FINANSE i PRAWO FINANSOWE

JOURNAL of FINANCE and FINANCIAL LAW

ISSN 2353-5601

vol. 2(46)

CZERWIEC/JUNE 2025

KWARTALNIK

WYDZIAŁ EKONOMICZNO-
-SOCJOLOGICZNY
Uniwersytet Łódzki

UNIWERSYTET
ŁÓDZKI

FINANSE i PRAWO FINANSOWE

JOURNAL of FINANCE and FINANCIAL LAW

e-ISSN 2353-5601 **vol. 2(46)**

CZERWIEC/JUNE 2025

K W A R T A L N I K

All articles published in the journal have undergone a double-blind peer review.

e-ISSN: 2353-5601 ISSN: 2391-6478

https://czasopisma.uni.lodz.pl/fipf/index
e-mail: joffl@uni.lodz.pl

CONTENTS

Adrian Apanel, Marlena Grzelczak – Assessment of the Level of Development of Cashless Transactions in the European Union Countries Between 2019–2023 5

Wojciech Kaczmarczyk – Attacks on Polish Bank Customers During the Pandemic: Cyberscams and the Role of Security Alerts 19

Patryk Janusz Król, Piotr Jędrzejewski – Analiza bibliometryczna badań nad ESG 37

Burcu Zengin, Monika Bolek – The Relationship Between ESG Scores and Net Profit Growth in the Light of Factors Determining It 55

Wojciech Jarosz, Mikołaj Górny – Regulatory Deficiencies in Investor Protection on the CFD Market in Poland 73

Kamila Szmigiel – NBP Monetary Policy in 2020–2022 in the Light of Central Banks' Responses to External Shocks 97

Zofia Polkowska – Impact of Costs on Legal Risk of CHF Foreign Currency Mortgage Loans in Shaping Financial Performance of Selected Banks 123

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •
Czerwiec/June 2025 • vol. 2(46): 5–17

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Authors assure of no violations of publication ethics and take full responsibility for the content of the publication.

ASSESSMENT OF THE LEVEL OF DEVELOPMENT OF CASHLESS TRANSACTIONS IN THE EUROPEAN UNION COUNTRIES BETWEEN 2019–2023

Adrian Apanel*, **Marlena Grzelczak****

https://doi.org/10.18778/2391-6478.2.46.01

ASSESSMENT OF THE LEVEL OF DEVELOPMENT OF CASHLESS TRANSACTIONS IN THE EUROPEAN UNION COUNTRIES BETWEEN 2019–2023

ABSTRACT

The purpose of the article. The aim of the article is to assess the level of development of cashless payment in the European Union countries between 2019 and 2023. The following research question was formulated – which European Union countries are leading, and which are at the bottom of the ranking in terms of the level of development of cashless payment?

Methodology. The source of data on non-cash transactions was statistical data from the European Central Bank's ECB Data Portal. The method of linear ordering – standardized sums – was used to create a ranking of the European Union countries in terms of the level of development of cashless payment.

Results of the research. An empirical study using the method of standardized sums made it possible to compare the level of development of cashless payment in the EU-27 countries and to identify the leaders and laggards in this respect. The results of the study proved that in the EU-27 countries, non-cash trading develops at a high and medium level. The leaders in this respect included Germany, France and Italy, while the worst ranked countries were Malta, Bulgaria, Latvia, Estonia and Cyprus. The reason for the underdevelopment of cashless payment in these countries can be attributed to an underdeveloped payment infrastructure, fewer institutions offering payment services, lower levels of investment in modern technology, and a payment culture that may be due to a tradition of attachment to cash and a lack of confidence in cashless forms of payment. In addition, the lack of appropriate regulation and government initiatives may influence their lower popularity.

Keywords: non-cash transactions, standardized sum method, payment instruments.

JEL Class: E42, G21, G28.

* MA, University of Lodz, The Faculty of Economics and Sociology. E-mail: adrian.apanel@edu.uni.lodz.pl
** PhD, University of Lodz, The Faculty of Economics and Sociology, https://orcid.org/0000-0002-3653-3920
Corresponding Author. E-mail: marlena.grzelczak@eksoc.uni.lodz.pl

Assessment of the Level of Development of Cashless Transactions in the European Union Countries Between 2019–2023

Non-cash transactions play a key role in the economy. They influence its development, as well as influence the economy itself by, among other things, reducing the size of the shadow economy, reducing the costs of sending and receiving payments, creating gross domestic product (the more non-cash transactions accompanying the purchase of products and services, the higher the value of gross domestic product). In addition, the availability of non-cash forms of payment allows the financial needs of consumers, which are basic needs, to be met.

There are many measures of non-cash transactions, including both general and specific ones. Generic measures come from the payment systems of individual EU countries and are collected using IT tools by the European Central Bank (ECB) and stored in the European Central Bank's Statistical Data Warehouse (SDW), now the ECB Data Portal. Examples of general measures are the number of transactions with payment cards, credit transfers, direct debits, cheques, e-money, the value of transactions with these payment instruments, and the payment infrastructure – the availability of POS terminals, ATMs, payment service outlets. Specific measures of goods transactions are created by transforming general measures, often considering the size of the population, e.g., the number of payment terminals per capita, or related to a country's population of one million. Due to the substantial number of available measures, cashless turnover should be studied in multi-criteria research.

The aim of the article is to assess the level of development of cashless transactions in the European Union countries between 2019 and 2023. This assessment can be helpful for payment market stakeholders, e.g., national central banks, payment organizations, as well as payment card issuers, i.e., commercial banks, who use reliable statistical information to compare the level of development of a country's payment system with other countries. Knowledge of the level of development of non-cash transactions is also necessary to make decisions aimed at promoting non-cash transactions in countries where they are underdeveloped. The following research question was formulated: Which countries of the European Union are leading, and which are trailing at the bottom of the ranking in terms of the level of development of non-cash transactions?

Non-Cash Transactions and Their Importance

Non-cash turnover is an important part of the payment system. The term of cashless transactions is understood as 'monetary settlements in which at each stage of the settlement cycle funds are transferred from and to bank accounts (or banks' own accounts or other payment accounts), i.e. both on the debtor's (payer's) side, as well as on the creditor's (beneficiary's) side, and in settlements between banks, settlement takes the form of entries only in the bank/payment accounts of the settling entities (with the exception of payment with an e-money instrument, where a transfer of funds from the e-money instrument to a device accepting it takes place' (NBP, 2013, p. 3).

This article fills a gap in the lack of a single synthetic indicator of the level of development of non-cash transactions that would allow for comparisons between a country and the rest of the Community, as highlighted in reports such as (Fundowicz et al., 2022, pp. 22–23). Data on measures of non-cash transactions that may be helpful in creating a synthetic measure of non-cash transactions are collected by national and European financial institutions, e.g., national central banks or the European Central Bank. The economic scale of the use of non-cash transactions is reflected in the value of transactions, while the frequency of use of non-cash payments is reflected in the number of transactions (Iwańczuk, 2011, p. 121). Variables depicting the value and number of transactions using traditional payment instruments, i.e., payment card, credit transfer, direct debit, cheque, and e-money in the empirical part of the article were included in the catalogue of potential variables describing the development of non-cash transactions. Since the use of non-cash payment instruments, both traditional and innovative, including mobile payments, online requires a relationship with a bank, e.g., to fund a prepaid account and thus to have a savings and checking account (ROR), called a personal account, the number of accounts was also included in the catalogue of potential variables.

It should also be noted that the execution of non-cash transactions requires the use of devices that accept electronic payment instruments. This means that among the variables describing non-cash transactions, it was decided to also include the basic elements of the payment infrastructure. Their presence in the set is due to the fact that payments take place using electronic payment elements in POS terminals – the so-called terminal payments (Zarańska & Zborowski, 2018, p. 15; Borcuch, 2016, p. 58) and multifunctional ATMs, which allow not only cash withdrawals, but also provide information on the bank account held and enable banking operations such as opening an account, making a transfer order or applying for a payment card (Łabenda, 2006, p. 7).

The development of non-cash transactions is beneficial both for the participants in the payment system, including consumers, and for the economy as a whole because of increased lending following the transfer of some cash from cash to bank deposits. The use of payment services by consumers makes it possible to satisfy financial needs, which are basic needs in the modern economy. Access to a wide range of financial services through the financialization of social relations is considered a key factor in consumer welfare (Soliwoda, 2015, p. 86). Furthermore, decisions on the use of cashless forms of payment by household members are an important ‘link in the decision tree of microfinance’, which originates from the institutional finance stream (Solarz, 2012, p. 171). In addition, the development of cashless payments by reducing the circulation of cash in the economy results in a reduction in the size of the shadow economy. This trend is confirmed, among other things, by cyclical studies conducted by Schneider and the research team of the A.T. Kearney consulting firm (Schneider, 2015, p. 6).

In addition, it should be emphasized that the development of cashless payments, e-payments, stimulates overall economic growth, consumption and trade and thus has a positive impact on the economy (Hasan, et. al., 2012, pp. 1–41; Cirasino & Garcia, 2008, pp. 1–78; Slozko & Pelo, 2014, pp. 130–140). In addition to this, previous studies have shown that a country that switches from a completely paper-based payment system to an electronic system can see savings of at least 1% of GDP per year (Humphrey et al., 2006, pp. 1631–1652).

Description of The Research Method

The study used the method of standardized sums, which is a model-free method of linear ordering. The method consisted in the construction of a synthetic index, based on which it was possible to rank the objects (countries of the European Union) from the best to the worst, where the criterion of ordering was the level of a complex phenomenon, i.e., the development of non-cash transactions. A characteristic feature of this method is both simplicity and low loss of information during the aggregation of diagnostic variables.

The selection of variables to describe a complex phenomenon is most often substantive. This method makes it possible to juxtapose measurement values for distinctive characteristics, even if expressed in different units. This is because the first operation to be carried out was the standardization of the z_{ij} variables. The standardization of the diagnostic variables was aimed at bringing them to a comparable scale, the so-called unmeasured scale, and therefore unrelated to the unit of measurement. In constructing the synthetic index, the authors of the article refrained from assigning weights to individual variables. It was assumed that each characteristic has the same weight in the calculation of the synthetic indicator.

In the study, consideration is limited to the situation where all diagnostic variables are stimulants. A stimulant is a variable having a positive impact on a given phenomenon, a higher value of which indicates a higher level of the phenomenon under consideration (Młodak, 2006, p. 33). Stimulants were standardized according to the following formula (Balicki, 2013, p. 327; Turczak, 2013, p. 79):

$$z_{ij} = \frac{x_{ij} - \overline{x}_j}{s_j}$$

where: z_{ij} – the variable after normalization; x_{ij} – value for object i and j – of this variable; $\overline{x}_j$ – arithmetic mean for j – that variable; s_j − standard deviation for j – that variable.

Standardization results in standardizing the values of all variables in terms of variability measured by standard deviation, which means eliminating variability as a basis for differentiating objects (Kądziołka, 2021, p. 72). If there are destimulants, it would be necessary to convert them into stimulants by multiplying their standardized values by –1 (Kopyściański & Rólczyński, 2013, p. 118). The standardized sums method was carried out in two stages (Dziechciarz, 2003, p. 290).

In the first step, sums of variable values were calculated for each site (country) according to a formula in which all variables are assumed to have a one-to-one effect on the level of the composite phenomenon:

$$p_i = \sum_{j=1}^{m} z_{ij}$$

where: z_{ij} – the value of the i-th object of the j-th variable.

In the next step, a so-called development measure was calculated for each site according to the formula:

$$m_i = \frac{p_i - p_0}{p_0 - p_{-0}},$$

for i = 1, 2, …, n,

where:

$$p_0 = \sum_{j=1}^{m} z_{0j} * w_j$$

$$p_{-0} = \sum_{j=1}^{m} z_{-0j} * w_j$$

w_j – weight of the j-th variable.

z_{0j} oraz z_{-0j} – values of the variables for the abstract objects, i.e., the pattern and the anti-pattern:

$$z_{0j} = \max z_{ij}$$

$$z_{-0j} = \min z_{ij}$$

Based on the mi sum values obtained, the objects were ranked from best to worst. The construction of the mi development measure was aimed at obtaining normalized values in the interval [0;1]. Thus, the higher the value of m_i the higher the level of the complex phenomenon in each object (Bartosiewicz, 1992, pp. 256–261). The study used a classification of the study sites into four typological groups due to the value of the synthetic measure m_i (see Table 1).

Table 1

Division of sites into typological groups according to the value of the synthetic measure

Value of the development measure	Class	Country's level of development in terms of non-cash trade
$m_i \geq \bar{x}+S_d$	I	Very high
$\bar{x}+S_d > m_i \geq \bar{x}$	II	High
$\bar{x} > m_i \geq \bar{x}-S_d$	III	Medium
$m_i < \bar{x}-S_d$	IV	Low

Source: Nowak (1990).

The resulting four typological groups dependent on mi values were created based on the arithmetic mean ($\bar{x}$) and standard deviation (S_d) of these measures (Nowak, 1990).

Results of Own Research

The objects of the study were 27 countries of the European Union. The time scope of the analysis covered the years 2019–2023. The study of the development of cashless trading in the European Union countries during the indicated period was justified by the following considerations:

1. The period covered by the analysis included the pandemic caused by the SARS-CoV-2 virus, which significantly affected consumer payment preferences (Konishi et al., 2024, pp. 140–169; Wisniewski et al., 2021); many people started to avoid cash for hygienic reasons for fear of infection, accelerating the development of cashless payment methods, which is confirmed, among others, by the results of an international UN study (UNCTAD, 2020), as well as a study conducted in Poland (Kotkowski et al. 2021, p. 24; Kotkowski and Polasik, 2021) or Italy (Graziano et. al., 2024).
2. Payment technologies such as mobile payments, digital wallets and proximity technologies have developed rapidly during the period under review (Capgemini Research Institute, 2023; NBP, 2020, pp. 33–50).
3. During the time under review, the European Union introduced several regulations and initiatives to promote cashless trading, including the PSD2 (Payment Services Directive 2), implemented in Poland from 14.09.2019 (Directive of the European Parliament and of the Council (EU) 2015/2366).

In the set of potential diagnostic variables, the variables analyzed by the National Bank of Poland in its annual reports “Comparison of selected elements of the Polish payment system with those of other EU countries” (NBP, 2023) were used. Among the selected variables in the authors' study were the following characteristics, labelled X_1 to X_{16}, converted per capita:

- X_1 – number of credit transfer (ECB, 2024a);
- X_2 – number of direct debits (ECB, 2024b);
- X_3 – number of payment card transactions (ECB, 2024c);
- X_4 – number of cheques (ECB, 2024d);
- X_5 – number of e-money transactions (ECB, 2024e);
- X_6 – number of total transactions excluding cash withdrawals (ECB, 2024f);
- X_7 – value of transactions by credit transfer (ECB, 2024g);
- X_8 – value of direct debit transactions (ECB, 2024h);
- X_9 – value of payment card transactions (ECB, 2024i);
- X_{10} – value of cheque transactions (ECB, 2024j);
- X_{11} – value of e-money transactions (ECB, 2024k);
- X_{12} – value of all transactions excluding cash withdrawals (ECB, 2024l);
- X_{13} – number of all institutions offering payment services to entities that are not part of monetary financial institutions (non-MFI's) (ECB, 2024m);

- X_{14} – number of bank accounts for entities that are not part of monetary financial institutions (non-MFI's) (ECB, 2024n);
- X_{15} – number of payment terminals (ECB, 2024o);
- X_{16} – number of ATMs (ECB, 2024p).

For most of the variables indicated, the NBP assesses annually the position of Poland in comparison with other EU countries from the point of view of the development of cashless trading.

For the selected potential diagnostic variables, coefficients of variation (V) were calculated, being the quotient of the arithmetic mean and the standard deviation, in order to verify whether these variables had the ability to discriminate between the analyzed EU countries, i.e., whether they had an ability to identify and classify various features and characteristics of individual EU countries, which made it possible to distinguish them from one another. The critical value of the coefficient of variation adopted in the study was V = 5%, which resulted in the final inclusion of all mentioned potential variables in the set of diagnostic variables. The results of the variability of characteristics X_1 to X_{16} in the study period are presented in Table 2.

Table 2

Coefficients of variation for potential diagnostic variables in 2019–2023

Variable/Year	2019	2020	2021	2022	2023
X_1	137,6%	136,3%	132,8%	137,0%	129,5%
X_2	273,3%	276,2%	273,9%	258,3%	250,1%
X_3	136,9%	131,8%	129,0%	148,3%	134,2%
X_4	438,6%	439,8%	443,7%	453,6%	450,8%
X_5	387,0%	384,7%	362,9%	336,3%	335,3%
X_6	141,9%	139,7%	135,2%	149,1%	135,4%
X_7	182,8%	181,9%	174,8%	218,2%	184,7%
X_8	275,6%	274,8%	268,5%	273,2%	294,7%
X_9	154,3%	151,1%	146,5%	159,5%	149,9%
X_{10}	244,3%	246,6%	243,1%	246,1%	245,0%
X_{11}	397,3%	384,1%	347,1%	308,2%	296,9%
X_{12}	180,7%	180,8%	176,5%	197,6%	181,4%
X_{13}	133,1%	132,9%	131,6%	130,8%	154,5%
X_{14}	140,0%	138,9%	137,3%	137,0%	141,1%
X_{15}	164,2%	168,6%	172,5%	144,6%	140,7%
X_{16}	49,3%	50,8%	53,6%	56,6%	65,7%

Source: own compilation based on data from ECB Data Portal – European Union.

Table 2 shows that the variables X_4 – number of cheques (volatility above 400%), X_5 – number of e-money transactions and X_{11} – value of e-money transactions (above 300%) and X_2 – number of direct debits, X_8 – value of direct debit transactions and X_{10} – value of cheque transactions (above 200%) had the highest volatility.

The next stage of the study was to use the method of standardized sums to sort the EU countries in terms of non-cash transactions by a level of development class created as shown in Table 1. The results of the ordering over the study period are shown in Table 3.

Table 3

Ranking of the EU27 countries in terms of the level of development of cashless trading between 2019 and 2023

Development level class/Year	2019	2020	2021	2022	2023
I	Germany	Germany	Germany	Germany	Germany
	France	France	France	France	France
	Italy	Italy	Italy	Italy	Italy
II	Spain	Spain	Spain	Spain	Spain
	Poland	Poland	Poland	Luxembourg	Poland
	Luxembourg	Luxembourg	Netherlands	Netherlands	Netherlands
	Netherlands	Netherlands	Luxembourg		Luxembourg
	Portugal	Portugal			
III	Belgium	Austria	Belgium	Ireland	Ireland
	Austria	Belgium	Ireland	Austria	Austria
	Ireland	Ireland	Portugal	Portugal	Portugal
	Denmark	Denmark	Sweden	Belgium	Belgium
	Sweden	Sweden	Austria	Polska	Greece
	Greece	Greece	Greece	Greece	Czech Republic
	Finland	Finland	Finland	Czech Republic	Finland
	Croatia	Czech Republic	Denmark	Finland	Romania
	Czech Republic	Croatia	Czech Republic	Lithuania	Hungary
	Hungary	Romania	Lithuania	Romania	Lithuania
	Romania	Hungary	Romania	Croatia	Slovakia
	Slovenia	Slovakia	Hungary	Denmark	Denmark
	Slovakia	Lithuania	Slovakia	Hungary	Slovenia
	Estonia	Slovenia	Bulgaria	Slovakia	Latvia
	Cyprus	Cyprus	Croatia	Sweden	Malta
	Lithuania	Estonia	Cyprus	Slovenia	Sweden
	Latvia	Latvia	Latvia	Latvia	Cyprus
	Bulgaria	Bulgaria	Estonia	Cyprus	Estonia
	Malta	Malta	Slovenia	Estonia	Bulgaria
			Malta	Bulgaria	Croatia
				Malta	

Source: own research.

