responsibility Attitudes: The Demography of Socially Responsible Investors. British Journal Of Management, 2011, Vol. 22.
Communication from the Commission to the European Parliament, the European Council, the Council, the European Central Bank, the European Economic and Social Committee and the Committee of the Regions: Action Plan: Financing Sustainable Growth, Brussels, 8.3.2018 COM(2018) 97 final.
Derwall J., Guenster N., Bauer R., Koedijk K.: The Eco-Efficiency Premium Puzzle. Financial Analyst Journal, 2005, Vol. 61, No. 2.
Donath L.E., Ioan R., Mandimutsira T.: Evaluating the Performance of Socially Responsible Investment Funds. Scientific Annals and Business, 2018, Vol 65, No 2.
Doś A., Foltyn-Zarychta M.: Motywy inwestowania społecznie odpowiedzialnego – przegląd wybranych badań. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 2017, nr 478.
Dziawgo L.: Zielony rynek. Ekologiczna ewolucja rynku finansowego. Polskie Wydawnictwo Ekonomiczne, Warszawa 2010.
Eurosif: European SRI Study 2018, https://www.eurosif.org/wp-content/uploads/2021/10/European-SRI-2018-Study.pdf [access: 29.04.2022].
Geczy C.C., Stambaugh R.F., Levin D.: Investing in Socially Responsible Mutual Funds. Working paper, The Wharton School, University of Pennsylvania, Philadelphia, March 2005.
Gierałtowska U.: Inwestowanie społecznie odpowiedzialne - nowy trend na rynku kapitałowym, Finanse, Rynki Finansowe, Ubezpieczenia, 2017, nr 6(90).
Glac K.: Understanding Socially Responsible Investing: The Effect of Decision Frames and Trade-off Options. Journal of Business Ethics, 2009, No. 87.
GSIA: Global Sustainable Investment Review 2012, http://gsiareview2012.gsi-alliance.org/pubData/source/Global%20Sustainable%20Investement%20Alliance.pdf [access: 29.04.2022].
GSIA: Global Sustainable Investment Review 2014, http://www.gsi-alliance.org/wp-content/uploads/2015/02/GSIA_Review_download.pdf [access: 29.04.2022].
GSIA: Global Sustainable Investment Review 2016, http://www.gsi-alliance.org/wp-content/uploads/2017/03/GSIR_Review2016.F.pdf, [access: 29.04.2022].
GSIA: Global Sustainable Investment Review 2018, http://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf [access: 29.04.2022].
GSIA: Global Sustainable Investment Review 2020, http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf [access: 29.04.2022].
Guenster N., Bauer R., Derwall J., Koedijk K.: The Economic Value of Corporate Eco-Efficiency. European Financial Management, 2011, Vol. 17, No. 4.
Heese K.: The development of Socially Responsible Investment in South Africa: experience and evolution of SRI in global markets. Development Southern Africa, 2005, Vol. 22, No. 5.
Humphrey J.E., Lee D.D., Shen Y.: Does it cost to be sustainable? Journal of Corporate Finance, 2012, Vol. 18, No. 3.
Jedynak T.: Rozwój koncepcji inwestowania społecznie odpowiedzialnego w Polsce i na świecie. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie, 2011, nr 875.
Jedynak T.: Fundusze inwestycyjne na rynku inwestycji społecznie odpowiedzialnym. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie, 2016, nr 2(950).
Kłobukowska J.: Społecznie odpowiedzialne inwestowanie na rynku kapitałowym w Polsce. Stan i perspektywy rozwoju. Wydawnictwo naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2019.
KłobukowskaJ.: Społecznie odpowiedzialne inwestowanie na rynku europejskim. Polityki Europejskie, Finanse, Marketing, 2014, nr 11(60).
Krupa D.M.: Fundusze inwestycyjne odpowiedzialnie społecznie. Annales Universitatis Mariae Curie-Skłodowska, 2012, vol. XLVI.
Marcinek K.: Inwestycje społecznie odpowiedzialne – motywacja inwestorów, Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, 2016, nr 286.

Michalczuk G., Konarzewska U.: Komunikowanie działań CSR w procesie społecznie odpowiedzialnego inwestowania. Polityki Europejskie, Finanse i Marketing, 2018, nr 19 (68).
Michalczuk G., Konarzewska U.: Strategie inwestowania społecznie odpowiedzialnego na rynku kapitałowym in: M. Wasilewski, S. Zabolotnyy (eds.): Kierunki Ewolucji Rynku finansowego, Wydawnictwo SGGW w Warszawie, Warszawa 2019.
Principles for Responsible Investment: What is responsible investment?; https://www.unpri.org/an-introduction-to-responsible-investment/what-is-responsible-investment/4780.article [access: 12.04.2022].
Remlein M.: Społecznie odpowiedzialne inwestowanie – analiza europejskiego i polskiego rynku w przekroju strategii inwestowania. Zeszyty Teoretyczne Rachunkowości, 2017, tom 92 (148).
Renneboog L., Horst J.T., Zhang C.: Socially responsible investments: Institutional aspects, performance, and investor behavior. Journal of Banking & Finance, 2008, No. 32.
Revelli C., Viviani J.L.: The Link Between SRI and Financial Performance: Effects and Moderators. Management international / International Management / Gestiòn Internacional, 2013, No. 17(2).
RIA Canada: 2020 Canadian Responsible Investment Trends Report, https://www.riacanada.ca/research/2020-canadian-ri-trends-report/ [access: 12.04.2022].
RIAA: Responsible investment explained, https://responsibleinvestment.org/what-is-ri/ri-explained/ [access: 12.04.2022].
Riedl A., Smeets P.: Why Do Investors Hold Socially Responsible Mutual Funds? CESifo Working Paper Series No. 4403, July 2017.
Rogowski W., Ulianiuk A.: Społecznie odpowiedzialne inwestowanie (SRI) – próba charakterystyki Część III: Efektywność inwestycji społecznie odpowiedzialnych (SRI). Studia i Prace Kolegium Zarządzania i Finansów SGH, 2012, nr 114.
Schroders: Global Investor Study. The rise of the sustainable investor, https://www.schroders.com/en/sysglobalassets/_global-shared-blocks/gis-2020/theme-2/schrodersgis2020_t2_full-report_za.pdf [access: 12.04.2022].
Sparkes R.: Socially Responsible Investment: A Global Revolution. John Wiley & Sons Ltd, Chichester, 2002.
Statman M.: Socially Responsible Indexes. The Journal of Portfolio Management, 2006, Vol. 32, No. 3.
Statman M.: What do investors want? The Journal of Portfolio Management, 2004, Vol. 30, No. 5.
The Responsible Investment Association Australasia: About RIAA, https://responsibleinvestment.org/about-us/ [access: 19.11.2021 r.].
Urban D.: Zarys koncepcji inwestowania społecznie odpowiedzialnego. Acta Universitatis Lodziensis, 2011, nr 261.
US SIF: Getting Started in Sustainable Investing. A Guide for Individual Investors, https://www.ussif.org/files/Publications/USSIF_individualinvestors_sustainableinvesting.pdf [access: 12.04.2022].
Waring P., Edwards T.: Socially Responsible Investment: Explaining its Uneven Development and Human Resource Management Consequences. Socially Responsible Investment, 2008, Vol. 16, No 3.
Warsaw Stock Exchange, Socially-Responsible Investing, http://respectindex.pl/socially_responsible_investing [access: 12.04.2022].

Inwestowanie społecznie odpowiedzialne jako kierunek rozwoju rynku kapitałowego

Streszczenie

Inwestowanie społecznie odpowiedzialne (SRI) staje się coraz szybciej rozwijającym się segmentem rynku kapitałowego. Dotyczy ono transakcji, w których cel inwestycyjny jest determinowany nie tylko kryteriami finansowymi (oczekiwaną stopą zwrotu i ryzykiem), ale również aspektami pozafinansowymi dotyczącymi kwestii środowiskowych, społecznych i związanych z ładem korporacyjnym (ESG).

Celem artykułu jest diagnoza inwestowania społecznie odpowiedzialnego na rynkach kapitałowych w ujęciu przestrzennym. Dodatkowym celem jest identyfikacja strategii implementowanych przez inwestorów na poszczególnych rynkach.

W artykule zastosowano klasyczne metody badawcze, takie jak: studium literatury odnoszącej się do problematyki inwestowania społecznie odpowiedzialnego, a także metoda analizy desk research oparta na dokumentach ukazujących tendencje w zakresie społecznie odpowiedzialnego inwestowania na świecie w ujęciu wartościowym oraz w przekroju strategii inwestycyjnych stosowanych przez inwestorów.

Odnosząc się do statystyk, można zauważyć, że inwestowanie społecznie odpowiedzialne staje się znaczącą formą lokowania środków finansowych na globalnym rynku kapitałowym. W roku 2020 globalna wartość rynku SRI wyniosła ponad 35 bln dolarów. Nie jest to jednak rynek jednolity, o czym świadczy zróżnicowane tempo rozwoju inwestowania społecznie odpowiedzialnego w poszczególnych regionach świata. Jest to też rynek, który ewoluuje pod względem stosowanych strategii inwestycyjnych. Znajduje to odzwierciedlenie w odchodzeniu od podejmowania decyzji inwestycyjnych głównie z wykorzystaniem selekcji negatywnej na rzecz inwestycji dokonanych w oparciu o strategię związaną z integracją czynników ESG z tradycyjną analizą finansową.

Słowa kluczowe: inwestowanie społecznie odpowiedzialne, strategie inwestowania społecznie odpowiedzialnego, rynek kapitałowy.
Kody JEL: G11, M14, O16

Information about the authors:

Grażyna Michalczuk, PhD, Professor of the University of Bialystok
University of Bialystok
Faculty of Economics and Finance,
Department of Finance, Division of Finance and Accounting
ul. Warszawska 63, 15-062 Bialystok, Poland
e-mail: g.michalczuk@uwb.edu.pl
ORCID: 0000-0003-0546-4456

Urszula Konarzewska, MA
University of Bialystok
Faculty of Economics and Finance,
Department of Finance, Division of Finance and Accounting
ul. Warszawska 63, 15-062 Bialystok, Poland
e-mail: u.konarzewska@uwb.edu.pl
ORCID: 0000-0003-1257-3749

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.5

Received: 22.05.2022
Accepted: 15.06.2022

Anna Milewska
Daniel Błażejczyk
Warsaw University of Life Sciences – WULS SGGW

POLAND'S "FAMILY 500+" PROGRAM AS AN OPPORTUNITY TO SOLVE THE PROBLEMS OF FAMILY AND DEMOGRAPHIC POLICY

The goal of this article was to identify and characterize the socio-economic effects of the introduction of the "Family 500+" program in Poland. The research part focused on checking the implementation of the assumptions, which were placed on the introduction of the "Family 500+" program. The main focus of the study was fertility, the improvement of which is a key goal of the program.

The research methods used in the article were: data analysis method - data on the number of births of children in Poland, the fertility rate as well as the method of synthesis, inference and interpretation were analyzed. On the basis of the data analysis, conclusions were drawn and their nature explained. This was done in order to reflect on the effectiveness of public spending on the "Family 500+" program.

To achieve the intended objective, research and analysis were carried out using selected indicators and statistical data. Their results allowed to verify the effectiveness of public funds spent on the indicated program.

Keywords: "Family 500+" programme, finance, effectiveness, fertility
JEL codes: J11, J13, J18

Introduction

For three decades, the fertility rate in Poland has remained below the level of simple generation replacement, and the long-term demographic forecasts do not indicate an imminent improvement in this area[1].Over the past several years, significant changes in the Polish family policy system have taken place. Successive governments have tried to help families with children as much as possible. This resulted in a systematic expansion of support instruments and an increase in the importance of family policy against the background of other public policies. Despite these changes, the opinion still prevailed in Polish society that the state support for raising children is insufficient. There were demands for a comprehensive change in family policy, the effects of which would be more

[1] I. Kaźmierczak – Kałużna, Gdzie te dzieci? O pronaturalistycznej (nie) efektywności programu „Rodzina 500 Plus", Rocznik Lubuski Tom 46, cz. 2, 2020, s. 2, doi: https://doi.org/10.34768/rl.2020.v462.09

noticeable to families. European countries, in which state support for raising children, especially in the financial dimension, was much greater than in Poland, were pointed out as examples.

In Germany, for example, there are child allowances (Kindergeld) which cover all children up to the age of 18 and up to the age of 25 if the child is undertaking further education or vocational training. The amount of the benefit depends on the number of children in the family. Thus, for the first and second child the amount is currently 219 euros, for the third 225 euros and for each additional child, 250 euros per month[2]. In the UK child benefit is paid only to parents who work and pay insurance premiums (in some cases there is a departure from this rule). It is available until the child is 16 years old or until 20 years of age when the child continues education. It is £20.70 per week for the eldest child and £13.70 for all other children[3]. Family allowances exist also in Norway. The benefit (Barnetrygd) is paid for each child under 18 years of age and amounts to NOK 1354 (about EUR 130) per month for children under 6 years of age and NOK 1054 (about EUR 100) for others[4].

The lack of a coherent and long-term family policy was also indicated by the report of the Supreme Chamber of Control in 2014[5]. In its opinion, the state concentrated on ad hoc solutions, without ensuring adequate coordination and defining concrete goals. The NIK also pointed out to those in power the under-definition of the scope of family policy, which resulted in the lack of grounds for a detailed determination of the effects achieved in comparison with the outlays of funds incurred. The report additionally presents an in-depth analysis of the demographic situation in Poland.

The fertility rate in Poland has been declining for over 20 years, the number of births has continued to fall, while on the other hand life expectancy has increased and migration to more affluent countries has continued. In the long run, these phenomena are expected to determine a decline in the population of the country. If current trends continue, Poland's population will shrink to about 32 million people in 2060[6]. The structure of the population will also change dramatically – the proportion of elderly and post-working age people will increase significantly, while the share of children and youth will decrease. The restructuring of the population will have a negative impact on Poland's economic development and public finances.

Program "Family 500+" – does it work?

The "recipe" for solving the indicated problems of demographic and family policy was to be the program "Family 500+". It entered into force on 1 April 2016 on the basis of the Act of 11 February 2016 on state aid in the upbringing of children (Journal of Laws 2016, item 195, as amended). This Act introduced a new concept to the Polish family

[2] Kindergeld w Niemczech: podwyżki oraz aktualne informacje na rok 2021, https://dojczland.info/kindergeld-niemcy [dostęp: 18.04.2021].

[3] Zasiłki w Anglii, https://www.england.pl/informacje/zasilki-w-anglii [dostęp: 18.04.2021].

[4] Barnetrygd, https://www.nav.no/no/nav-og-samfunn/kontakt-nav/oversikt-over-satser/barnetrygd [dostęp: 18.04.2021].

[5] Najwyższa Izba Kontroli, Informacja o wynikach kontroli: Koordynacja polityki rodzinnej w Polsce. Nr P/14/046, Warszawa, 2014.

[6] Najwyższa Izba Kontroli, Informacja o wynikach kontroli: Koordynacja polityki rodzinnej w Polsce. Nr P/14/046, Warszawa, 2014, s. 22

policy system – the child-rearing benefit. In addition, it defines the rules for granting the benefit and the conditions that must be met to become eligible to receive it. Parents, legal guardians or actual guardians of a child are entitled to receive the benefit in the amount of PLN 500 per month.

In the first stage of its operation the program covered the second and subsequent children in the family until they reached 18 years of age. Exceptions were families where the income per capita did not exceed PLN 800 net per month, or PLN 1200 net per month in the case of families with disabled children. Both events guaranteed a benefit for the first child. This form of the program functioned until the end of June 2019. In July of 2019, an amendment to the law came into force, which resulted in the absence of income thresholds, and the benefit is due to each child until the age of 18.

The "Family 500+" program significantly strengthened state activities in the area of support for families with children. It has become a leading element of family policy, functioning independently of previous instruments. This means that the benefit paid under the program is not counted as income when granting other family benefits, such as, for example, housing allowances.

The main justifications for the introduction of the program were demographic issues, namely, the decreasing number of births in Poland and the declining fertility rate. The legislation mentions as the goal of the "Family 500+" program financial aid for families bringing up children, counteracting the "demographic decline" and partial coverage of expenses related to raising children[7].The program was supposed to reverse this trend and make Polish women more willing to decide to become mothers. Another important objective was to reduce child poverty and improve the standard of living of families with children. The intention of the program, according to Article 4 of the aforementioned law, is "partial coverage of expenses related to raising a child, including child care and satisfying the child's living needs"[8].

The number of children eligible for the benefit has varied over the duration of the program, and this has affected its cost to the state budget. These data are presented in Table 1. In the first year of its functioning, the average number of children covered by the benefit amounted to 3.81 million, which constituted 55% of all children under 18, and its cost oscillated around PLN 17.4 billion. However, in the next, first full year of operation, the cost reached PLN 23.5 billion. After the change made in 2019, the number of beneficiaries increased to about 6.8 million, and the expenditure on the program increased to PLN 30.5 billion. In the next full years, the amount oscillates around PLN 40-42 billion. During the 4 years of the program's operation, it has cost the Polish budget about 94 billion zlotys.

The "Family 500+" program raises many emotions in Poland. By some it is complimented – evaluated as a real help in raising children, as well as a financial boost for families, helping them to afford greater expenses, travel with children, courses and additional lessons, etc. Interestingly, it was a model for the Lithuanian political party representing Poles living in the country (Electoral Action of Poles in Lithuania - Union of Christian Families), which initiated the introduction of a similar program[9].

---

[7] A. Gromada, Czemu służy program Rodzina Plus? Analiza celów polityki publicznej i polityki partyjnej, Ruch Prawniczy, Ekonomiczny i Socjologiczny, 3/2018 s. s. 242

[8] Ustawa z dnia 11 lutego 2016 r. o pomocy państwa w wychowywaniu dzieci (Dz.U. 2016 poz. 195 z późn. zm.)

[9] https://www.bankier.pl/wiadomosc/Litwa-wprowadza-program-na-wzor-Rodziny-500-plus-4054365.html

Table 1. The number of beneficiaries of the "Family 500+" program and its cost in subsequent years of operation

Years		Average number of children (MM)	Average number of families (MM)	Costs of the program* (BN PLN)
2016		3,8	2,5	17,4
2017		3,8	2,5	23,4
2018		3,6	2,4	22,2
2019	01-06	3,6	2,4	11,1
	07-12	6,8	4,7	19,4

Program cost includes the amount of benefits paid. Service costs are not included.
Source: Authors' own study based on data from the Ministry of Family and Social Policy and the Central Statistical Office.

The benefit has been granted since January 2018 for every child up to the age of 18 (or up to 21 in the case of continuing education). However, it is criticized by others, mainly due to its poor effectiveness in pro-demographic policy and the high financial cost for the state budget. The opponents of the program believe that it has not provided a comprehensive change in family policy and that the money spent on the program could have been allocated in a more effective way for Polish families. Many also argue that the program has a bad impact on the labour market because it discourages people from taking up employment and creates entitlement thinking.

Effects of implementation of the "Family 500+" program

The main intention of the introduction of the program was pro-natalist aspects, that is, an increase in the number of children born and the fertility rate. This coefficient is the most reliable in analysing the demographic situation. It represents the number of children a woman would potentially have during her reproductive cycle (15-49 years), assuming that fertility rates remain the same as in a given year[10]. Other parameters, such as the number of children born, cannot be analysed and discussed without correlation with the others, as they do not reflect the current demographic situation and may lead to erroneous conclusions.

Demographic studies and analyses consider that a fertility rate of 2.1 is the one that will ensure the replacement of generations. In Poland, this level was last reached in 1988. Since then, this coefficient has been characterized by a downward trend. In the 1990s, systemic transformations and socio-economic perturbations can be identified as the cause of this state of affairs. The fertility rate declined steadily until 2003, when it was only 1.22. The following years brought Poland's accession to the European Union and an improving economic situation. GDP growth and decreasing unemployment contributed to the upward trend of the ratio. From a level of 1.22 in 2003 it rose to 1.39 in 2008-2009, followed by

[10] https://stat.gov.pl/metainformacje/slownik-pojec/pojecia-stosowane-w-statystyce-publicznej/3950,pojecie.html [dostęp: 21.04.2021].

a significant slowdown. In the aforementioned years there was a global financial crisis, the effects of which can be identified as the cause of the decline in the coefficient. Its recession lasted until 2013, in which it was formed at the level of 1.26. During the next 3 years it increased slightly and in 2015 it reached the value of 1.29.

A year later, the "Family 500+" program came into force, and the level of fertility rate achieved significant growth dynamics. It is presented in Figure 1.

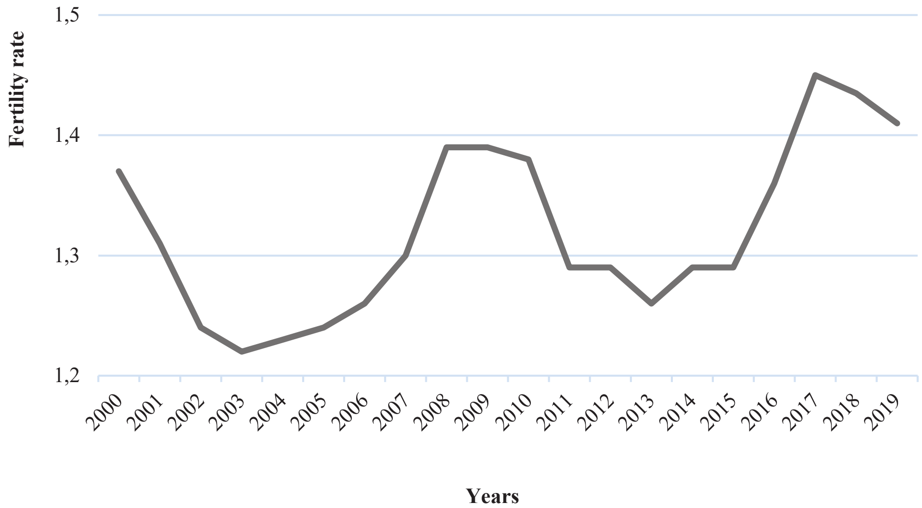


Figure 1. The development of the fertility rate in Poland between 1990 and 2019
Source: Authors' own study based on CSO, Demographic Yearbook 2020, Warsaw 2020

Between 2015 and 2017, there was a large increase in the level of the fertility rate by 0.16 points – the peak of the increase is 1.45 in 2017 (this is the highest level since 1997, when the rate was 1.5). Unfortunately, in the following years there is a slight decline to the level of 1.41 in 2019. The mentioned improvement is not due only to the "Family 500+" program. In the analysed years, the economic situation in the country improved, as evidenced by the acceleration of GDP growth, the decline in unemployment to its lowest level ever, and the increase in wages. Moreover, in recent years a number of changes have been made in family policy and several support instruments have been introduced. For example, child care leaves have been extended, a parental benefit has been introduced which is a type of maternity benefit for persons not covered by it before (not working and insured in The Agricultural Social Insurance Fund (KRUS). The principles and amounts of tax allowances and income criteria for family benefits were also changed. Therefore, it is difficult to estimate how much of an impact the introduction of the program had on the improvement of the examined indicator.

The fertility rate is correlated with another important demographic indicator – the number of children born. It is important for statistical purposes, but it does not play a leading role in demographic research. This is because when analysing the number of children born, it is important to remember that it is related to the number of women of childbearing age at a given time. Looking at the dynamics of change in the number of children born in Poland, as shown in Figure 2, one can see similar changes as in the case of the fertility rate.

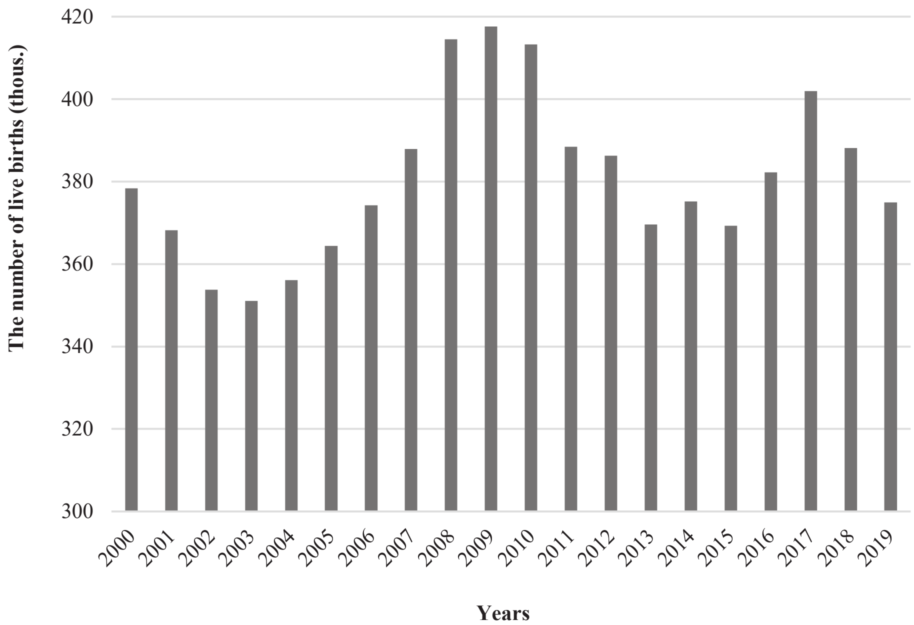


Figure 2: Evolution of live births in Poland, 2000-2019
Source: Authors' own study based on CSO, Demographic Yearbook 2020, Warsaw 2020.

Over the last dozen years or so, the number of children born in Poland has been highly changeable. During this period, the lowest value was recorded in 2003 (351 thousand), while the highest number of births fell on 2009, when 419 thousand children were born. In the following years, the number systematically decreased. The trend reversed in 2016, when the "Family 500+" program was introduced. The number of births increased for 2 consecutive years. In 2017, 403 thousand births were registered and this was the highest number of births so far after the introduction of the program. Although the fertility rate, after the introduction of the program, reached a higher level than in 2009, this did not translate into a higher number of births. Between 2018 and 2019, the number of child births declined to a comparable level prior to 2016.

It is worth comparing how much higher the actual values of the number of children born after the introduction of the program are from those previously forecast by the Central Statistical Office (without the "Family 500+" program) and by the Ministry of Family and

Social Policy in 2016 before the introduction of the program[11]. These values are shown in Figure 3.

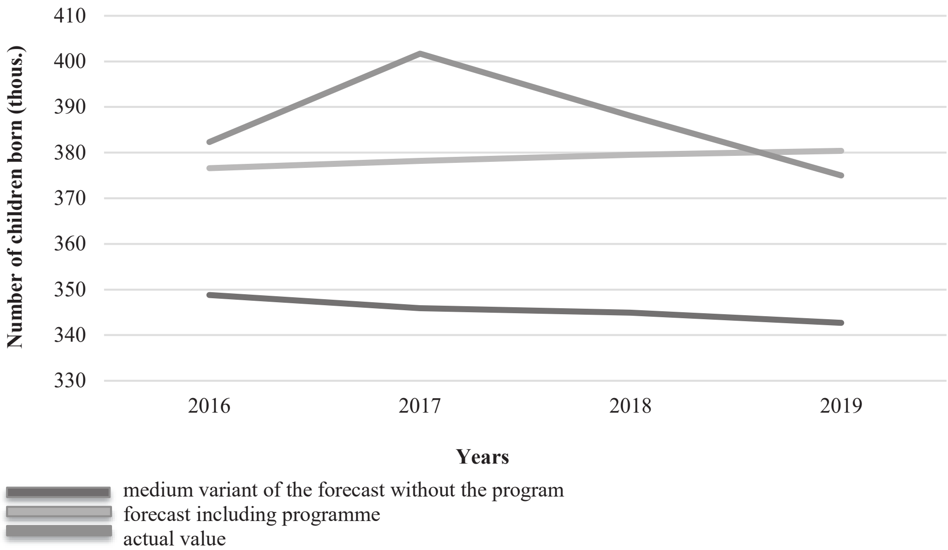


Figure 3: Comparison of the projected number of child births in Poland with actual values in 2016-2019
Source: Authors' own compilation based on data from the Ministry of Labour and Social Policy, Regulatory Impact Assessment,
https://archiwum.mrips.gov.pl/download/gfx/mpips/pl/defaultopisy/9493/2/1/zalacznik%20nr%202%20do%20OSR%20KONSULTACJE.pdf [accessed: 25.04.2021].

The number of births of children significantly exceeded the values forecast by the CSO before the introduction of the program. For 2016, 348.8 thousand births were predicted, while 33.5 thousand more children were born – 382.3 thousand. In the record year 2017, the difference was even greater and amounted to 56.1 thousand (345.9 thousand compared to 402 thousand), while a year later it slightly decreased to 43.2 thousand. Moreover, for the first 3 years of the program's operation, more children were born than the government's 2016 forecast. The situation changed in 2019, when the number of children born was more than 5 thousand less than the forecast, but was still much higher than the value predicted by the CSO. In total, the number of "excess births" calculated as the difference between the actual values and the values from the average variant is 165.1 thousand.

The analysis of data concerning the order of children born in the family after the introduction of the program provides important information and conclusions. In the first stage of its functioning, the programme covered the second and the next child in the family. This rule, as can be seen, significantly influenced the decisions made by Polish families. In 2017, the first year in which the program was fully operational, there was a

[11] Ministerstwo Rodziny i Polityki Społecznej: Ocena skutków regulacji. Załącznik nr 2 do OSR https://archiwum.mrips.gov.pl/download/gfx/mpips/pl/defaultopisy/9493/2/1/zalacznik%20nr%202%20do%20OSR%20KONSULTACJE.pdf

very large increase in births of second children in the family. They accounted for 40.1% of all children born compared to 38.4% the year before. The situation is similar for third children in order. The increase was 1.3 percentage points (from 11.1% in 2016 to 12.4% a year later). The opposite is true for the first children in a family. Since 2016, there has been a noticeable decline in births in this category, both in nominal and percentage terms. A peculiar situation has occurred in 2019, with a very large decline in the number of births of second children in the family and a significant increase in third and fourth children in order.

Table 2. Live births by maternal birth order 2010-2019

Years	Maternal birth order									
	First		**Second**		**Third**		**Fourth**		**Fifth and next**	
	thous.	%	thous.	%	thous..	%	thous.	%	thous.	%
2010	207,1	50,1	145,3	35,1	41,1	9,9	12	2,9	7,9	1,9
2011	191	49,2	139,4	35,9	39,5	10,2	11,4	2,9	7,1	1,8
2012	188,2	48,7	140,9	36,3	39,6	10,2	11,1	2,9	7	1,8
2013	179,7	48,6	134,4	36,4	38,5	10,4	10,5	2,8	6,6	1,8
2014	178	47,4	140,6	37,5	39,6	10,5	10,6	2,8	6,4	1,7
2015	173,7	47,0	138,7	37,6	39	10,6	10	2,7	5,6	1,5
2016	175,9	46,0	147	38,4	42,5	11,1	10,7	2,8	6	1,6
2017	172,6	42,9	161,3	40,1	49,9	12,4	11,9	3,0	6,2	1,5
2018	*No data available*									
2019	160,1	42,7	134	35,7	57,6	15,4	16,3	4,3	7	1,9

Source: Authors' own compilation based on CSO data, Live births by order of birth to mother 1960-2019, [in:] http://stat.gov.pl/ [accessed 25.04.2021]

Based on the data in Table 2, the following conclusions can be drawn. First, the program did not affect women's decisions to conceive their first child. This may have been influenced by its initial design, which did not include families with one child. It can be assumed that the analysis of these data contributed to the expansion of the program, which assumes the payment of the benefit to all children up to the age of 18. Second, the introduction of the program contributed to the birth of more children in the family – especially, third and fourth children. The number of the latter has been falling steadily since 2000, and not even the small high in 2007-2009 changed that. The trend reversed only in 2016. Also noteworthy is the change in the number of births to second-born children. This category has seen the largest increase in recent years. Confirmation of the second conclusion is provided by the results of a survey conducted on November 24-27, 2017, commissioned by the portal Wirtualna Polska[12]. One of the questions was: in your opinion, does the "Family 500+" program encourage Poles to have more children? To this question as many as 61% of respondents answered in the affirmative (24% "definitely

[12] E. Koszowska: Efekt 500 plus? Najnowszy sondaż https://opinie.wp.pl/efekt-500-plus-najnowszy-sondaz-6193664517712001a [dostęp: 26.04.2021].

yes", 37% "rather yes"). However, 22% of respondents answered in the negative. The rest of the respondents said that it was "difficult to answer".

Conclusions

Summarizing this section, it is impossible not to notice an improvement in the demographic situation in Poland after the introduction of the program. This is evidenced by the large increase in the fertility rate, reaching in 2017 the highest level in 20 years, and the improvement in the dynamics of the number of children born. Nevertheless, it should be emphasized that many factors contribute to parents' decision to have a child and it is impossible to assess which of them is the most leading one. Besides, the demographic improvement was short-lived and unsatisfactory.

The "Family 500+" program did not significantly change the negative demographic trends. Its introduction brought positive effects only in the short term, until 2017. During this time, the fertility rate improved significantly and thus the number of children born increased. These values were much higher than forecasted by the Central Statistical Office in 2014, and also higher than ex ante simulations carried out by the government. The promising change did not last long. In the following years, it worsened, and the improvement was weaker and weaker each year. The government responded to this situation by extending the program from July 1, 2019. It is still necessary to wait a while for the effects of this change, the more so that six months after its introduction, the COVID-19 epidemic broke out in the world.

The "Family 500+" program has its advantages and disadvantages. Therefore, it is important to consider how to improve its functioning and thus increase its effectiveness in influencing Polish society. It is especially important that any changes contribute to encouraging families to have more children, as the demographic situation and forecasts of its changes do not give rise to optimism. The Polish political class should take decisive actions and solutions. If this does not happen, Poland is threatened with the specter of perturbations in the labor market, the pension system or public finances in the future.

References

Barnetrygd, https://www.nav.no/no/nav-og-samfunn/kontakt-nav/oversikt-over-satser/barnetrygd [dostęp: 18.04.2021].

Gromada A., Czemu służy program Rodzina Plus? Analiza celów polityki publicznej i polityki partyjnej (What is the purpose of the 'Family 500+' Programme? An analysis of the public policy and party policy objectives), Ruch Prawniczy, Ekonomiczny i Socjologiczny, 3/2018 s. s. 242

Kaźmierczak – Kałużna I., Gdzie te dzieci? O pronaturalistycznej (nie) efektywności programu „Rodzina 500 Plus"(Where are the children? On the pronatalistic (non)effectiveness of the "Family 500 plus" Programe), Rocznik Lubuski Tom 46, cz. 2, 2020, s. 2, doi: https://doi.org/10.34768/rl.2020.v462.09

Kindergeld w Niemczech: podwyżki oraz aktualne informacje na rok 2021 (Kindergeld in Germany: Rises and Update for 2021), https://dojczland.info/kindergeld-niemcy [dostęp: 18.04.2021]

Koszowska E., Efekt 500 plus? Najnowszy sondaż (500 plus effect? Latest poll) https://opinie.wp.pl/efekt-500-plus-najnowszy-sondaz-6193664517712001a [dostęp: 26.04.2021].

Ministerstwo Rodziny i Polityki Społecznej: Ocena skutków regulacji. (Ministry of Labour and Social Policy: Regulatory Impact Assessment.) Załącznik nr 2 do OSR https://archiwum.mrips.

gov.pl/download/gfx/mpips/pl/defaultopisy/9493/2/1/zalacznik%20nr%202%20do%20OSR%20KONSULTACJE.pdf
Najwyższa Izba Kontroli, Informacja o wynikach kontroli: Koordynacja polityki rodzinnej w Polsce. (Supreme Audit Office, Information on the inspection results: Coordination of family policy in Poland) Nr P/14/046, Warszawa, 2014.
Ustawa z dnia 11 lutego 2016 r. o pomocy państwa w wychowywaniu dzieci (Act of the 11th February of 2016 on state assistance in upbringing of the children, Text No. 195). (Dz.U. 2016 poz. 195 z późn. zm.)
Zasiłki w Anglii (Benefits in England), https://www.england.pl/informacje/zasilki-w-anglii [dostęp: 18.04.2021]
https://www.bankier.pl/wiadomosc/Litwa-wprowadza-program-na-wzor-Rodziny-500-plus-4054365.html
https://stat.gov.pl/metainformacje/slownik-pojec/pojecia-stosowane-w-statystyce-publicznej/3950,pojecie. html [dostęp: 21.04.2021].

Program „Rodzina 500+" szansą na rozwiązanie problemów polityki rodzinnej i demograficznej

Streszczenie

Głównym celem artykułu było zbadanie efektów wprowadzenia programu „Rodzina 500+" w kontekście społeczno-ekonomicznym. Autorzy preferowali podejście interdyscyplinarne w badaniu konsekwencji programu. W tym celu szczególną uwagę poświęcono na weryfikację i analizę założeń, jakie stawiał sobie pomysłodawca programu. Głównym zakresem badań była dzietność, której poprawa jest kluczowym celem programu. Zestawienie tych założeń z danymi statystycznymi dało odpowiedź na pytanie, czy program jest skuteczny i spełnia swoją rolę. Do zbadania efektów programu wykorzystano dane z lat 2015-2019.

Ważnym aspektem była także weryfikacja efektywności w aspekcie ekonomicznym i społecznym. Istotnym zamiarem było także przybliżenie historii programu „Rodzina 500+", jego założeń, finansowania i zakładanej zmiany w podejściu do polityki prodemograficznej w Polsce.

Słowa kluczowe: „Program 500+", finanse, efektywność, dzietność
JEL Codes: J11, J13, J18

Information about the authors:

Anna Milewska, PhD
Poland, Warsaw University of Life Sciences,
Institute of Economics and Finance, Department of Finance
Nowoursynowska 166 ST., 02-787 Warsaw,
e-mail: anna_milewska1@sggw.edu.pl
ORCID: 0000-0003-4776-6049

Daniel Błażejczyk
Warsaw University of Life Sciences,
Faculty of Economics
Nowoursynowska 166 ST., 02-787 Warsaw,
e-mail: s195879@sggw.edu.pl
ORCID: 0000-0002-8914-4822

Polityki Europejskie,
Finanse i Marketing
27 (76) 2022

DOI 10.22630/PEFIM.2022.27.76.6

Received: 21.11.2021
Accepted: 30.05.2022

Piotr Misztal
Marcin Łupiński
Jan Kochanowski University in Kielce

ARE POLISH BANKS STABLE? A SYSTEMIC RISK ANALYSIS

The financial crisis that began in 2007 pointed out deficiencies in policy-makers' responses to systemic risk. It turned out that not only individual bank insolvencies but also spillovers from negative externalities among entities can cause serious threats to the financial sector. During the last 10 years, many international and national initiatives were taken to strengthen the soundness of the financial system, introducing a macroprudential perspective to financial supervision. However, the recent COVID-19 pandemic resulted in a serious negative shock for many economies and their financial sectors. In this paper, using the network model we try to analyse how these recent unexpected developments affected the Polish banking sector with systemic risk. To analyse Polish bank stability we developed a formal stress-testing framework based on the network model that allowed systemic risk identification, modelling and measurement. We tried to integrate analysis of time and the cross-sectional nature of systemic risk.

Keywords: financial stability, systemic risk, network model, banking system
JEL codes: G21, G23, G32

Introduction and research motivation

The financial crisis that began in 2007 pointed out deficiencies in policy-makers' responses to systemic risk. It turned out that not only individual bank insolvencies but also spillovers from negative externalities among entities can cause serious threat to the financial sector. During the last 10 years many international (e.g. G-20 Financial Stability Committee recommendations) and national initiatives (e.g. Polish financial supervisory regulations) were taken to strengthen the soundness of the financial system, introducing a macroprudential perspective to financial supervision. However, the recent COVID-19 pandemic resulted in a serious negative shock for many economies and their financial sectors.

In this paper, using the network model we try to analyse how these recent unexpected developments affected the Polish banking sector. Considering the complex characteristics of systemic risk we looked at its key sources:

- Selected real economy sectors severely hit by negative shocks;
- Decision-makers' reaction to unexpected developments: expansionary domestic monetary and fiscal policy being a catalyst of a credit and consumption boom;
- Opaque and oligopolistic interconnections between local large financial institutions that amplify externalities stemming from excessive leverage and procyclical business models;

- Integration of small open economy with global financial markets and deregulation of cross-border capital movements allowing transmission of foreign macroeconomic policy shock;
- Banks' similar responses to the external shocks (one-approach-fits-all).

To analyse the stability of Polish banks, we developed a formal stress-testing framework based on a network model that allowed systemic risk identification, modelling and measurement. We tried to integrate analysis of time and the cross-sectional nature of systemic risk:

- Time dimension: addressing the evolution of system-wide risk over time by considering risk stemming from banking sector procyclicality, amplifications of credit action, asset price bubbles, excessive leverage and maturity mismatches;
- Cross-sectional dimension: addressing distribution of risk in the financial system at a certain point of time by analysing risk concentration caused by the similarity of banking sector institution exposure to non-financial enterprises and the direct balance and off-balance sheet interlinkages among banks.

We also needed to close some statistical data gaps ensuring access to accurate and reliable financial and prudential statistics of the Polish banking sector and Polish financial markets. We used the individual supervisory data taken from the National Bank of Poland/Financial Supervisory Commission dashboard.

We hope that our approach can be applied for proactive Polish banking sector systemic risk detection and measurement and then used by decision-makers to intervene as early as possible to reduce the impact of potential distress on the Polish financial system.

The article was divided into six parts. In the first part were presented different, theoretical concepts of systemic risk. In the second part we made a review of the recent literature on systemic risk analysis. Then we described the data used in the research. In the next part we presented the formal framework (network model) used for the analysis. The fifth part is devoted to description of the gained results, and the last part presents conclusions.

Systemic risk definitions and concepts

Systemic risk can be defined in both a narrow and broad sense as the risk of experiencing systemic events in a strong way. Basically, the spectrum of systemic risk covers second-round effect on an individual institution or market to the risk of a systemic crisis affecting most or the entire financial system. The geographic scope of systemic risk can be regional, national or international. A key component of this definition of systemic risk, the systemic event, consists of two important components: shocks and propagation mechanisms. According to the terminology of financial theory, shocks can be idiosyncratic or systematic. In an extreme sense, idiosyncratic shocks are those that initially affect only the condition of one financial institution or only the price of one asset, while systematic shocks affect the entire economy, e.g. all financial institutions together.

Another dimension of the concept of systemic risk is the impact of systemic events in the financial sector on the real sector, and more specifically on production and general welfare. A horizontal view of the concept of systemic risk can be distinguished, in which the emphasis is only on events in the financial sector (through the bankruptcy of financial intermediaries or a financial market crash). From a vertical view of systemic risk, the impact of a systemic event on production is assessed to calculate the severity of such an event. The real effects play a role in many of the articles discussed below. In this article, the analysis focuses on the horizontal dimension of systemic risk (De Bandt and Hartmann, 2000).

The literature on systemic risk assessment in the banking sector can be divided into three categories. The first category focuses on how balance linkages can amplify the magnitude of shocks and influence the direction of propagation across borders. The second category uses abundant market data and uses information from credit spreads and stock or other asset prices to measure system risk premiums and correlate shocks across markets.

Table 1. Systemic events in the financial system

Type of initial shocks	**Single systemic events (affect only one institution or one market in the second round effect)**		**Wide systemic events (affect many institutions or markets in the second round effect)**	
	Weak (no failure or crash)	Strong (failure of one institution or crash of one market)	Weak (no failure or crash)	Strong (failure of one institution or crash of one market)
Narrow shock that propagates				
- **Idiosyncratic shock**	✓	✓Contagion	✓	✓Contagion leading to a systemic crisis
- **Limited systematic shock**	✓	✓Contagion	✓	✓Contagion leading to a systemic crisis
Wide systematic shock			✓	✓Systemic crisis

✓ means that the combination of events defined by the cell is a systemic event. The shaded area describes cases of systemic events in the narrow sense. Systemic events in the broad sense also include the cells with ✓ in the last row.

Source: (De Bandt and Hartmann, 2000).

Ultimately, the third category is one of perspective and based on simulations to better understand how certain types of shocks can develop into more serious systemic events. All three types of analysis take into account risks from the side of assets and liabilities, bank balance sheets, as well as risks that arise from interactions between the two parties (Cerutti, Claessens and McGuirev, 2012).

Literature review

We start by pointing out literature that defines key issues analysed in the research: financial stability and systemic risk. Smaga (2013) described financial stability as the feature of the financial system that can fulfil its crucial functions: financial intermediation, asset pricing and capital/risk allocation. The second most important phenomenon analysed in our survey, systemic risk, can be defined as the risk that internal and external shocks can destabilize the whole financial system (Bongini, Nieri, and Pelagatti, 2015). In the strict sense, systemic risk materialization can be perceived as the process in which financial problems of a single financial institution result in negative externalities for the whole financial system or/and the real economy (Bluhm and Krahnen, 2014; Tarashev, Tsatsaronis, and Borio, 2016; Vallascas and Keasey, 2012).

To analyse systemic risk many researchers use different econometric and statistic methods. Some of them (e.g. Adrian and Brunnermeier, 2008; Adrian and Brunnermeier, 2016; Brunnermeier, Dong, and Palia, 2012; Castro and Ferrari, 2014; López-Espinosa et al. 2013; Weiß and Mühlnickel, 2014) within the CoVaR framework tried to capture marginal contribution of individual financial entities to the general risk of the financial system. This approach compares cumulated system-wide losses caused by systemically important institutions or their group failure and the financial output of the system being in the normal condition.

An alternative idea of systemic risk analysis uses information included in financial market data. The Systemic Expected Shortfall (SES) model described and applied in the papers of Acharya et al. (2009), Acharya et al. (2017), Jonghe, Diepstraten, and Schepens (2015) tries to capture the expected value of individual institution undercapitalization when the systemic risk spillover occurs and when the whole financial system is undercapitalized. There is also a formalized SRISK framework (Laeven, Ratnovski, and Tong, 2014) based on the Systemic Expected Shortfall model that measures systemic risk with the capital shortfall of a particular financial institution caused by severe market negative shock, focusing on the key institution's parameters such as its size, leverage and interconnectedness. Moreover Banulescu and Dumitrescu (2015) in their Component Expected Shortfall (CES) procedure extended the SES approach to directly measure the contribution of an individual institution to the system-wide systemic risk.

To analyse Polish banks' stability we use a network model that allows tracing the impact of the contagion effect on the whole banking sector. Detailed description of this model can be found in the works of Arinaminpathy, Kapadia, and May (2012), Caccioli, Catanach, and Farmer (2012) Krause and Giansante (2012) and He and Chen (2016).

Data

In the research we used micro and macroprudential data gathered within the National Bank of Poland/Financial Supervision Commission databases. Our area of interest covered:

- FINREP package (balance sheet and off-balance sheet data);
- COREP package (capital requirements and capital structure);
- EU Large Exposures (ELE) statistics (>= 10% of institution capital criterion);
- Domestic Large Exposures (DLE) statistics (>= 120.000 EUR criterion).

Based on the statistical history of individual Polish banks we prepared a set of quarterly time series:

- Measures of interconnections: interlinkages among institutions (especially systemically important ones), sectors and countries;
- Indicators of institutions and sectors with cross-border dependencies and cross-border investment flows;
- Measures of common exposures and funding concentrations;
- Time series of leverage;
- Measures of financial market risks;
- Bank balance sheets data and ratio;
- Data on banks' collateral practices;
- Measures of maturity mismatches and financial imbalances.