The results presented in Table 3 show that, considering the number, value of transactions using basic non-cash payment instruments and payment infrastructure, countries such as Germany, France and Italy performed best in the analyzed period. The countries indicated were assigned to the first class, within which countries with an extremely high level of cashless development were concentrated. Germany, France, and Italy were ranked top for several key reasons such as (CNPS, 2019):

- developed payment infrastructure: these countries have a well-developed payment infrastructure, including a wide network of payment terminals and ATMs, which facilitates cashless transactions;
- a high number of financial institutions: the substantial number of banks and other financial institutions offering a variety of payment services contributes to the popularity of cashless transactions;
- technological innovation: France, Germany and Italy are investing in nova payment technologies, such as mobile and contactless payments, which increases the convenience and security of transactions;
- policy and regulation: the governments of these countries actively support the development of cashless payments through appropriate regulations and initiatives that promote their use;
- payment culture: there is a high culture of using cashless payments in these countries, which is supported by educational and promotional campaigns.

Within the second tier (indicating a high level of development of cashless trading), five countries were included in the 2019–2022 period: Spain, Poland, the Netherlands, Luxembourg and Portugal. In 2022 Poland (due to the lack of most data on the number of transactions with payment instruments) was displaced from Tier II by Austria. In 2023, only four countries (Spain, Poland, the Netherlands and Luxembourg) were concentrated in Class II. In the last year under review, the position of Austria and Portugal deteriorated in terms of non-cash transactions, which translated into their drop in ranking to Class III (medium level of development in terms of non-cash transactions). It is noteworthy that over the entire period analyzed, no EU27 country was assigned to Class IV, indicating a low level of development in non-cash transactions. On this basis, it can be concluded that in the EU27, non-cash transactions are developing at a high and medium level, and only in a few countries at a very high level. In contrast, in the last group of countries according to the value of the development level measure, the following countries were included in almost every analyzed year: Malta, Bulgaria, Latvia, Estonia and Cyprus. The distant ranking of these countries may be due to their attachment to cash as the preferred means of payment, or the lack of adequate legal regulations and government initiatives to support the promotion of cashless forms of payment, as well as underdeveloped payment infrastructure and low levels of use of modern technologies. The deterioration of Croatia's position in 2023 – last position in the ranking is due to the lack of data provided by the country's national bank to the ECB on the number of accounts and the number of ATMs.

Summary

The study conducted to assess the level of development of cashless trading between 2019 and 2023 showed that European Union countries ranked similarly in each of the years analyzed. Germany, France and Italy were among the leaders in terms of the development of cashless trading. The worst ranked countries were Malta, Bulgaria, Latvia, Estonia and Cyprus. In addition, the study showed that there were countries that improved their ranking year on year, such as Lithuania, Ireland, and Romania, as well as those that deteriorated, such as Denmark.

The analysis of statistical data from various EU-27 countries allows for a comparison of the level of development of non-cash transactions, the identification of leaders and the worst in the ranking and provides a voice in the discussion in understanding the factors influencing these differences. The information from the study can be of significant use to national central banks or payment organizations and commercial banks that are interested in intensifying cashless solutions.

References

Balicki, A. (2013). *Statystyczna analiza wielowymiarowa i jej zastosowania społeczno-ekonomiczne.* Wydawnictwo Uniwersytetu Gdańskiego.

Bartosiewicz, S. (red.). (1992). *Ekonometria z elementami programowania matematycznego i analizy porównawczej* (wyd. 3). Akademia Ekonomiczna we Wrocławiu.

Borcuch, A. (2016). *Rozwój rynku płatności mobilnych w Polsce. Perspektywa konsumentów, dostawców i akceptantów płatności mobilnych.* Wydawnictwo CeDeWu.

Capgemini Research Institute. (2023). *World Payments Report 2023.* https://go.capgeminigroup.com/l/95412/2023-09-12/7tbpd6/95412/1694547172idbuBtLE/WPR_2023_web.pdf

Cirasino, M., & Garcia, J. A. (2008). *Measuring payment system development.* Working Paper. Financial Infrastructures Series, Payment Systems Development Group, The World Bank, 1–78.

CNPS. (2019). National Strategy for Cashless Payment Instruments 2019–2024. https://fondation.banque-france.fr/sites/default/files/media/2019/03/11/190227_-_en_national_cashless_payments_strategy_2019-2024.pdf

Directive of the European Parliament and of the Council (EU) 2015/2366 [Dyrektywa Parlamentu Europejskiego i Rady (UE) 2015/2366] z dnia 25 listopada 2015 r. w sprawie usług płatniczych w ramach rynku wewnętrznego, zmieniająca dyrektywy 2002/65/WE, 2009/110/WE, 2013/36/UE i rozporządzenie (UE) nr 1093/2010 oraz uchylająca dyrektywę 2007/64/WE, Dz.Urz. UE, L 337, 23.12.2015.

Dziechciarz, J. (red.). (2003). *Ekonometria − metody, przykłady, zadania.* Wydawnictwo Akademii Ekonomicznej we Wrocławiu.

ECB. (2024a). *Total number of credit transfers – all transactions.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024b). *Total number of direct debits.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024c). *Total number of card payments.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024d). *Total number of cheques.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024e). *Total number of e-money payments.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024f). *Total number of total payment transactions (excluding cash withdrawals).* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024g). *Total value of credit transfers – all transactions.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024h). *Total value of direct debits.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024i). *Total value of card payments.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024j). *Total value of cheques.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024k). *Total value of e-money payment transactions.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024l). *Total value of total payment transactions (excluding cash withdrawals).* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024m). *Total institutions offering payment services to non-MFIs – Number of institutions.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024n). *Payment institutions and credit institutions (MFI dataset) – Number of overnight deposit accounts held by non-MFIs.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024o). *Number of terminals provided by resident PSPs – POS terminals.* ECB Data Portal. https://data.ecb.europa.eu/data

ECB. (2024p). *Number of terminals provided by resident PSPs – ATM terminals.* ECB Data Portal. https://data.ecb.europa.eu/data

Fundowicz, J., Łapiński, K., Wyżnikiewicz, B., & Wyżnikiewicz, D. (2022). *Raport Szara Strefa 2022.* Instytut Prognoz i Analiz Gospodarczych.

Graziano, E. A., Musella, F., & Petroccione, G. (2024). Cashless payment: behavior changes and gender dynamics during the COVID-19 pandemic. *EuroMed Journal of Business.* Advance online publication. https://doi.org/10.1108/EMJB-11-2023-0299

Hasan, I., Renzis, T., & Schmiedel, H. (2012). Retail payments and economic growth. *Bank of Finland Research, Discussion Papers*, *19*, 1–41.

Humphrey, D. B., Willesson, M., Bergendahl, G., & Lindblom, T. (2006). Benefits from a changing payment technology in European banking. *Journal of Banking & Finance*, *30*(6), 1631–1652. https://doi.org/10.1016/j.jbankfin.2005.09.009

Iwańczuk, A. (2011). *Systemy płatnicze i rynek płatności w Unii Europejskiej.* Wydawnictwo CeDeWu.

Kądziołka, K. (2021). Porównanie wybranych metod normalizacji zmiennych pod kątem podobieństwa uzyskiwanych rankingów. *Zeszyty Naukowe ZPSB Firma i Rynek*, *2*(60), 70–80.

Konishi, Y., Saito, T., Kanai, H., Naoya, N., Mizumura, J., Shiga, K., Keueyasu, K., & Hamaguchi, R. (2024). Change from the COVID-19 pandemic to a new normal: Documenting consumption behavior of two years with big data. *Asian Economic Papers*, *23*(1), 140–169. https://doi.org/10.1162/asep_a_00876

Kopyściański, T., & Rólczyński, T. (2013). Analiza porównawcza potencjału gospodarczego regionów w Polsce w latach 2006–2012. *Zarządzanie i Finanse, 3.*

Kotkowski, R., & Polasik, M. (2021). COVID-19 pandemic increases the divide between cash and cashless payment users in Europe. *NBP Working Papers, 339.* https://doi.org/10.1016/j.econlet.2021.110139

Kotkowski, R., Dulinicz, M., & Maciejewski, K. (red.). (2021). *Zwyczaje płatnicze w Polsce w 2020 r. Podstawowe wyniki badania.* Narodowy Bank Polski. https://nbp.pl/wp-content/uploads/2022/09/zwyczaje_platnicze_Polakow_2020p.pdf

Łabenda, K. P. (2006). *Instrumenty płatnicze.* Biblioteka Kwartalnika Naukowego „Pieniądze i Więź", Fundacja na rzecz Polskich Związków Kredytowych.

Młodak, A. (2006). *Analiza taksonomiczna w statystyce regionalnej.* Difin.

NBP [Narodowy Bank Polski]. (2013). *Diagnoza stanu rozwoju obrotu bezgotówkowego w Polsce.* Departament Systemu Płatniczego. https://nbp.pl/wp-content/uploads/2022/09/diagnoza-rozwoju-obrotu-bezgotowkowego.pdf

NBP [Narodowy Bank Polski]. (2020). *PayTech – innowacyjne rozwiązania płatnicze na rynku polskim*.

NBP [Narodowy Bank Polski]. (2023). *Porównanie wybranych elementów polskiego systemu płatniczego z systemami innych krajów Unii Europejskiej za 2022 r*. https://nbp.pl/wp-content/uploads/2024/01/Porownanie_2022.pdf

Nowak, E. (1990). *Metody taksonomiczne w klasyfikacji obiektów społeczno-gospodarczych.* PWE.

Schneider, F. (2015). Size and development of the shadow economy of 31 European and 5 other OECD countries from 2003 to 2014: Different developments. *Journal of Self-Governance and Management Economics*, *4*(3).

Slozko, O., & Pelo, A. (2014). The electronic payments as a major factor for further economic development. *Economics and Sociology*, *7*(3), 130–140.

Solarz, J. K. (2012). *Nanofinanse. Codzienność zmienia świat.* Wydawnictwo C.H. Beck.

Soliwoda, M. (2015). Zwyczaje płatnicze ludności wiejskiej w Polsce – bariery i wyzwania dla systemu usług finansowych. *Problemy Zarządzania*, *13*(3[54]), 85–101.

Turczak, A. (2013). Liczba abonentów telefonii przewodowej i komórkowej w krajach Unii Europejskiej. W: P. Zwiech (red.), *Zróżnicowanie gospodarek unijnych – aspekty społeczne* (ss. 75-93). Economicus.

UNCTAD. (2020). COVID-19 has changed online shopping forever, survey shows. *United Nations Conference on Trade and Development.* https://unctad.org/press-material/covid-19-has-changed-online-shopping-forever-survey-shows

Wisniewski, T. P., Polasik, M., Kotkowski, R., & Moro, A. (2021). Switching from cash to cashless payments during the COVID-19 pandemic and beyond. *NBP Working Papers*, *337*. https://static.nbp.pl/publikacje/materialy-i-studia/337_en.pdf

Zarańska, K., & Zborowski, M. (2018). Charakterystyka bankowości elektronicznej. W: A. Gospodarowicz (red.), *Bankowość elektroniczna. Istota i innowacje* (ss. 11–61). Wydawnictwo C.H. Beck.

OCENA POZIOMU ROZWOJU OBROTU BEZGOTÓWKOWEGO W KRAJACH UNII EUROPEJSKIEJ W LATACH 2019–2023

STRESZCZENIE

Cel artykułu. Celem artykułu było dokonanie oceny poziomu rozwoju obrotu bezgotówkowego w krajach Unii Europejskiej w latach 2019–2023. Sformułowano następujące pytanie badawcze – które kraje Unii Europejskiej są liderem, a które znajdują się na końcu rankingu pod względem poziomu rozwoju obrotu bezgotówkowego?

Metoda badawcza. Źródłem danych na temat obrotu bezgotówkowego były dane statystyczne pochodzące z bazy Europejskiego Banku Centralnego ECB Data Portal. Do stworzenia rankingu krajów Unii Europejskiej pod względem poziomu rozwoju obrotu bezgotówkowego wykorzystano metodę porządkowania liniowego – metodę sum standaryzowanych.

Wyniki badań. Przeprowadzone badanie empiryczne z wykorzystaniem metody sum standaryzowanych pozwoliło na porównanie poziomu rozwoju obrotu bezgotówkowego w krajach UE-27 oraz identyfikację liderów i opóźnionych pod tym względem. Wyniki badań dowiodły, że w krajach UE-27 obrót bezgotówkowy na ogół rozwija się na wysokim i średnim poziomie, Do liderów pod tym względem należały Niemcy, Francja i Włochy, natomiast najgorsze pozycje w rankingu zajmowały: Malta, Bułgaria, Łotwa, Estonia i Cypr. Przyczyn średniego rozwoju obrotu bezgotówkowego w tych krajach należy upatrywać w niedostatecznie rozwiniętej infrastrukturze płatniczej, ograniczonej liczbie instytucji oferujących usługi płatnicze, ograniczonych inwestycjach w nowoczesne technologie, a także kulturze płatności, co może wynikać z tradycji przywiązania do gotówki oraz braku zaufania do bezgotówkowych form płatności. Ponadto brak odpowiednich regulacji prawnych i inicjatyw rządowych może wpływać na niższą ich popularność.

Słowa kluczowe: obrót bezgotówkowy, metoda sum standaryzowanych, instrumenty płatnicze.

Kody JEL: E42, G21, G28.

Received: 25.09.2024
Accepted: 04.03.2025
Available online: 30.06.2025

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •

Czerwiec/June 2025 • vol. 2(46): 19–35

Funding information: The publication of the article was funded by a subsidy for maintaining and developing the research potential of the University of Economics in Katowice. **Conflicts of interests:** None. **Ethical considerations:** The author represents individuals affected by cybercrime in legal action against banks, including individuals whose cases are described in the case study presented in this article (at the time of publication, the author no longer represents these individuals). This potential conflict of interest is disclosed in the interest of full transparency.

ATTACKS ON POLISH BANK CUSTOMERS DURING THE PANDEMIC: CYBERSCAMS AND THE ROLE OF SECURITY ALERTS

Wojciech Kaczmarczyk*

https://doi.org/10.18778/2391-6478.2.46.02

ATTACKS ON POLISH BANK CUSTOMERS DURING THE PANDEMIC: CYBERSCAMS AND THE ROLE OF SECURITY ALERTS

ABSTRACT

The purpose of the article. The publication aims to determine the extent to which changes in the use of e-banking during the COVID-19 pandemic influenced the methods and scale of cyberscams in Europe (including Poland). Additionally, it seeks to assess whether Polish banks conducted a proper information policy and were able to practically implement the adopted solutions during the examined period.

Methodology. First, an analysis of the available literature, applicable laws, and reports from state institutions was conducted. Then, security announcements from the five largest banks regarding cyberscams were examined. Additionally, a case study of three different incidents was carried out, including a review of complaint and court documentation.

Results of the research. The study demonstrates the growth and expansion of banking cyber scams in Europe (including Poland) during the COVID-19 pandemic. The analysis of security alerts highlights the need for improvements in the actions taken. Additionally, the case study points to the existence of systemic and organizational shortcomings. These findings facilitated the identification of potential changes to reduce the scale of the phenomenon. The obtained results may be useful for both researchers and practitioners working in the banking or supervisory sector.

Keywords: cybercrime, cyberscams, e-banking, COVID-19, banking services.

JEL Class: G21, G28.

* MSc in Finance and Accounting, MA in Law, University of Economics in Katowice, https://orcid.org/0000-0003-2037-2568 , Corresponding Author. E-mail: wojciech.kaczmarczyk@ue.katowice.pl

Attacks on Polish Bank Customers During the Pandemic: Cyberscams and the Role of Security Alerts

The Covid-19 pandemic forced numerous changes in the lives of residents of the Western world, significantly accelerating the digitization of the economy, including the banking sector. Handling most matters via phone, email, or dedicated applications has become the new normal, also in Poland (Rybacka, 2023).

These changes did not go unnoticed by cybercriminals, who had already been exploiting human naivety and lack of knowledge about modern technologies before the pandemic to fraudulently obtain significant sums of money. The subject of the presented research is a significant portion of cybercrimes committed against e-banking customers, specifically those that exhibit characteristics of fraud.

This publication aims to shed light on the issue of banking cyberscam in Poland in the context of increasing cyber scam number in Europe, determine the impact of the pandemic on its scale, including the evolution of fraud methods, and assess the security of e-banking in Poland. It is addressed to both professional entities (regulators, banks, researchers) and e-banking customers. The conclusions drawn from the study may contribute to improving the security of e-banking usage.

Considering the objectives of the publication, the following research hypotheses have been adopted:

1. During the Covid-19 pandemic in selected European countries there was an increase and development of e-banking cyberscam.
2. During the Covid-19 pandemic, the largest banks in Poland published public security alerts about cybercrime threats at the same time.
3. During the Covid-19 pandemic in Poland there were no organizational problems limiting the effectiveness of customer protection in case of cybercrimes.

Methodology

As part of the conducted research, a review of financial and legal literature, applicable legal acts, and reports related to the security of banking sector and the fight against cybercrime was carried out. As a result, the subject of the study was characterized, security-related obligations were identified, and the impact of the Covid-19 pandemic on the scale of banking cyberscam in Europe (including Poland) and its evolution in Poland were determined.

Next, an analysis was conducted on security communications published by the five largest banks in Poland. These communications were evaluated quantitatively, categorized by year, and assessed for their adequacy in relation to emerging scenarios of selected cyberscam cases (identified based on the aforementioned review).

The final element of the study consisted of case studies of cyber scams committed against e-banking customers during the Covid-19 pandemic in Poland. Based on the documentation related to criminal and civil proceedings, the exact mechanisms of committed crimes were determined, and an assessment was made regarding whether they could have been prevented.

The Concept and Characteristics of Banking Cyber Scam

Crimes targeting e-banking can generally be divided into two categories: those directly affecting banking systems and those impacting users (consumers) of e-banking services (Lotko, 2024). This publication focuses on the second type of cybercrime.

For this reason, the term banking cyberscam will be understood as offenses committed to the detriment of e-banking customers, penalized under article 286 § 1 of the Penal Code (Act of 6 June 1997) and classified as cybercrime. According to this provision, fraud is defined as an offense involving the deception of a victim through fraudulent practices that create a false perception of reality (Kulik, 2022). Meanwhile, cybercrime refers to an illegal act directed against IT systems, in which a computer is either a tool or the target itself (Stefanowicz, 2017).

Cyberscam can be committed in various ways. In the literature, these crimes are most often characterized basing on the method used to gain access to e-banking. The most common types include obtaining data that allows for banking transactions, using malware that enables banking operations (Górnisiewicz et al., 2014), and scams that deceive the victim into performing the necessary banking transactions themselves (Rynkowska, 2017).

Data theft can be carried out using various phishing methods, ranging from fraudsters impersonating bank employees in phone conversations to advanced techniques involving redirection to a fake online banking website that captures login credentials (Czyżak, 2016). More sophisticated form of phishing is spearphishing, which involves creating personalized messages based on information gathered about the victim (Konieczny, 2023).

Due to the wide range of phishing methods, various taxonomies of this phenomenon can be found in the literature. Aleroud & Zhou (2017) propose categorizing phishing according to the following criteria:

- communication media (e-mail, website, messengers, social networks, blogs, mobile apps etc.);
- target devices (personal PC, smart phones, voice and Wi-Fi Devices);
- attack techniques (methods of: attack initialization, data collection and system penetration);
- countermeasures.