The time span used for calibration covered the years 2013-2017. For analysis we used data from 2018-2020 including the data depicting the massive economic shock at the beginning of 2020 caused by the COVID19 pandemic.

Polish bank characteristics

The development of the modern Polish banking sector can be dated back to the 1990's. During last 30 years it has undergone substantial transformation, focusing on asset accumulation and consolidation. Finally, at the end of 2019 it consisted of 30 commercial banks, 538 cooperative banks and 32 branches of credit institutions. At the end of 2019 Polish banking sector assets totalled almost $525 billion and the relative size of the banking industry reached 88.3% of Polish GDP. The Polish banking sector is also highly concentrated, with the 5 and 10 biggest local banks making up 50% and 70% of total banking sector assets, respectively.

Table 2. Polish largest bank assets compared with assets of the biggest banks worldwide

	Country	Assets 31 Dec 2019 ($ billion)
Industrial and Commercial Bank of China	China	**4,307,501**
China Construction Bank Corporation	China	3,638,950
Agricultural Bank of China	China	3,559,125
Bank of China	China	3,257,474
Mitsubishi UFJ Financial Group	Japan	3,096,332
HSBC Holdings	US	2,715,152
JP Morgan Chase & Co	US	2,687,379
Bank of America	US	2,434,079
BNP Paribas	France	**2,432,261**
…	…	…
PKO Bank Polski	PL	**81,843**
Bank Pekao	PL	**50,442**
Santnder Bank Polska (Banco Santander)	PL/SP	**46,695**

Source: National Bank of Poland and The Banker database.

However, in the context of systemic risk analysis it is worth noting that the world's biggest banks are much larger than Polish banks. At the end of 2019 the world's largest bank (Industrial and Commercial Bank of China) was more than 50 times larger than Poland's biggest bank (PKO Bank Polski) (Table 2).

Research framework

The framework used in this survey was initially developed in 2011 and 2012 to analyse the stability of the Polish banking sector after the financial crisis that began in 2007. The heart of this system consists of the 20 biggest Polish banks' balance sheet model, associated with the Risk Weighed Assets (RWA) model, credit loss model and liquidity risk model. The impact on banks from the side of the most important risks (credit and market risks) was embedded in the satellite models. The framework is fed with scenarios prepared with separated financial, founding and macro generators. To evaluate consequences of the systemic risk spillovers within the Polish banking sector we used a network model. The iterative character of systemic risk is simulated with a feedback module.

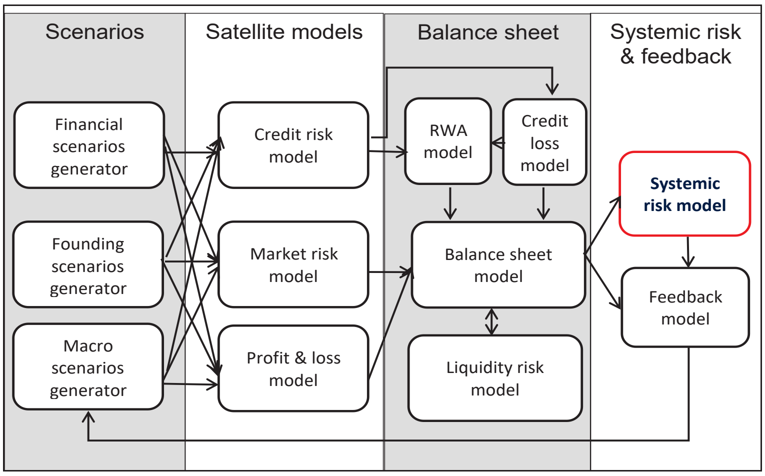


Figure 1. The framework used in the research
Source: Author's own study

The network model

The network model of systemic risk used in the research allows for modelling direct relations among banking sector entities, resulting from financial instrument exposure and the structure of capital. The model is iterative; in each period it consists of a certain number of bank entities (network nodes). A particular financial entity's balance sheet at a specific period of time consists of:

- Assets: external assets and interbank assets;
- Liabilities: aggregated equity capital, external liabilities and interbank liabilities.

In each period of time, external assets are replenished with net external income and interbank assets with interbank net receivables. On the liability side, external liabilities are with external net due liabilities and interbank liabilities with interbank net due liabilities outflows.

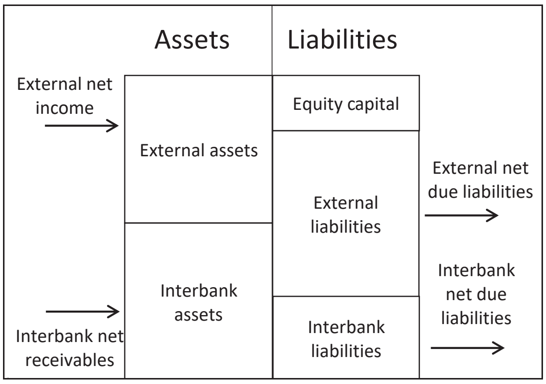


Figure 2. Individual banks' balance sheets used in the network model
Source: Author's own study

The interdependencies between two particular banks from the Polish sector (eg. A.B.) in each period of time (t) are modelled with flows of capital (C) within capital channels and liabilities (L) within liabilities channels.

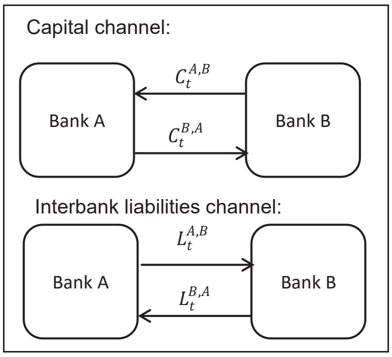


Figure 3. Individual banks' balance sheets used in the network model
Source: Author's own study

The model is solved with an iterative Fictious Default Algorithm (FDA). It starts with computation of initial net due liabilities of the initial group of banks and the system "clearing vector" and, possibly, identification of insolvent banks. Then, for each step (period of time t):

- net due liabilities of surveyed banks (taking into account solvency of other institutions) are computed; if all banks' liabilities are covered with current income/capital cushion, the algorithm is stopped.
- in the case where some insolvent institutions are identified, the clearing vector is computed and all connected institutions, which lost their solvency due to lack of payments from counterparties, are identified; if the propagation of first-order defaults doesn't imply bankruptcies of the banks, the algorithm is stopped at this stage; if it does, net due liabilities of surveyed banks are computed and the procedure is repeated.

The Fictious Default Algorithm stops when there is a lack of defaults in a certain step or all entities from the banking sector have defaulted. The iteration number, in which a particular bank was found insolvent, can be interpreted as its measure of vulnerability to systemic risk. The institutions that were found bankrupt in the first round can be perceived as fundamentally/exogenously insolvent.

Results

The empirical study started with three different scenarios: 1) baseline, 2) scenario including moderate financial, founding and macro shocks, and 3) scenario including severe financial, founding and macro shocks. The satellite models were applied to compute credit, market and liquidity risk reactions to the alternative paths. In the last stage, a network model with FDA procedure was used to identify the number of banks and their uncovered losses. The gained results were analysed in two dimensions:

- the number of banks that defaulted in each period;
- the share of defaulted bank assets in total banking sector assets.

The first approach allows to identify systemically important institutions that are prone to financial distress. The second one can be perceived as the measure of systemic risk spillovers. Below we present both perspectives of analysis for moderate and severe shock scenarios. In the baseline we didn't detect any default in the Polish banking sector.

a. Moderate negative scenario

Moderate negative shocks impacted the Polish banking sector in the 3rd quarter of 2020, resulting in 10 defaulted banks. None of them was among the systemically important institutions (their assets accounted for approx. 5% of the total Polish banking sector).

The defaulted banks' assets share in the time series shows that the combination of a moderate negative scenario with the COVID19 shock substantially increased the number of affected banks. The number of defaulted banks soared from 6 to 10 and the share of their assets almost doubled from 3% to 5,25%.

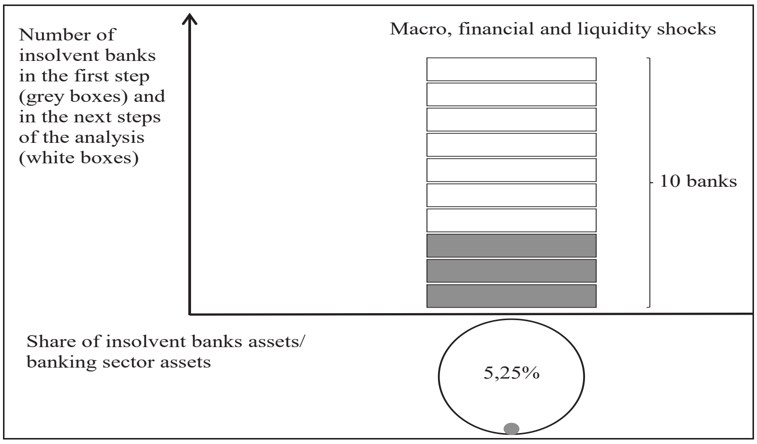


Figure 4. Moderate negative shock scenario: number of defaulted banks and their asset share in the 3rd quarter 2020
Source: Author's own computations

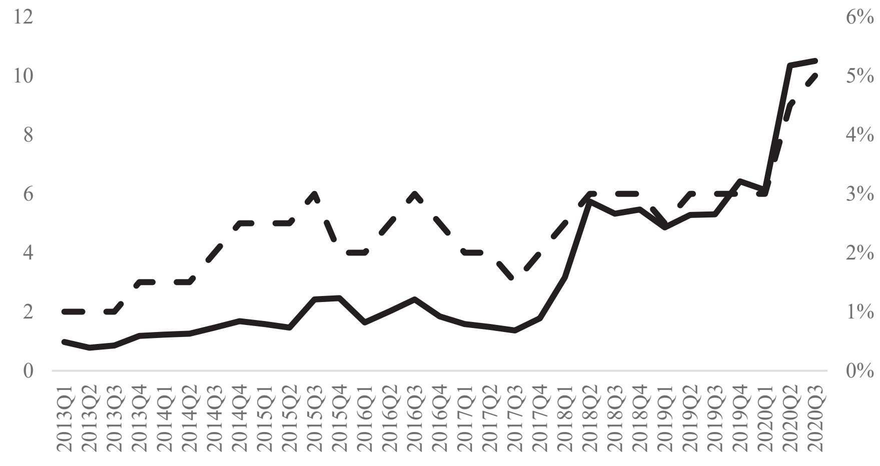


Figure 5. Moderate negative scenario: number of defaulted banks and their asset share, 2013- 2020
Source: Author's own computations

b. Severe negative scenario

The severe negative scenario added momentum to the risk impact on the Polish banking sector. Compared with the moderate scenario, nine additional insolvent banks were detected. Moreover, the share of defaulted banks' assets in the post-COVID19 environment increased to almost 8%. Despite the difficult situation of the Polish banking sector in this scenario, no systemically important institutions have failed.

Substantial negative shocks brought additional instability to the Polish banks. The number of insolvent banks increased from 11 to 17, and their asset share almost tripled from 3% to almost 8%.

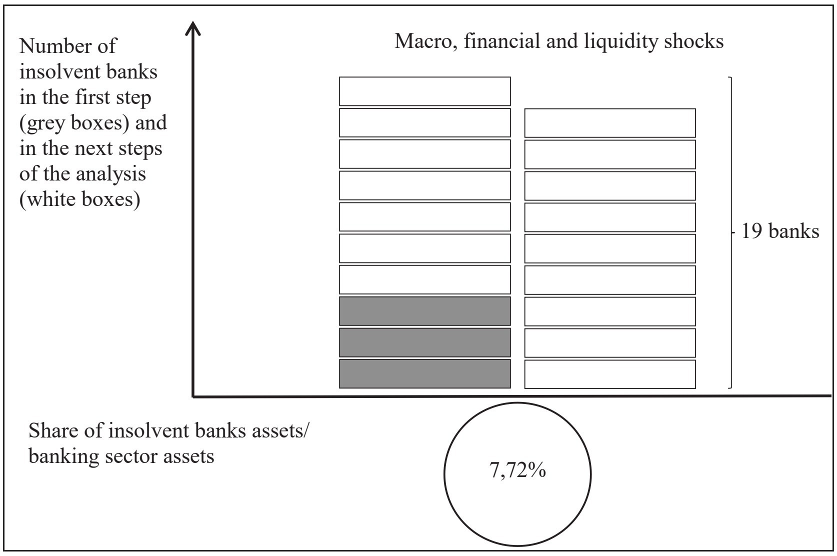


Figure 6. Moderate negative scenario: number of defaulted banks and their asset share in the 3rd quarter 2020

Source: Author's own computations

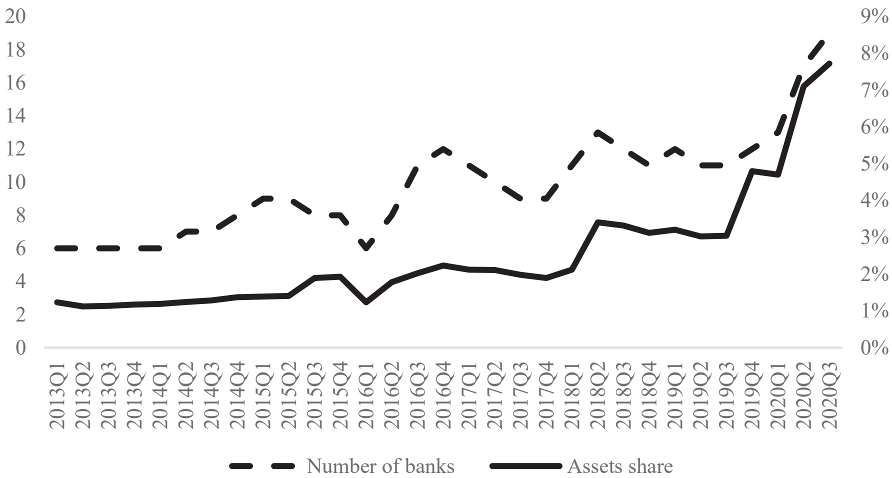


Figure 7. Moderate negative shock scenario: number of defaulted banks and their asset share, 2013-2020

Source: Author's own computations

Conclusions

Due to its traditional business model the Polish banking sector is generally immune to endogenous and exogenous sources of systemic risk. The relatively low value of interbank loans, balanced structure of assets (with extremely small share of structured instruments like ABS, MBS, etc.), adequate level of leverage and high liquidity are strong pillars of the Polish banking sector stability. However, the COVID-19 pandemic generated new sources of negative shocks originating mainly in the real economy. The 2020 "new normal" substantially increased domestic banks' insolvency risk.

The results of the analysis based on the systemic risk network model, using data up to the third quarter of 2020, allow us to conclude that, in the case where post-COVID19 is combined with:

- moderate real economy shock associated with financial and liquidity distress, 10 Polish banks would be insolvent (5,25% of the Polish banking sector's assets),
- severe real economy shock associated with financial and liquidity distress, 19 Polish banks would be insolvent (7,72% of the Polish banking sector's assets).

Generally, the COVID19 pandemic seems to be a catalyst of insolvency risk for institutions with poor credit risk management procedures (revealed before the pandemic). However, it is worth emphasizing once again that none of Poland's systemically important institutions is exposed to the risk of insolvency.

The dynamics of the recent economic and financial condition could also allow the authors to draw other conclusions. The empirical exercise described in this paper can be perceived as research in progress. The proposed framework can be used to cyclically assess systemic risk propagation in the Polish banking sector.

References

Acharya, V. V. (2009): A Theory of Systemic Risk and Design of Prudential Bank Regulation, Journal of Financial Stability vol. 5(3), pp. 224–255.

Acharya, V. V., L. H. Pedersen, T. Philippon and M. Richardson (2010): Measuring Systemic Risk, NYU Stern Working Papers.

Acharya, V. V., L. H. Pedersen, T. Philippon and M. Richardson (2017): Measuring Systemic Risk, Review of Financial Studies vol. 30(1), pp. 2–47.

Acharya, V. V., R. F. Engle and M. Richardson (2012): Capital Shortfall: A New Approach to Ranking and Regulating Systemic Risks, The American Economic Review vol. 102(3), pp.59–64.

Adrian, T. and M. K. Brunnermeier (2008): CoVaR., Federal Reserve Bank of New York Staff Reports 348.

Adrian, T. and M. K. Brunnermeier (2016): CoVaR, American Economic Review vol. 106(7), pp. 1705–1741.

Banulescu, G.-D. and E.-I. Dumitrescu (2015): Which are the SIFIs?: A Component Expected Shortfall Approach to Systemic Risk, Journal of Banking & Finance vol. 50, pp. 575–588.

Benoit, S., J.-E. Colliard, C. Hurlin and C. Pérignon (2017): Where the Risks Lie: A Survey on Systemic Risk, Review of Finance vol. 21(1), pp. 109–152.

Bluhm, M. and J. P. Krahnen (2014): Systemic Risk in an Interconnected Banking System with Endogenous Asset Markets, Journal of Financial Stability vol. 13, pp. 75–94.

Bongini, P., L. Nieri and M. Pelagatti (2015): The Importance of Being Systemically Important Financial Institutions, Journal of Banking & Finance vol. 50, pp. 562–574.

Brunnermeier, M. K., G. Dong and D. Palia (2012): Banks' Non-Interest Income and Systemic Risk, Paper presented at the AFA 2012 Chicago Meeting.

Caccioli, F., T. A. Catanach and J. D.Farmer (2012): Heterogeneity, Correlations and Financial Contagion, Advances in Complex Systems 15 Suppl. No. 2

Castro, C. and S. Ferrari (2014): Measuring and Testing for the Systemically Important Financial Institutions, Journal of Empirical Finance vol. 25, pp. 1–14.
Cerutti, E. S. Claessens and P. McGuirev (2012): Systemic Risks in Global Banking: What Can Available Data Tell Us and What More Data Are Needed?, BIS Working Papers No 376, pp. 1-22.
De Bandt, O. and P. Hartmann (2000): Systemic Risk: A Survey, ECB Working Paper No 35, pp. 12.
Financial Stability Board (2014): Structural Banking Reforms. Cross-border consistencies and global financial stability implications: Report to G20 Leaders for the November 2014 Summit.
Gravelle, T. and F. Li (2013): Measuring Systemic Importance of Financial Institutions: An Extreme Value Theory Approach, Journal of Banking & Finance vol. 37(7), pp. 2196–2209.
He, F. and X. Chen (2016): Credit Networks and Systemic Risk of Chinese Local Financing Platforms: Too Central or Too Big to Fail?, Physica A: Statistical Mechanics and Its Applications vol. 461, pp. 158–170.
Knot, K. H. W. and H. Van Voorden (2013): Systemically Important Banks – Possible Options for Policy Makers, in: A.Dombret and O.Lucius(eds.) Stability of the Financial System. Illusion or Feasible Concept?. Edward Elgar Publishing, Cheltenham, pp. 288–309.
Krause, A. and S. Giansante (2012): Interbank Lending and the Spread of Bank Failures: A Network Model of Systemic Risk, Journal of Economic Behavior & Organization vol. 83(3), pp. 583–608.
Laeven, L., L. Ratnovski and H. Tong (2014): Bank size and systemic risk, International Monetary Fund Staff Discussion Note 14/04
Laeven, L., L. Ratnovski and H. Tong (2016): Bank Size, Capital, and Systemic Risk: Some International Evidence, Journal of Banking & Finance 69 Suppl. 1, S25–S34.
López-Espinosa, G., A. Moreno, A. Rubia and L. Valderrama (2012): Short-Term Wholesale Funding and Systemic Risk: A Global CoVaR Approach, Journal of Banking & Finance vol. 36(12), pp. 3150–3162.
López-Espinosa, G., A. Rubia, L. Valderrama and M. Antón (2013): Good for One, Bad for All: Determinants of Individual versus Systemic Risk, Journal of Financial Stability vol. 9(3), pp. 287–299.
Smaga, P. (2013): Assessing Involvement of Central Banks in Financial Stability, Center for Financial Stability Policy Paper.
Tarashev, N., K. Tsatsaronis and C. Borio (2016): Risk Attribution Using the Shapley Value: Methodology and Policy Applications, Review of Finance vol. 20(3), pp. 1189–1213.
Vallascas, F. and K. Keasey (2012): Bank Resilience to Systemic Shocks and the Stability of Banking Systems: Small Is Beautiful, Journal of International Money and Finance vol. 31(6), pp. 1745–1776.
Vanhoose, D. D. (2011): Systemic risks and macroprudential bank regulation: A critical appraisal, Networks Financial Institute at Indiana State University Policy Brief 2011-PB-04
Vlahović, A. (2014): Challenges to the Implementation of a New Framework for Safeguarding Financial Stability, Journal of Central Banking Theory and Practice vol. 3(3), pp. 19–52.
Völz, M. and M. Wedow (2011): Market Discipline and Too-Big-To-Fail in the CDS Market: Does Banks' Size Reduce Market Discipline?, Journal of Empirical Finance vol. 18(2), pp. 195–210
Weiß, G. N. F. and J. Mühlnickel (2014): Why Do Some Insurers Become Systemically Relevant?, Journal of Financial Stability vol. 13, pp. 95–117.

Czy polskie banki są stabilne? Analiza ryzyka systemowego

Streszczenie

Kryzys finansowy 2007+ ujawnił braki w reakcji decydentów politycznych na ryzyko systemowe. Okazało się, że nie tylko upadki poszczególnych banków, ale także negatywne efekty zewnętrzne wśród podmiotów mogą spowodować poważne zagrożenie dla sektora finansowego. W ciągu ostatnich 10 lat podjęto wiele międzynarodowych i krajowych inicjatyw mających na celu wzmocnienie stabilności systemu finansowego, wprowadzając perspektywę makroostrożnościową do nadzoru finansowego. Jednak ostatnie pandemie COVID19 okazały się poważnym negatywnym szokiem dla wielu gospodarek i ich sektorów finansowych. W niniejszym artykule, wykorzystując model sieciowy, staramy się przeanalizować, w jaki sposób te nieoczekiwane wydarzenia wpłynęły na polski sektor bankowy z ryzykiem systemowym. W celu analizy stabilności polskich banków opracowaliśmy formalne ramy testów warunków skrajnych oparte na modelu sieciowym, które umożliwiły identyfikację, modelowanie i pomiar ryzyka systemowego. Staraliśmy się zintegrować analizę czasu i przekrojowego charakteru ryzyka systemowego.

Słowa kluczowe: stabilność finansowa, ryzyko systemowe, model sieci
Kody JEL: G21, G23, G32

Information about authors

Dr hab. Piotr Misztal, prof. UJK,
Jan Kochanowski University in Kielceul. Żeromskiego 5, 25-369 Kielce
e-mail: piotr.misztal@ujk.edu.pl
ORCID: 0000-0003-2609-3439

Dr hab. Marcin Łupiński, prof. UJK,
Uniwersytet Jana Kochanowskiego w Kielcach, Narodowy Bank Polski w Warszawie
e-mail: marcin.lipinski.edu.pl
ORCID: 0000-0002-8632-8087

Polityki Europejskie,
Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.7

Received: 20.05.2022
Accepted: 19.06.2022

Agnieszka Parlińska
Warsaw University of Life Sciences

E-LEARNING CHALLENGES IN POLAND DURING THE COVID-19 PANDEMIC

The main objective of the paper is to show the new challenges for education that arose in Poland from 2019-2021, and the use of e-learning methods. This new approach, and the purpose and added value of this study, is to enrich the knowledge of the use of new teaching and research methods gained during the Covid-19 pandemic and applicability to pandemics generally, as well as continued use of these methods afterwards..

To achieve the objective, the method of literature analysis and critique was used, as well as a ratio analysis based on historical data from Statistics Poland (GUS), EUROSTAT and the author's own first-hand observations as a university educator.

The research results helped to formulate several conclusions regarding the factors which influence effective e-learning, such as: internet access and quality; the availability of adequate software, hardware and other tools; and the digital competence of teachers and students. A short SWOT analyse is also presented to highlight key considerations that are crucial for the future of e-learning.

Key words: COVID-19, e-learning, distance learning, remote education
JEL code:A2, I2, P46

Introduction

Since March 2020, many things have changed because of the pandemic. There have been many challenges for individuals, institutions, and companies around the world. Teachers and students also had to adapt to the emerging changes in the way they communicate and work. Working at a university, teaching and researching, has provided a good opportunity to share first-hand experience. The situation caused by the virus brought the need to implement new ways of learning, communicating, and sharing knowledge and research results. Because of the lockdown it was necessary to work online throughout the entire academic year. Comparing both methods – traditional and online – illuminates both advantages and disadvantages.

As technology advances, the training and e-learning systems industry has expanded, and so has the terminology that functions within it. Many new words and concepts have appeared, the meanings of which either overlap or are simply not obvious. Some of them can be used interchangeably, others – less so. This paper, among other things, seeks to organize some of the basic terminology functioning in the e-learning industry, specifically the lexicon related to forms of remote learning.

Material and methodology of research

The main purpose of the paper is to show the need to work on new challenges for knowledge acquisition with the use of e-learning methods in education, as well as in research activities. The study was carried out on the example of solutions in Poland in the time frame 2019-2021.

The first part of the paper presents a literature overview. The author focuses on the definitions of e-learning and other similar terms, as well as fundamental perspectives of e-learning. In addition, the positive benefits and negative effects of e-learning and the factors that influence e-learning are discussed.

In the empirical section, the author's own analyses and assessments were made on the basis of data from Statistic Poland (GUS), EUROSTAT and personal observation.

Literature overview

The term e-learning was developed in the mid-1990s when the Internet began to gain momentum (Garrison, 2011), and the application of e-learning includes both computer-based and networked learning. Learning content can be delivered via the Internet, intranet, video/audio cassettes, CD-ROM, DVD, and television channels. Papanis (2005) stated that " e-learning provides faster learning at reduced cost, increased access to learning, and clear accountability for all participants in the learning process".

Wentling et al. (2000) pointed out that e-learning is the use of Internet technologies that can provide a wide range of solutions to enhance knowledge and productivity. It facilitates and enhances learning through and based on computer and communication technology. In addition, it can also support Wide Area Network (WAN) learning and can be considered as a flexible way of learning. At the same time, Papanis (2005) stated that e-learning components include content delivery in different formats, learning management, network community of learners and content creators and experts.

As technology advances, the training and e-learning systems industry has expanded, and so has the terminology that functions within it. Many terms have appeared, the meanings of which either overlap or are simply not obvious. Some of them can be used interchangeably, others – less so. It is helpful to organize the basic terminology functioning in the e-learning industry, specifically the lexicon related to forms of remote learning.

First, the differences between some terms related to e-learning should be distinguished. Digital learning (d-learning), which is the broadest term in meaning, is a tool which addresses a number of challenges that are faced by educational institutions, community leaders and policymakers, and it helps learners to connect from remote areas. Online learning as a form of distance learning can be described as teaching via the Internet using personal computers or portable wireless devices – smartphones, tablets, laptops (mobile learning/m-learning). M-learning is e-learning through mobile computational devices: Palms, Windows CE machines, even digital cell phones.

It should also be pointed out that there are four fundamental perspectives of e-learning that are delivered in higher educational institutions – see Figure 1. These basic perspectives of e-learning are interdependent and equally important when it comes to the possibility of using electronic devices as tools to run educational institutions.

When it comes to the factors influencing e-learning, researchers have pointed out: accessibility of Internet broadband, cost of mobile Internet, lack of formal implementation process, lack of interest of faculty, lack of ICT-enabled teachers and enabled students, power failure, lack of learning objects in local language, socio-cultural norms, lack of resources, practical arrangements for practical oriented courses, and literacy rate (Buabeng-Andoh, C. 2012; Vasilevska, D., et al. , 2017; Kumar Basak, S. et al., 2018; Tomczyk, Ł., Walker, C., 2021)

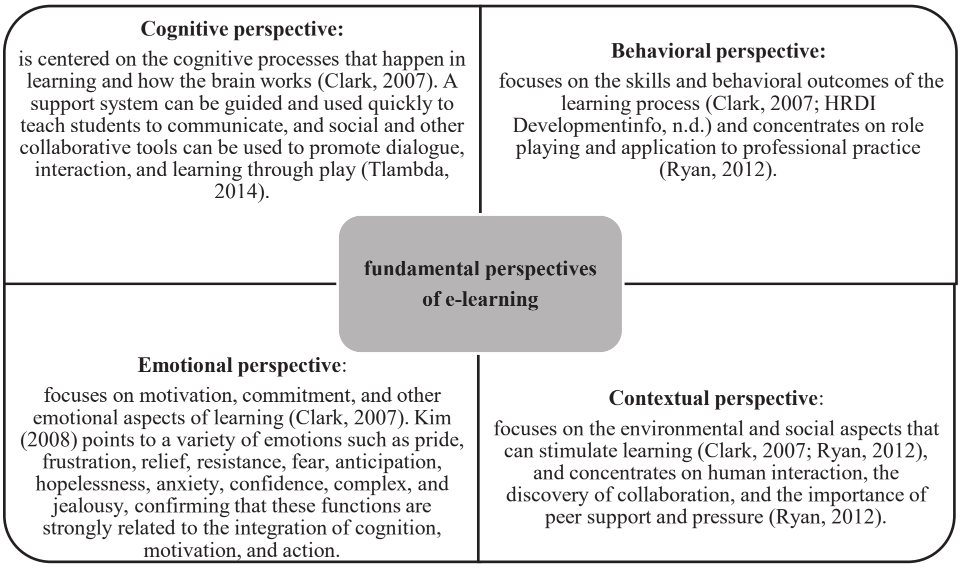


Figure 1. Fundamental perspectives of e-learning

Source: Kumar Basak, S. et al, 2018, p.197

Online education offers both positive benefits and negative effects. Within positive benefits students can:

- feel flexibile to attend classes and work at their own pace and time;
- not have to deal with commuting or parking issues;
- learn to take responsibility for their own education with information available at their fingertips;
- hand in assignments easily and comfortably;
- are more willing to express their own opinions, discuss with other students, and learn from other students during group discussions.

But at the same time some students can face negative effects of learning online:

- may miss the direct interaction with the instructor and between students;
- may prefer to attend a traditional class with an instructor who teaches and guides them through the course;
- find access to the necessary technology challenging and the availability of technical assistance is limited.

In addition, some administrators and instructors who do not understand the workload may display a negative attitude toward online education. (Encyclopedia)

Results of the survey

It is also worth paying special attention to a new form of performing work that emerged in Poland and all over the world in 2020, namely: remote work[1], which was closely related to the COVID-19 pandemic that was proclaimed in March 2020 and the subsequent so-called speculative acts adopted in a rapid pace.

Table 1. Percentage of people who usually and sometimes perform work duties from home 2019-2020 (%)

Specification	Usually working from home	Usually working from home because of COVID-19	Sometimes working from home	Sometimes working from home due to the COVID-19 pandemic
Q1 2019	4,8	.	9,9	.
Q2 2019	5,2	.	9,8	.
Q3 2019	4,4	.	9,6.	.
Q4 2019	4,3	.	9,9	.
Q1 2020	6,4	.	10,5	.
Q2 2020	13,1	9,5	8,4	5,1
Q3 2020	6,8	3,1	8,6	3,3
Q4 2020	9,7	6,3	9,5	5,2

Source: Author's own work based on data from GUS.

Many companies, as well as universities and schools, have done well technologically in terms of quickly transitioning to "home office" mode, although operating companies in the era of the COVID-19 pandemic has forced the use of new methods, previously unknown to the Polish legal order. Previously, the Labour Code allowed telework only in the form of tele-collaboration.

[1] The concept of remote work appeared in the Polish legal system for the first time with the entry into force of the Act of March 2, 2020 on special solutions related to the prevention and combating of COVID-19, other infectious diseases and crisis situations caused by them, i.e. . anti-crisis shield. Pursuant to Art. 3 sec. 1 of this normative act, in order to counteract COVID-19, the employer may instruct the employee to perform, for a specified period of time, work specified in the employment contract, outside the place of its permanent performance, i.e. remote work. Remote work may be recommended if the employee has the technical and local skills and capabilities to perform it and the type of work allows it. In particular, remote work may be performed with the use of means of direct remote communication or related to the performance of manufacturing parts or material services. The tools and materials needed to perform remote work and its logistic service are provided by the employer. When performing remote work, an employee may use tools or materials not provided by the employer, provided that it allows for the respect and protection of confidential information and other legally protected secrets, including business secrets or personal data, as well as information the disclosure of which could expose the employer to damage. At the employer's request, an employee performing remote work is required to keep records of performed activities, taking into account, in particular, their description, as well as the date and time of their performance. It should be noted here that the concept of remote work should not be confused with teleworking, as defined in the Act of June 26, 1974, Labor Code. Teleworking is regulated in Art. 675–6717 of the Labor Code, defining it as work performed regularly outside the workplace, with the use of electronic communication means within the meaning of the provisions on the provision of electronic services. In practice, remote work is also most often carried out using means of direct remote communication, which makes it similar to telework.

In comparison with European countries, Poland was characterized by a slightly lower than average value in the EU-27 countries percentage of people sometimes or usually working from home. In 2019, the highest percentage of employees sometimes or usually working remotely was in Sweden, the Netherlands, Luxembourg and Finland, while the lowest was in Romania, Bulgaria and Cyprus. In Poland (14.3% in 2019 and 18.1% in 2020) it was slightly below the EU27 average of 20.6% at that time. It can therefore be concluded that the degree of use of remote working in Poland is not the highest, and in the COVID-19 pandemic the process of transition to remote working was more dynamic in other countries than in Poland. (EUROSTAT)

It is also important to note that in 2019, the percentage of home-based workers in total workers was lower, indicating changes in the Polish labour market under pandemic conditions (Table 1).

During remote work as well as remote education, access to a good quality internet connection is a key element. In 2021, 92.4% of households had Internet access, an increase of 2.0 percentage points from the previous year and 5 percentage points from 2019. Year-over-year, the share of households with Internet access via mobile broadband increased by 5.3 percentage points and via fixed-line broadband by 1.1 percentage points. Both Internet access and the type of Internet connections owned varied by household type, class of residence, and degree of urbanization. Households with children were more likely to have Internet access than those without. Taking into account the class of place of residence, the percentage of households with the Internet was higher in large cities than in smaller towns and in rural areas, and taking into account the degree of urbanization – it was highest in highly urbanized areas (Figure 2).

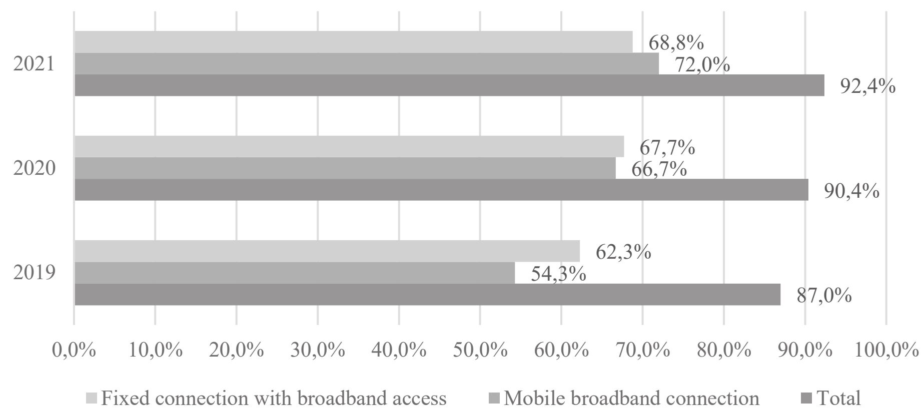


Figure 2. Type of Internet connections in households 2019-2021 (%)
Source: Author's own work based on data form GUS.

In March and April 2020, an Independent Student Association (ISA 2020) tried to diagnose students' situations in the initial period of distance learning. More than 3,400 students from 100 different universities in Poland took part in a survey conducted by the ISA. Among the survey respondents, as many as 53% indicated that they had encountered a situation in which the teacher did not conduct classes remotely in any way, while in the case of 24%, this situation was valid more than once. When asked how the remote lectures were held, 68% of respondents indicated the answer "by mail," and 63% said they were carried out on "platforms such as MS Teams, Skype, or Discord".

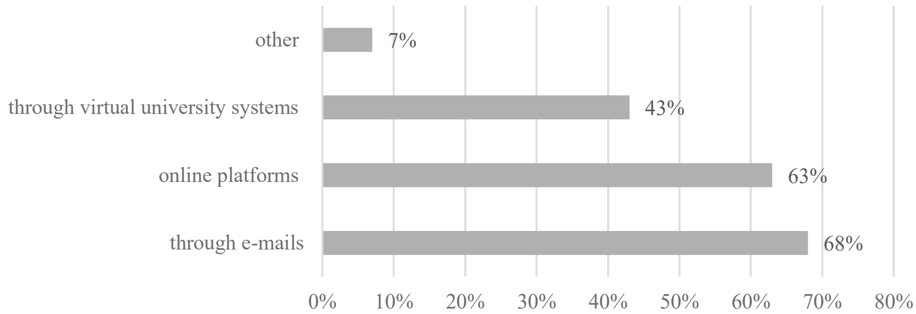


Figure 3. How the classes were held at the respondents' university (%)
Source: ISA 2020

Many teachers used several methods of remote working. This was primarily because of the different ways that different tools and methods are better suited for various purposes that are important in remote learning.

Table 2. Tools used during e-larning.

To teach	To keep in touch	To homework	To evaluate and examine	To show content in an attractive form	Other
Cisco Webex Discord Google Classroom Google meets Live Streaming Facebook Microsoft Teams Skype WhatsApp Zoom	USOS, e-hms Messenger Moodle Skype	USOS, e-hms Google Classroom Messenger Microsoft Teams Moodle WhatsApp	Microsoft Teams Moodle	Canva Google Maps Mentimeter Microsoft Excel Microsoft PowerPoint Microsoft Sway	Bitable CodeOrg ETwinning Kodable

Source: Based on the author's own observations.

Generally, tools used during remote learning (Table 2) can be divided into:

- those used for online lessons;
- for ongoing contact with students;
- for uploading homework;
- for assessments and tests;
- for adding variety to lessons, interesting presentation of material, transfer of material.

Summary and conclusions

Based on the undertaken research, the following conclusions were formulated:

1. Most of the teachers use several methods of e-learning. This is dependant on:
- the level of knowledge of the available tools,
- the ability to quickly learn to use the available tools,
- the fact that different ways/tools for e-learning are better suited for the purposes of remote learning, and
- what was available/advised by the University/School
2. Advantages and disadvantages in e-learning were already pointed out. However, the pandemic period also highlighted:
- at the start of rapid implementation of e-learning, students reported a problem of too many different communication tools – e.g., each subject used a different platform. This was solved by guidelines and training organized by universities/schools.
- a significant increase in time-consuming preparation and prediction of classes/ homework/ tests and in addition monitoring and checking the work – especially at the time of transition to remote working, but also later during the implementation of new solutions adopted by the departments.
3. Low digital competences of teachers but also gaps in digital competencies of students. However an increase of digital competence could also be observed:
- some students are proficient in social media and instant messaging and cannot answer an email, follow a link, send an attachment, or use Office tools.
- When pointing out this problem, it is worth remembering that it is often viewed as necessary to learn most of the above skills in computer science classes. The transition to distance learning has motivated many teachers to improve their skills in this area. Some did it on their own or with the help of colleagues. However, support from universities through training organizations was important.
4. Important role of institutional conditions in creating student-friendly e-learning environments:
- implementation of necessary equipment and tools.
- providing workshops for improving skills,
- provision of helpdesk.
5. Problems at students' homes:
- they are proficient in social media and instant messaging and cannot answer an email, follow a link, send an attachment, or use Office tools.
- when pointing out this problem, it is worth remembering that they should learn most of the above skills in computer science classes.

In conclusion, it is important to point out that the future of e-learning is connected with analyses of the challenges and opportunities associated with remote education as well the strengths and weaknesses. Therefore, SWOT analysis is helpful.

Strengths	Weaknesses
• More flexibility when it comes to participating in classes and better access to education, regardless of where one is; • Gaining experience that allows not only to continue teaching in the pandemic era but also to re-think the approach to remote education tools in the long term; • Accelerating the digitization of university	• Requiring more work and more time consuming (both teaching and learning) while at the same time maintaining the existing requirements; • Significant role of technical aspects in didactics; • Difficulties in adapting some classes to remote teaching, e.g., the discipline's specificity or the group's size
Opportunities	**Threats (Challenges)**
• The possibility of making the study process more flexible; • A chance to create better learning conditions for students with disabilities • Motivation to develop and implement technological solutions that improve distance learning; • Dissemination of the digital competences among both students and teachers and providing the basis for their future development	• Preventing exclusion due to the necessity to have the appropriate equipment and learning conditions; • Keeping students motivated; • Adjusting of regulatory and institutional requirements to the challenges of distance learning; • Unknown long-term psychological and didactic effects of 100% remote learning - the need to monitor it closely.

Sources: Remote Learning. Taming the (Un)known Impact of COVID-19 on higher education https://www.delab.uw.edu.pl/wp-content/uploads/2021/01/ENG-Report_Remote-Learning-Taming-the-Unknown-Impact-of-COVID-19-on-higher-education.pdf (01.02.2022)

References

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. International Journal of Education and Development using ICT, 8(1).

Clark, JD (2007) Learning and Teaching in the Mobile Learning Environment of the Twenty-First Century. Austin, Texas: Austin Community College.

Digital learning 2020: A policy report for Kentucky's digital future. Prepared in Partnership with OpenEdSolution. Retrieved from https://education.ky.gov/districts/tech/Documents/Digital%20Learning%202020%20-%20A%20Policy%20Report.pdf (10.12.2021)

Encyclpedia: https://www.encyclopedia.com/finance/finance-and-accounting-magazines/online-education

Garrison, DR, Kanuka, H (2004) Blended learning: Uncovering its transformative potential in higher education. The Internet and Higher Education 7(2): 95–105.

GUS, (2021a) Wybrane aspekty rynku pracy w Polsce. Aktywność ekonomiczna ludności przed i w czasie pandemii COVID-19, GUS, Recived from https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5818/11/1/1/wybrane_aspekty_rynku_pracy_w_polsce_aktywnosc_ekonomiczna_ludnosci_przed_i_w_czasie_pandemii_covid-19.pdf (12.02.2022)

GUS (2021b) Społeczeństwo informacyjne w Polsce w 2021 roku, GUS Recived from: https://stat.gov.pl/obszary-tematyczne/nauka-i-technika-spoleczenstwo-informacyjne/spoleczenstwo-informacyjne/spoleczenstwo-informacyjne-w-polsce-w-2021-roku,1,15.html (01.02.2022)

HRDI Developmentinfo (n.d.) Developing content for E-learning. Retrieved from https://hrdevelopmentinfo.com/developing-content-for-e-learning/ (01.02.2022)

Kim, M. (2008). Processes of emotional experiences in online discussions: Emotional changes through interacting with other students. The Korean Journal of Educational Psychology, 22(4), 697-722.

Kumar Basak, S., Wotto, M., & Belanger, P. (2018). E-learning, M-learning and D-learning: Conceptual definition and comparative analysis. E-learning and Digital Media, 15(4), 191-216.
Papanis, E (2005) Traditional Teaching versus e-learning. Experimental Approach, Statistical Review 1(1): 19–35
Remote Learning. Taming the (Un)known Impact of COVID-19 on higher education https://www.delab.uw.edu.pl/wp-content/uploads/2021/01/ENG-Report_Remote-Learning-Taming-the-Unknown-Impact-of-COVID-19-on-higher-education.pdf (01.02.2022)
The Act of March 2, 2020 on special solutions related to the prevention, prevention and combating of COVID-19.
The Act of June 26, 1974, Labor Code.
Tomczyk, Ł., Walker, C. (2021) The emergency (crisis) e-learning as a challenge for teachers in Poland. Educ Inf Technol 26, 6847–6877. https://doi.org/10.1007/s10639-021-10539-7.
Trinder, J (2005) Mobile technologies and systems. Mobile learning: A handbook for educators and trainers. In: Kuklska-Hulme, A (ed.) Mobile Learning: A Handbook for Educators and Trainers. USA: Taylor & Francis, 7–24.
Tlambda, S. (2014). E-learning pedagogy part 2: The cognitive perspective. Viitattu, 26, 2019.
Vasilevska, D., Rivza, B., Pivac, T., Alekneviciene, V., & Parlinska, A. (2017). Analysis of the Demand for Distance Education at Eastern and Central European Higher Education Institutions. Journal of Teacher Education for Sustainability, 19(1), 106-116.
Wentling, T. L., Waight, C., Gallaher, J., La Fleur, J., Wang, C., & Kanfer, A. (2000). E-learning: A review of literature. Knowledge and Learning Systems Group NCSA, 9(1), 73.

Wyzwania e-learningu w czasie pandemii w Polsce

Streszczenie

Głównym celem pracy było ukazanie konieczności podjęcia nowych wyzwań w edukacji z wykorzystaniem metod e-learningowych w Polsce w latach 2019-2021. Nowym podejściem oraz celem i wartością dodaną opracowania było wzbogacenie wiedzy na temat wykorzystania nowych metod dydaktycznych i badawczych w sytuacji pandemii, ale także po niej.

Do realizacji celu wykorzystano metodę analizy i krytyki literatury, a także analizę wskaźnikową opartą na danych historycznych z GUS, EUROSTATU i obserwacji własnej.

Przeprowadzone badania pozwoliły na sformułowanie kilku wniosków związanych z czynnikami wpływającymi na e-learning, takimi jak dostęp do Internetu, stosowane narzędzia oraz kompetencje cyfrowe nauczycieli i uczniów. Przedstawiono również krótką analizę SWOT, co jest kluczowe dla przyszłości e-learningu.

Słowa kluczowe: COVID-19, e-learning, nauczanie na odległość, edukacja zdalna
JEL Kody: A2, I2; P46

<u>Information about the author:</u>

Dr Agieszka Parlińska
Warsaw University of Life Sciences
ul. Nowoursynowska 166; 02-787 Warszawa
e-mail: agnieszka_parlinska@sggw.edu.pl
ORCID: 0000-0001-6640-3097

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.8

Received: 15.05.2022
Accepted: 15.06.2022

Marian Podstawka
Warsaw University of Life Sciences

INFLATION AND PRODUCTION COSTS OF SELECTED AGRICULTURAL PRODUCTS IN POLAND IN 2022

The aim of the paper is to present measures taken in recent years by state public authorities that affect inflation in Poland. An assessment was made of the growth in prices for purchased agricultural inputs, which was correlated with cost structures, and on this basis an increase in the production costs of basic agricultural products in 2022 was estimated. This projected increase in production costs was then related to estimated income. This made it possible to determine their growth, which would allow the current level of agricultural income to be maintained. The government rescue measures triggered by COVID-19 had three main sources of funding: expenditure of the state budget and the budget of European funds - PLN 23.2 billion, COVID-19 Counteracting Fund - PLN 92.7 billion, and financial shields of the Polish Development Fund - PLN 63.5 billion,

While the government's intervention activities, under the conditions of the crisis, should be assessed positively, their methods of implementation should be assessed critically. Financial support under the shields was given to companies that showed a decline in turnover caused by the coronavirus pandemic. As a result, those companies that may have deliberately created the conditions to receive support were supported. In all analyzed types of agricultural crop production activities in 2022, there will be an increase in the cost of their production by about 50-60%. The exception will be the production of rye, where the cost increase will be even higher.