Another method of data theft is *spoofing*, which originated as a technique for impersonating the addresses of other Internet users (Radoniewicz, 2021). Today, it is just as frequently used to impersonate another user of a telephone network, meaning that the victim believes they are receiving a call from a trusted institution (Deng et al., 2018). Spoofing that involves disguising a phone number is referred to as *smishing* (when SMS messages are used, e.g., containing links to malware) or *vishing* (when voice calls are used). These terms are combinations of the words SMS, voice, and phishing (Mangut & Datukun, 2021).

The use of malicious software can take various forms, ranging from programs that capture the data necessary for banking transactions to those that provide remote access to the victim's computer (Czyżak, 2016). This type of software is collectively referred to as *malware* (Stawińska, 2021). However, for the purposes of this publication, the term will also include legitimate software, provided that it was installed at the initiative of the perpetrators and used in an unlawful manner.

The *scam* mechanism relies on gaining the victim's trust through traditional correspondence, email, online services, or direct contact, persuading them to take specific actions (Rynkowska, 2017). This type of cyberscam originates from the Nigerian scam, which became popular as early as the 1980s. It involved sending messages in which a wealthy benefactor is claiming that he wants to transfer a large sum of money to the recipient – but only after various fees were paid upfront (Dyrud, 2005). Interestingly, the Nigerian scam mechanism is still actively used in Poland today (Łęski et al., 2023).

Frauds that primarily rely on obtaining confidential information through human interaction (manipulation) are referred to as *social engineering attacks* (Radoniewicz, 2021). Additionally according to Salahdine & Kaabouch (2019), social engineering attacks can be categorized into the following types:

- human based and computer based;
- or technical based, social based and physical based.

Increasingly, complex strategies that are emerging also incorporate elements of advanced technical knowledge. A social engineering attack may include aspects of phishing, malware, or scam (Gryszczyńska, 2021).

Basic Obligations of Banks in e-Banking Security

One of the fundamental obligations of a bank is to ensure the security of e-banking customers, although, naturally, the complete elimination of cybercrime is impossible (Lisowska & Waściński, 2021). The fundamental provisions are contained in the Banking Law (Act of August 29, 1997). Pursuant to Article 50 par. 2 thereof, "a bank shall exercise special diligence in ensuring the security of the funds entrusted to it". The aforementioned provision indicates that ensuring the security of entrusted funds is one of the most significant obligations of a bank (Judgment of April 14, 2003), which should be associated with strict authentication procedures for transactions on the account, even if they are burdensome (Kociucki, 2020).

The European PSD2 directive is also of significant importance, as it imposes substantial transaction security requirements on banks, such as the strong authentication procedure, while also greatly enhancing consumer protection, for instance, through the procedure for reporting unauthorized transactions. In the case of an unauthorized transaction being reported, the bank is obligated to promptly refund the lost amount unless there is suspicion of the customer's involvement in fraud (Paduszyńka & Pawlak, 2020). These regulations were implemented into the national law through the Payment Services Act.

The scope of "special diligence" should be assessed, among other things, through the lens of Recommendations issued by the Financial Supervision Authority under Article 137 point 5 of the Banking Law and Article 102 point 2 of the Payment Services Act (Act of August 19, 2011). Among these, particular importance is given to Recommendation D on the management of information technology areas and the security of the IT environment in banks (Resolution No. 7/2013) and the Recommendation on the security of online payment transactions executed by banks, national payment institutions, national electronic money institutions, and cooperative savings and credit unions (Resolution No. 584/2015).

Banks use transaction monitoring systems available on the market, provided by leading software manufacturers. Such a system should detect changes in login locations, modifications in the usage patterns of e-banking (navigation paths), excessively fast transaction execution, and unusual transactions, such as international transfers, termination of all deposits, or the use of all available funds (Iwaszczuk & Jarzęcka, 2016).

The literature mentions several possible channels for reporting incidents, including a dedicated email inbox, a designated section in online banking, encrypted and digitally signed emails, and the bank's helpline (Iwaszczuk & Jarzęcka, 2016).

The Growth of Bank Cyberscam during the Pandemic in Poland and Europe

The COVID-19 pandemic intensified the phenomenon of bank cyberscams, with criminals developing fraud schemes based on fear and the desire for pandemic-related information (Stawińska, 2021), leading to large-scale fraudulent activities (Tang et al., 2021). Due to the lockdown, consumer habits changed, including among older and less-educated individuals, who increasingly used e-banking and the Internet, making them targets for specially designed cyberscams (Naeem & Ozuem, 2021).

The sudden increase in online activity was also accompanied by a significant rise in cybercrime in Poland (Gryszczyńska, 2021), including a noticeable increase in fraudulent transactions using payment cards online in years 2018–2019 (Zalewska-Bochenko, 2023). This is confirmed by the rise in crimes related to e-banking identified by law enforcement agencies and the number of incidents classified by CERT as online fraud. However, it is important to note that such an increase was not observed in incidents described by CERT as belonging to the banking sector (likely because only reports directly related to banking systems are considered) or in the statistics provided by the Supreme Audit Office (there is no known distinction between the classification of crimes according to NPH and SAO data, while SAO figures pertain to reported crimes rather than confirmed ones). Also the number of cybercrime incidents reported by CSIRT increased in analyzed period.

A trend analysis was conducted, assuming a significance level of alpha = 0.1 due to the limited study period (2018–2021). Based on the obtained p-values, it can be inferred that a trend is present in the NPH, CERT (online fraud), and CSIRT data, however, the results are affected by a high margin of error due to a low number of observations. In the case of CERT data for the banking sector, the trend was not confirmed for reasons previously discussed. Similarly, the trend in card fraud data was not confirmed, as it appears to be only a one-time increase. Detailed data is presented in Table 1.

Table 1

Data related to cybercrimes committed and reported in Poland in thousands

	2018	2019	2020	2021	p-value
Confirmed crimes related to e-banking (National Police Headquarters)	3,6	6,3	6,7	14,5	0,0889
Online fraud reported to Police (Supreme Audit Office)	–	48,12	49,44	37,79 (50,38*)	–
Incidents handled described as banking sector (CERT Poland)	0,64	1,05	1,00	0,95	0,3845
Incidents handled described as online fraud (CERT Poland)	1,88	4,08	8,31	25,47	0,0947
Number of cybercrime incidents (CSIRT)	6,24	12,4	23,31	26,90	0,0164
Number of card frauds (Payment Systems Department)	44,4	62,4	63,9	61,8	0,2458

* Only data for three quarters has been provided, and the number in parentheses represents an estimated figure for the entire year, assuming the same quantity as in previous quarters.

Source: own work based on Boczoń (2022), CERT (2018; 2019; 2020; 2021), NIK (2022), Zalewska-Bochenko (2023), Statista (2024a).

A significant increase in online fraud was also observed in other major European countries during the pandemic. It is important to note that the data obtained for France, Germany, and the United Kingdom come from different sources with varying reporting methods and definitions of counted cases, so they should not be compared between countries. In all cases, a substantial rise was recorded, with the significance of the trend for France and Germany also confirmed by a low p-value. For these countries, it seems that the increase during the pandemic was not as pronounced as in Poland. Meanwhile, the United Kingdom recorded a similar rise to Poland, however, due to incomplete data (only three observations), the calculation of the p-value was omitted. Detailed information is presented in Table 2.

An additional source of information may also be the Eurojust statistics on cooperation in cybercrime cases. Here, too, a clear increase was observed: 2018: 99, 2019: 125, 2020: 174, and 2021: 188. The calculated p-value is 0.0198, which means that, given the adopted assumptions (along with the indicated limitations), the parameter is statistically significant, and in this case, a trend is also present.

Table 2

Number of online fraud incidents in France, Germany and United Kingdom (in thousands)

	2018	2019	2020	2021	p-value
France	79,3	99,0	124,5	149,8	0,0017
Germany	66,28	78,2	105,0	113,0	0,0210
United Kingdom	–	25,8	56,0	72,6	–

Source: own work based on Statista (2024b; 2024c; 2025).

Evolution of Bank Cyberscam during the Pandemic in Poland

During the pandemic, the number of cybercrimes not only surged dramatically but also gave rise to innovative methods of cyberscams. Among these new tactics were shocking, but not true online messages (e.g., about the number of infections), as well as mass-distributed SMS messages offering access to a paid vaccine, a fake food support, or claims that the government had frozen funds for special reserves – each time including a link to a fraudulent website or malicious software (CERT, 2020).

The further stages of the pandemic saw the emergence of additional fraud methods, among which the following were particularly notable: fake applications spread via SMS, such as STOP COVID, supposedly informing users about contact with infected individuals; mObywatel, allegedly allowing access to a third dose of the COVID-19 vaccine; and parcel delivery apps, especially those imitating InPost (CERT, 2021). Other scams included home quarantine (KNF, 2021) and the PKO BP Super campaign, falsely advertised on social media as offering a 200 PLN bonus (CERT, 2020).

Existing fraud schemes were also enhanced, including the previously common bank helpline scam, in which victims were persuaded to install malware or transfer money using Blik codes. During the pandemic, criminals combined these manipulation techniques with vishing, making the bank's actual helpline number appear on the victim's phone screen. Victims often verified the phone number, and its authenticity increased their trust in the caller (Rzecznik Finansowy, 2021).

Particularly noteworthy is the rapid growth of cyberscam schemes based on various investment opportunities, including fake investment platforms promising exceptionally high returns on cryptocurrencies and, from the second half of 2021, fraudulent investment offers imitating well-known companies, especially PKN Orlen. In both cases, victims were deceived through fabricated news articles, made more convincing with numerous photos and statements from celebrities and prominent politicians. After believing the content, victims provided their phone numbers to scammers and, following a persuasive phone conversation, invested a small amount. Through continuous manipulation, they were convinced to transfer additional funds and install remote-access software on their devices used for e-banking (CERT, 2021).

The described modus operandi of criminals during the Covid-19 pandemic indicates the development and significant complexity of methods used to defraud funds. Changes during the pandemic have led to crimes committed against e-banking customers relying predominantly on social engineering and often incorporating elements of phishing (including spoofing), malware exploitation, and scenarios typical of scams.

Analysis of Security Alerts Published by the Largest Banks in Poland

As part of the research, an analysis was conducted on security alerts published on the websites of the five largest banks in Poland (based on total assets), namely PKO Bank Polski, Bank Pekao, Santander Bank Polska, ING Bank Śląski, and mBank, during the period from 2018 to 2021. Only warnings about potential cyberscams targeting customers were considered as security announcements, regardless of the level of detail in the warning (technical information, such as changes in e-banking, was excluded). A comprehensive summary of the results is provided in Table 3.

Table 3

Number of security alerts published on the website by the five largest banks in Poland in the years 2018–2021

	PKO Bank Polski	Bank Pekao	Santander Bank Polska	ING Bank Śląski	mBank
2018	5	0	–*	10	11
2019	6	2	5	9	7
2020	17	6	15	6	12
2021	10	3	14	10	12

* Rebranding and website change at the end of 2018.

Source: own work.

A diverse approach to publishing security notices is evident among the analyzed banks, particularly in the case of Bank Pekao, which significantly lags in terms of the number of notices (it also lacked a visible section dedicated solely to security updates). Notably, there was an increase in the number of published notices during the Covid-19 pandemic – 26 notices were published in 2018, 29 in 2019 (24 excluding Santander Bank Polska), 56 in 2020 (41), and 49 in 2021 (35). This observed trend appears to support findings regarding the rise in cyberscam cases during the pandemic.

It should be emphasized that a bank's website is not the only channel used for communicating security announcements. Banks can also display alerts during logging in, send messages to users, and more. Additionally, in cases of recurring cyberscam schemes, instead of publishing a new notice, banks may simply update a previous one (for example, ING Bank Śląski highlights certain notices as “Top Threats”).

As the next element of study, six characteristic bank cyberscam scenarios were selected, which, according to the analyzed reports, emerged or reached a significant scale during the pandemic. The study further analyzed if and when the examined banks issued announcements regarding these threats. The detailed dates are presented in Table 4.

Table 4

Publication of the first security alerts regarding selected cyberscam scenarios in the years 2018–2021 (the five largest banks in Poland)

	PKO Bank Polski	Bank Pekao	Santander Bank Polska	ING Bank Śląski	mBank
Bank helpline fraud*	–	11.12.2020	21.09.2021	03.09.2019	05.11.2020
Paid vaccine	–	–	16.03.2020	25.03.2020	–
Funds blockage	13.03.2020	–	16.03.2020	25.03.2020	14.03.2020
Food support	–	–	16.03.2020	25.03.2020	14.03.2020
Fake inpost app	–	–	–	01.07.2020	27.01.2021
Cryptocurrency scam	04.09.2020	05.02.2020	14.07.2020	10.02.2020	28.01.2020
PKN Orlen scam	–	–	–	–	–

* Only announcements regarding the potential use of vishing.

Source: own work.

The first selected scenario was the so-called bank helpline scam, focusing solely on its latest version, which relies on deceiving victims through vishing. This choice was made due to the significant role that phone number confirmation plays in the effectiveness of the manipulation. As a result, numerous notices published by PKO Bank Polski were excluded, as none of them mentioned the possibility of vishing; instead, they merely encouraged verifying the caller by dialing the official helpline number. For the remaining four banks, warnings about this scam were published over a period of two years.

Cyberscam schemes related to the early days of Covid-19 in Poland were also identified. These included fraudulent SMS messages falsely informing recipients about faster vaccinations for a fee, blocked funds allocated to a special reserve, and food support due to the pandemic. The first announcement was issued by PKO Bank Polski on March 13, 2020, but it only addressed SMS scams related to fund blocking. The following day, mBank published an announcement, providing a detailed description of the fund-blocking messages while mentioning the food support scam only briefly in a single sentence. Three days later, Santander Bank Polska released a statement covering all three scam types. ING Bank Śląski also warned against all three scams, but on March 25, 2020, whereas Bank Pekao did not issue any warning. A similar cyberscam scheme was also analyzed – one based on SMS messages claiming that a package was waiting for pickup at an InPost parcel locker. Only two banks issued warnings about this scam: ING Bank Śląski on July 1, 2020, and mBank on January 27, 2021 – half a year later.

The last group consisted of fraudulent investment offers, specifically the so-called cryptocurrency scam and the PKN Orlen scam. All of the analyzed banks issued announcements about the cryptocurrency scam, with mBank being the first to do so on January 28, 2020, and PKO Bank Polski being the last, nearly nine months later, on September 4, 2020. However, none of the banks issued warnings about the PKN Orlen scam, possibly due to their earlier communications on investment-related cyberscam.

It can also be perceived that, in the case of the analyzed cyber fraud scenarios, there is a potential relationship between the publication of security alerts and the nature of the bank's dominant owner. Banks controlled by the State Treasury published only two alerts each, while banks controlled by the public sector published five or six alerts. However, this may be merely an apparent correlation related to the selection of the analyzed scenarios, especially since, in terms of the overall number of security alerts, a lower number is observed only in the case of Pekao.

Cyberscams Committed during the Pandemic in Poland – Case Studies

The final part of the research consisted of case studies of three specific cyberscam incidents committed during the pandemic. The analysis was based on information from official documents issued by law enforcement authorities, correspondence between the victims and their banks, and documents submitted as part of mediation proceedings before the Financial Ombudsman or civil court proceedings. To maintain the anonymity of the victims, the timeframe of each crime was limited to indicating the quarter in which it occurred, and the financial loss was rounded to the nearest PLN 5,000. Each victim was a customer of a different bank, and in all cases, the dispute between the victim and the bank remains ongoing. A short summary of the analyzed cases is presented in Table 5.

Table 5

Basic information on the examined cases of cyberscams

Case	A	B	C
Quarter	Q1 and Q2 of 2020	Q3 of 2021	Q4 of 2021
Detriment	80.000 PLN	50.000 PLN	40.000 PLN
Scenario	cryptocurrency scam	bank helpline scam	bank helpline scam
Methods	scam, phising, malware	vishing	vishing, malware
Source of funds	funds in bank account, online loans	funds in bank account, funds from other bank ac-counts	funds in bank account, online loans
Method of taking funds	transfers to foreign banks	physical withdrawals and deposits using Blik codes (ATM)	transfers to domestic banks

Source: own work.

Case A involves a cryptocurrency scam. In the first quarter of 2020, the victim, encouraged by a mobile advertisement, created an account on a fraudulent investment platform, unknowingly installing an application that enabled remote access. Initially, they deposited a small amount in euros, which was allegedly "lost" in full. Several months later, the victim received a call from a fake investment consultant claiming that an automated trading system had generated a significant profit. A few days later, the consultant informed the victim that the funds were available for withdrawal and advised them to simultaneously open the investment platform and log in to their online banking. Within a short period, multiple transactions were carried out, including signing two online loan agreements, maxing out a credit card twice, and making two euro transfers to a foreign bank account. An attempt was also made to transfer funds directly from the credit card, but it failed due to exceeding the credit limit. These transactions drained all available funds from the victim's account. They were executed by the bank without additional verification, relying solely on SMS codes, resulting in a total financial loss of approximately 80,000 PLN. The bank's online banking expense analysis service categorized these transactions as unspecified financial expenses and household bills.

The victim realized the crime the following day, immediately notifying the bank and filing a criminal complaint. However, no funds were recovered, and the criminal investigation was discontinued due to the perpetrators remaining unidentified. The victim had never previously taken out online loans or made transfers of such high amounts. The only prior foreign transfer victim had executed was the initial small deposit to the fraudulent investment platform. The transactions carried out by the cybercriminals were clearly characteristic of fraudulent activities described in the literature and should have been flagged by the bank's fraud detection system, as outlined in the Security Recommendation (Recommendation 10), rather than being misclassified. The bank rejected all complaints filed by the victim, who was left repaying the fraudulent loans for over four years. In 2024, a court ruled that the bank was liable for all unauthorized transactions, and in 2025 the refund from the bank of the majority of the remaining disputed amounts.

Case B, a cyberscam based on the bank helpline scam, is particularly notable because the crime was carried out solely through vishing and advanced social engineering, without the use of any malware. In the third quarter of 2021, the victim was contacted by a fake bank consultant. The victim verified the helpline number on the bank's website and reviewed the bank's security announcement, none of which mentioned the possibility of vishing. The fraudster also possessed extensive personal information about the victim, including full name, bank account number, and details of authorizations for other bank accounts. The scammer informed the victim that an attempted hack had been detected on all accounts, including an attempt to take out a loan. To protect funds, the scammer instructed the victim to:

- change transaction limits;
- transfer all funds from various accounts into a main account;
- visit a bank branch with a cash deposit machine.

Following further instructions, the victim withdrew money from an ATM and deposited it into a cash deposit machine using Blik codes, allegedly transferring the funds to a "special reserve account" for security reasons. As a result of multiple transactions, the victim lost a total of PLN 50,000.

The victim’s actions were interrupted by a bystander, who immediately accompanied them to the police. The victim and the witness attempted to contact the real bank helpline, but were only able to get through after a significant delay. The police accepted the criminal complaint, and a criminal court convicted minor accomplices (while the main perpetrators were never identified). The victim managed to recover approximately 1/4 of the lost amount from them. Regardless of the method using Blik codes to transfer funds, the case suggests that if a vishing warning had been available on the bank’s website, the victim likely would not follow the scammer’s instructions. Additionally, the victim suspects that personal data was leaked from the bank.

Crime committed in case C was also based on the bank helpline scam scenario, but in this instance, the fraudsters additionally used malware. In Q4 2021, the victim was contacted by a fake bank consultant (using vishing) who informed them about an alleged attempt to hack their account. The scammer then convinced the victim to install and activate a remote access application, which allowed the fraudsters to take out an online loan and execute six transfers to three different accounts, totaling PLN 50,000. The bank processed all transactions without any additional verification, leading to the complete drainage of the victim's account.