Keywords:. agricultural production, inflation, price, forecast
JEL codes: Q11, Q14

Introduction

The economic and productive effects of agricultural production depend on: the manager, weather phenomena, climate, soil quality, and market conditions. The latter are related to the prices producers receive for their products and the prices of purchased inputs (in other words, the so-called price scissors). The price scissors, on the other hand, are influenced by inflation, which manifests itself in price increases. The increase in prices of agricultural products and purchased means of agricultural production has the effect of disturbing the previously existing market equilibrium. However, this disruption of the previous market equilibrium may be caused by a decrease in supply with the same demand or a decrease in supply with an increase in demand. In the last three years (2020-2022) due to the crisis phenomena (COVID-19, war in Ukraine) there is a reduction in supply of goods and services – which is a natural situation under crisis conditions – and an increase in demand caused by the intervention of state public authorities[1].

The aim of the paper is to present actions taken in recent years by state public authorities which have influenced inflation in Poland. Then, against this background, an assessment was made of an increase in prices for purchased means of agricultural production, which was confronted with a cost structure, and on this basis an increase in production costs of basic agricultural products in 2022 was estimated. In turn, the estimated increase in production costs of selected agricultural products was related to income, which made it possible to calculate their increase, which would make it possible to maintain the current level of income realized from these activities.

The study formulated the following research hypothesis:

If in 2022 the revenues from the production of winter wheat, rye, spring barley, sugar beets, winter rape, dairy cows, beef livestock and pork livestock are the same as in 2021, the increase in their production costs will result in a decrease in the income of agricultural producers. In the study, the literature on public finance, economic and agricultural literature, data of mass statistics and data of FADN farms conducting agricultural accounting for the European Union were used. To achieve the objectives and to verify the hypothesis the following methods were used: descriptive analysis, financial analysis, simulation and inference.

Actions of the state public finance authorities in the conditions of crisis

The coronavirus pandemic crisis necessitated additional, unplanned public spending. This was an objective circumstance and was the result of interventionist theory. Interventionist financial theory allows for the possibility of stabilizing the economy through increased public spending financed by public debt[2]. Increased public spending contributes to increased demand, which with reduced supply in a crisis leads to higher prices. The government bailout in 2020 triggered by COVID-19 had three main sources of financing[3]:

- expenditure of the state budget and the budget of European funds - PLN 23.2 billion,
- COVID-19 Counteracting Fund - 92.7 billion,
- financial shields of the Polish Development Fund - PLN 63.5 billion

The shields were financed with bonds issued by the Polish Development Fund. Out of the PLN 61 billion in aid for enterprises, micro-enterprises received PLN 29 billion, while small and medium-sized enterprises received PLN 42 billion[4]. According to Stanisław Owsiak, "at this stage it is difficult to explicitly assess the effects of the discussed programs. They were introduced in extremely difficult conditions, ... however, the rescue activities undertaken by the state were undoubtedly necessary"[5]. It seems that

[1] St. Owsiak, *Finanse Publiczne. Współczesne ujęcie*, PWN, Warszawa, 2017, s. 76, 77
[2] St. Owsiak, *Ibidem*, p. 87-94
[3] M. Zioło (red.), *Finanse publiczne*, CIMPO, Warszawa, 2021, [w:] B. Guziewska, *Wybrane problemy strukturalne i instytucjonalne finansów publicznych w warunkach kryzysu wywołanego COVID-19: refleksje nad ewolucją paradygmatu*, p. 46
[4] M. Zioło (red.), *Finanse publiczne*, [w:] St. Owsiak, *Oracjonalne wykorzystanie finansów publicznych w warunkach kryzysu*, p. 28
[5] *Ibidem*, p. 28

the actions of the state can be assessed as necessary, although the manner of their implementation should be subject to a critical evaluation. It is worth recalling that financial support under the shields was given to companies that showed a decline in turnover caused by the COVID-19 pandemic. In effect, support was given to those companies that may have deliberately created conditions for receiving support by taking advantage of an actual or hypothetical decline in turnover.

It is arguable that a better solution would have been support based on lowering the tax burden for companies. Then, all companies would benefit from this financial support, including those that did well during the crisis. In this situation, companies that prospered in crisis conditions, which required a lot of effort from them, were ignored by the state aid. Hence, the conclusion is that it is not worth striving for revenue optimization. It is more profitable to show weakness – whether for objective or subjective reasons – and receive support.

Returning to the proposal of lowering taxes for companies in the crisis, it is possible guess why it was not used. Tax relief for companies would have resulted in increased shortages in the state budget, and this would not have been in line with the strategy pursued by those in power. The current strategy of public finance management is based on the debudgetization of public finances, which is based on the growth of extra-budgetary economy units. According to Stanislaw Owsiak, from 2010 to 2020 there has been an alarming increase in the number of agencies and state legal entities and funds from 24 to 40[6] . Additionally, as a result of the social policy pursued by the government, there has been an increase in the money supply from PLN 1.553 billion in 2019 to PLN 1.866 billion in mid-2021[7] . While in 2019 the benefits to individuals, across the public finance sector, amounted to PLN 399.6 billion, in 2020 they increased to PLN 461.1 billion[8] .

It is worth referring to the Family 500+ program. This was a planned tool to stimulate population growth, but also contributed to the redistribution of national income. The basic goal of the aforementioned program, based on the potential increase in family fertility, was not achieved. Social transfers, on the other hand, brought positive changes in the sphere of income inequality. In 2011, the Gini coefficient was 31.1%, while in 2019 its value was equal to 28.5%, which is a favorable result compared to other European Union countries, as the average value of this indicator in the period 2011-2019 was 30.5%[9] . The Family 500+ program, in addition to its positive effects, has a serious drawback, which is the lack of application of income criterion. The assumption was made that every child – regardless of family wealth – should receive support from the government. This does not seem to have any economic justification.

At the end of these considerations, it is worth pointing out the size of property expenditures implemented from public finances. In 2019, these expenditures amounted to PLN 28.5 billion, of which the government subsector spent PLN 27 billion[10]. These measures in the structure of all expenditures of the entire public finance sector accounted for slightly more than 3%. In 2020, property expenditures totaled PLN 113.9 billion, which accounted for more than 10% in the structure of expenditures of the entire public finance

[6] *Ibidem*, p. 25
[7] *Ibidem*, p. 28
[8] *Ibidem*, p. 45
[9] *Ibidem,* p. 24
[10] *Sprawozdania z wykonania budżetu za 2019 rok*, Rada Ministrów, Warszawa, 2020, p. 333

sector[11], which should be evaluated positively if among them there were no expenditures for the purchase of bonds. The analysis of recent years allows us to observe a small share of property expenditures in the structure of public finances, which translates into a lack of sustainable basis for economic growth in the future.

In summary, since the second quarter of 2020, so since the start of the coronavirus pandemic, changes in the area of public finance include:

- an amendment to the Law on Public Finance, which resulted in the suspension of the provisions on the expenditure rule and changed the public debt limits,
- amending the 2022 budget to increase spending and the budget deficit,
- the creation of new special purpose funds from 29 to 37 and thus an increase in the scope of extra-budgetary economy. In 2020, the costs of the funds amounted to 377.6 billion zlotys and the state budget expenditures amounted to 504.8 billion zlotys, which accounted for about 75% of budget expenditures[12],
- no significant impact on the state budget as a result of COVID-19, as a result of the debudgetization of public finances,
- increased public spending and increased public debt that are beyond parliamentary and public control,
- an increase in inflation, which has its source not only abroad, but also in Poland.

Forecasted increase in production costs of selected agricultural products and forecasted income situation of Polish agricultural producers in 2022

Using data from FADN farms, the cost structure was assessed for basic agricultural, plant and animal products such as:

- winter wheat,
- rye,
- sugar beets,
- spring barley,
- winter rapeseed,
- dairy cows,
- beef livestock,
- pork livestock.

Then, on the basis of observations and statistical analyses of CSO No. 12 of 2021, the price level of basic agricultural inputs in 2022 was estimated. On the basis of this information, the development of production costs (their increase) in 2022 relative to 2021 was calculated. The so-called integrated index of forecasted costs (ZWPK for short) was calculated. Then different situations were assumed concerning the development of revenues from the analyzed activities in 2022. On the basis of these simulations, a forecast assessment of the economic situation of agricultural producers in 2022 was made.

---

[11] *Ibidem*, p. 333

[12] M. Zioło (red.), *Finanse publiczne*, [w:] St. Owsiak, *Oracjonalne wykorzystanie finansów publicznych w warunkach kryzysu*, p. 25

The data presented in Table 1 show that direct costs (i.e. those which can be precisely assigned to a given activity) constitute about 40% of total costs. Their share is slightly higher in the production of sugar beets and winter rape.

Table 1. Crop production cost structure in 2021 per ha

Specification	On average, farms growing:				
	winter wheat	rye	spring barley	sugar beets	winter rape
Total costs [%]	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
total direct costs:	**40,5**	**39,9**	**39,3**	**44,8**	**45,0**
seed	6,6	6,2	9,2	11,5	6,0
total mineral fertilizers	21,9	26,6	23,6	18,6	24,4
foreign organic fertilizers	0,0	0,2	0,0	0,0	0,6
crop protection products	10,4	6,5	6,6	14,6	12,5
growth regulators	1,0	0,4	0,4	0,0	0,7
other	0,0	0,0	0,0	0,1	0,8
total indirect costs	**59,5**	**60,1**	**60,7**	**55,2**	**55,0**
electricity	1,8	3,2	2,6	1,5	2,0
coal	1,0	0,0	1,0	0,6	1,0
propellant fuels	26,8	28,9	25,4	21,0	24,6
repairs, maintenance and inspections	12,1	12,5	11,9	9,5	10,9
services	12,2	9,0	13,9	17,2	10,8
insurances	2,9	3,1	2,9	2,3	2,6
other	3,3	3,5	3,7	3,1	3,1

Source: M. Podstawka (red.), Ocena sytuacji ekonomiczno-produkcyjnej rolnictwa i gospodarki żywnościowej w latach 2015-2020, IERIGŻ, Warszawa, 2021.

Table 2. Cost structure of livestock production in 2021

Specification	On average in farms		
	keeping dairy cows (per cow)	producing beef livestock (per 100 kg of gross livestock)	producing pork livestock (per 100 kg of gross livestock)
Total costs [%]	**100,0**	**100,0**	**100,0**
total direct costs	**50,1**	**61,3**	**80,8**
herd exchange	7,5	44,6	50,0
feed from outside the farm	23,5	5,7	18,3
own fodder	9,2	8,0	11,1
non-commodity own feedingstuffs	3,8	2,0	0,0
other	6,0	1,1	1,1
total indirect costs	**49,9**	**38,7**	**19,2**
electricity	3,5	2,1	1,8
coal	0,1	0,1	0,0
propellant fuels	16,4	14,3	6,5
repairs, maintenance and inspections	13,8	8,2	4,8
services	10,5	8,9	4,1
insurances	1,7	1,9	1,0
other	4,0	3,1	1,3

Source: M. Podstawka (red.), Ocena sytuacji ekonomiczno-produkcyjnej rolnictwa i gospodarki żywnościowej w latach 2015-2020, IERIGŻ, Warszawa, 2021

The respective shares of these costs in the generation of these costs amounted to 44.8% and 45% in 2021.On the other hand, indirect costs (i.e. those that cannot be attributed to an activity) amounted to about 60% of total costs. A slightly smaller share of these costs occurs in the production of sugar beets and winter rape. Their share in 2021 was 55.2% and 55%, respectively.

Table 2 shows the total cost structure of selected agricultural animal products. These costs are shown per cow, 100 kg of beef livestock and 100 kg of pork livestock. From the data in Table 2, it can be seen that in the case of keeping one cow on a FADN farm, the share of direct costs and indirect costs in the total cost structure is 50% each. In hog livestock production, the share of direct costs is much higher and was more than 80% in 2021. Indirect costs in this production accounted for about 20%. In the case of production of 100 kg of beef livestock, direct costs in 2021 in FADN farms were more than 61%, while indirect costs in this production were about 39%. According to the methodological assumptions indicated earlier, the price indices of agricultural inputs in 2010, 2020, 2021 and their forecast for 2022 are presented in Table 3.

Table 3: Price indices for agricultural inputs

Specification	Previous year = 100			
	2010	**2020**	**2021**	**2022***
Seed	102,9	102,5	106,2	118,7
Mineral fertilizers	89,4	97,5	171,0	290,4
Plant protection products	100,8	102,0	104,9	137,5
Fodders	100,4	101,4	116,5	141,0
Agricultural machinery and tools	101,4	103,8	113,2	120,0
Fuels	108,8	93,5	128,3	143,4
Lubricants, electricity	108,8	93,5	128,3	143,4
Machine operation of agricultural production	103,5	103,8	113,2	126,6
Veterinary services	101,7	103,1	104,8	126,6

* - forecast

Source: Statistical analysis of GUS (the Central Statistical Office) 12/2021

The data of Table 3 indicate a significant increase in the price of agricultural inputs in 2022. This is the result of economic, social and fiscal policies of the government and the international situation related to COVID-19 and the war in Ukraine. The prices of mineral fertilizers, energy, feed and plant protection products will increase to the greatest extent in 2022. The collected data in Tables 1, 2 and 3 allowed to estimate the increase in production costs of selected inputs of selected agricultural, plant and animal products.

For 1ha of winter wheat, production costs in 2022 will increase by 57.5% compared to 2021, as the following calculation shows:

- ZWPK = 1,19 x 0,07 + 2,9 x 0,22 + 1,38 x 0,1 + 1,43 x 0,02 + 1,43 x 0,27 + 1,26 x 0,24
- ZWPK = 0,083 + 0,638 + 0,138 + 0,028 + 0,386 + 0,302
- ZWPK = 1,575

For 1 ha of rye, production costs in 202 will be 105% higher than in 2021, as determined below:

- ZWPK = 1,19 x 0,06 + 2,9 x 0,27 + 1,38 x 0,06 + 1,43 x 0,03 + 1,43 x 0,29 + 1,26 x 0,22
- ZWPK = 0,071 + 0,783 + 0,083 + 0,429 + 0,415 + 0,277
- ZWPK = 2,058

The production cost of 1ha of spring barley in 2022 will increase by 55.4% compared to its production cost in 2012, as shown in the calculations below:

- ZWPK = 1,19 x 0,09 + 2,9 x 0,24 + 1,38 x 0,07 + 1,43 x 0,02 + 1,43 x 0,21 + 1,26 x 0,26
- ZWPK = 0,107 + 0,696 + 0,096 + 0,028 + 0,3 + 0,327
- ZWPK = 1,554

For the production of 1ha of sugar beets, their acquisition cost in 2022 will increase by 51.5% in relation to the production cost in 2021. This is the result of the calculation below:

- ZWPK = 1,19 x 0,11 + 2,9 x 0,18 + 1,38 x 0,15 + 1,43 x 0,02 + 1,43 x 0,21 + 1,26 x 0,26
- ZWPK = 0,131 + 0,522 + 0,207 + 0,28 + 0,3 + 0,327
- ZWPK = 1,515

As for the increase in the cost of production of 1ha of winter rapeseed, the cost of its production in 2022 will increase by 61% compared to the previous year, which is the result of the following calculation:

- ZWPK = 1,19 x 0,06 + 2,9 x 0,24 + 1,38 x 0,13 + 1,43 x 0,02 + 1,43 x 0,25 + 1,26 x 0,22
- ZWPK = 0,071 + 0,696 + 0,179 + 0,029 + 0,358 + 0,277
- ZWPK = 1,608

The cost of keeping one dairy cow in 2022 will be 23% more than the 2021 cost. This is shown in the calculation below:

- ZWPK = 1,20 x 0,08 + 1,41 x 0,24 + 1,43 x 0,04 + 1,43 x 0,17 + 1,26 x 0,14 + 1,26 x 0,11 + 1,41 x 0,13
- ZWPK = 0,096 + 0,338 + 0,057 + 0,243 + 0,176 + 0,139 + 0,183
- ZWPK = 1,232

In terms of the cost of producing 100 kg of beef livestock, there will be a 20% increase in 2022 over its 2021 cost. This is evident from the calculation below:

- ZWPK = 1,20 x 0,45 + 1,41 x 0,14 + 1,43 x 0,02 + 1,43 x 0,14 + 1,29 x 0,19
- ZWPK = 0,54 + 0,197 + 0,029 + 0,2 + 0,239
- ZWPK = 1,205

The cost of producing 100 kg of pork livestock will increase by 37% compared to the cost of obtaining it in 2021 as a result of this calculation:

- ZWPK = 1,2 x 0,5 + 1,41 x 0,2 + 1,43 x 0,02 + 1,43 x 0,06 + 1,26 x 0,09
- ZWPK = 0,6 + 0,282 + 0,289 + 0,086 + 0,113
- ZWPK = 1,370

The presented simulations show that definitely worse production cost conditions will exist in 2022 for plant products, especially for rye, which is produced on poor quality arable land and requires a large amount of mineral fertilizer, the prices of which increased the most in 2022. A relatively smaller increase in production costs is predicted in 2022 for animal products.

In this part of the paper, the research hypothesis was verified. It was confirmed on the basis of simulation and inference. The FADN farm accounting results show that in crop production, production costs account for about 65 % of the operating income[13] . In view of this, a projected increase of about 50% in the cost of production of primary crop products in 2022 will, assuming that their revenue is the same as in 2021, result in a drastic reduction in income, as shown below:

- P – K = D
- 100 – 65 = 35 in 2021
- 100 – 98 = 2 in 2022

Where:

- P – Revenue,
- K – Costs,
- D – Income,

It should be assumed that, under crisis conditions, revenue from agricultural activity will also increase in 2022. Another simulation shows by how much the revenue from crop production should increase in 2022 in order to maintain the revenue level of 2021 with a 50% increase in costs.

- P – K = D
- 100 – 65 = 35 in 2021
- 133 – 98 = 35 in 2022

Thus, crop production revenues in 2022 should increase by 33% to maintain 2021 revenue levels. In the case of livestock production, costs versus revenues vary. The simulation will be done only for pork livestock production. Based on FADN farms, costs relative to income were about 70%[14] , and will be 37% higher in 2022. Thus, to maintain the 2021 income level from this production, income should increase by 26% according to this simulation.

Conclusions

1. The COVID-19 crisis necessitated additional, previously unplanned public spending.
2. The government bailout in Poland had three main sources of funding:
    a. state budget - PLN 22.3 billion,
    b. COVID-19 Counteracting Fund - PLN 92.7 billion,
    c. financial shields of the Polish Development Fund - PLN 63.5 billion,

[13] Table compilation IERIGŻ-PIB ZFZR 2022.04.24
[14] *Ibid*

3. Financial support was given to companies that showed a decrease in turnover, which should be evaluated critically. It would be more rational to support companies with tax relief. Then, those companies which did well during the crisis would also benefit from this aid.
4. Increased public spending due to the coronavirus pandemic and the government's social policies, combined with a reduced supply of goods and services, contributed to price increases (inflation).
5. In all analyzed types of crop production in 2022 the cost of their production will increase by about 50-60%, except for rye production where the cost increase will be even higher. It will amount to 105% compared to the previous year.
6. Regarding the analyzed livestock production, the increase in production costs ranges from 20.5% for beef livestock to 30.7% for pork livestock. Keeping one cow in 2022 will combine with an increase of 23%.
7. Assuming that revenues in 2022 will be the same as in 2021, the increase in production costs will reduce the income of agricultural producers. This will particularly affect crop-only farmers.
8. When we assume that on average in crop production, costs to income are about 65%, then to maintain the current level of income from this production, with an increase in costs of about 50/60%, income should increase by about 33%. This will probably be impossible.
9. There will likely be a reduction in revenue due to a greater decline in crop yields than an increase in crop prices, creating a dramatic situation in terms of income levels for agricultural producers in 2022.
10. In the case of hog livestock production, to maintain the current 2021 revenue levels with a 37% increase in production costs in 2022, revenues should increase by 26%.

References

S. Owsiak, Finanse Publiczne. Współczesne ujęcie, PWN, Warszawa, 2017

M. Podstawka (red.), Ocena sytuacji ekonomiczno-produkcyjnej rolnictwa i gospodarki żywnościowej w latach 2015-2020, IERIGŻ, Warszawa, 2021

Sprawozdania z wykonania budżetu za 2019 rok, Rada Ministrów, Warszawa, 2020

Statistical analysis of GUS (the Central Statistical Office) 12/2021

Wybrane problemy strukturalne i instytucjonalne finansów publicznych w warunkach kryzysu wywołanego COVID-19: refleksje nad ewolucją paradygmatu M. Zioło (red.), Finanse publiczne, [w:] St. Owsiak, Oracjonalne wykorzystanie finansów publicznych w warunkach kryzysu

M. Zioło (red.), Finanse publiczne, CIMPO, Warszawa, 2021, [w:] B. Guziewska,

Inflacja a koszty produkcji wybranych produktów rolniczych w 2022 roku

Streszczeie

Celem opracowania było przedstawienie działań podejmowanych, w ostatnich latach, przez państwowe władze publiczne wpływających na inflację w Polsce. Na tym tle dokonano oceny wzrostu cen na rolnicze kupowane środki produkcji, które skorelowano ze strukturą kosztów i na tej podstawie oszacowany został wzrost kosztów produkcji podstawowych produktów rolniczych w 2022 roku. Następnie ten prognozowany wzrost kosztów produkcji odniesiono do szacowanych

przychodów. Pozwoliło to ustalić ich wzrost, który umożliwiałby utrzymanie dotychczasowego poziomu dochodów rolniczych. Działania ratunkowe rządu wywołane przez COVID-19 miały trzy główne źródła finansowania:

- wydatki budżetu państwa i budżetu środków europejskich – 23,2 mld zł,
- Fundusz Przeciwdziałania COVID-19 – 92,7 mld zł,
- tarcze finansowe Polskiego Funduszu Rozwoju – 63,5 mld zł,

O ile działania interwencyjne rządu, w warunkach kryzysu, należy ocenić pozytywnie, to ich sposoby realizacji krytycznie. Wsparcie finansowe w ramach tarcz otrzymały firmy, które wykazywały spadek obrotów spowodowany pandemią koronawirusa. W efekcie wspierano te firmy, które być może celowo tworzyły warunki do otrzymania wsparcia. Firmy dobrze prosperujące w warunkach COVID-19 takiego wsparcia były natomiast pozbawione.

We wszystkich analizowanych rodzajach działalności produkcji rolniczej roślinnej w 2022 roku nastąpi wzrost kosztów ich wytwarzania o około 50-60% Wyjątkiem będzie produkcja żyta, gdzie wzrost kosztów będzie jeszcze wyższy.

Słowa kluczowe:. produkcja rolna, inflacja, cena, prognoza
Kody JEL: Q11, Q14

Information about the author:

Prof. dr hab. Marian Podstawka
Institute of Economy and Finance
Warsaw University of Life Sciences
ul. Nowoursynowska 166,
02-787 Warszawa
e-mail: marian_podstawka@sggw.edu.pl
ORCID: 0000-0002-3834-0743

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.9

Received: 17.03.2022
Accepted: 02.06.2022

Mateusz Śliwa
Aleksandra Kłosowska
University of Rzeszów

CHANGE IN THE LEVEL OF CORPORATE LENDING IN POLAND DURING THE COVID-19 PANDEMIC

The main theme undertaken in this paper is the assessment of the impact of the COVID-19 pandemic on corporate lending. The main objective of the article is to analyze the qualitative and quantitative changes in the level of corporate lending in Poland. The author focuses, on the one hand, on the ability of firms to incur liabilities and, on the other hand, on the changes in bank lending rules over the course of a changing economic reality burdened by the crisis caused by the pandemic. The individual analyses also show a broader comparative context by referring to statistical data before the onset of the virus crisis. In the case under review, uncertainty about the health of the MSP sector during the crisis weighed on the tightening of credit policy. An increase in demand for bank financing in the pandemic period was reported by both large companies and micro enterprises. However, only in the case of the former did the availability of loans increase. As a result, the gap between the availability of bank loans to large firms and the MSP sector widened.