During the call with the fake consultant, the victim went to a bank branch, where employees advised them to end the conversation. The bank staff spent over 30 minutes trying to contact headquarters, eventually deciding to send the information via email. As a result, they managed to block PLN 5,000, which was later returned to the victim after the criminal case was discontinued. However, the bank rejected all complaints. Similar to Case A, the fraudulent transactions carried out by cybercriminals matched patterns well-documented in financial fraud literature and should have been detected by the bank’s security system. Additionally, concerns arise regarding:

- whether the bank had adequate procedures for handling such incidents;
- the extent to which bank employees were familiar with those procedures.

A lawsuit against the bank is currently ongoing.

Conclusion

A significant portion of the analyzed data for Poland indicates that during the COVID-19 pandemic, there was a substantial increase in cybercrimes targeting online banking customers. This rise is particularly evident in data provided by the National Police Headquarters, the number of online fraud incidents handled by CERT, and the number of cybercrime incidents reported by CSIRT. Additionally, in these cases, the existing trend was statistically confirmed.

Not all of the analyzed data confirmed this phenomenon. A particularly surprising inconsistency arises between the number of reported online fraud cases (Supreme Audit Office) and the number of confirmed crimes related to e-banking, as well as online fraud incidents handled by CERT. Given that these events appear similar, an increase should also be observable in SAO data. Unfortunately, the precise methodology behind the SAO-released data remains unknown, including the specific types of crimes recorded and the counting methods used. Furthermore, data from banking sector incidents and card fraud indicate that the rise in cybercrime is not linked to an increased number of attacks reported by banks or a higher use of payment cards.

A similar phenomenon is also observed in the major European countries included in the study. The number of online fraud incidents increased in all examined countries, namely France, Germany, and the United Kingdom. Additionally, in the case of the first two countries, a statistical analysis indicates a high significance of the trend (p-value of 0.02 or lower, while for the United Kingdom, the lower number of observations affects statistical significance). Thus, 1st hypothesis has been positively verified.

The analysis of security alerts indicates that Poland's largest banks lacked a unified policy for publishing such announcements, with significant differences observed between institutions. Notably, there were also big time discrepancies in warnings about the same cyberscams schemes published by different banks (even more than one year). The examined banks fulfilled their information obligations to varying degrees, meaning that at least some did not take all necessary actions immediately. As a result, 2nd hypothesis has been negatively verified.

Additionally, the case studies revealed deficiencies in existing security measures, particularly:

- the lack of effective systems for detecting fraudulent transactions, including wrong categorization of transactions (household bills etc.);
- problems with reaching bank hotlines in case of emergency;
- inadequate employee training at bank branches resulting in failure to take fast and appropriate action.

For this reasons 3rd hypothesis has also been negatively verified.

The research results indicate that during the pandemic, the number of crimes increased drastically, both in Poland and across Europe. Enhanced customer education policies were essential. Moreover, considering the significant inconsistencies in banks' security alerts, the development of a centralized system for disseminating security-related information warrants consideration. It also became essential to enhance fraud detection systems, even at the cost of reducing the convenience of online banking (even like wider transaction delays for high-risk transfer). Finally, modifications to existing procedures are necessary to ensure an immediate response to scam reports. This requires not only raising employee awareness (including appropriate training programs) and improving system infrastructure but also implementing better procedures, such as dedicated fraud hotline or specialized in-app feature for reporting cyberscams.

References

Act of August 19, 2011 on Payment Services [Ustawa z dnia 19 sierpnia 2011 roku o usługach płatniczych], t.j. Dz.U. 2024, poz. 30 ze zm.

Act of August 29, 1997 – Banking Law [Ustawa z dnia 29 sierpnia 1997 roku Prawo bankowe], t.j. Dz.U. 2024, poz. 1646 ze zm.

Act of June 6, 1997 – Penal Code [Ustawa z dnia 6 czerwca 1997 roku Kodeks karny], t.j. Dz.U. 2024, poz. 17 ze zm.

Aleroud, A., & Zhou, L. (2017). Phishing environments, techniques, and countermeasures: A survey. *Computers & Security*, *68*, 3–12. https://doi.org/10.1016/j.cose.2017.04.006

Boczoń, W. (2022, November 30). Pandemia sprzyja cyberprzestępczości. Lawinowy wzrost ataków na klientów banków. *Bankier.pl*. https://www.bankier.pl/wiadomosc/Pandemia-sprzyja-cyberprzestepczosci-Lawinowy-wzrost-atakow-na-klientow-bankow-8285514.html

CERT. (2018). *Annual Report on the Activities of CERT Polska 2018*. NASK – National Research Institute [*Raport roczny z działalności CERT Polska 2018*. Państwowy Instytut Badawczy]. https://cert.pl/uploads/docs/Raport_CP_2018.pdf

CERT. (2019). *Annual Report on the Activities of CERT Polska 2019*. NASK – National Research Institute [*Raport roczny z działalności CERT Polska 2019*. Państwowy Instytut Badawczy]. https://cert.pl/uploads/docs/Raport_CP_2019.pdf

CERT. (2020). *Annual Report on the Activities of CERT Polska 2020*. NASK – National Research Institute [*Raport roczny z działalności CERT Polska 2020*. Państwowy Instytut Badawczy]. https://cert.pl/uploads/docs/Raport_CP_2020.pdf

CERT. (2021). *Annual Report on the Activities of CERT Polska 2021*. NASK – National Research Institute [*Raport roczny z działalności CERT Polska 2021*. Państwowy Instytut Badawczy]. https://cert.pl/uploads/docs/Raport_CP_2021.pdf

Czyżak, M. (2016). Cyberprzestępczość bankowa i środki jej zwalczania. *Ekonomiczne Problemy Usług*, *123*, 205–206. http://dx.doi.org/10.18276/epu.2016.123-19

Deng, H., Wang, W., & Peng, C. (2018). CEIVE: Combating Caller ID Spoofing on 4G Mobile Phones Via Callee-Only Inference and Verification. In *Proceedings of the 24th Annual International Conference on Mobile Computing and Networking* (pp. 369–370). https://doi.org/10.1145/3241539.3241573

Dyrud, M. (2005). "I brought you a good news": An analysis of Nigerian 419 letters. In *Proceedings of the 2005 Association for Business Communication Annual Convention* (pp. 2–4).

Eurojust. (2018). *Eurojust Annual Report 2018*. https://www.eurojust.europa.eu/sites/default/files/assets/eurojust_2018_annual_report_en.pdf

Eurojust. (2019). *Eurojust Annual Report 2019*. https://www.eurojust.europa.eu/sites/default/files/assets/ar2019_en.pdf

Eurojust. (2020). *Eurojust Annual Report 2020*. https://www.eurojust.europa.eu/sites/default/files/assets/2021_04_14_eurojust_annual_report_2020_final.pdf

Eurojust. (2021). *Eurojust Annual Report 2021*. https://www.eurojust.europa.eu/sites/default/files/assets/eurojust-annual-report-2021.pdf

Górnisiewicz, M., Obczyński, R., & Pstruś, M. (2014). *Bezpieczeństwo finansowe w bankowości elektronicznej – przestępstwa finansowe związane z bankowością elektroniczną. Poradnik usług finansowych*. KNF.

Gryszczyńska, A. (2021). Wykorzystanie Covid-19 w scenariuszach ataków opartych na socjotechnice. *Rocznik Bezpieczeństwa Morskiego: Przestępczość teleinformatyczna 2020*, 137–161.

Iwaszczuk, N., & Jarzęcka, A. (2016). Porównanie wybranych aspektów bezpieczeństwa płatności internetowych kilku banków działających na polskim rynku. *Przedsiębiorczość i Zarządzanie*, *XVII* (8, part. III), 210–211.

Judgment of the Supreme Court of Poland dated April 14, 2003, in case no. I CKN 308/01 [Wyrok Sądu Najwyższego z dnia 14 kwietnia 2003 roku, w sprawie o sygn. akt I CKN 308/01], LEX/el. nr 157324.

KNF. (2021). *2021 Year in Review at CSIRT KNF. Description of Selected Attacks*. Polish Financial Supervision Authority [*2021 Podsumowanie Roku w CSIRT KNF. Opis wybranych ataków*. Komisja Nadzoru Finansowego]. https://cebrf.knf.gov.pl/images/Raporty/RaportCSIRTKNF_76474.pdf

Kociucki, L. (2020). Art. 50. In B. Bajor, J.M. Kondek, K. Królikowska & L. Kociucki (Eds.), *Prawo bankowe. Komentarz do przepisów cywilnoprawnych*. LEX/el.

Konieczny, M. (2023). Cyberprzestępczość – krótka historia, współczesne oblicza i trudna do przewidzenia przyszłość. *Annuals of The Administration and Law*, *23*, 37–38. https://doi.org/10.5604/01.3001.0016.3776

Kulik, M. (2022). Art. 286. In M. Mozgawa (Ed.), *Kodeks karny. Komentarz aktualizowany*. LEX/el.

Łęski, Z., Kurkowski, M., Gozdecki, B., & Steingartner, W. (2023). Czy można zakochać się w Jessice? – czyli o Nigeryjskim Przekręcie z perspektywy Analizy Transakcyjnej. *Przegląd Policyjny*, *4*(152), 253–254. https://doi.org/10.5604/01.3001.0054.4340

Lisowska, A., & Waściński, T. (2021). Bezpieczeństwo bankowości internetowej i mobilnej na rynku finansowym. *Systemy Logistyczne Wojsk*, *54*, 162. http://dx.doi.org/10.37055/slw/140380

Lotko, M. (2024). Bezpieczeństwo płatności w erze cyfrowej. *Zeszyty Naukowe Wyższej Szkoły Bankowej w Poznaniu*, *2*(105), 13. https://doi.org/10.58683/dnswsb.1999

Mangut, P., & Datukun, K. (2021). The Current Phishing Techniques – Perspective of the Nigerian Environment. *World Journal of Innovative Research*, *10*, 38–39. https://doi.org/10.31871/WJIR.10.1.9

Naeem, M., & Ozuem, W. (2021). The role of social media in internet banking transition during COVID-19 pandemic: Using multiple methods and sources in qualitative research. *Journal of Retailing and Consumer Services*, *60*, 8. https://doi.org/10.1016/j.jretconser.2021.102483

NIK. (2022). *State actions in preventing and combating the effects of selected cybercrimes, including identity theft*. Supreme Audit Office [*Działania państwa w zakresie zapobiegania i zwalczania skutków wybranych przestępstw internetowych, w tym kradzieży tożsamości*. Najwyższa Izba Kontroli]. https://www.nik.gov.pl/plik/id,27206,vp,30013.pdf

Paduszyńka, M. & Pawlak, B. (2020). Rynek usług płatniczych w Polsce w świetle zmian prawnych Implementujących postanowienia dyrektywy PSD2. *Studia Prawno-Ekonomiczne*, *CXIV*, 340–341. https://doi.org/10.26485/SPE/2020/114/18

Radoniewicz, F. (2021). Hacking w Kodeksie karnym – wybrane zagadnienia techniczne i karne. *Rocznik Bezpieczeństwa Morskiego: Przestępczość teleinformatyczna 2020*, 179–194.

Resolution No. 584/2015 of the Polish Financial Supervision Authority of November 17, 2015, on the issuance of a Recommendation concerning the security of payment transactions performed online by banks, national payment institutions, national electronic money institutions, and cooperative savings and credit unions [Uchwała Nr 584/2015 Komisji Nadzoru Finansowego z dnia 17 listopada 2015 r. w sprawie wydania Rekomendacji dotyczącej bezpieczeństwa transakcji płatniczych wykonywanych w internecie przez banki, krajowe instytucje płatnicze, krajowe instytucje pieniądza elektronicznego i spółdzielcze kasy oszczędnościowo-kredytowe], Dz.Urz. KNF 2015, poz. 56.

Resolution No. 7/2013 of the Polish Financial Supervision Authority of January 8, 2013, on the issuance of Recommendation D concerning the management of information technology and cybersecurity in banks [Uchwała Nr 7/2013 Komisji Nadzoru Finansowego z dnia 8 stycznia 2013 r. w sprawie wydania Rekomendacji D dotyczącej zarządzania obszarami technologii informacyjnej i bezpieczeństwa środowiska teleinformatycznego w bankach], Dz.Urz. KNF 2013, poz. 5.

Rybacka, J. (2023). Wpływ pandemii covid-19 na sposób korzystania z usług bankowych oraz na postrzeganie banków w Polsce – na podstawie badania empirycznego. *Journal of Finance and Financial Law*, *2*(38), 91–109. https://doi.org/10.18778/2391-6478.2.38.05

Rynkowska, M. (2017). Bezpieczeństwo danych osobowych w cyberprzestrzeni. *Rocznik Bezpieczeństwa Morskiego*, *XI*, 185–200.

Rzecznik Finansowy. (2021). *Podejrzany telefon z infolinii banku? Rzecznik Finansowy ostrzega przed nową metodą oszustów*. https://archiwum.rf.gov.pl/2021/08/13/podejrzany-telefon-z-infolinii-banku-rzecznik-finansowy-ostrzega-przed-nowa-metoda-oszustow/.

Salahdine, F. & Kaabouch, N. (2019). Social Engineering Attacks: A Survey. *Future Internet*, *11*(4), 89, 3-4. https://doi.org/10.3390/fi11040089

Statista. (2024a). *Cybercrime and cybersecurity in Poland*. https://www.statista.com/study/66683/cyber-crime-and-cyber-security-in-poland/

Statista. (2024b). *Nombre d'infractions pour escroquerie en ligne enregistrées par les forces de l'ordre en France entre 2016 et 2023*. https://fr.statista.com/statistiques/1464740/escroquerie-numerique-infraction-france/

Statista. (2024c). *Number of internet banking fraud incidents in the United Kingdom (UK) from 1st half 2019 to 1st half 2024*. https://www.statista.com/statistics/1426076/uk-internet-banking-fraud-incidents/

Statista. (2025). Anzahl der Fälle von Computerbetrug in Deutschland von 2009 bis 2024. https://de.statista.com/statistik/daten/studie/419459/umfrage/faelle-von-computerbetrug-in-deutschland/

Stawińska, W. (2021). Pandemia a zjawisko cyberprzestępczości. *Media i Społeczeństwo*, *14*, 239–240. https://doi.org/10.53052/MiS.2021.14.15

Stefanowicz, M. (2017). Cyberprzestępczość – próba diagnozy zjawiska. *Kwartalnik Policyjny*, *4*, 20.

Tang, Z., Miller, A., Zhou, Z, & Warkentin, M. (2021). Does government social media promote users' information security behavior towards COVID-19 scams? Cultivation effects and protective motivations. *Government Information Quarterly*, 38, 1. https://doi.org/10.1016/j.giq.2021.101572

Zalewska-Bochenko, A. (2023). Rynek płatności elektronicznych z perspektywy bezpieczeństwa transakcji. *Roczniki Ekonomiczne Kujawsko-Pomorskiej Szkoły Wyższej w Bydgoszczy*, *16*, 71–72.

Received: 30.03.2025
Accepted: 11.05.2025
Available online: 30.06.2025

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •

Czerwiec/June 2025 • vol. 2(46): 37–53

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Authors assure of no violations of publication ethics and take full responsibility for the content of the publication.

ANALIZA BIBLIOMETRYCZNA BADAŃ NAD ESG

Patryk Janusz Król*, Piotr Jędrzejewski**

https://doi.org/10.18778/2391-6478.2.46.03

BIBLIOMETRIC ANALYSIS OF RESEARCH ON ESG

ABSTRACT

The purpose of the article. The aim of this article is to provide a comprehensive bibliometric analysis of the academic literature on Environmental, Social, and Governance (ESG) topics within the domains of economics, business, and finance. By examining 4,499 documents indexed in the Web of Science (WoS) database from 2006 to 2024, the study aims to identify key trends, research clusters, influential publications, and knowledge gaps in ESG-related research.

Methodology. The methodology involves the use of the Bibliometrix package and its graphical interface Biblioshiny, which enabled advanced science mapping techniques, including co-citation, co-authorship, and keyword co-occurrence analyses. Data were filtered based on relevant WoS categories, and analytical metrics included publication growth rates, citation statistics, authorship patterns, and thematic clustering.

Results of the research. The results reveal a rapidly growing interest in ESG, with an annual publication growth rate of 38.83% and an increasing focus on topics such as corporate performance, cost efficiency, disclosure practices, and governance structures. Four major thematic clusters were identified: ESG disclosure and firm performance, CSR and sustainability, corporate financial management, and emerging markets. The analysis highlights a growing integration of ESG into investment strategies and corporate governance, though the causal mechanisms linking ESG performance to financial outcomes remain insufficiently explained. The study concludes that ESG has evolved into a multidimensional and strategic framework, surpassing CSR in conceptual precision and regulatory relevance.

Keywords: ESG, CSR, bibliometric analysis, sustainable finance, corporate governance, disclosure, firm performance, risk management.

JEL Class: G32, M14, Q56, O16, C89.

* Licencjat, Uniwersytet Ekonomiczny w Poznaniu, https://orcid.org/0000-0003-4079-8849 Autor korespondencyjny. E-mail: patkro12@gmail.com
** Licencjat, Uniwersytet Ekonomiczny w Poznaniu, https://orcid.org/0009-0001-8537-5981

Analiza bibliometryczna badań nad ESG

Temat artykułu związany jest z coraz częściej słyszanym i używanym skrótem „ESG”. Zarówno konsumenci, przedstawiciele biznesu, jak i społeczność akademicka podejmuje tematy związane z wpływem działalności przedsiębiorstw na środowisko (environment), społeczeństwo (social) i ład korporacyjny (governance), czyli trzy główne elementy koncepcji „ESG”. Koncepcja ta związana jest bezpośrednio ze społeczną odpowiedzialnością biznesu – „CSR”, tak więc w dalszej części artykułu postanowiono dokonać przeglądu definicji związanych z powyższymi pojęciami, a także nakreślić ich praktyczne implikacje i trendy dotyczące ich wykorzystania. Pierwsze próby zdefiniowania pojęć z tych obszarów podjął H.R. Bowen w roku 1953. Praca pt. „Social Responsibility of the Businessman” (1953, s. 6) definiowała CSR jako „(…) zobowiązanie przedsiębiorcy do prowadzenia polityki, podejmowania decyzji i podążania za takimi kierunkami działania, które będą pożądane jako cele i wartości naszego społeczeństwa”. Definicja ta pokazuje, że przedsiębiorstwo powinno analizować otoczenie, w którym funkcjonuje i dostosowywać swoje działania do potrzeb społeczeństwa. Definicja zmienia perspektywę postrzegania przedsiębiorstw – nie są to odizolowane jednostki nastawione wyłącznie na maksymalizacje zysku, ale pewnego rodzaju elementy systemu społeczno-gospodarczego, mające realny wpływ na jego aktualny obraz. Praca Bowena zapoczątkowała dyskusje wśród przedsiębiorców, ale także naukowców, którzy rozwijali kwestie wpływu działalności firm na otoczenie i związaną z tym odpowiedzialność. W dalszych badaniach i opracowaniach definicje ujmowały CSR od strony relacji i struktury organizacji, konkretnych zasad, aż w końcu koncepcji zarządzania i strategii organizacji (Misztal, 2024).

Tabela 1

Definicje CSR

Autor	Definicja
H.R. Bowen (1953)	Zobowiązanie przedsiębiorcy do prowadzenia polityki, podejmowania decyzji i podążania za takimi kierunkami działania, które będą pożądane jako cele i wartości naszego społeczeństwa.
R.E. Freeman (1984)	Zbiór relacji między grupami, które mają udział w działaniach składających się na biznes.
D.J. Wood (1991)	Składa się z trzech zasad: korporacyjnej odpowiedzialności społecznej, odpowiedzialności publicznej i uznaniowości kierownictwa.
M. Blowfield (2005)	Koncepcja zarządzania, w ramach której przedsiębiorstwa integrują kwestie społeczne i środowiskowe w działalności i interakcjach z interesariuszami.
A.McWiliams, D.S. Siegel, P.M. Wright (2006)	Strategiczne działania CSR można uznać za inwestycje długoterminowe, które mogą przynieść zwrot finansowy.
J. Dymowski, M. Szymańska (2009)	Sposób, w jaki tworzymy zyski, a nie czy się nimi dzielimy (…) oraz strategia zarządzania oparta na wielowymiarowych relacjach.
A.B. Carroll (2016)	CSR to polityki, praktyki i strategie, które uwzględniają interesariuszy.

Źródło: opracowanie własne.

Współcześnie CSR jest często kojarzone z działaniami marketingowymi, budowaniem wizerunku firmy, w tym z nieuczciwym „wybielaniem” znanym jako *greenwashing*. Krytycy CSR podkreślają duże zróżnicowanie definicji i dowolność rozumienia CSR. Adam Zadroga twierdzi, że pojęcie CSR nie ma jasno wyrażonej treści, ani ostro wyznaczonego zakresu (2013, s. 189). W odpowiedzi na tą krytykę wyłoniło się pojęcie zdecydowanie lepiej dookreślone i konkretnie zarysowane – ESG. Wybrane definicje akronimu przedstawiono w tabeli 2. Widoczna jest zdecydowana wielowymiarowość koncepcji. ESG postrzegane i definiowane jest w kontekście inwestycji i budowania portfela, tworzeniem modeli biznesowych i strategii, budowania wartości firmy, a także zarządzania ryzykiem.

Tabela 2

Definicje ESG

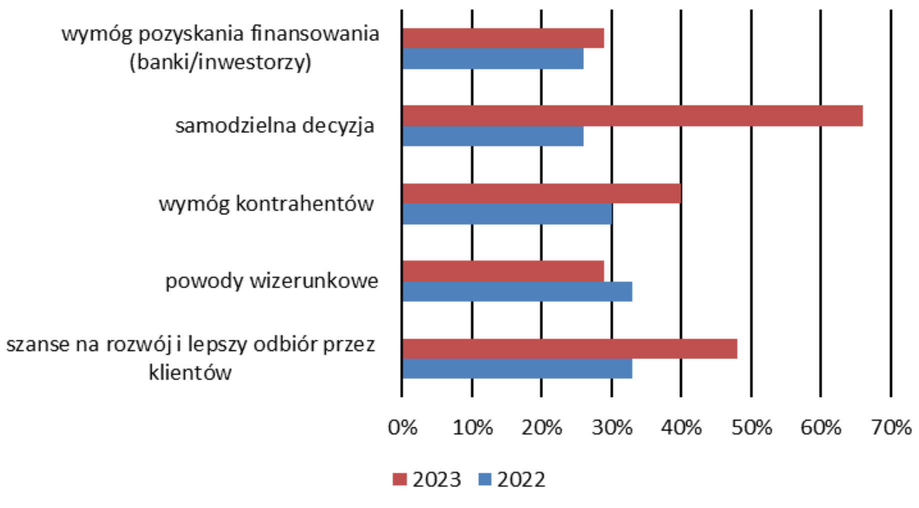
Autor	Definicja
P. Matos (2020)	Uwzględnienie aspektów środowiskowych, społecznych i ładu korporacyjnego w decyzjach dotyczących portfela inwestorów.
S.L. Gillian i in. (2021)	ESG odnosi się do sposobu, w jaki korporacje i inwestorzy integrują kwestie środowiskowe, społeczne i związane z ładem korporacyjnym w swoich modelach biznesowych. ESG wydaje się być bardziej ekspansywną terminologią niż CSR.
M. Cicirko (2022)	ESG pomaga ustalać poszczególne cele strategiczne zgodnie z czynnikiem środowiskowym, społecznym i ładem korporacyjnym.
B. Domańska-Szaruga (2011)	Czynniki wpływające również na wartość przedsiębiorstwa, na podstawie której określa się rozwój i ocenia efektywne zarządzanie w perspektywie długookresowej.
A. Lewis (2023)	ESG oparte na ryzyku uznaje, że czynniki środowiskowe, społeczne i ład korporacyjny mogą stanowić istotne ryzyko dla działalności, finansów i reputacji firmy.
X. Feng i N.M. Saleh (2024)	Ryzyka ESG odnoszą się do ryzyk powiązanych ze środowiskowymi, społecznymi i korporacyjnymi działalnościami biznesu. (…) Ryzyka te mogą podważyć wiarygodność firm w zakresie działalności ESG, stanowiąc poważne zagrożenie dla ich reputacji i wyceny.

Źródło: opracowanie własne.

Aby zobrazować praktyczny wymiar koncepcji ESG w kontekście inwestycji przedstawiono dane z polskiego rynku inwestycyjnego. Przygotowany przez GPW raport, bazujący na grupie badawczej składającej się z m.in. maklerów, analityków giełdowych, osób zarządzających funduszami inwestycyjnymi oraz reprezentantami wybranych firm konsultingowych wskazuje, że 84% ankietowanych uwzględnia dane ESG w procesach decyzyjnych, a kolejne 3% zamierza tak robić w ciągu najbliższych 2 lat. Ponadto dla 81% profesjonalnych inwestorów, spółki, które posiadają wdrożoną strategię ESG są postrzegane jako podmioty o niższym ryzyku (Kiśluk & Wiśniewski, 2022). Potwierdza to nie tylko definicje P. Matosa przez praktykę rynkową, ale również odwołuje się do pozostałych definicji, wspominając o istotności strategii zrównoważonego rozwoju dla inwestorów, a także określaniu ryzyka dla działalności jednostki, a tym samym ryzyka inwestycji. Kolejne dane z polskiego rynku wskazują, że również firmy widzą zasadność implementacji koncepcji ESG w organizacji; według badania przygotowanego przez Polskie Stowarzyszenie ESG, Bank Gospodarstwa Krajowego i grupę PFR w roku 2023 w Polsce już 44% badanych firm posiadało strategie ESG (dla porównania w roku 2022 wartość ta wynosiła 20%). Motywacje firm do tego typu działań są różne i obejmują powody wizerunkowe, ale również wymogi kontrahentów czy wymogi inwestorów – rysunek 1. Jednak największy wzrost między 2022 a 2023 rokiem widoczny jest przy odpowiedzi „samodzielna decyzja" co wskazuje na rosnącą świadomość i chęć wdrażania zrównoważonych praktyk przez sam biznes. Koncepcja ESG jest szczególnie istotna dla instytucji finansowych, jak zauważa Król (2023), wpływa na ich reputację, atrakcyjność w oczach klientów oraz zdolność do pozyskiwania kapitału. W obliczu rosnącego nacisku regulacyjnego i społecznego, banki, w tym banki spółdzielcze, muszą dostosować swoje strategie do wymagań związanych z ochroną środowiska, odpowiedzialnością społeczną i ładem korporacyjnym. Integracja zasad ESG w działaniach banków nie tylko zwiększa ich konkurencyjność, ale także odpowiada na zmieniające się oczekiwania rynku, w tym potrzebę transparentności oraz dbałości o zrównoważony rozwój. Zapoznając się z powyższymi danymi jednoznacznie można stwierdzić zasadność definicji M. Cicirko, a także S. L. Gilliana – firmy wykorzystują koncepcje ESG do tworzenia strategii i modeli biznesowych.

Rysunek 1

Powody wdrożenia ESG w badanych firmach w 2022 i 2023 roku



Źródło: Polskie Stowarzyszenie ESG (2024).

Ocena działalności przedsiębiorstwa jest procesem złożonym i wieloetapowym – w znacznym stopniu opartym na danych finansowych. Jednak jak zauważają MacNeil i Esser (2022) wyniki finansowe w ocenie przedsiębiorstw powinny być łączone z analizą dokonań pozafinansowych. Jest to twierdzenie niezwykle istotne w kontekście definicji ESG przedstawionej przez P. Domańską-Szarugę, jednak zagłębiając się w temat wpływu czynników ESG na wartość firmy okazuje się, że jest to temat nadal nie przebadany na tyle, aby stawiać jasne i pewne tezy. Jak wskazują raporty i analizy, firmy, które wdrażają rozwiązania ESG, cieszą się większym zainteresowaniem inwestorów. Są one bardziej odporne na destabilizacje, a dodatkowo w perspektywie średnio- i długoterminowej redukują koszty – mechanizm ten szczegółowo został zobrazowany w modelu przygotowanym przez Szczepankowskiego – rysunek 2. Tym samym przedsiębiorstwa zwiększają swoją wycenę rynkową (KPMG, 2023). Jednak jak zauważa Szczepankowski mechanizm łączący ESG z CFP i wartością firmy nie został dotychczas wyjaśniony. Najczęściej w literaturze przedmiotu wskazuje się na dwie koncepcje teoretyczne, mające wyjaśniać proces tworzenia wartości przez czynniki ESG; hipoteza Portera (Kudłak, 2010) i teoria interesariuszy Freemana (Wójcik-Karpacz, 2018; Hąbek, 2009; Soin, 2016). Zgodnie z pierwszą z nich, przedsiębiorstwa w obliczu wymagań środowiskowych optymalizują zarządzanie zasobami, wdrażają innowacje technologiczne, organizacyjne i produktowe, co bezpośrednio przekłada się na przewagę konkurencyjną i wzrost wartości. Freeman (1984) twierdzi z kolei, że oczekiwania interesariuszy powinny być jedynym determinantem kształtującym strategie budowania wartości i konkurencyjności firmy.

Rysunek 2

Model tworzenia wartości przedsiębiorstwa w strategii zrównoważonego rozwoju

Źródło: Szczepankowski (2023).

Podsumowując, większość badań i raportów potwierdza pozytywne skutki wdrażania ESG dla budowania wartości firmy w długim terminie. Badania próbujące dokładnie opisać mechanizm i powiązanie ESG z CFP i wzrostem wartości nie wyjaśniły dokładnie tego zjawiska.

Ostatnie dwie definicje przedstawione w tabeli 2 ujmują ESG od strony zarządzania ryzykiem. ESG postrzegane właśnie w ten sposób nie funkcjonuje tylko w badaniach i dyskusjach akademickich, ale jest realną i coraz powszechniejszą praktyką. Przede wszystkim wymuszają to nowopowstające regulacje np. dyrektywa CSRD, która z dniem 6 grudnia 2024 r. została zaimplementowana do polskiego prawa w Ustawie o zmianie ustawy o rachunkowości, ustawy o biegłych rewidentach, firmach audytorskich oraz nadzorze publicznym oraz niektórych innych ustaw. Zgodnie z ustawą sprawozdanie zrównoważonego rozwoju musi zawierać opis odporności modelu biznesowego i strategii jednostki na ryzyka związane z ESG, szczegółowy opis najważniejszych ryzyk i sposobów zarządzania nimi. Jednak ESG w kontekście ryzyk środowiskowych, społecznych i z obszaru governance nie należy postrzegać wyłącznie przez pryzmat wymogów prawnych, ale również jako praktykę zalecaną przez firmy doradcze. Jak podaje PwC (2025), integracja czynników ESG z systemem zarządzania ryzykiem pozwala skuteczniej identyfikować i monitorować kluczowe zagrożenia, a także wdrażać bardziej efektywne rozwiązania. Ponadto, zwiększa transparentność przedsiębiorstwa oraz jego łańcucha wartości, co sprzyja długoterminowej stabilności. W rezultacie organizacje nie tylko minimalizują ryzyko, ale także wzmacniają zaufanie interesariuszy, co stanowi fundament ich konkurencyjności w długim terminie.

Celem niniejszego artykułu jest wskazanie luk badawczych poprzez przeprowadzenie kompleksowej analizy bibliometrycznej literatury na temat ESG, w kontekście nauk o ekonomii i finansach, na podstawie zasobów z bazy Web of Science (WoS). Wybór bazy Web of Science (WoS) do przeprowadzenia analizy bibliometrycznej został dokonany ze względu na jej wysoką jakość, rygorystyczne kryteria indeksacji oraz szerokie uznanie w środowisku naukowym. WoS oferuje dane o publikacjach z renomowanych, recenzowanych czasopism naukowych, co przekłada się na wysoką wiarygodność analiz bibliometrycznych. Ponadto, baza ta zapewnia dostęp do rozbudowanych metadanych (takich jak cytowania, afiliacje, autorzy, słowa kluczowe), które są niezbędne do przeprowadzenia zaawansowanych analiz naukometrycznych.

Narzędzie Bibliometrix (i jego interfejs graficzny Biblioshiny) zostało wybrane ze względu na swoją kompatybilność z WoS oraz szeroką funkcjonalność. Bibliometrix umożliwia m.in. analizę cytowań, map współwystępowania słów kluczowych, analizę współautorstwa czy identyfikację kluczowych źródeł publikacji. Co istotne, jest to rozwiązanie typu open-source, co zapewnia transparentność i możliwość replikacji wyników. Według Mongeon i Paul-Hus (2015) wyniki badań bibliometrycznych prowadzone w oparciu o bazy WoS i Scopus może prowadzić do innych wyników badań, w szczególności w zakresie nauk społecznych i humanistycznych.

W niniejszej pracy wykorzystujemy narzędzie Bibliometrix (Aria i Cuccurullo, 2017), które umożliwia systematyczne badanie struktury i dynamiki wiedzy w tej dziedzinie. Analiza ta ma na celu nie tylko przedstawienie aktualnego stanu wiedzy, ale także dostarczenie inspiracji i wytyczenie kierunków dla przyszłych badań.

Metodologia

Spośród 12 465 dokumentów zgromadzonych w bazie WoS z frazą „ESG", 4 499 wyselekcjonowano jako odpowiadające kategoriom Business Finance, Management, Business i Economics z lat 2006–2024. Roczna stopa wzrostu liczby publikacji wynosi 38,83%, co wskazuje na dynamicznie rosnące zainteresowanie tą tematyką. Średnia liczba cytowań na dokument wynosi 23,22, a przeciętny wiek publikacji to 3,23 roku, co potwierdza aktualność analizowanych badań.

Analizowane publikacje pochodzą z 874 źródeł (czasopism, książek itp.) i zawierają łącznie 133 919 odwołań bibliograficznych. W zakresie słów kluczowych zidentyfikowano 3 397 Keywords Plus[1] oraz 8 940 słów kluczowych nadanych przez autorów. Autorami publikacji jest 10 044 badaczy, z czego 512 to autorzy publikacji jednoautorskich. W sumie zidentyfikowano 617 dokumentów jednoautorskich, natomiast średnia liczba współautorów na publikację wynosi 2,93, co sugeruje umiarkowany poziom współpracy naukowej. Współautorstwo międzynarodowe stanowi 30,21% wszystkich publikacji.

Pod względem typów dokumentów dominują artykuły naukowe (3 634), a także m.in. prace przeglądowe (117), materiały konferencyjne (158), materiały redakcyjne (79) i inne mniej liczne formy (np. książki, rozdziały w książkach, korekty, recenzje książek).

Zebrane dane stanowią solidną podstawę do identyfikacji trendów, kluczowych tematów badawczych oraz potencjalnych luk w dotychczasowej literaturze, co zostanie omówione w kolejnych częściach artykułu.

Wyniki

Rysunek 3 przedstawia liczbę nowych publikacji dotyczących tematyki ESG (Environmental, Social, and Governance) w latach 2006–2024. Z danych wynika, że liczba publikacji rosła w sposób znaczący, zwłaszcza w ostatnich latach, co odzwierciedla rosnące zainteresowanie tematyką zrównoważonego rozwoju, odpowiedzialności społecznej oraz zarządzania środowiskowego w kontekście biznesu.

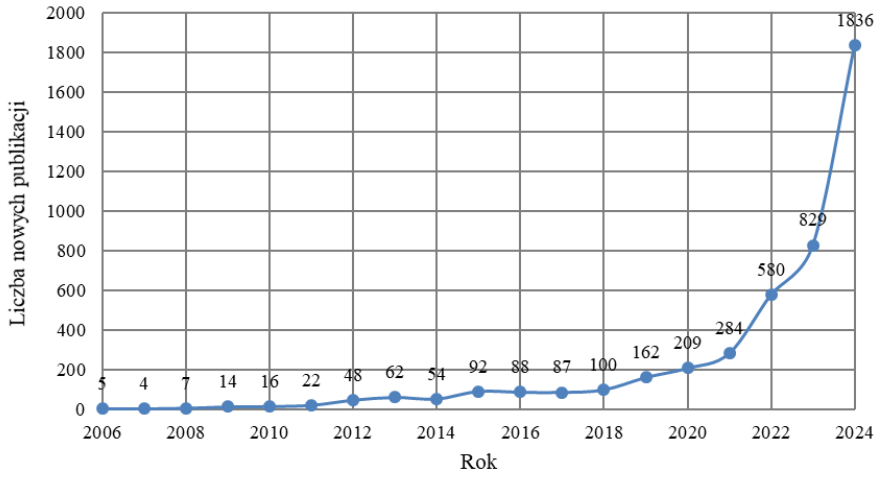
W początkowych latach liczba publikacji była stosunkowo niska, zaledwie 5 w 2006 roku, a w kolejnych latach wzrastała stopniowo – w 2007 roku opublikowano 4 artykuły, a w 2008 roku już 7. W 2012 roku liczba publikacji wzrosła do 48, a w 2013 do 62, co świadczy o rosnącym zainteresowaniu tematyką ESG w środowisku naukowym.

Znaczący wzrost liczby publikacji zaczął się w 2015 roku, kiedy to opublikowano już 92 artykuły. W ciągu kolejnych lat liczba publikacji rosła szybko, przekraczając 100 w 2018 roku, a w 2019 roku osiągając 162. Rok 2020 był kluczowy dla badań nad ESG, kiedy to liczba nowych publikacji wyniosła 209, a w 2021 roku wzrosła do 284.

[1] Keywords Plus to specjalny zestaw słów kluczowych automatycznie generowanych przez Web of Science na podstawie tytułów publikacji cytowanych w danym artykule, a nie tylko na podstawie tytułu czy abstraktu samego artykułu. Innymi słowy, są to dodatkowe terminy powiązane tematycznie z treścią publikacji, które pomagają rozszerzyć zakres wyszukiwania.

Rysunek 3

Liczba nowych publikacji dotyczących ESG



Źródło: opracowanie własne.

Najbardziej dynamiczny wzrost liczby publikacji nastąpił w latach 2022–2024. W 2022 roku liczba nowych publikacji osiągnęła 580, a w 2023 roku wyniosła 829. Liczba nowych publikacji na 2024 rok to 1 836, co stanowi ogromny wzrost w porównaniu z wcześniejszymi latami. Wzrost ten może wskazywać na rosnące globalne znaczenie kwestii ESG, które stają się coraz bardziej centralnym tematem badań naukowych w obszarze zarządzania, finansów, etyki i zrównoważonego rozwoju.