Keywords: enterprise, lending, COVID-19, state interventionism, corporate finances, crisis
JEL codes: G20, G38

Introduction

The COVID-19 pandemic has left its mark on almost every national economy in the world. The implementation of government decisions in response to the spread of SARS-CoV-2 has had many negative economic consequences in individual countries[1] and its effects have become one of the main challenges for enterprises operating in the 2020's, both in Poland and globally.

The spread of COVID-19 reduced economic activity worldwide, leading to new threats to financial stability. The crisis caused by the pandemic has demonstrated, both to financial market participants and the general public, that natural disasters can have a direct global disruptive economic impact on an unprecedented scale[2]. In April 2020, a preliminary analysis was made of the impact of the pandemic on selected parts of the global economy, including the financial industry. This assessment shows that the non-integrated response of governments and the blockade of many countries has led to

[1] K. Czech, A. Karpio, M. Wielechowski, T. Woźniakowski, D. Żebrowska-Suchodolska: Polska gospodarka w początkowym okresie pandemii Covid-19, SGGW, Warszawa 2020.
[2] K. Czech, A. Karpio, M. Wielechowski, T. Woźniakowski, D. Żebrowska-Suchodolska: Polska gospodarka w początkowym okresie pandemii Covid-19, SGGW, Warszawa 2020, s.15.\

disruptions such as interruptions in supply chains and reductions in factory production, which has affected, among other things, the GDP[3].

Based on research released in the Economic Alert, Poland's economy has characteristics that should allow it to cope with a pandemic much better than most other countries. These features include: strong sectoral diversification; a low share of tourism in GDP; a floating exchange rate, the weakness of which limits the decline in exporters' revenues; a current account balance, which in turn prevents excessive weakening of the zloty threatening the solvency of entities with liabilities in foreign currencies; an excess of imports over exports of energy resources, whose prices have collapsed[4].

The adjustment of monetary policy has softened financial markets, contributed to a reduction in the cost of credit and promoted the extension of credit[5]. Nevertheless, in the face of pandemic-induced economic disruption, historically low global interest rates may hide solvency problems that will arise in future years[6]. In Poland, on the side of fiscal policy, stimulation packages were applied – the so-called anti-crisis shields. On the monetary policy side, the National Bank of Poland (NBP) Monetary Policy Council (MPC) decided to cut interest rates close to zero. Thus, the NBP joined the group of other central banks applying a very mild monetary policy[7].

Despite the many tools and systems used for risk identification, the introduced legal regulations and historical experience, it was not possible to avoid the consequences of the global crisis caused by the pandemic.

In conditions of high uncertainty, effective forecasting of the economic situation becomes particularly problematic, and thus making the right business decisions becomes more difficult[8]. Enterprises, in order to survive the global crisis, had to implement several measures to adapt to the conditions in which they found themselves. The scale of the impact of enterprise activity on the economic condition of the state is shown in the report on the condition of the small and medium-sized enterprise (SME) sector in Poland according to which, in 2021, all enterprises generated 72.7% of GDP, of which 49.1% was as a result of the activity of the SME sector[9,10].

In Poland, investments of enterprises (most often technological) are carried out mainly by large companies. The reason for this is the greater economic potential compared

---

[3] Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. International journal of surgery (London, England), 78, 185–193.

[4] B.Biga, A. Chłoń-Domińczak, J. Czekaj, S. Dudek, D. Filar, M. Gronicki, J. Hausner, J. Jankowiak, R. Kowalski, L. Pawłowicz, A. Rzońca, A. Sławiński, M. Starczewska-Krzysztoszek: Alert Gospodarczy 4: Banki w czasie kryzysu COVID-19, Kraków 2020.

[5] I.D. Czechowska, C. Lipiński, J. Stawska, W. Zatoń: Potencjał działalności kredytowej sektora bankowego w obliczu pandemii COVID-19, Perspektywa credit crunch, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2022, s. 104.

[6] Global Economic Prospects, January 2021, s. 14.

[7] M. Flotyński, Polityka pieniężna w Polsce w trakcie kryzysu spowodowanego pandemią wirusa SARS-CoV-2, Czasopismo Polskiego Towarzystwa Ekonomicznego, Poznań 2020, s. 16

[8] K. Jędrzejowska, A. Wróbel: Wielki lockdown i deglobalizacja: Wpływ pandemii COVID-19 na gospodarkę światową, Rocznik Strategiczny 2020/21, 2021.

[9] A. Skowrońska, A. Tarnawa (red.): Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce, Polska Agencja Rozwoju Przedsiębiorczości, Warszawa 2021.

[10] N. Pandel, L. Sołoducho-Pelc: Trzydzieści lat rozwoju przedsiębiorczości w Polsce, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, nr 538, Wrocław 2018.

to the SME sector[11]. However, the SME sector, in which many entities do not conduct diversified activities, and moreover, usually have small financial resources, had to show the greatest scale of adjustment of activities due to the rapidly changing sanitary restrictions[12]. Generally, in the event of unforeseen situations, it may become necessary to take out a working capital loan that will help maintain a company's financial liquidity and allow it to rebuild its development potential in times of better economic conditions. Investment loans taken by enterprises to expand their operations on a larger scale, improve production processes, provide services, or provide the enterprise with protection systems that prevent or minimise the negative effects of the crisis are also important[13].

In order to prevent unfavourable incidents and mitigate the economic crisis that occurred as a result of economic lockdowns, the Polish government took the initiative to help entrepreneurs by creating a package of actions and instruments dubbed the Anti-Crisis Shield, which aimed to cushion the effects of the problems arising from the struggle with Covid-19. The proposed aid measures under the Anti-Crisis Shield were primarily intended to support Polish enterprises in terms of maintaining their operations, protecting jobs, and ensuring the safety of employees, health protection, strengthening the financial system and public investments. In March 2020, work began on ways to save the Polish economy. To maintain the financial continuity of enterprises, the government introduced an additional package under the aid of the Polish Development Fund in the form of the so-called Polish Development Fund Financial Shield, complementing the Anti-Crisis Shield. As part of financing enterprises, the government introduced, for example, a convenience related to the costs of running a business itself, including the possibility of a favourable deduction of losses in tax returns[14].

Loans (granted both in domestic and foreign currencies) are popular sources by which companies obtain assets depending on their needs. It is worth noting that, on the one hand, decisions to incur liabilities are implied by information from the financial sector, economic reports, the monetary policy strategy of the National Bank of Poland and exchange rates (in the case of loans in foreign currencies). On the other hand, there are lenders who may be reluctant to lend when there are uncertainties in the market. In this case, banks delimit enterprises in terms of their activities, size, and market shares, because depending on the sector of activity, individual companies differ from each other in the level of capital intensity, and thus, depending on the industry, banks can expect larger, smaller, or negligible difficulties in the payment of obligations incurred[15]. From the banks' point of view, entities with good economic and financial standing are more reliable because their financial liquidity, assessed on the basis of indicators, brings greater potential for using external capital to invest in the development of the enterprise. Entities characterised by a stable position on the market are privileged in terms of the availability of financing with

[11] E. Mazur-Wierzbicka: Działalność innowacyjna przedsiębiorstw w Polsce, Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie, 1, 97-109, Tarnów 2015.
[12] M. Szarucki, G. Noga, O. Kosch: Wpływ pandemii COVID-19 na modele biznesu przedsiębiorstw sektora MŚP w Polsce, Horyzonty Polityki, 12(40), 95-114, Kraków 2021.
[13] K. Puchalska, I.D. Tymoczko: Szerokie ujęcie ekspozycji polskich przedsiębiorstw niefinansowych na ryzyko walutowe, Źródła i skala ekspozycji oraz metody zarządzania ryzykiem walutowym, Materiały i Studia, Zeszyt nr 293, Warszawa, 2013.
[14] K. Dębkowska, U. Kłosiewicz- Górecka, A. Szymańska, P. Ważniewski, K. Zybertowicz: Tarcza Antykryzysowa. Koło ratunkowe dla firm i gospodarki?, Warszawa 2021, s. 10-16.
[15] 9 B. Korzeniewska, Kredyt w przedsiębiorstwie. Zeszyty Naukowe PWSZ w Płocku Nauki Ekonomiczne, t. XXII, Płock 2015.

external capital, thanks to which they are able to implement the adopted goals and development strategies[16].

The main aim of the article was to identify quantitative changes in the level of corporate lending in Poland. In this study, the author focused on depicting the economic reality in the context of the possibility of the banking sector to grant loans and of enterprises to incur liabilities during the COVID-19 pandemic. The individual analyses also show a broader comparative context by referring to statistical data before the onset of the virus crisis.

Research methodology

The subject of the research is the possibility of taking loans by Polish enterprises (large and SMEs) during the COVID-19 pandemic. The sources of the data are statistical data from the Central Statistical Office and quarterly reports published by the National Bank of Poland. The main research method is a comparative analysis of qualitative and quantitative changes in granting loans by banks and incurring liabilities by enterprises in selected time series. A linear regression function was also used to conduct the study, based on which the interdependence of the selected variables was examined. The study used the formula:

$$y_i = a + b\,x_i$$ [17]

The results of the analysis made it possible to assess the scale of changes in the level of lending to Polish enterprises in the period under examination. In order to illustrate a broader horizon, the analysed period was the time frame with complete data from 2010 to 2020 and the latest data obtained from 2021. For the purposes of the analysis, two research hypotheses were formulated:

H1: During the COVID-19 pandemic, the growth of corporate credit obligations towards banks slowed down.

H2: In the case of microenterprises, there was a decrease in the number and volume of loans taken during the COVID-19 pandemic.

Results

The level of corporate lending is influenced by many factors that are both the cause of these changes and their effect. For analysis of this issue, it is necessary to juxtapose some of them and properly analyse them in terms of their possible impact on the change in the credit level on a macro scale.

GDP in the years 2010-2020 adopted an increasing trend. The exception is the year 2020, when the coronavirus pandemic officially began, and with it a number of sanitary restrictions that were introduced and which directly affected the condition of the Polish economy (e.g. introducing limits on people staying in one place/room, closing dining and entertainment outlets). The condition of Polish GDP in the years before the lockdowns began showed a good market situation and favoured the functioning of enterprises on the market.

[16] A. Paździor: Dostępność instrumentów finansowych wspierających przedsiębiorczość i innowacje, Ekspertyza naukowa, Politechnika Lubelska, Lublin 2013.

[17] M. Pigłowski, Analiza regresji dla liczby systemów i placówek franczyzowych w Polsce, Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 776, Szczecin 2013, s. 101.

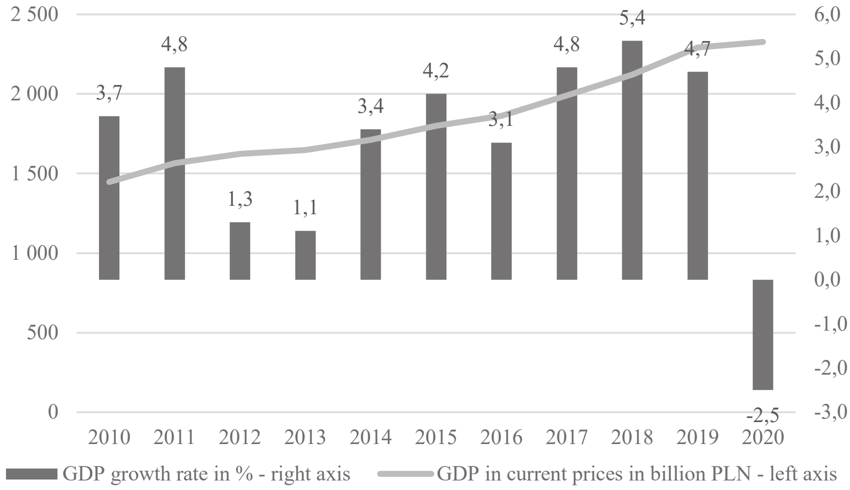


Chart 1. Growth rate (%) and value (in PLN billion) of GDP in Poland in 2010-2020
Source: Author's own study based on data from the Central Statistical Office

As shown by the data in Chart 1, it can be noticed, however, that the trend of growing GDP does not go hand in hand with the number of enterprises operating on the market (Chart 2). With the onset of the pandemic and the increase in the risk associated with running a business, potential entrepreneurs did not undertake the risk of starting a business, which significantly decreased the number of newly established companies – it was the lowest in the entire analysed period

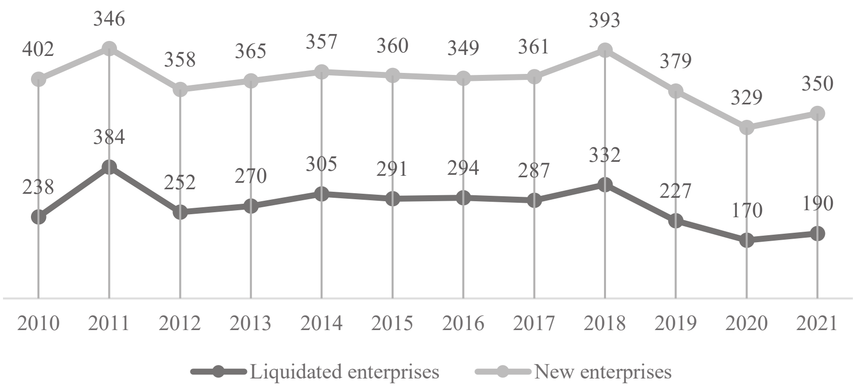


Chart 2. Number of newly established and eliminated enterprises in Poland (in thousands) in 2010-2020
Source: Author's own study based on the Central Statistical Office. Annual and monthly reports on entities of the national economy in the REGON register.

The number of liquidated enterprises is equally important. Between 2010 and 2020, the trend of quantitative changes in their context showed greater fluctuations than in the case of the number of newly established enterprises, while in 2020 it reached the lowest rate in the last 10 years. The downward trend was noticeable already in 2019. Such a decrease may be the result of state intervention in the form of financial shields, which were not sufficient to cover all losses and liabilities of companies caused by the lockdown, but which certainly contributed significantly to reducing the number of liquidated enterprises due to the requirements for maintaining company operations and employment of personnel.

Most importantly, from the point of view of lending to enterprises, observing that the number of liquidated enterprises did not increase during the first year of the pandemic (when they were burdened with the greatest limitations in how they could function), one should reject correlation of a decrease in lending with a decline in the number of enterprises and look for the reasons for this decline in other factors.

The last analysed year, 2021, was characterized by much smaller restrictions affecting enterprises and a better market situation, which resulted in the creation of over 30,000 more companies than in 2020. It may be alarming that after the relatively good years of 2019-2020, there was a sudden crash as far as liquidated enterprises were concerned – an increase of liquidated enterprises by approx. 20 thousand entities compared to the previous year. The observed phenomenon may be influenced by the fact that aid shields for entrepreneurs were no longer provided. Particularly sharp drops in the number of registered enterprises were observed in January (-23,803) and December (-21184) of 2021. There were on average 75% more liquidated entities than in August 2021, when this number was the lowest (-12,856).

Domestic enterprises have bank accounts with which to carry out financial transactions in the scope of business activity, and bank accounts through which to make settlements resulting from the concluded transactions and public law clearings. An average large enterprise operating on the Polish market uses bank loans for approx. 14 years. In the case of the SME sector, the period is approx. 4 years shorter[18] (Chart 3).

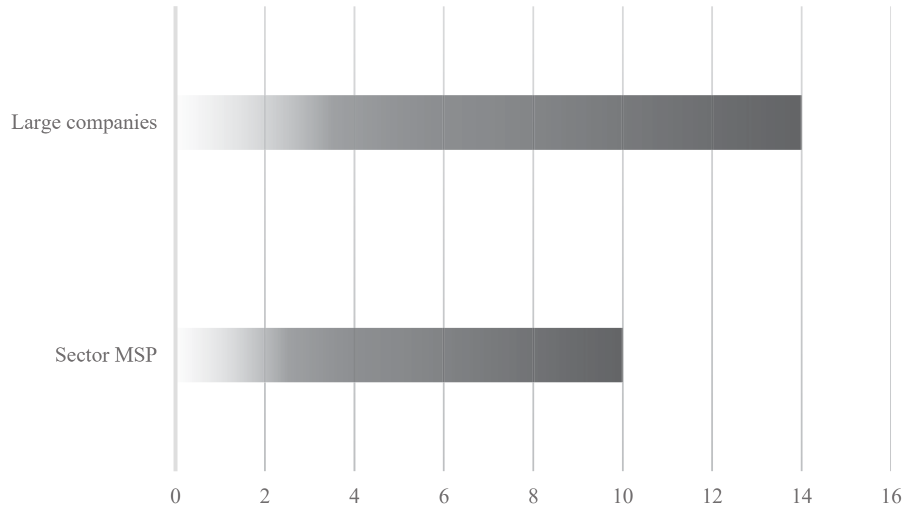


Chart 3. Period of using bank loans by enterprises in Poland (in years)
Source: Author's own elaboration based on K. Puchalska, I.D. Tymoczko, 2013, op. cit..

[18] K. Puchalska, I.D. Tymoczko, 2013, op. cit.

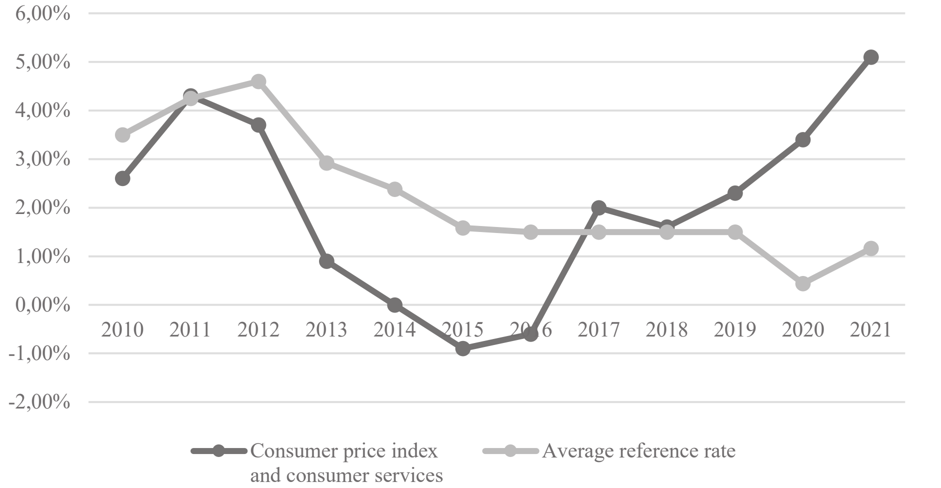


Chart 4. Price indices of consumer goods and services in Poland and the average reference interest rate in 2010-2020
Source: Author's own study based on data from the Central Statistical Office

An important issue in the context of the level of financing for enterprises is the level of inflation, which has seen a significant upward trend since 2018 and continues until now, accelerating dangerously. As the NBP analyses indicate, inflation at the end of December 2021 reached the level of 8.6% and significantly differed from the assumed safe level[19] (Chart 4).

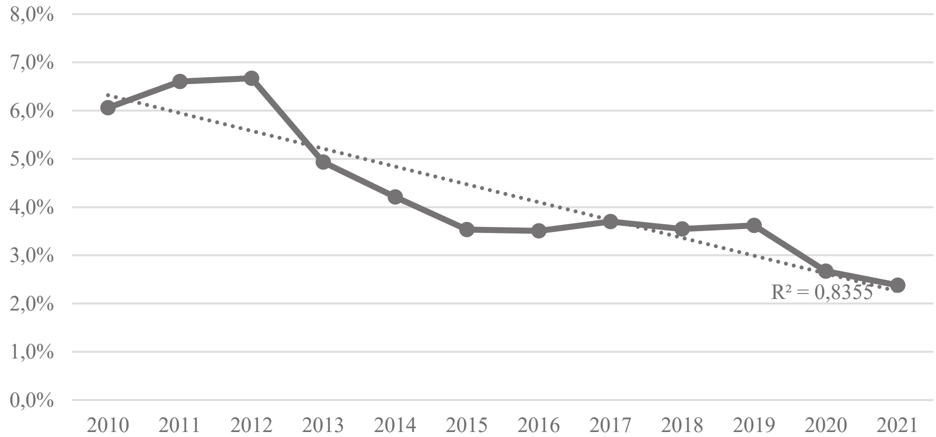


Chart 5. Average interest on loans to enterprises in Poland in 2010-2020
Source: Author's own study based on data from the Central Statistical Office

This has translated into a level of interest rates that necessitated NBP intervention. During the pandemic, interest rates were significantly reduced, stimulating companies to

[19] NBP: Statystyka i sprawozdawczość, Inflacja bazowa, https://www.nbp.pl/home.aspx?f=/statystyka/bazowa/bazowa.htm [accessed: 15.02.2021]

take out favourable loans. In the present situation, raising these rates in order to slow down inflation is causing an unfavourable situation on the credit market, both among enterprises and individual clients. Despite lowering the reference rate, the phenomenon of entrepreneurs being cautious about taking out loans was stronger.

By comparing the average corporate loan obligation with the average reference rate, we can observe similar downward trends over the analysed period.

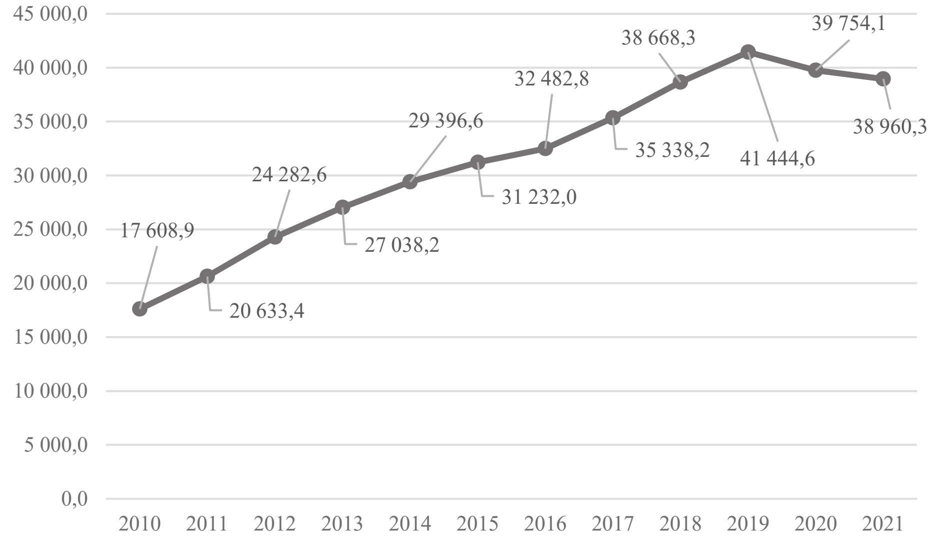


Chart 6. Average value of bank loans for individual entrepreneurs (mln PLN) in Poland in 2010-2021
Source: Author's own study based on data from the NBP report
https://www.nbp.pl/home.aspx?f=/statystyka/ pieniezna_i_bankowa / nal_zobow.html

The initial period of the COVID-19 pandemic in Poland is considered to be March 2020. Then, a sudden drop in the value of bank loans for individual entrepreneurs, which lasts until August 2020, can be observed (Chart 6). The average value of loans granted in 2019 amounted to PLN 41444.6 million, while for 2020 it decreased by PLN 1690.5 million. It is only from December that an upward trend can be observed, which continues until the end of the analysed period. Returning to the beginning of 2020, it should be mentioned that at that time the policy of a slight tightening of the standards of granting loans to enterprises was continued and the current trend of falling demand for loans was observed[20] (Table 1).