Tabela 3

Wiodące czasopisma w zakresie badań nad ESG

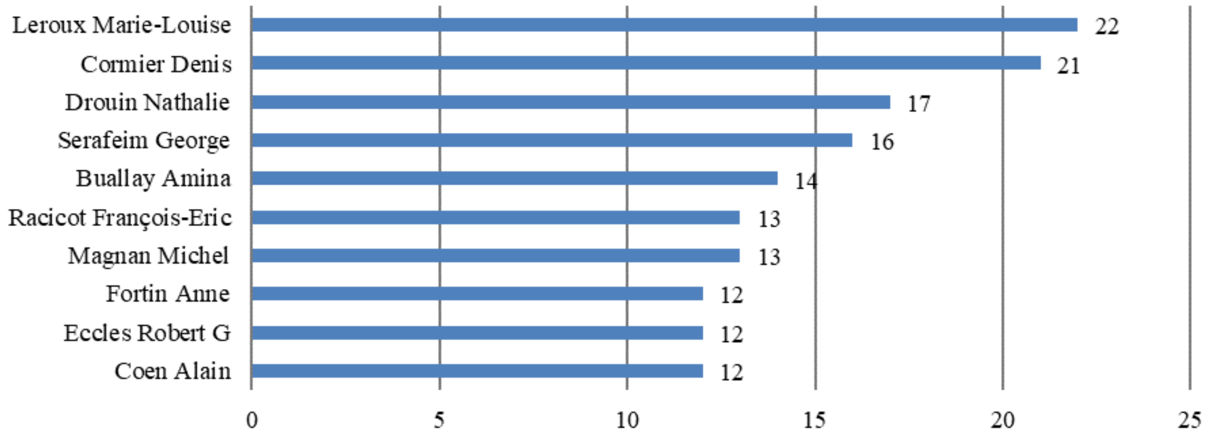
Czasopismo	Liczba publikacji	Miejsce w rankingu AJG 2024	Wydawca
Finance Research Letters	329	2	Elsevier
Corporate Social Responsibility and Environmental Management	218	1	John Wiley & Sons
Business strategy and the Environment	154	3	John Wiley & Sons
International Review of Financial Analysis	130	3	Elsevier
Research in International Business and Finance	100	2	Elsevier
Journal of Sustainable Finance & Investment	90	1	Taylor & Francis
International Review of Economics & Finance	70	2	Elsevier
Journal of Business Ethics	54	3	Springer
Applied Economics Letters	51	1	Taylor & Francis
Energy Economics	51	3	Elsevier

Źródło: opracowanie własne.

Tabela 3 przedstawia wiodące czasopisma naukowe w zakresie badań nad ESG, uwzględniając liczbę publikacji, miejsce w rankingu AJG 2024 oraz wydawcę poszczególnych czasopism. Czasopisma te różnią się oceną w systemie AJG, który przyznaje oceny w skali od 1 do 4*, gdzie najwyższą oceną jest 4*. Na czołowej pozycji w rankingu AJG 2024 znajduje się Corporate Social Responsibility and Environmental Management, z 218 publikacjami, które otrzymało ocenę 4. Drugie miejsce zajmuje Finance Research Letters (329 publikacji, Elsevier), które także uzyskało ocenę 4. Na trzeciej pozycji znajduje się Business Strategy and the Environment, z 154 publikacjami i oceną 3. Kolejne czasopisma, takie jak International Review of Financial Analysis (130 publikacji) oraz Research in International Business and Finance (100 publikacji), uzyskują ocenę 2, co również świadczy o ich znaczeniu w badaniach nad ESG. W tabeli wyróżniono czasopisma wydawane przez renomowane wydawnictwa, takie jak Elsevier, John Wiley & Sons, Taylor & Francis oraz Springer, co podkreśla ich międzynarodowy zasięg oraz wpływ na rozwój badań w tej dziedzinie.

Rysunek 4

Autorzy największej liczby artykułów o ESG



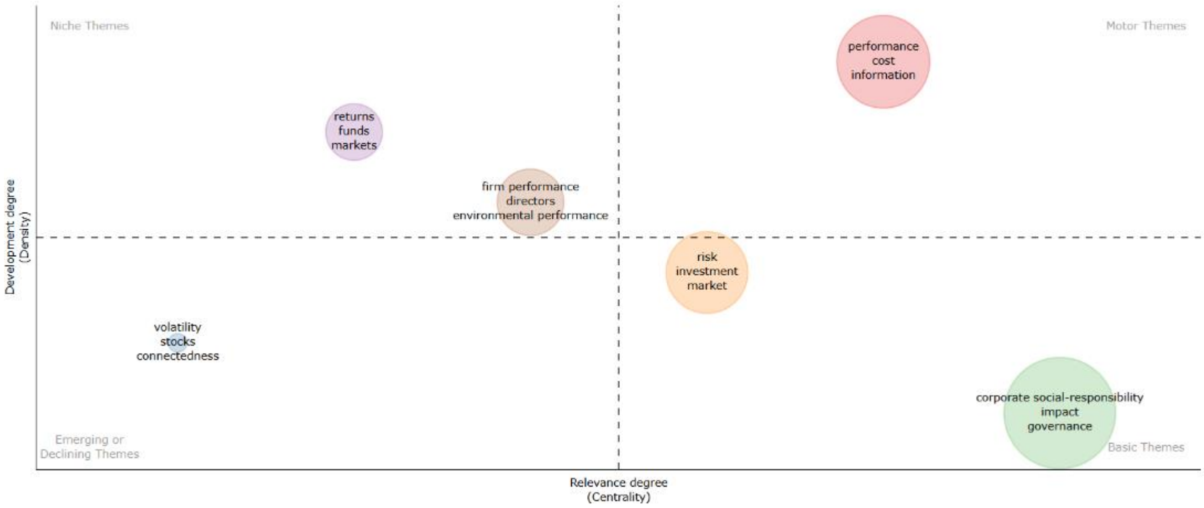
Źródło: opracowanie własne.

Analiza liczby publikacji autorów zajmujących się tematyką ESG wskazuje na zróżnicowany poziom aktywności naukowej wśród badaczy. W zestawieniu wyróżnia się Marie-Louise Leroux, która opublikowała 22 prace, oraz Denis Cormier z 21 publikacjami. Kolejne miejsca zajmują Nathalie Drouin (17 publikacji), George Serafeim (16), Amina Buallay (14), a także François-Eric Racicot i Michel Magnan – po 13 publikacji.

Nieco niższą aktywność wykazali Anne Fortin, Robert G. Eccles oraz Alain Coen, z dorobkiem po 12 prac naukowych każdy. Choć różnice w liczbie publikacji są relatywnie niewielkie (zakres 12–22), zestawienie to pozwala zidentyfikować kluczowych autorów i wskazuje na pewne ośrodki intensywnie zaangażowane w rozwój badań nad ESG.

Rysunek 5

Mapa tematów badań z zakresu ESG



Źródło: opracowanie własne.

Rysunek 5 przedstawia mapę tematyczną publikacji z bazy Web of Science (WoS), koncentrujących się wokół zagadnień z zakresu zrównoważonego rozwoju korporacyjnego, wyników finansowych i zarządzania. Tematy podzielono na klastry, analizując je pod kątem centralności (*centrality*) – czyli znaczenia danego zagadnienia w sieci powiązań – oraz gęstości (*density*), rozumianej jako poziom rozwinięcia i dojrzałości danego tematu w literaturze. Oś pozioma reprezentuje centralność, natomiast pionowa – gęstość danego zagadnienia.

W prawym górnym rogu znajdują się tematy dobrze rozwinięte i kluczowe dla badanego obszaru, czyli „performance", „cost", „information" oraz „innovation". Są one zarówno silnie powiązane z innymi terminami, jak i intensywnie badane, co wskazuje na ich centralną rolę w literaturze dotyczącej efektywności, innowacyjności oraz analizy kosztów w kontekście ESG.

Lewy górny róg, zawierający tematy niszowe, reprezentowany jest przez zagadnienia takie jak „volatility", „stocks" czy „connectedness". Pomimo dużej gęstości, mają one mniejsze znaczenie w ogólnej sieci tematycznej, co sugeruje, że są to dobrze rozwinięte, lecz bardziej specjalistyczne wątki.

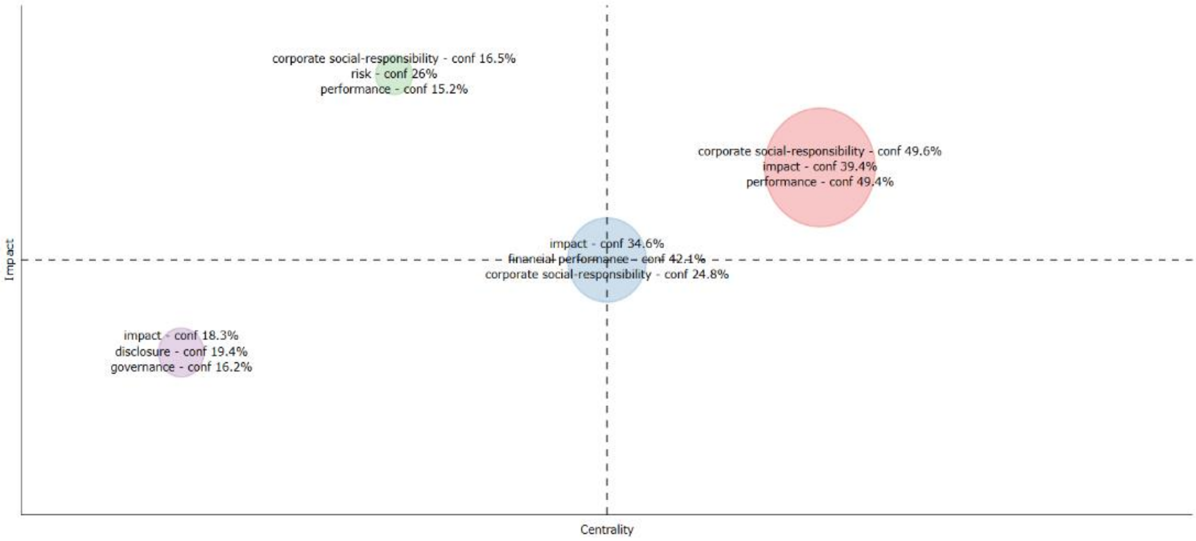
W prawym dolnym rogu znajdują się tematy podstawowe – o wysokiej centralności, ale niższej gęstości – takie jak „corporate social responsibility", „impact", „governance" i „disclosure". Ich obecność wskazuje na znaczenie tych zagadnień w literaturze i szerokie powiązania z innymi tematami, przy jednoczesnej potrzebie dalszego rozwijania badań w tym zakresie.

Lewy dolny róg reprezentuje tematy o niskiej centralności i słabym rozwinięciu, np. „returns", „markets", „price" czy „investments". Zagadnienia te mogą być uznane za wschodzące lub marginalne w aktualnym nurcie badawczym.

Analiza wskazuje, że tematy związane z „performance" oraz „cost" pełnią kluczową rolę w literaturze, koncentrując się na ocenie efektywności oraz aspektach ekonomicznych działalności przedsiębiorstw. Wysoka centralność tematów związanych z CSR i zarządzaniem sugeruje ich strategiczne znaczenie i potencjał do dalszych badań interdyscyplinarnych, łączących ekonomię, zarządzanie i zrównoważony rozwój.

Rysunek 6

Klastry tematyczne badań z zakresu ESG



Źródło: opracowanie własne.

Analiza klastrów w obszarze finansów i rachunkowości, zaprezentowana na rysunku 6, umożliwia identyfikację głównych nurtów tematycznych dominujących w literaturze naukowej. Klasteryzacja oparta została na współwystępowaniu słów kluczowych oraz analizie cytowań lokalnych, z zastosowaniem wskaźnika MNLCS[2]. Wartości wskaźnika cytowań znormalizowanych dla dokumentów zostały zestawione z indeksem centralności według Callona, co pozwoliło na określenie zarówno wpływu, jak i istotności poszczególnych tematów.

Pierwszy klaster koncentruje się na zagadnieniach związanych z ujawnieniami niefinansowymi, praktykami zrównoważonego rozwoju oraz ich wpływem na wartość rynkową i wyniki finansowe przedsiębiorstw. Artykuły należące do tej grupy podejmują tematykę związaną z raportowaniem ESG, relacjami między społeczną odpowiedzialnością biznesu a efektywnością operacyjną, a także oceną wpływu czynników środowiskowych i społecznych na ryzyko kredytowe i koszt kapitału. Badania skupiają się zarówno na kontekście rynków rozwiniętych, jak i wschodzących, analizując m.in. efektywność wdrażania standardów zrównoważonego raportowania w chińskich przedsiębiorstwach. Wśród analizowanych autorów znajdują się m.in. Tsang, Frost i Cao (2023), Rau i Yu (2024), Guo, Bian, Zhang i Ji (2024), Chiaramonte, Dreassi, Girardone i Piserà (2022) i Bissoondoyal-Bheenick,

[2] Mean Normalized Local Citation Score to wskaźnik bibliometryczny służący do oceny wpływu cytowań publikacji w kontekście określonego zbioru artykułów, czyli tzw. „lokalnej” grupy badawczej, tematu lub dziedziny (Aria i Cuccurullo, 2017).

Brooks i Do (2023). Wartość wskaźnika MNLCS dla tego klastra utrzymuje się na stabilnym poziomie, co sugeruje konsekwentne zainteresowanie badaczy wpływem czynników ESG na decyzje inwestycyjne i strategię finansową firm.

Drugi klaster obejmuje tematykę związaną z odpowiedzialnością społeczną, zrównoważonym rozwojem i etyką w kontekście finansów i rachunkowości. Kluczowymi pojęciami są tu „CSR" (Corporate Social Responsibility), „sustainability", „ethics" i „disclosure". Artykuły należące do tego klastra często analizują wpływ ujawnień niefinansowych i praktyk odpowiedzialności społecznej na wyniki przedsiębiorstw, ich reputację oraz dostęp do kapitału. Wysoki wskaźnik cytowań, jak np. w przypadku publikacji Drempetic, Klein i Zwergel (2020) czy Fatemi, Glaum i Kaiser (2018), świadczy o dużym zainteresowaniu tą tematyką w środowisku naukowym. Centralność tego klastra jest umiarkowana, ale rosnąca, co wskazuje na jego istotne, choć jeszcze nie dominujące miejsce w dyskursie akademickim.

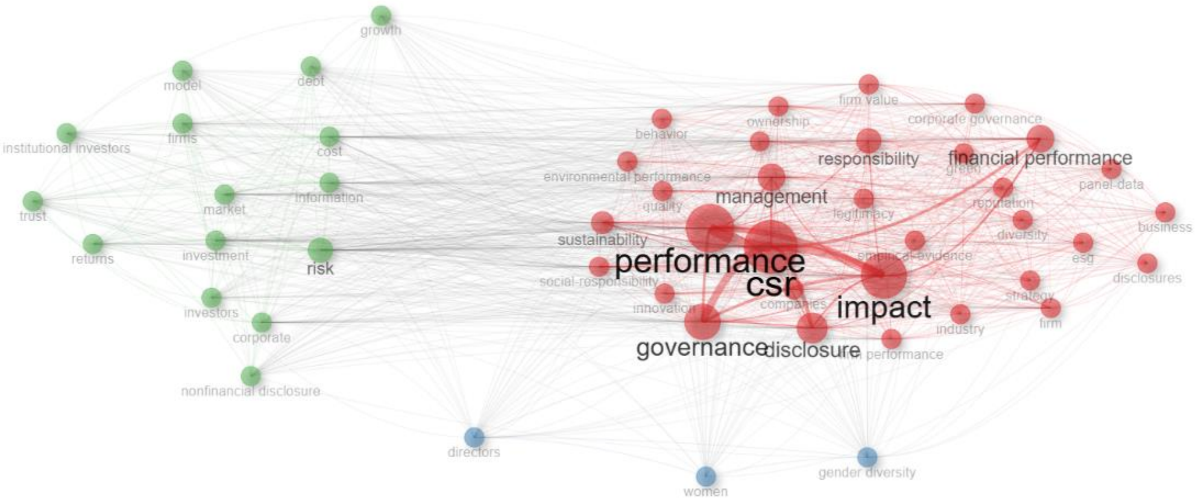
Trzeci klaster skupia się na problematyce związanej z efektywnością, zarządzaniem wynikami i praktykami operacyjnymi w kontekście finansów korporacyjnych. Artykuły z tego klastra koncentrują się na modelach oceny wydajności, pomiarach produktywności oraz analizie czynników wpływających na skuteczność zarządzania finansami w przedsiębiorstwach. W obrębie tej grupy znajdują się zarówno badania ilościowe, jak i jakościowe, a wśród cytowanych autorów pojawiają się m.in. Bhaskaran, Ting, Sukumaran i Sumod (2020), Ademi i Klungseth (2022) i Jain i Tripathi (2023). Wskaźniki MNLCS dla tego klastra wykazują tendencję wzrostową, co odzwierciedla zwiększające się zainteresowanie badaczy skutecznością procesów zarządczych w warunkach niepewności rynkowej.

Czwarty klaster łączy zagadnienia związane z rynkami wschodzącymi, finansami międzynarodowymi oraz instytucjonalnym kontekstem decyzji inwestycyjnych. Publikacje przypisane do tej grupy poruszają kwestie adaptacji praktyk zarządzania finansowego w niestabilnym lub dynamicznie zmieniającym się otoczeniu, szczególnie w krajach rozwijających się. Często pojawiającymi się pojęciami są „emerging markets", „institutional quality" oraz „foreign investment". Autorzy analizują wpływ uwarunkowań kulturowych, regulacyjnych i politycznych na strategie finansowe firm. Choć centralność tego klastra jest relatywnie niższa w porównaniu z wcześniejszymi, to jego wpływ mierzony MNLCS wskazuje na rosnące znaczenie w globalnym kontekście badawczym. Do artykułów wpisujących się w tą tematykę są m.in. Bagh, Fuwei i Khan (2024), Bagh, Zhou, Alawi i Azam (2024), Bolognesi i Burchi (2023), De Villiers (2022) i Nam, Bilgin i Ryu (2024).

Podsumowując, analiza klastrów tematycznych ujawnia istotne różnice w zakresie podejmowanej problematyki, jak również stopnia wpływu poszczególnych zagadnień na rozwój literatury z obszaru zarządzania finansowego. Szczególnie wyróżniają się tematy związane z CSR i zrównoważonym rozwojem, których znaczenie wciąż rośnie w odpowiedzi na wyzwania współczesnej gospodarki. Klastry te nie tylko wyznaczają kierunki dalszych badań, ale również sygnalizują zmieniające się priorytety w praktyce zarządzania finansami w ujęciu globalnym.

Rysunek 7

Sieć współwystępowania



Źródło: opracowanie własne.

Rysunek 7 ilustruje sieć współwystępowania, czyli strukturę tematyczną badań wokół ESG. Centralną część sieci (czerwony klaster) tworzą pojęcia takie jak „csr”, „performance”, „impact”, „governance” i „disclosure”, które pełnią funkcję głównych węzłów łączących pozostałe terminy. Obszar ten odzwierciedla dominującą tematykę związaną z wpływem odpowiedzialności społecznej na wyniki i zarządzanie firmą. Z lewej strony widoczny jest zielony klaster, skupiony wokół terminów takich jak „risk”, „investment”, „market” czy „returns”, wskazujący na tematy finansowe i inwestycyjne w kontekście CSR. Na dole, niebieski klaster obejmuje pojęcia związane z różnorodnością płci i strukturą zarządczą („gender diversity”, „directors”, „women”), tworząc odrębną, choć powiązaną ścieżkę badań. Wielkość węzłów odzwierciedla ich znaczenie w sieci, a wyraźna gęstość połączeń w centrum wskazuje na silną integrację tematów związanych z odpowiedzialnością społeczną i wynikami firm.

Wnioski

- ESG to wielowymiarowa koncepcja obejmująca inwestycje, tworzenie i modyfikację strategii przedsiębiorstw, rozwój modeli biznesowych, zarządzanie ryzykiem oraz wycenę firmy. Przegląd literatury ukazał wiele możliwych perspektyw postrzegania koncepcji ESG, a także wykazał obszary wymagające dalszych badań i wyjaśnień – mechanizm łączący czynniki ESG z wynikami finansowymi.
- ESG jest bardziej szczegółową, ustandaryzowaną i lepiej określoną koncepcją niż CSR, oferującą jasne wytyczne w zakresie zarządzania ryzykiem, inwestycji i zrównoważonego rozwoju. Jak twierdzi S.L. Gillian i in. (2021) ESG jest bardziej ekspansywną terminologią. Krytycy CSR mówią

o dużej dowolności rozumienia tego pojęcia, a także zróżnicowaniu definicji (Zadroga, 2013). Można więc uznać, że ESG jest odpowiedzią na tą krytykę.

- Wzrost znaczenia ESG jest napędzany nie tylko przez oczekiwania społeczne, ale także przez regulacje prawne i wymagania inwestorów. Unijna dyrektywa CSRD wprowadza regulacje dotyczące raportowania zrównoważonego rozwoju, tworząc przy współpracy z EFRAG europejskie standardy raportowania zrównoważonego rozwoju. Coraz więcej polskich firm wdraża strategie ESG, motywując swoją decyzje wymogami kontrahentów, inwestorów, ale również z przyczyn niezależnych od czynników zewnętrznych (Polskie Stowarzyszenie ESG, 2024).
- Firmy implementujące strategie ESG są postrzegane jako podmioty o niższym ryzyku inwestycyjnym i większej odporności na destabilizację. Jak wskazują badania GPW 81% profesjonalnych inwestorów, postrzega spółki, które posiadają wdrożoną strategię ESG jako podmioty o niższym ryzyku (Kiśluk & Wiśniewski, 2022).
- Mimo pozytywnych korelacji między ESG a wartością firmy, mechanizm łączący ESG z wynikami finansowymi (CFP) pozostaje nadal niejednoznaczny i wymaga dalszych badań. Jak zauważają MacNeil i Esser (2022), ocena działalności przedsiębiorstwa nie powinna opierać się wyłącznie na danych finansowych, lecz także na analizie aspektów pozafinansowych, w tym czynników ESG. Choć według KPMG (2023) firmy wdrażające strategie ESG zyskują na zainteresowaniu inwestorów, są bardziej odporne na destabilizacje i w dłuższym okresie redukują koszty, to – jak wskazuje Szczepankowski (2023) – brak jest jednoznacznego i powszechnie akceptowanego modelu wyjaśniającego sposób, w jaki ESG przekłada się na poprawę wyników finansowych i wzrost wyceny przedsiębiorstwa.

Bibliografia

Ademi, B., & Klungseth, N.J. (2022). Does it pay to deliver superior ESG performance? Evidence from US S&P 500 companies. *Journal of Global Responsibility, 13*(4), 421–449.

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics, 11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Bagh, T., Fuwei, J., & Khan, M.A. (2024). Corporate ESG investments and firm's value under the real-option framework: Evidence from two world-leading economies. *Borsa Istanbul Review, 24*(2), 324–340.

Bagh, T., Zhou, B., Alawi, S.M., & Azam, R.I. (2024). ESG resilience: Exploring the non-linear effects of ESG performance on firms' sustainable growth. *Research in International Business and Finance, 70*, 102305. https://doi.org/10.1016/j.ribaf.2024.102305

Bhaskaran, R.K., Ting, I. W.K., Sukumaran, S.K., & Sumod, S.D. (2020). Environmental, social and governance initiatives and wealth creation for firms: An empirical examination. *Managerial and Decision Economics, 41*(5), 710–729.

Bissoondoyal-Bheenick, E., Brooks, R., & Do, H.X. (2023). ESG and firm performance: The role of size and media channels. *Economic Modelling, 121*, 106203. https://doi.org/10.1016/j.econmod.2023.106203

Blowfield, M. (2005). Corporate social responsibility – The failing discipline and why it matters for international relations. *International Relations, 19*(2), 173–191. https://doi.org/10.1177/0047117805052812

Bolognesi, E., & Burchi, A. (2023). The impact of the ESG disclosure on sell-side analysts' target prices: The new era post Paris agreements. *Research in International Business and Finance, 64*, 101827. https://doi.org/10.1016/j.ribaf.2022.101827

Bowen, H.R. (1953). *The social responsibilities of the businessman*. Harper & Brothers.

Carroll, A.B. (2016). Carroll's pyramid of CSR: Taking another look. *International Journal of Corporate Social Responsibility, 1*(1), 2–8. https://doi.org/10.1186/s40991-016-0004-6

Chiaramonte, L., Dreassi, A., Girardone, C., & Piserà, S. (2022). Do ESG strategies enhance bank stability during financial turmoil? Evidence from Europe. *The European Journal of Finance, 28*(12), 1173–1211. https://doi.org/10.1080/1351847X.2021.1964556

Cicirko, M. (2022). Znaczenie czynników środowiskowego, społecznego i ładu korporacyjnego (ESG) we współczesnej gospodarce. Percepcja inwestycji ESG wśród studentów uczelni ekonomicznej. *Ubezpieczenia Społeczne. Teoria i Praktyka*, *1*, 117–139.

De Villiers, C., Jia, J. & Li, Z. (2022). Corporate social responsibility: A review of empirical research using Thomson Reuters Asset4 data. *Accounting & Finance*, *62*(4), 4523–4568.

Domańska-Szaruga, B. (2011). Rola czynników ESG w budowaniu wartości przedsiębiorstwa. *Contemporary Management Quarterly / Współczesne Zarządzanie*, *3*, 141–151.

Drempetic, S., Klein, C., & Zwergel, B. (2020). The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal of Business Ethics*, *167*(2), 333–360. https://doi.org/10.1007/s10551-019-04164-1

Dymowski, J., & Szymańska, M. (2009). CSR raport specjalny. Społeczna odpowiedzialność biznesu. *Brief*, *2*.

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, *38*, 45–64. https://doi.org/10.1016/j.gfj.2017.03.001

Feng, X., & Mohd Saleh, N. (2024). Managerial Ability and ESG Risks: The Moderating Effect of Internal Control Quality. *Sustainability*, *16*(22), 9838. https://doi.org/10.3390/su16229838

Freeman, R.E. (1984). *Strategic management: A stakeholder approach*. Pitman.

Gillan, S.L., Koch, A., & Starks, L.T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance*, *66*, 101889. https://doi.org/10.1016/j.jcorpfin.2021.101889

Guo, K., Bian, Y., Zhang, D., & Ji, Q. (2024). ESG performance and corporate external financing in China: The role of rating disagreement. *Research in International Business and Finance*, *69*, 102236. https://doi.org/10.1016/j.ribaf.2024.102236

Hąbek, P. (2009). Społeczna odpowiedzialność przedsiębiorstw jako koncepcja firmy zorientowanej na interesariuszy. *Organizacja i Zarządzanie*, *2*(6), 69–86.

Jain, K., & Tripathi, P.S. (2023). Mapping the environmental, social and governance literature: A bibliometric and content analysis. *Journal of Strategy and Management*, *16*(3), 397–428.

Kiśluk, K., & Wiśniewski, T.K. (2022). *Wpływ czynników ESG na decyzje inwestycyjne* [Raport]. Giełda Papierów Wartościowych w Warszawie. https://www.gpw.pl/pub/GPW/files/PDF/Raport_badanie_ESG_2022.pdf

KPMG. (2023). *Badanie raportowania zrównoważonego rozwoju* [Raport]. https://kpmg.com/pl/pl/home/insights/2023/01/badanie-raportowania-zrownowazonego-rozwoju-sprawozdawczosc-w-dobie-nowych-przepisow.html

Król, P. (2023). Polska bankowość spółdzielcza w obliczu wyzwań ESG i CSR. W: M. Miśniakiewicz (red.), *Innowacje w nauce i praktyce: Preferencje i oczekiwania konsumenta* (s. 48–58). Małopolska Szkoła Administracji Publicznej Uniwersytetu Ekonomicznego w Krakowie. https://msap.uek.krakow.pl/wp-content/uploads/2024/12/INNOWACJE-W-NAUCE-I-PRAKTYCE-sklad-mk-kolor-korekta.pdf

Kudłak, R. (2010). Wpływ ochrony środowiska na konkurencyjność. *Gospodarka Narodowa. The Polish Journal of Economics*, *237*(1–2), 109–125.

Lewis, A. (2023). A risk-based approach to ESG: Why organisations must embrace proactive sustainability. *LinkedIn*. https://www.linkedin.com/pulse/risk-based-approach-esg-why-organisations-must-andy-lewis-msc/

MacNeil, I., & Esser, I.M. (2022). From a financial to an entity model of ESG. *European Business Organization Law Review*, *23*(1), 1–29. https://doi.org/10.1007/s40804-021-00234-y

Matos, P. (2020). *ESG and responsible institutional investing around the world: A critical review*. CFA Institute Research Foundation. https://www.cfainstitute.org/en/research/foundation/2020/esg-and-responsible-institutional-investing

McWilliams, A., Siegel, D.S., & Wright, P.M. (2006). Corporate social responsibility: Strategic implications. *Journal of Management Studies*, *43*(1), 1–18. https://doi.org/10.1111/j.1467-6486.2006.00580.x

Misztal, A. (2024). Zrównoważony rozwój przedsiębiorstw, CSR i ESG w dobie kryzysu makroekonomicznego i geopolitycznego. *Kwartalnik Nauk o Przedsiębiorstwie*, *68*, 87–99.

Mongeon, P., & Paul-Hus, A. (2015). The journal coverage of Web of Science and Scopus: A comparative analysis. *arXiv*. https://doi.org/10.48550/arXiv.1511.08096

Nam, H.J., Bilgin, M.H., & Ryu, D. (2024). Firm value, ownership structure, and strategic approaches to ESG activities. *Eurasian Business Review*, *14*(1), 187–226. https://doi.org/10.1007/s40821-024-00252-z

Polskie Stowarzyszenie ESG. (2024). *Raport ESG – szanse i ryzyka*. https://polskiestowarzyszenieesg.pl/raport-szanse-i-ryzyka-esg/

PwC. (2025). *ESG w zarządzaniu ryzykiem* [Raport]. https://www.pwc.pl/pl/artykuly/esg-w-zarzadzaniu-ryzykiem-organizacji.html

Rau, P.R., & Yu, T. (2024). A survey on ESG: Investors, institutions and firms. *China Finance Review International*, *14*(1), 3–33. https://doi.org/10.1108/CFRI-12-2022-0260

Soin, M. (2016). Filozoficzne trudności teorii interesariuszy. *Annales. Etyka w Życiu Gospodarczym*, *19*(3), 7–16.

Szczepankowski, P. (2023). Rola ESG w kształtowaniu wartości przedsiębiorstw na przykładzie spółek giełdowych w Polsce. *Przegląd Organizacji*, *(7)*, 195–204.

Tsang, A., Frost, T., & Cao, H. (2023). Environmental, social, and governance (ESG) disclosure: A literature review. *The British Accounting Review*, *55*(1), 101149. https://doi.org/10.1016/j.bar.2022.101149

Ustawa z dnia 6 grudnia 2024 r. o zmianie ustawy o rachunkowości, ustawy o biegłych rewidentach, firmach audytorskich oraz nadzorze publicznym oraz niektórych innych ustaw, Dz.U. 2024, poz. 1863. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240001863

Wood, D.J. (1991). Corporate social performance revisited. *Academy of Management Review*, *16*(4), 691–718. https://doi.org/10.5465/amr.1991.4279616

Wójcik-Karpacz, A. (2018). Implikacje praktyczne teorii interesariuszy: Czego mniejsze firmy mogą się nauczyć od większych względem interesariuszy wewnętrznych? *Studia Ekonomiczne*, *348*, 7–25.

Zadroga, A. (2013). *Człowiek – społeczeństwo – gospodarka. Perspektywa odpowiedzialności społecznej*. Wydawnictwo KUL.

Received: 29.04.2025
Accepted: 05.06.2025
Available online: 30.06.2025

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •
Czerwiec/June 2025 • vol. 2(46): 55–71

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Author assures of no violations of publication ethics and takes full responsibility for the content of the publication.

RELATIONSHIP BETWEEN ESG SCORES AND NET PROFIT GROWTH IN THE LIGHT OF FACTORS DETERMINING IT

Burcu Zengin*, **Monika Bolek****

https://doi.org/10.18778/2391-6478.2.46.04

RELATIONSHIP BETWEEN ESG SCORES AND NET PROFIT GROWTH IN THE LIGHT OF FACTORS DETERMINING IT

ABSTRACT

The purpose of the article. The aim of the article is to analyze the growth of net profits in the context of factors influencing it, taking into account ESG strategy implemented by companies.

Methodology. In the research, data from 238 matured, European companies, covering the period from 2013 to 2023, was analyzed. OLS models were tested, taking into account heteroscedasticity correction.

Results of the research. As a result of the research, it was found that the profitability of assets and their size have a positive impact on the increase in net profits of the surveyed enterprises, but ESG has a negative influence on this increase, with environmental and social scores being statistically significant, while governance does not significantly affect the increase in profits, and therefore value creation.

Keywords: ESG Scores, ESG Pillars, Profitability, Net Profit Growth.

JEL Class: G10, G15, G30, G32, Q56.

* Dr, Assistant Professor, Department of Business, Ankara Haci Bayram Veli University, Türkiye, https://orcid.org/0000-0001-5275-6748 Corresponding Author. E-mail: burcu.zengin@hbv.edu.tr

** Dr. Professor, Faculty of Economics and Sociology, University of Lodz, https://orcid.org/0000-0001-9376-1105

The Relationship Between ESG Scores and Net Profit Growth in the Light of Factors Determining It

Enhanced net profits directly translate into an increased enterprise value, a primary objective for any business. Comprehending the causal link between ESG characteristics and financial outcomes is crucial for validating the efficacy of ESG investing. Shifts in a company's ESG profile can serve as valuable financial indicators. Moreover, ESG ratings can be effectively integrated with political benchmarks and financial analyzes.

Three primary channels transmit the influence of ESG information on company valuations and performance: cash flow, risk, and valuation (Giese et al., 2019). The Cash Flow Channel: High ESG scores are associated with lower perceived risk, leading to decreased capital costs, higher valuations, and improved financial performance. Improved ESG conditions directly benefit company cash flows, positively impacting overall performance. Stakeholder attitudes significantly influence cash flows. Positive stakeholder sentiment, driven by strong ESG performance, mitigates cash flow risk. However, excessive ESG expenditures, particularly in developing countries, may deter investors (Gregory, 2022; Dash & Sethi, 2024; Cheng & Feng, 2023). The Risk Channel: High ESG ratings indicate better risk management across various dimensions, including systemic, regulatory, supply chain, product, technology, litigation, reputational, and physical risks (Starks, 2009). While operational risks are commonly addressed in research, ESG considerations encompass a broader spectrum of risks. Companies with strong ESG scores exhibit lower stock price volatility, suggesting a reduced specific risk. However, negative ESG news can significantly impact firm volatility (Sabbaghi, 2022; Bax et al., 2023). The Valuation Channel: High ESG scores lead to higher valuations due to lower capital costs. Reduced risks enable companies to secure cheaper debt and equity financing. Increased transparency in internal processes and management, driven by strong ESG practices, enhances investor confidence (Shad et al., 2020; Ramirez et al., 2022). While some studies suggest that ESG expenditures can increase costs and reduce a company value (Chen et al., 2023), the overall impact on valuation is generally positive. The relationship between ESG reporting and financial performance is complex and subject to ongoing debate. While some argue that the relationship is not causal or that ESG research methodologies have limitations, there's growing consensus on the importance of ESG considerations for businesses. Stakeholders, including investors, consumers, employees, and governments, increasingly prioritize ESG factors. This growing demand necessitates a comprehensive understanding of the interplay between ESG and financial performance for both investors and companies.

This article examines the increase in a firm value resulting from profitability growth, analyzed through an ESG lens. A key factor influencing profitability and, consequently, a firm value, is the cash conversion cycle. This cycle reflects the efficiency of converting assets into cash. Key components include a current ratio, total asset turnover, net profit margin, and sales. Effective cash conversion cycle management ensures a rapid conversion of assets into cash, consistent sales growth with controlled costs, and improved net profit margins, all indicative of strong operational efficiency (Chang, 2018; Doğan & Kevser, 2020). Investors typically expect high total asset turnover and net profit margins, while favoring lower current ratios and current liabilities to inventory ratios. High current ratios may indicate excessive idle assets, potentially hindering profitability. Similarly, high current liabilities to inventory ratios suggest high dependence on suppliers, increasing the risk of delayed payments and potential disruption to operations. The effect of firm size on profitability is debated. While larger companies enjoy greater revenue opportunities, they also incur higher costs, potentially limiting profit growth. Ultimately, a well-managed cash conversion cycle, driven by efficient operations and effective financial management, is crucial for maximizing firm value and achieving sustainable growth. This article aims to investigate the factors influencing profit growth, with a specific focus on the impact of Environmental, Social, and Governance (ESG) policies. The study seeks to empirically test the hypothesis that strong ESG performance contributes to increased profit growth. By examining both overall ESG scores and the individual contributions of environmental, social, and governance factors, this research aims to advance the understanding of the relationship between ESG and financial performance. The article consists of an introduction, literature review, description of data and research methods, research results, discussion and conclusions.

Literature Review

The literature on profit growth and the impact of ESG policy on the value determined by a profit growth, among others, continues to develop. Kalsum (2023) analyzed factors influencing the increase in profits in banking sector on the Indonesia Stock Exchange in 2015–2020. It was found that Net Interest Margin has a significant positive impact on earnings growth and banks that manage their interest-bearing assets efficiently and generate higher net interest margins achieve a greater profit growth. ROA has a significant positive impact on earnings growth. The higher the ROA, the greater the company's efficiency in generating profits using its assets, which translates into a higher profit growth (Kalsum, 2023).

Andriani and Setiawati (2024) used data from the annual financial statements of 30 selected companies in Indonesia. They found that CR has a positive impact on earnings growth. A high CR means a stable financial situation of the company and the ability to effectively manage finances, which translates into better risk management and investment decisions. Total Asset Turnover showed a negative impact on earnings growth. This suggests that merely improving the efficiency of using assets to generate sales does not always translate into a proportional increase in profits. It is possible that companies use low prices to increase sales, which reduces profit margins. Sales growth has a direct and positive impact on profit growth. Increasing sales without a proportional increase in operating costs leads to an increase in net profit. Additionally, sales growth's long-term impact on profit growth comes from building customer loyalty and increasing market share. The analysis showed a negative impact of company size on profit growth. Large companies may have higher operating costs due to their scale, which can limit profit growth. Factors having no significant influence in that research include Inventory coverage ratio and Net Profit Margin (NPM) (Andriani & Setiawati, 2024).

Endri et al. (2020) analyzed factors influencing the growth of profits of companies from the food and beverage sector listed on the Indonesia Stock Exchange (IDX) in 2014–2018. They found that the higher the Total Asset Turnover ratio, the more effectively the company's assets are used to generate sales, which translates into higher profits. Moreover, a high net profit margin indicates a company's effectiveness in managing costs and generating sales profits. Sales growth, supported by effective management, leads to an increase in the company's revenues and profits. On the other hand, it was found that some factors influenced net profit margin growth in a negative way and a high Current Ratio may indicate an excessive amount of current assets that are not being used effectively in the company's operations, which can lead to a decline in profits. A high Current Liabilities Coverage Ratio indicates a company's high dependence on suppliers and a high level of short-term debt, which may generate high interest costs and reduce profits (Endri et al., 2020).