Based on the data of the average value of bank loans for individual entrepreneurs and the average interest rate in 2020-2021, the linear regression function took the following form $y_i = 0{,}094381922 - 0{,}0000016423x_i$. This means that if the average interest rate decreases by 1%, then the average value of bank loans for individual entrepreneurs will increase by PLN 625 billion. In order to relate the results to the scale of Poland's economy as a whole, the conclusions are given in billions of PLN.

[20] NBP: Sytuacja na rynku kredytowym IV kwartał 2020 r., https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2020_4.pdf [accessed: 12.02.2022]

Table 1. Average value of bank loans for individual entrepreneurs (million PLN) "x" and average interest rate "y" in Poland in 2010 - 2021

Years	Average value of bank loans for individual entrepreneurs (mln PLN) x	Average interest rate y	x_iy_i	x^2
2010	17 608.9	6.00%	1056.532	310 072 302.7
2011	20 633.4	6.60%	1362.49	425 736 143.3
2012	24 282.6	6.67%	1619.647	589 643 035.8
2013	27 038.2	4.94%	1334.336	731 064 741.4
2014	29 396.6	4.21%	1236.616	864 159 062.7
2015	31 232.0	3.53%	1102.749	975 435 455.6
2016	32 482.8	3.51%	1138.793	1 055 133 497.7
2017	35 338.2	3.70%	1307.514	1 248 788 803.3
2018	38 668.3	3.55%	1371.437	1 495 239 422.8
2019	41 444.6	3.62%	1500.642	1 717 658 999.8
2020	39 754.1	2.67%	1062.098	1 580 392 038.1
2021	38 960.3	2.38%	926.6066	1 517 907 625.4
Total	**376 840.0**	**51.37%**	**15019.46**	**12511231128**

Source: Author's own compilation based on data from the report GUS and reports NBP https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/nal_zobow.html

In the fourth quarter of 2020, although no noticeable changes in lending policy towards large enterprises were observed, there was a noticeable decrease in the value of bank loans for individual enterprises, which in particular increased at the turn of November and December 2020. In the last quarter of the discussed year, no noticeable changes were observed in lending policy towards large enterprises, while the criteria for small and medium-sized enterprises were slightly eased, which was mainly motivated by the deteriorating economic situation (especially in industries sensitive to the impact of the pandemic)[21]. From January to September 2021, the value of bank loans for individual entrepreneurs shows a growing tendency. The increase from the beginning of 2021 (PLN 37,688.1 million) to September (PLN 39,613.7 million) amounted to PLN 1,925.6 million. Only around March and April, is a slight decrease noticeable, which could have been caused by the projected third wave of COVID-19 infections (Chart 7).

Based on the analysis, it can be concluded that during the pandemic, the upward trend in corporate liabilities towards banks was reversed. Therefore, the first hypothesis should be rejected and it should be pointed out that it was not so much a slowdown as a reversal of the upward trend in this respect. Hypothesis II can only be accepted if only the year 2020 is assumed as the pandemic period. If we want to consider 2021 also as a pandemic year, Hypothesis II should be rejected, because the volume of loans taken by micro-enterprises increased to a level similar to that before the pandemic.

[21] NBP: Sytuacja na rynku kredytowym I kwartał 2021 r., https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2021_1.pdf [accessed: 12.02.2022]

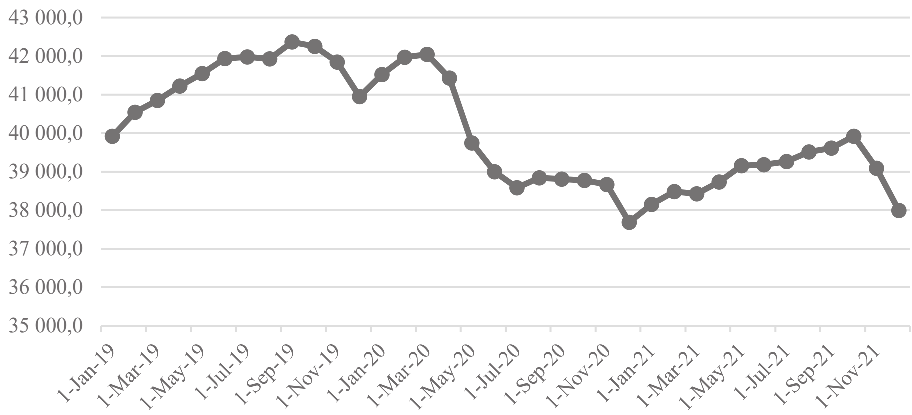


Chart 7. Value of bank loans for individual entrepreneurs (mln PLN) in Poland in 2019-2021
Source: Author's own study based on data from the NBP report
https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/nal_zobow.html

Conclusions

The topicality of the subject of changes in lending policy is reflected in the dynamically changing situation in the credit market, dictated by the active intervention of the NBP. Under circumstances of persistent high levels of risk, it becomes complicated to effectively forecast the economic situation and for enterprises to build development strategies. Knowledge and awareness within a company about past crises may help to prepare appropriate plans of action in the case of similar situations in the future. Particularly important is the lack of correlation between low interest rates and the availability of credit in high-risk circumstances. Micro and SME enterprises in crisis-related uncertainty need to be aware that taking out a working capital loan or carrying out a planned investment with the support of an investment loan may not be feasible.

During the analysis of secondary data, difficulties were encountered in making an objective comparative analysis of the average value of bank lending to entrepreneurs with the economic situation observed in the various quarters before and during the COVID-19 pandemic. The problem in this case was the state interventions aimed at a systemic solution to the problems enterprises faced during the COVID-19 pandemic. However, they disturbed the standard functioning of the borrower-lender relationship, hence such an analysis would not be objectively justified.

Emergency situations such as the COVID-19 pandemic strongly affect the economic growth of individual countries, including Poland. It becomes important to recognize that this is an indirect impact. In the analyzed case, the uncertainty as to the condition of the SME sector during the crisis influenced the tightening of lending policy. At the same time, it clearly showed that the level of trust in large entities is much higher than in micro, small and medium-sized enterprises.

It is also worth emphasizing that, according to the analysed secondary sources, an increase in the demand for bank financing during the pandemic was reported by both large companies and micro-enterprises, but only in the case of the former did the availability of loans increase. As a result, the difference between the availability of bank loans for the large enterprise sector and the SME sector has widened. In terms of sectors, differences in credit availability also persist. Once again, the availability of bank financing for transport and trade companies deteriorated, which was probably the result of the greater sensitivity of these industries to the impact of the pandemic.

In this context, there is room for conducting in-depth quantitative and qualitative research among representatives of the banking sector in order to work out solutions for industries that had problems with access to credit during the pandemic crisis. Research on the condition of enterprises which managed to obtain investment or working capital loans at that time may also be valuable.

References

1.B.Biga, A. Chłoń-Domińczak, J. Czekaj, S. Dudek, D. Filar, M. Gronicki, J. Hausner, J. Jankowiak, R. Kowalski, L. Pawłowicz, A. Rzońca, A. Sławiński, M. Starczewska-Krzysztoszek: Alert Gospodarczy 4: Banki w czasie kryzysu COVID-19, Kraków 2020.

2.Czech K., Karpio A., Wielechowski M., Woźniakowski T., Żebrowska-Suchodolska D.: Polska gospodarka w początkowym okresie pandemii Covid-19, SGGW, Warszawa 2020, s. 27.

3.K. Czech, A. Karpio, M. Wielechowski, T. Woźniakowski, D. Żebrowska-Suchodolska: Polska gospodarka w początkowym okresie pandemii Covid-19, SGGW, Warszawa 2020, s.15.

4.I.D. Czechowska, C. Lipiński, J. Stawska, W. Zatoń: Potencjał działalności kredytowej sektora bankowego w obliczu pandemii COVID-19, Perspektywa credit crunch, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2022, s. 104.

5.M. Flotyński, Polityka pieniężna w Polsce w trakcie kryzysu spowodowanego pandemią wirusa SARS-CoV-2, Czasopismo Polskiego Towarzystwa Ekonomicznego, Poznań 2020, s. 16.

6.Global Economic Prospects, January 2021, s. 14.

Jędrzejowska K., Wróbel A.: Wielki lockdown i deglobalizacja: Wpływ pandemii COVID-19 na gospodarkę światową, Rocznik Strategiczny 2020/21, 2021.

Korzeniewska B., Kredyt w przedsiębiorstwie. Zeszyty Naukowe PWSZ w Płocku Nauki Ekonomiczne, t. XXII, Płock 2015.

Mazur-Wierzbicka E.: Działalność innowacyjna przedsiębiorstw w Polsce, Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie, 1, 97-109, Tarnów 2015.

10.NBP: Sytuacja na rynku kredytowym IV kwartał 2020 r. https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2020_4.pdf

11.NBP: Sytuacja na rynku kredytowym I kwartał 2021 r., https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2021_1.pdf

NBP: Statystyka i sprawozdawczość, Inflacja bazowa, https://www.nbp.pl/home.aspx?f=/statystyka/bazowa/bazowa.htm.

13.Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. International journal of surgery (London, England), 78, 185–193.

Dębkowska K., Kłosiewicz- Górecka U., Szymańska A., Ważniewski P., Zybertowicz K.: Tarcza Antykryzysowa. Koło ratunkowe dla firm i gospodarki?, Warszawa 2021, s. 10-16.

Pandel N., Sołoducho-Pelc L.: Trzydzieści lat rozwoju przedsiębiorczości w Polsce, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, nr 538, Wrocław 2018.

Paździor A.: Dostępność instrumentów finansowych wspierających przedsiębiorczość i innowacje, Ekspertyza naukowa, Politechnika Lubelska, Lublin 2013.

17.M. Pigłowski, Analiza regresji dla liczby systemów i placówek franczyzowych w Polsce, Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 776, Szczecin 2013, s. 101.

Puchalska K., Tymoczko I.D., Szerokie ujęcie ekspozycji polskich przedsiębiorstw niefinansowych na ryzyko walutowe. Źródła i skala ekspozycji oraz metody zarządzania ryzykiem walutowym, Materiały i Studia, Zeszyt nr 293, Warszawa, 2013.

Skowrońska A., Tarnawa A.(red.): Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce, Polska Agencja Rozwoju Przedsiębiorczości, Warszawa 2021.
Szarucki M., Noga G., Kosch O.: Wpływ pandemii COVID-19 na modele biznesu przedsiębiorstw sektora MŚP w Polsce, Horyzonty Polityki, 12(40), 95-114, Kraków 2021

Zmiana poziomu kredytowania przedsiębiorstw w Polsce w okresie pandemii COVID-19

Streszczenie

Tematem przewodnim niniejszego opracowania jest ocena wpływu pandemii COVID-19 na kredytowanie przedsiębiorstw. Głównym celem artykułu jest analiza zmian jakościowych i ilościowych poziomu kredytowania przedsiębiorstw w Polsce. Autorzy skupiają się z jednej strony na możliwościach zaciągnięcia zobowiązań przez firmy, z drugiej zaś na zmiany zasad udzielania pożyczek przez banki na przestrzeni zmieniającej się rzeczywistości gospodarczej, obarczonej kryzysem spowodowanym przez pandemię. W poszczególnych analizach ukazano również szerszy kontekst porównawczy odwołując się do danych statystycznych przed wystąpieniem kryzysu spowodowanego wirusem. W analizowanym przypadku niepewność co do kondycji sektora MSP w okresie kryzysu zaważyła na zaostrzeniu polityki kredytowej. wzrost zapotrzebowania na finansowanie bankowe w okresie pandemii zgłaszały zarówno duże firmy, jak i mikroprzedsiębiorstwa, jednak tylko w przypadku tych pierwszych dostępność kredytów wzrosła. W związku z tym różnica między dostępnością kredytów bankowych dla sektora dużych firm i sektora MSP powiększyła się.

Słowa kluczowe: przedsiębiorstwo, kredytowanie, interwencjonizm państwowy, COVID-19, kryzys, finanse przedsiębiorstw
Kody JEL: G20, G38

Information about authors:

Mateusz Śliwa, MSc
Mieczysławy Ćwiklińskiej 2; 35-601 Rzeszów, Polska
e-mail: msliwa.interkreator@gmail.com
ORCID: 0000-0002-7911-9658

Aleksandra Kłosowska, MSc
Mieczysławy Ćwiklińskiej 2; 35-601 Rzeszów, Polska
e-mail: aklosowska@ur.edu.pl
ORCID: 0000-0003-2793-3444

Polityki Europejskie, Finanse i Marketing
27 (76) 2022
DOI 10.22630/PEFIM.2022.27.76.10

Received: 22.11.2021
Accepted: 04.05.2022

Marta Wiśniewska
Jan Kochanowski University in Kielce

THE IMPACT OF THE CORONAVIRUS (COVID-19) PANDEMIC ON INVESTORS' BEHAVIOUR IN THE LIGHT OF BEHAVIOURAL FINANCE

The aim of the research was to find out the opinions of stockbrokers working at the Warsaw Stock Exchange regarding the behaviour of Polish investors in the face of the coronavirus (COVID-19) pandemic. The research was carried out among 51 stockbrokers representing brokerage houses with a long history of operations. It has been found that psychological conditions of people and stock market sentiments play an important role in the decision-making process, and irrational investor behaviours, including largely herd effects, are particularly evident during the pandemic. The research shows that the occurrence of the coronavirus has not reduced the activity of Polish investors. Thus, significantly growing interest in shares of companies listed on the Warsaw Stock Exchange has been noted. The behaviour and attitude of market participants towards risk were volatile during the developing pandemic, which manifested itself in rapid buying of overvalued assets or rapid selling of assets.

Keywords: coronavirus pandemic, behavioural finance, investment decisions
JEL codes: G01, G11, G41

Introduction

Investment decisions on stock exchanges are conditioned by many factors, both economic and non-economic in nature.[1] Among them, psychological determinants are important and constitute an area of research in behavioural finance. Behavioural finance is defined as a science that explains economic decisions of investors on the basis of studies of individual and social cognitive and emotional tendencies[2]. Proponents of this discipline believe that the human mind sometimes misperceives reality and incoming data, and investors are not always able to correctly value securities[3].

[1] More information about this subject is presented in the article by: M. Juszczyk, M. Wasilewski, Czynniki kształtujące decyzje inwestorów na rynku kapitałowym. Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 855, Finanse, Rynki finansowe, Ubezpieczenia nr 74, Czas na pieniądz. Rynek kapitałowy, wycena przedsiębiorstw, inwestycje, Szczecin 2015; M. Juszczyk, M. Wasilewski, Znaczenie czynników behawioralnych w podejmowaniu decyzji inwestycyjnych na rynku kapitałowym. Zeszyty Naukowe SGGW w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej, Warszawa 2015.
[2] K. Opolski, T. Potocki, T. Świst, Teorie inwestycyjne w zarządzaniu bogactwem na przykładzie instytucji Wealth Management Bank i Kredyt, nr 5, 2010, s. 78.
[3] A. Szyszka, Finanse behawioralne. Nowe podejście do inwestowania na rynku kapitałowym. Wydawnictwo Uniwersytetu Ekonomicznego a Poznaniu, Poznań 2009, s. 34.

The theory related to the incorrect interpretation of reality was developed by A. Tversky and D. Kahneman, according to whom limited rationality is determined by time pressure and complexity of information[4]. Investors in their activities often disregard rational methods of conduct, allowing for so-called heuristics, i.e. simplified processes of data analysis. Heuristics can be useful, as they are an important tool facilitating analysis in the case of complex information. On the other hand, they are a source of severe and systematic inference errors. It is indicated that, under conditions of risk and uncertainty, investors make systematic errors due to both their beliefs and preferences (Table 1).

Table 1. Selected mistakes (heuristics) made by investors

Name of the effect	Description
Freshness effect	Being strongly influenced by recent events or experiences and by the most recent information, compared to information that appeared earlier
Loss aversion	Choosing less risky assets than recommended
Narrow framing effect	Decision making influenced by how information is presented
Mental accounting	Categorizing assets into different segments based on financial objectives
Herd behaviour	Following the crowd or the latest investment trends
The status quo effect	Fear of change; commitment to the status quo
Accessibility heuristics	Making decisions solely on the basis of readily available information
Overconfidence	Overconfidence in own abilities leading to excessive trading

Source: Author's own study based on Szyszka (2009), Ostaszewski (2013).

A common phenomenon is *overconfidence* in assessing investment opportunities, defined as an unjustified belief in the correctness of one's own judgements and overestimation of one's skills[5]. Such behaviour leads to overconfidence in stock market positions, i.e. when the confidence level of investors in their knowledge and skills rises, the frequency of their transactions also increases. Psychology studies prove the occurrence of *the phenomenon of selective attribution*, which consists in attributing successes, even accidental ones, to one's own person, while explaining failures to independent factors[6]. Apart from the incorrect perception of one's own skills and experience, representativeness errors have a significant impact on the incorrect revaluation of financial instruments. It is common to underestimate the importance of the size of the research sample, which results in the *gambler's error,* otherwise known as the gambler's delusion. This error depends on perceiving regularities in random sequences and treating independent random events as dependent[7].

At the same time, the present study indicates that analyses and descriptions often have a significant impact on the context in which a given situation is perceived and on investment decisions. A distortion in the perception and processing of information is the so-called *narrow framing effect*, whereby a particular problem or phenomenon is analysed in isolation from its wider context. This effect can be reflected in *mental accounting*, which manifests itself in the misallocation of resources, i.e. in the improper diversification and maintenance of inefficient stock portfolios. Mental accounting assumes that we record

[4] A. Tversky, D. Kahneman, Judgment Under Uncertainty: Heuristics and Biases. Science, vol. 185, no. 4157, 1974, s. s. 1124-1131.
[5] P. Zielonka, Behawioralne aspekty inwestowania na rynku papierów wartościowych. CeDeWu, Warszawa 2008, s. 49.
[6] A. Szyszka, Zachowania inwestora a teoria rynku kapitałowego. Ekonomista, nr 3, Polska Akademia Nauk – Komitet Nauk Ekonomicznych, Warszawa 2004, s. 382.
[7] J. Ostaszewski (ed.), Finanse. Difin, Warszawa 2013, s. 53.

most transactions only in our head, remembering profitable transactions and forgetting loss positions[8].

Another anomaly related to perceptual tendencies of investors is the *affect heuristics*. This phenomenon consists in evaluating situations and events solely on the basis of one's own intuition and judgments[9]. Decisions taken as a result of such actions are not fully rational because they are made using mental shortcuts. There is also a tendency for people to assign greater value to objects they currently possess than to analogous things that they do not (*the possession effect*). We also observe the effect of commitment to the current state of affairs, i.e. the *status quo effect*. People susceptible to this phenomenon do not undertake any actions but consistently persist with the previously made decision[10]. At the same time, the so-called *freshness effect* should be mentioned which shows that the information received as the last in the sequence, the freshest in memory, exerts the strongest effect.

In addition to the psychological determinants of reality perception that influence irrational decisions, errors in investor behaviour may derive from inconsistencies in their preferences. According to the prospect theory, decision makers are characterized by *risk aversion* when they are confronted with profit alternatives and risk taking propensity when they are forced to choose between loss-making plays. Furthermore, people dislike losses much more than they desire gains (*known as loss aversion*)[11]. In the capital market, this phenomenon may take the form of too quick realization of profits by investors and too late closing of loss-making positions, termed the *"sunk cost effect"*[12].

Both literature theory and empirical studies indicate that people's emotional states significantly affect their investment decisions[13]. People who are in good moods are more optimistic in their evaluations and show greater willingness to take risk. In the case of people in a bad mood, evaluations are more pessimistic and the propensity to take risk decreases[14]. Economic history provides evidence challenging the assumption that markets are rational. Examples include speculative fevers and outbursts of panic, which should be considered through the prism of crowd psychology and *herd behaviour*[15]. It results in the creation of speculative bubbles, which are significant deviations of asset prices from their fundamental ones[16].

---

[8] M. Płuciennik, Psychologia Inwestowania. E-book, 2014, www.investhelp.pl [dostępny 4.10.21], s. 16.

[9] M. Czerwonka, B. Gorlewski, Finanse behawioralne. Zachowania inwestorów i rynku. Szkoła Główna Handlowa w Warszawie, Warszawa 2012, s. 105.

[10] H. K. Baker, G. Filbeck, J.R. Nofsinger, Finanse behawioralne. Co każdy powinien wiedzieć. Wydawnictwo Naukowe PWN S.A., Warszawa 2021, s. 120.

[11] A. Tversky, D. Kahneman, Prospect theory: An analysis of decisions under risk. Econometrica, vol. 47, no. 2, 1979, s. 269, 279.

[12] P. Zielonka, Czym są finanse behawioralne, czyli krótkie wprowadzenie do psychologii rynków finansowych. Materiały i Studia, Zeszyt nr 158, Narodowy Bank Polski, Warszawa 2003, s. 25.

[13] Research in this area was conducted by a.o.: G. Loewenstein, C. Hsee, E. Weber, N. Welsh, Risk as Feeling, Psychological Bulletin, vol. 127, no. 2, 2001; M. Dowling, B. Lucey, The Role of Feelings in Investor Decision-Making, Journal of Surveys, vol. 19, no. 2, 2005; J. S. Lerner, S. Han, D. Keltner, Feelings and consumer decision making: Extending the appraisal-tendency framework. Journal of Consumer Psychology, vol. 17, no. 3, 2007; S. Rick, G. Loewenstein, The role of emotion in economic behavior. [w:] Handbook of Emotions, Lewis M., Haviland-Jones J.M., Feldman-Barrett L. The Guilford Press, New York. 2008.

[14] A. Szyszka, Finanse behawioralne. Nowe podejście do inwestowania na rynku kapitałowym. Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2009, s. 67.

[15] Comp. e.g. G. Le Bon, Psychologia tłumu. Kaprocki B. (tłum.), Wydawnictwo Antyk, Kęty, 2004; H.B. Neill Neil H. B., 1954: The Art of Contrary Thinking. Caxton Press, 1954; Ch. Mackay, Niezwykłe złudzenia i szaleństwa tłumów. WIG PRESS, Warszawa 1999.

[16] A. Sławiński, Rynki finansowe. PWE, Warszawa 2006, s. 159.

In conclusion, it should be noted that the development of behavioural finance, which postulates the need to take into account the frailty of human reason in the behaviour of investors, is the evidence to regard emotions as an important factor influencing investors' decisions. Since psychological factors are particularly strong during market turbulences and crises, it is interesting to examine the behaviour of stock market investors during the coronavirus (COVID-19) pandemic, referring to the achievements of behavioural finance.

Research methodology

The aim of the study was to determine the stockbrokers' opinions on the behaviour of investors operating on the Warsaw Stock Exchange (WSE) during the COVID-19 pandemic and to evaluate the impact of the situation associated with the coronavirus on the process of investment decision-making.

To achieve the main objective, the following research questions were developed:

1. What emotions and moods were dominant among investors in the face of the emerging crisis?
2. Did irrational investor behaviour increase during the pandemic period?
3. How do brokers assess the strength of the influence of selected factors, including behavioural ones, on investment decision-making before and during the pandemic?

Based on the descriptive-tabulation method, a survey was developed and carried out among a group of stockbrokers who work in the majority of brokerage houses currently operating in the market: the Brokerage Office of mBank, Brokerage House of PEKAO S.A, Brokerage Office of Bank BGŻ, Brokerage House of Bank of Environment Protection, Brokerage Office of Alior Bank, Brokerage Office of BNP Paribas Bank Polska, Brokerage Office of ING Bank Śląski, Brokerage House of Trade Bank, Millennium of the Brokerage House, Noble Securities SA, Brokerage House of Bank BPH, and Prosper Capital Brokerage House. The survey was conducted between 15 and 30 September 2021. The research was carried out among 51 stockbrokers identified on the basis of their activity on social media with a professional profile (LinkedIn).

The method of selecting and reaching survey respondents primarily resulted from the nature of the target group (employees of brokerage houses). Although there are registers of stockbrokers kept by the Polish Financial Supervision Authority (KNF)[1], it is not clear from those registers which of the stockbrokers listed there is actually engaged in this kind of business. In addition, there are no variables that would allow us to characterize the population, which is the basis for determining the representativeness of the sample. In fact, the register only contains data on the number of the stockbroker's license and the date of their registration on the list, which, however, cannot constitute criteria for the selection of the sample. The only identifiable criterion of this kind is the gender of the stockbrokers which can be identified by analysing their personal data; nevertheless it does not seem to be a variable that determines the opinions issued in the context of this research.

Another aspect, to some extent related to the above, is the issue of availability of contact data. On the one hand, the requirements of RODO, and on the other hand, the policy of brokerage houses, cause that direct contact details of stockbrokers are not made available, and brokerage houses themselves are not interested in carrying out the survey, which in a way characterizes the behaviour of their clients. This conditioned the method of implementation of the study which was based on the use of stockbrokers' activity on social media with a professional profile.

Study results

The research on the behaviour of Polish investors during the pandemic was based on a questionnaire conducted among stockbrokers who professionally operate on the Warsaw Stock Exchange and hold relevant qualifications in this area, authorising them to manage the investment portfolios of their clients.

The pandemic that has been ongoing for over 1.5 years has shown that, in the long run, a situation of increased risk can be conducive to investing. In the first phase of the COVID-19 outbreak, until around 20 February 2020, most investors pushed the emerging threat aside, and the stock market did not seem to react to the alarming news coming into Poland. It was only the news of the deaths in Italy that led to the first declines in stock indices, followed by a huge wave of sell-offs and stock discounts. Within a month, there were reductions in quotations of up to over 30% on most markets, and the minimum on the Warsaw Stock Exchange WIG index was recorded on 13 March 2020.[17] The short-term market slump and one of the biggest and fastest sell-offs on stock exchanges in history were followed by a continuation of the stock market boom. The stock market is still in a long-term upward trend and the stock indices are setting new maximum levels.

Figure 1 presents the stockbrokers' opinions on investor activity during the COVID-19 pandemic. The survey confirmed that the situation did not limit investor activity on the Polish capital market. According to 45% of respondents, there was no major difference in investor activity at the Warsaw Stock Exchange compared with the pre-pandemic period. On the other hand, 43% of stockbrokers even indicated an increase in investor activity during the period in question.

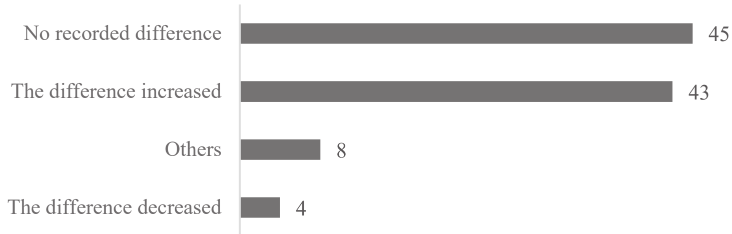


Figure 1. Stockbrokers' opinions on the activity of Polish investors during the COVID-19 pandemic (%)
Source: Author's own research.

Volatility and uncertainty in the market have encouraged market participants to invest, and especially to invest using mobile services. In 2020, there was a significant increase in user activity through investment applications that allow users to trade directly from their mobile phones. The number of users of mobile trading applications also increased.[18]

During the pandemic, volatility and indecision dominated the general sentiment on the Warsaw Stock Exchange. Figure 2 presents the stockbrokers' opinions on the behaviour of Polish investors during the COVID-19 pandemic. More than half of the

[17] Orlik K., Psychologia inwestorów w czasach pandemii, Generali Investments, 2020. Retrieved: https://generali-investments.pl/contents/display-article/klient-indywidualny/psychologia-inwestorow-w-czasach-pandemii. Access: 02.10.2021

[18] Hossa trwa mimo pandemii, a Polacy inwestują na potęgę, Wprost, 19.03.2020. Retrieved: https://www.msn.com/pl-pl/finanse/najpopularniejsze-artykuly/hossa-trwa-mimo-pandemii-a-polacy-inwestuj%C4%85-na-pot%C4%99g%C4%99-wydali-miliardy-na-akcje-zagranicznych-sp%C3%B3%C5%82ek/ar-BB1eL8tS. Access: 15.10.21.

respondents reported that investors were characterised by high mood swings (55%) during the pandemic. Market participants' indecision is evident in further responses, indicating rapid buying of overvalued assets (45%) or rapid selling of assets (35%). Only 16% of indications concerned more rational behaviour, i.e. refraining from sudden movements and investment decisions.

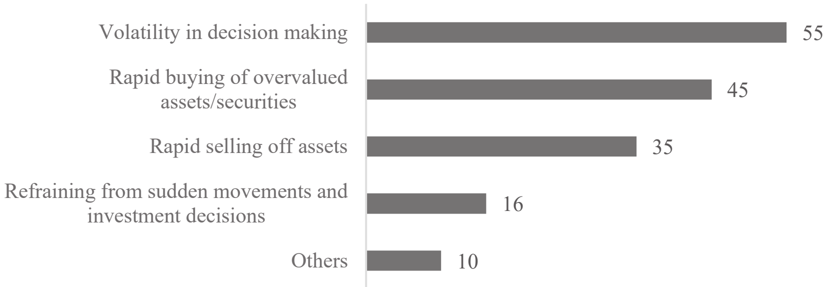


Figure 2. Stockbrokers' opinions on the behaviour of Polish investors during the COVID-19 pandemic (%)

Source: Author's own research.

In crisis situations and moments of increased risk, significant mood volatility of market participants is justified. Investors are driven alternately by fear and panic, and on the other hand, by greed and the need to make up for potential losses. The beginning of the pandemic on the Polish market was marked by rapid selling of shares, followed by almost equally rapid buying of overvalued securities. Such irrational behaviour of investors shows how important the role of psychological factors and behavioural analysis is in the valuation of listed assets.

It is important to keep in mind that investment decisions are generally complex in nature. The market valuation of shares is affected by many factors, of which investors are well aware. Investor behaviour and trends on the WSE depend largely on price trends on global stock markets, which in the period under review were shaped mainly by tensions related to the prolonged pandemic and the economic consequences. The year 2021 brought a strong increase in prices almost all over the world, related to the disturbed systemic balance after the first phase of the pandemic. Inflation recorded during this time was triggered by rising energy commodity prices and product shortages, which was rooted in a strong economic rebound. The volatile global economic situation during the COVID-19 pandemic may have been a factor sustaining investor uncertainty in financial markets.

In addition, it is worth noting that in circumstances of severe global stock market turbulence, there are usually significant disparities between the importance of incoming information and the reaction of investors to it, which is mainly influenced by human emotions. A study of the US market showed that investor behaviour seemed to repeatedly ignore health risks associated with the coronavirus, and that stock prices on the stock exchange during the pandemic did not always react in line with the assumptions of financial theory (stock prices on the stock exchange did not always reflect all available information). This thus contradicted the efficient market hypothesis. At the same time, it was emphasized that when extreme circumstances emerge, economic and financial factors alone may not be sufficient to explain the market participants' behaviour[1]. Bansal also pointed to the importance of behavioural factors, indicating the phenomena most relevant to the course of the COVID-19 pandemic, i.e. the effect of overconfidence, risk aversion, herd behaviour or availability heuristics[22].

Most investors in the markets are naturally risk averse. This characteristic causes a risk averse investor to choose the less risky investment from among investments with the same expected return.[19] In practice, this means that people, given a choice between a certain payment and a lottery with an expected value of the same amount, prefer a certain payment. Figure 3 presents the stockbrokers' opinions on investor attitudes towards risk during the COVID-19 pandemic.

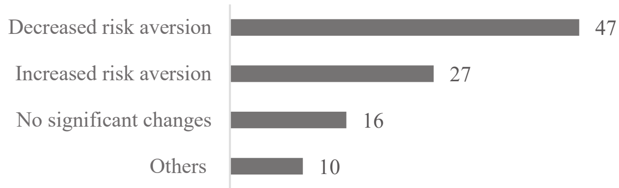


Figure 3: Stockbrokers' opinions on investor attitudes towards risk during the COVID-19 pandemic (%)
Source: Author's own research.

About half of the respondents' answers (47%) suggest that a decrease in risk aversion among stock market investors was observed during the pandemic. There were fewer answers regarding an increase in risk aversion during the period in question (27%). The remaining 10% of responses indicate that the decisions of investors on the Warsaw Stock Exchange were made in a more deliberate manner and on the basis of thorough market analyses rather than in a haphazard manner. The coronavirus pandemic caused that a group of investors got used to the new situation and made more courageous investment decisions. The risk taken is always associated with the expectation of increased profits (above average rates of return), so some investor motives for taking market opportunities or making a profit on markets/companies that benefit from the pandemic seem justified.

Table 3 presents the stockbrokers' opinions regarding the impact of selected psychological effects on investor behaviour during the COVID-19 pandemic.

Stockbrokers considered herd behaviour to be the strongest psychological effect influencing investors during the pandemic. A total of 90% of respondents indicated that this factor had at least a moderate impact on the behaviour of market participants in the examined period, while 70% of respondents described this impact as high. The uncertainty in the market caused by the outbreak of the coronavirus is conducive to the lemming-like rush effect. This means that investors take decisions primarily based on the behaviour of others, ignoring previously established goals. Such actions contribute to the formation of speculative bubbles which often deepen the crisis. A similar effect is achieved by the accessibility heuristics. According to 64% of stockbrokers, this effect determines investor behaviour to a moderate degree. This may mean that a significant number of market participants tend to make decisions and assessments that correspond with events that are easy to recall. At the same time, brokers underlined the importance of the freshness effect - 86% of respondents reported that this factor had at least a moderate impact on investor behaviour; according to 62%, it affected investment decisions to the highest extent. A disproportionately high impact of recent events on stock market participants' behaviour may cause a loss of confidence in the markets and deepen a possible recession. At the

[19] Jajuga K., Jajuga T., Inwestycje. Instrumenty finansowe, aktywa niefinansowe, ryzyko finansowe, inżynieria finansowa. PWN, Warszawa, 2015, s. 195-196.

same time, it is important to emphasize that investors will operate under the exaggerated influence of the coronavirus as long as it remains dangerous to the functioning of society and economy.

Table 3. Stockbrokers' opinions regarding the impact of selected psychological effects on investor behaviour during the COVID-19 pandemic (%)

Specification	High	Moderate	Low	Hard to say
Freshness effect	62	24	0	14
Loss aversion	30	44	12	14
Narrow framing effect	0	48	24	28
Mental accounting	8	32	14	46
Herd behaviour	70	20	0	10
The status quo effect	4	26	32	38
Accessibility heuristics	0	64	14	22
Overconfidence	0	48	30	22

Source: Author's own research.

The psychological effect highlighted by stockbrokers in their responses was loss aversion. On average, one in three respondents (30%) felt that this phenomenon strongly influenced their investment decisions during the pandemic, while 44% of stockbrokers described this impact as moderate. Feeling the loss of a certain amount of money more strongly than gaining the same amount of money can cause a paralyzing fear of engaging in capital market transactions. The experience of loss often makes investors completely withdraw from the market so as not to be disappointed again after another failure. The phenomenon of short-term loss aversion is reflected in more frequent scrutiny and updating of the investment portfolio, which is reflected in further research results (Figure 6). Investors check their investments at short intervals and update their portfolios according to the current benchmark. The more often this situation occurs, the higher the risk-aversion of the participants in the market game is observed.

According to stockbrokers, other factors that significantly affected investment decisions during the pandemic were the narrow-framing effect and overconfidence. Nearly half of the respondents (48%) indicated that these phenomena affected investor behaviour to a moderate degree during the coronavirus outbreak. The framing effect, depending on how the information is presented, can evoke positive or negative connotations. In light of the pandemic, this effect can cause people to focus their attention primarily on negative news, while ignoring information about positive aspects, such as the countermeasures being taken. The resulting pessimism prompts investors to withdraw from the market. On the other hand, the effect of overconfidence in financial markets leads to overinvestment when investors believe they have better information than others, and to underestimation of the risk for their portfolios. However, in times of falling quotations this behaviour is associated with increased losses and reduced asset values.

More frequent changes in the composition of investment portfolios was evidently characteristic of investors during the coronavirus outbreak, as shown in Figure 4. More than half of respondents (51%) reported that investors changed their investment portfolios more frequently during the pandemic compared to the preceding period. Frequent updating of portfolios by investors is not beneficial, as it can lead to selling of declining assets and rapid realization of losses, which in turn is negatively reflected in the value of investment portfolios.

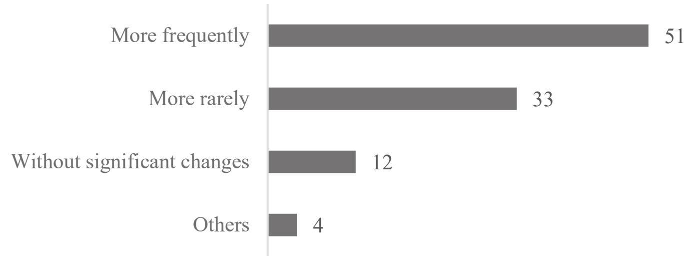


Figure 4: Stockbrokers' opinions on the frequency of changes in the investment portfolio composition compared to the pre-COVID-19 pandemic period (%)

Source: Author's own research.

More rare control of assets by investors was less common during the pandemic, as indicated by 33% of respondents. Lower frequency of changes in the composition of the investment portfolio in a period of high uncertainty seems to be more rational because it increases the probability of avoiding wrong decisions, made under the influence of emotions, and thus increases the chance of obtaining higher rates of return to investment.

The present research demonstrates that the pandemic was conducive to investing on the Warsaw Stock Exchange. Table 4 presents the stockbrokers' opinions on the demand for particular types of investments at the time studied.

Table 4. Stockbrokers' opinions on the demand for different types of investments during the COVID-19 pandemic (%)

Specification	Decrease in investors' interest	No significant changes noted	Increased investors' interest	Hard to say
Raw materials	32	68	0	0
Shares	0	22	78	0
Currencies	0	88	0	12
Investment funds	0	68	32	0
Treasury bonds	0	70	30	0
Derivatives	0	74	26	0

Source: Author's own research.

For most assets listed on the Warsaw Stock Exchange, the pandemic did not adversely affect investor demand. The vast majority of stockbrokers indicated no significant changes in the interest of capital market participants in most of the available investments, i.e. currencies (88%), derivatives (74%), treasury bonds (70%), raw materials or investment funds (68% each). Polish investors were most interested in shares - 78% of stockbrokers reported an increase in these assets. This is confirmed by the upward trend in the stock market that has continued since the second half of March 2020. The COVID-19 pandemic has induced an increase in global demand for vaccines and protective measures, i.e. masks, and gloves, which gave an opportunity for the accelerated growth of biotechnology companies (e.g. Pfizer, AstraZeneca). High demand for the above-mentioned products and hopes for the control of the pandemic pushed up the share prices of some companies. Stockbrokers' predictions for the future performance of the Warsaw Stock Exchange are positive. However, the situation in the capital markets over the coming months will depend not only on the course of the pandemic, but also on other factors, e.g. the pace of unfreezing of the economies or central bank policy.

At the same time, it should be emphasized that due to the limitation of empirical studies, further research is planned in the analysed research area. Future analyses will consider the study of the impact of the COVID-19 pandemic on the financial market, taking into account the existing data. It seems interesting to extend the research in question, bearing in mind, among other things, the sensitivity of selected global and national indices and individual sectors of the economy to the information on the appearance of coronavirus and a prolonged pandemic.

Conclusions

The aim of the research was to find out the opinions of stockbrokers operating on the Warsaw Stock Exchange on investor behaviour in the face of the COVID-19 pandemic. The research attempted to assess the impact of risk and uncertainty-related situations on the investment decision-making process. On the basis of the conducted research the following conclusions were formulated:

1. Investors, especially in times of turbulence and uncertainty, are particularly prone to emotional reactions and irrational behaviour as a result of various psychological mechanisms. In the period of the COVID-19 pandemic, in particular, herd behaviour based on crowd psychology and the so-called freshness effect have become more evident, which may result in a loss of confidence in the capital market.
2. Investors often changed the composition of their investment portfolios, which can be particularly associated with the phenomenon of so-called short-sighted loss avoidance, and the overreaction of investors to short-term losses.
3. The attitude of market participants to risk was variable: on the one hand, an increase in risk aversion was observed, on the other, investors took speculative actions, motivated by the desire to achieve above-average profits.
4. The pandemic did not reduce the activity of Polish investors, who were often more active than before the pandemic, looking for investment opportunities. The activities of market participants were changeable, which was manifested in particular by rapid purchases of overvalued securities and rapid sale of assets. At the same time, an increased interest in shares of companies listed on the Warsaw Stock Exchange was visible.

References

Baker H. K., Filbeck G., Nofsinger J. R., Finanse bahawioralne. Co każdy powinien wiedzieć. Wydawnictwo Naukowe PWN S.A., Warszawa 2021.

Bansal T., Behavioral finance and COVID-19: cognitive errors that determine the financial future, 2020. Retrieved: Behavioral Finance and COVID-19: Cognitive Errors that Determine the Financial Future by Tanmay Bansal :: SSRN. Access: 02.05.22.

Czerwonka M., Gorlewski B.: Finanse behawioralne. Zachowania inwestorów i rynku. Szkoła Główna Handlowa w Warszawie, Warszawa 2012.

Dowling M., Lucey B., 2005: The Role of Feelings in Investor Decision-Making, Journal of Surveys, vol. 19, no. 2.
Jajuga K., Jajuga T., Inwestycje. Instrumenty finansowe, aktywa niefinansowe, ryzyko finansowe, inżynieria finansowa. Wydawnictwo PWN, Warszawa 2015.
Juszczyk M., Wasilewski M., Czynniki kształtujące decyzje inwestorów na rynku kapitałowym. Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 855, Finanse, Rynki finansowe, Ubezpieczenia nr 74, Czas na pieniądz. Rynek kapitałowy, wycena przedsiębiorstw, inwestycje, Szczecin 2015.
Juszczyk M., Wasilewski M., Znaczenie czynników behawioralnych w podejmowaniu decyzji inwestycyjnych na rynku kapitałowym. Zeszyty Naukowe SGGW w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej, Warszawa 2015.
Le Bon G., 2004: Psychologia tłumu. Kaprocki B. (tłum.), Wydawnictwo Antyk, Kęty.
Lerner J. S., Han S., Keltner D., 2007: Feelings and consumer decision making: Extending the appraisal-tendency framework. Journal of Consumer Psychology, vol. 17, no. 3.
Loewenstein G., Hsee C., Weber E., Welsh N., 2001: Risk as Feeling, Psychological Bulletin, vol. 127, no. 2.
Mackay Ch., 1980: Extraordinary Popular Delusions and the Madness of Crowds (with a foreword by Andrew Tobias, 1841). New York: Harmony Books.
Mackay Ch., 1999: Niezwykłe złudzenia i szaleństwa tłumów. WIG PRESS, Warszawa.
Neil H. B., 1954: The Art of Contrary Thinking. Caxton Press.
Orlik K., Psychologia inwestorów w czasach pandemii, Generali Investments, 2020. Retrieved: https://generali-investments.pl/contents/display-article/klient-indywidualny/psychologia-inwestorow-w-czasach-pandemii. Access: 25.10.2021.
Opolski K., Potocki T., Świst T.: Teorie inwestycyjne w zarządzaniu bogactwem na przykładzie instytucji Wealth Management. Bank i kredyt, 5, 2010.
Ostaszewski J. (ed.): Finanse. Difin, Warszawa 2013.
Płuciennik M., Psychologia inwestowania, 2014. Retrieved: www.investhelp.pl. Access: 4.10.21.
Rick S., Loewenstein G., 2008: The role of emotion in economic behavior. [w:] Handbook of Emotions, Lewis M., Haviland-Jones J.M., Feldman-Barrett L. The Guilford Press, New York.
Sławiński A., Rynki finansowe. PWE, Warszawa 2006.
Szyszka A., Zachowania inwestora a teoria rynku kapitałowego. Ekonomista, nr 3, Polska Akademia Nauk - Komitet Nauk Ekonomicznych, Warszawa 2004.
Szyszka A., Finanse behawioralne. Nowe podejście do inwestowania na rynku kapitałowym. Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2009.
Tversky A., Kahneman D.: Judgement Under Uncertainty: Heuristics and Biases. Science, vol. 185, no. 4157, 1974.
Tversky A., Kahneman D., Prospect theory: An analysis of decisions under risk. Econometrica, vol. 47, no. 2, 1979.
Vasileiou E., Behavioral finance and market efficiency in the time of the COVID-19 pandemic: does fear drive the market?. International Review of Applied Economics, vol. 35, no. 2, 2021.
Zielonka P., Czym są finanse behawioralne, czyli krótkie wprowadzenie do psychologii rynków finansowych. Materiały i Studia, Zeszyt nr 158, Narodowy Bank Polski, Warszawa 2003.
Zielonka P., Behawioralne aspekty inwestowania na rynku papierów wartościowych. CeDeWu, Warszawa 2008.
Hossa trwa mimo pandemii, a Polacy inwestują na potęgę, Wprost. Retrieved: https://www.msn.com/pl-pl/finanse/najpopularniejsze-artykuly/hossa-trwa-mimo-pandemii-a-polacy-inwestuj%C4%85-na-pot%C4%99g%C4%99-wydali-miliardy-na-akcje-zagranicznych-sp%C3%B3%C5%82ek/ar-BB1eL8tS. Access: 15.10.21

Wpływ pandemii koronawirusa (COVID-19) na zachowania inwestorów w świetle finansów behawioralnych

Streszczenie

Celem badań było poznanie opinii maklerów papierów wartościowych pracujących na GPW w Warszawie, dotyczących zachowań polskich inwestorów w obliczu pandemii koronawirusa COVID-19. Badaniami objęto grupę 51 maklerów giełdowych, reprezentujących domy maklerskie o długiej historii działania. Stwierdzono, że uwarunkowania psychologiczne ludzi i nastroje panujące na giełdzie odgrywają istotną rolę w procesie decyzyjnym, a nieracjonalne zachowania inwestorów, w tym w dużej mierze efekty stadne, są podczas pandemii szczególnie widoczne. Z badań wynika, że pojawienie się koronawirusa nie wpłynęło na obniżenie aktywności polskich inwestorów. Odnotowano tym samym wyraźny wzrost zainteresowania akcjami spółek notowanych na GPW S.A. Zachowania i stosunek uczestników rynku do ryzyka był zmienny w obliczu rozwijającej się pandemii, co przejawiało się m.in. szybkim kupowaniem przecenionych walorów czy gwałtowaną wyprzedażą aktywów. Za najważniejszy czynnik wpływający na kształtowanie notowań w trakcie pandemii COVID-19 uznano ogólne zmiany na rynku krajowym i na rynkach globalnych.

Słowa kluczowe: pandemia koronawirusa, finanse behawioralne, decyzje inwestycyjne
Kody JEL: G01, G11, G41

<u>Information about the author:</u>

Marta Wiśniewska, PhD,
Jan Kochanowski University in Kielce, Branch in Piotrków Trybunalski
email: marta.wisniewska@ujk.edu.pl
ORCID: 0000-0001-5500-316X