Danbolt et al. (2011) found that earnings growth has a significant impact on a company's value. According to the Miller-Modigliani model (1961), the value of a company can be divided into the value of fixed assets and the value of growth opportunities (Miller-Modigliani, 1961). The value of growth opportunities is the net present value (NPV) of future investment projects. Earnings per share (EPS) growth is a more reliable indicator of a company's value than growth in sales, assets, or equity. An increase in EPS indicates that the company is implementing profitable projects with a positive NPV. However, it should be remembered that an increase in profits alone does not guarantee an increase in the company's value. Investments may be misdirected, made for reasons other than shareholder interests, or high profitability may attract competition, resulting in lower profits in the long run. Although earnings growth is an important factor in a company's value, it is not the only factor that should be taken into account. Other factors such as capital structure, dividend policy and risk management also play an important role (Danbolt et al., 2011).

The study of Cherkasova and Nenuzhenko (2022) examined the impact of ESG investments on the financial performance of multinational companies in seven regions: North America, Latin America, Western Europe, Eastern Europe, the Middle East and Africa, developing Asia and developed Asia. It was found that the region in which a company is based affects the relationship between financial performance and investments in ESG projects. Moreover, companies in North America, Developing Asia, and Developed Asia benefit from ESG investing. It was also found that Eastern European companies demonstrate effective ESG implementation, likely due to their proximity to Western Europe. Companies in the Middle East, Africa, and Latin America do not see significant benefits from implementing ESG. It was also found that internationalization leads to a positive relationship between ESG activities and the financial performance of companies in Developing Asia and Developed Asia. Internationalization does not affect this relationship for North American and Western European firms.

Internationalization negatively affects the relationship between ESG activities and the financial performance of companies in the Middle East, Africa, and Latin America. ESG initiatives lower the credit ratings of companies in Latin America, North America, and Developed Asia. Internationalization mitigates this negative effect for firms in North America and Developed Asia. Multinational companies in Developing Asia are improving their credit ratings by engaging in ESG projects. For Western European companies, ESG initiatives increase credit ratings, but internationalization weakens this positive effect. For companies in the Middle East and Africa, internationalization produces an inverse relationship between ESG initiatives and credit rating. ESG practices do not have a significant impact on the credit rating of Eastern European companies. It was concluded that Latin American companies face significant challenges when implementing ESG projects and should receive support from more developed regions. Investors interested in companies actively participating in ESG should consider multinational companies based in Emerging and Developed Asia or North America (Cherkasova & Nenuzhenko, 2022).

Zhou et al. (2022) analyzed the relationship between ESG performance, financial performance, and market value of listed companies on the stock exchange in China. The study focuses on whether improving ESG performance translates into an increase in a company's market value, and if so, how financial performance plays a mediating role in this process. It was found that improving ESG scores contributes to increasing a company's operational capabilities but does not have a significant impact on its profitability and ability to grow but improving ESG results helps increase the company's market value. Operational ability is one of the most important factors mediating the impact of ESG results on the company's market value (Zhou et al., 2022).

Giese et al. (2019) focused on three areas within the standard discounted cash flow (DCF) model related to ESG: the cash flow channel, the idiosyncratic risk channel, and the valuation channel. Companies with a high ESG score are more competitive, which translates into higher profitability and higher dividends. Examination of data from 2007–2017 confirmed that companies with the highest ESG ratings were characterized by higher profitability and paid higher dividends compared to companies with the lowest ratings. The authors argue that companies with strong ESG ratings have better risk control and compliance standards, leading to fewer major incidents such as fraud, embezzlement, corruption, or lawsuits. As a result, companies with high ESG ratings are characterized by lower idiosyncratic risk, which translates into lower share price volatility. Companies with the highest ESG ratings had lower volatility and kurtosis of stock returns compared to companies with the lowest ratings. A strong ESG profile leads to higher valuations through a lower systematic risk and a lower cost of capital. Companies with high ESG ratings are less susceptible to market shocks, which translates into lower beta and lower cost of capital. Companies with the highest ESG ratings had lower beta, higher price-to-book (P/B) ratios, and higher price-to-earnings (P/E) ratios compared to companies with the lowest ratings (Giese et al., 2019).

Pérez et al. (2022) indicated that companies that do not incorporate ESG aspects into their business strategies risk losing public trust, which could lead to a decline in value in the long run. Ignoring the growing importance of ESG factors, such as climate change, the impact on markets, or the health and safety of suppliers, may lead to an incorrect assessment of the market situation and make it difficult to achieve long-term goals. Companies, especially those with a significant impact on the environment (e.g., high-emitting industries) that delay implementing ESG principles until "perfect" data and "error-free" rating systems are developed, may lose their raison d'être in the next 20–30 years. While there is no clear evidence that high ESG ratings translate into better financial performance, companies that show improvement in these rankings often achieve higher shareholder returns compared to their competitors (Pérez et al., 2022).

Lubis and Rokhim (2021) presented the results of a study conducted on 52 companies listed on the Indonesia Stock Exchange (IDX) between 2015 and 2019 and found that ESG disclosures hurt companies' financial performance. This means that the better a company was at disclosing ESG information, the worse its financial performance. There are several potential explanations for this phenomenon as the costs of ESG implementation. Shareholders may perceive ESG disclosures as an additional cost that does not provide direct financial benefits. Companies from sectors with a high environmental impact may incur significant costs in adapting to new standards. The study also found that a company's competitive advantage has a positive but statistically insignificant effect on the relationship between ESG disclosures and company performance. This means that competitive advantage may amplify the positive impact of ESG disclosures on performance, but this effect is not yet clear (Lubis & Rokhim, 2021).

Oprean-Stan et al. (2020) found that there are companies for which compliance with ESG principles brings benefits, but there are also those for which it generates costs without bringing tangible benefits. It is more likely that companies that adopt ESG will succeed than that adopting ESG will make them successful. Investors can make profits by investing in ESG-compliant companies during transitional periods, but this will result in lower returns in the long term. Research on the impact of ESG on companies' financial performance is inconclusive and the relationship between them is weak. Markets are more likely to punish companies that do not meet ESG standards than to reward those that do (Oprean-Stan et al., 2020).

Cornell and Damodaran (2020) concluded that there is no clear evidence that high ESG ratings automatically translate into better financial results for companies. Companies that effectively implement shared value strategies can achieve better results, benefiting both society and their shareholders. There are successful companies that do not rank at the top of ESG rankings. Investors should focus on analyzing specific ESG factors relevant to a given industry and company strategy, rather than relying on general ESG rankings. Companies often do not report the economic benefits resulting from implementing ESG, which makes it difficult for investors to assess their impact on financial results (Cornell & Damodaran, 2020).

Porter et al. (2019) focused on the relationship between reporting non-financial data, including ESG factors, and companies' financial, market, and sustainable growth performance. It analyzed 50 companies included in the STOXX Europe 50 index in 2013–2020. It was found that there is no clear evidence of a positive relationship between reporting non-financial data and companies' financial performance, despite research suggesting such a correlation. Improper management of ESG factors, especially social aspects, harms companies' financial results. Managing environmental and social aspects in the context of ESG has a positive impact on the sustainable development of companies. No relationship was found between non-financial reporting and sustainable growth, ESG risk and market performance, or involvement in controversial events and financial and market performance (Porter et al., 2019).

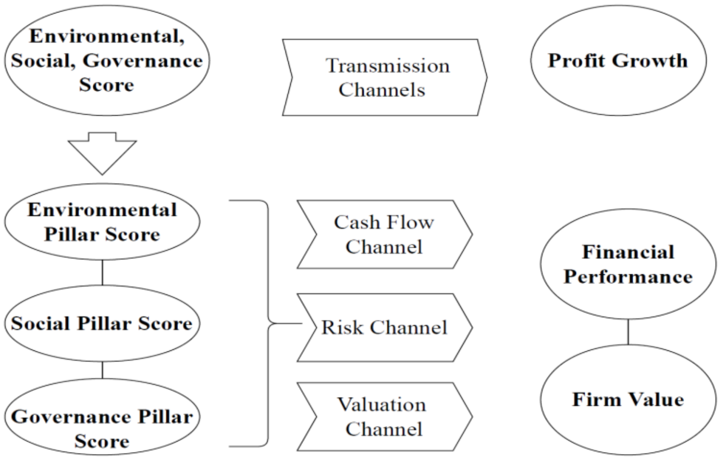
Data and Methodology

The data originates from the S&P Global database, which, beyond financial information, evaluates companies on their sustainability performance (availability, quality, relevance, and performance) using a 0–100 scale. This database, aimed at assessing ESG risks, opportunities, and impacts, is built through company disclosures, media and stakeholder analysis, modeling techniques, and the S&P Global Corporate Sustainability Assessment (CSA). S&P Global's ESG scoring offers a quantitative evaluation of a company's sustainability performance, mainly derived from their CSA. This scoring system assesses companies across environmental, social, and governance criteria, employing a double materiality lens to capture both the company's impact on the world and how ESG factors affect its financial well-being. Scores range from 0 to 100, indicating how effectively a company manages its ESG risks and opportunities compared to its industry counterparts. Companies taken into consideration include public non-financial entities in a legal form of shareholder companies traded on a European stock exchanges.

To examine the relationship between ESG scores and net profit growth, ESG scores, assets, intangible assets, ROA, ROE, debt/assets, and net profit growth variables are selected. While examining this relationship, the Environmental score, social score, Governance score, as well as the total scores of ESG, are considered separately to evaluate the impact of different factors and make policy recommendations accordingly. In selecting these variables, studies in the literature analyzing the relationship between ESG scores and profitability and firm value are used. To reveal this relationship, which is known to occur through three transfer channels called cash flows, risk, and valuation, the factors affecting the cash conversion cycle are discussed in the analysis. In this way, it is aimed to evaluate the impact that the positive perception of companies with high ESG scores by investors, consumers, and employees will have on the financial performance of the company. This study is conducted with the expectation that this perception would have a positive impact on the growth of the company's net profit. The framework guiding this study is illustrated below.

Figure 1

The relationship between ESG scores and profit growth



Source: own research.

In the analysis, Developed Europe data from the S&P Global dataset is used. To increase the reliability of the analysis and minimize data loss, data from 238 companies whose data are accessible between 2013 and 2023 are used. Profit growth can be determined by many variables. Variables selected for this study include the profitability of assets and equity capital, the size of enterprises, their innovativeness, capital structure and the level of ESG, also divided into subgroups regarding environmental activity, social activities and the corporate governance. In the research part, the hypotheses shown below is verified.

For total ESG;

$$\mathrm{NPG_i} = \alpha + \beta_1 \mathrm{ROE_{0i}} + \beta_2 \mathrm{ROA_{0i}} + \beta_3 \mathrm{ESG_{0i}} + \beta_4 \mathrm{D/A_{0i}} + \beta_5 \mathrm{lA_{0i}} + \beta_6 \mathrm{lIA_{0i}} + \varepsilon_{\mathrm{it}}$$

For ESG pillars;

$$\mathrm{NPG_i} = \alpha + \beta_1 \mathrm{ROE_{0i}} + \beta_2 \mathrm{ROA_{0i}} + \beta_3 \mathrm{E_{0i}} + \beta_4 \mathrm{D/A_{0i}} + \beta_5 \mathrm{lA_{0i}} + \beta_6 \mathrm{lIA_{0i}} + \varepsilon_{\mathrm{it}}$$
$$\mathrm{NPG_i} = \alpha + \beta_1 \mathrm{ROE_{0i}} + \beta_2 \mathrm{ROA_{0i}} + \beta_3 \mathrm{S_{0i}} + \beta_4 \mathrm{D/A_{0i}} + \beta_5 \mathrm{lA_{0i}} + \beta_6 \mathrm{lIA_{0i}} + \varepsilon_{\mathrm{it}}$$
$$\mathrm{NPG_i} = \alpha + \beta_1 \mathrm{ROE_{0i}} + \beta_2 \mathrm{ROA_{0i}} + \beta_3 \mathrm{G_{0i}} + \beta_4 \mathrm{D/A_{0i}} + \beta_5 \mathrm{lA_{0i}} + \beta_6 \mathrm{lIA_{0i}} + \varepsilon_{\mathrm{it}}$$

where: NPG – net profit growth; ESG – ESG score; ROE – return on equity; ROA – return on assets; E – environmental score; S – social score; G – governance score; lA – Assets (log); lIA – intangible assets (log); D/A – debt/asset ratio.

Table 1 presents the statistics of the analyzed variables.

Table 1

Variable statistics

Variable	Mean	Median	Minimum	Maximum
ESG	59.2640	58.0000	7.00000	94.0000
E	61.9704	64.0000	6.00000	100.000
S	56.1296	55.0000	5.00000	97.0000
G	60.5196	59.0000	7.00000	94.0000
Assets	168,966,000	20,074,300	564.823	3,044,030,000
Intangible Assets	7,493,600	2,064,250	0.000000	186,814,000
ROA	5.45259	3.58700	–114.309	2599.00
ROE	12.6908	10.9905	–920.192	596.786
Net Profit Growth	27.4442	6.87730	–100.726	978.400
Debt/Asset	0.223722	0.208032	–0.000240615	7.63747
Variable	**Std. Dev.**	**C.V.**	**Skewness**	**Ex. Kurtosis**
ESG	18.5934	0.313739	–0.0207028	–1.13730
E	22.4395	0.362100	–0.310439	–0.918620
S	20.2945	0.361565	0.0442582	–1.12022
G	17.6322	0.291347	–0.0455660	–1.06658
Assets	389,310,	2.30407	3.89615	17.9164
Intangible Assets	16,335,600	2.17994	6.07322	49.4972
ROA	52.0840	9.55216	49.0980	2442.67
ROE	37.9265	2.98849	–4.19149	224.740
Net Profit Growth	106.501	3.88063	3.99004	22.2680
Debt/Asset	0.307669	1.37523	11.9763	255.483

Source: own research.

Results

The results of the research that has two stages are presented below. First, the effect of information about companies' total ESG scores on the net profit growth is examined. Subsequently, the environmental, social, and corporate impacts that constitute ESG are evaluated separately. In this way, it is attempted to determine which ESG factor companies should focus on to improve their financial performance. It has been observed which of these factors all stakeholders – investors, consumers, suppliers, and government – react more to, and suggestions have been made for companies and investors.

The heteroscedasticity-corrected OLS model is used in this analysis. In the analysis, OLS is applied for the heteroscedastic model instead of OLS, which assumes that the variance of the error term is constant (Westort, 2010).

Table 2 presents a model in which, in addition to the classic variables determining net profit growth, the ESG indicator was taken into account.

Table 2

ESG Score – Net Profit Growth: Heteroskedasticity-corrected OLS Model

	Coefficient	Std. Error	t-ratio	p-value	
const	−15.93	25.0609	−0.6356	0.52508	
ROE	0.0740662	0.0633846	1.1685	0.24274	
ROA	0.678092	0.337526	2.0090	0.04467	**
l_A	3.47522	1.86353	1.8649	0.06235	*
l_IA	−0.693464	1.52265	−0.4554	0.64885	
D/A	6.32946	13.6191	0.4647	0.64216	
ESG	−0.242647	0.125063	−1.9402	0.05250	*
Statistics based on the weighted data:					
Sum squared resid	25336.23	S.E. of regression	3.612919		
R-squared	0.006576	Adjusted R-squared	0.003505		
F(6, 1941)	2.141254	P-value(F)	0.046013		
Statistics based on the original data:					
Mean dependent var	25.21984	S.D. dependent var	105.6498		
Sum squared resid	21884384	S.E. of regression	106.1829		

Source: own research.

As a result of the research, it is found that the increase in net profits is positively influenced by profitability and the size of assets, so the larger the company, the higher the increase in net profits it records, while ESG has a negative impact on this increase, due to the costs incurred in connection with the implementation of this strategy.

Table 3

Environmental Score – Net Profit Growth: Heteroskedasticity-corrected OLS Model

	Coefficient	Std. Error	t-ratio	p-value	
const	−17.7296	25.2105	−0.7033	0.48198	
ROE	0.0561944	0.0622338	0.9030	0.36666	
ROA	0.750771	0.333743	2.2495	0.02459	**
l_A	3.7971	1.8129	2.0945	0.03635	**
l_IA	−0.932979	1.52143	−0.6132	0.53980	
D/A	5.77455	13.4731	0.4286	0.66826	
E	−0.233285	0.100832	−2.3136	0.02079	**
Statistics based on the weighted data:					
Sum squared resid	25392.86	S.E. of regression	3.616954		
R-squared	0.008085	Adjusted R-squared	0.005019		
F(6, 1941)	2.636947	P-value(F)	0.015021		
Statistics based on the original data:					
Mean dependent var	25.21984	S.D. dependent var	105.6498		
Sum squared resid	21880028	S.E. of regression	106.1723		

Source: own research.

Next, due to the division of the ESG indicator into subcategories, only the part related to the environment is included in the model, and the model estimation results are presented in Table 3.

As a result of the estimation, it is found that environmental activities have a negative impact on the growth of net profits due to the costs incurred by enterprises.

Next, it is examined how activities for the social benefit affect the increase in net profits and the results are presented in Table 4.

Table 4

Social Score – Net Profit Growth: Heteroskedasticity-corrected OLS Model

	Coefficient	Std. Error	t-ratio	p-value	
const	−25.6804	25.4185	−1.0103	0.31247	
ROE	0.0806167	0.0622247	1.2956	0.19528	
ROA	0.724599	0.330603	2.1917	0.02852	**
l_A	3.74702	1.8732	2.0003	0.04560	**
l_IA	−0.561909	1.51235	−0.3715	0.71027	
D/A	7.62879	13.5884	0.5614	0.57458	
S	−0.220634	0.112382	−1.9632	0.04976	**
Statistics based on the weighted data:					
Sum squared resid	25112.66	S.E. of regression	3.596943		
R-squared	0.007272	Adjusted R-squared	0.004203		
F(6, 1941)	2.369774	P-value(F)	0.027674		
Statistics based on the original data:					
Mean dependent var	25.21984	S.D. dependent var	105.6498		
Sum squared resid	21907762	S.E. of regression	106.2396		

Source: own research.

As a result of the analysis, it is found that activities for the social benefit have a negative impact on the increase in net profits.

Next, an analysis of the impact of corporate governance on the growth of net profits is carried out and the results are presented in Table 5.

Table 5

Governance Score – Net Profit Growth: Heteroskedasticity-corrected OLS Model

	Coefficient	Std. Error	t-ratio	p-value	
const	−11.6213	25.0434	−0.4640	0.64267	
ROE	0.0711165	0.0669659	1.0620	0.28838	
ROA	0.669593	0.350138	1.9124	0.05598	*
l_A	3.12816	1.86057	1.6813	0.09287	*
l_IA	−0.975568	1.53538	−0.6354	0.52525	
D/A	6.14493	13.6756	0.4493	0.65324	
G	−0.140502	0.138052	−1.0177	0.30893	

Statistics based on the weighted data:			
Sum squared resid	25840.66	S.E. of regression	3.648707
R-squared	0.005016	Adjusted R-squared	0.001941
F(6, 1941)	1.630929	P-value(F)	0.134631
Statistics based on the original data:			
Mean dependent var	25.21984	S.D. dependent var	105.6498
Sum squared resid	21852068	S.E. of regression	106.1044

Source: own research.

Discussion

The analysis concludes that the increase in net profit is affected by the size and return of assets (ROA), as well as its activities in the field of ESG. The direction of this effect varies depending on the variables. While it is observed that the size of the assets and the profitability of the assets positively affect the increase in net profit, it is determined that the increase in ESG negatively affects the net profit. It is an expected result that the size of the assets, which generally shows the size of the company, and ROA, which shows how effectively the assets are used, positively affect the growth in the company's profit. Because, as companies grow and gain the ability to use their assets more effectively, their value in the eyes of investors and consumers may increase. As their risks decrease, they may be able to meet their resource needs in a less costly way and create a more effective process for their cash conversion cycle. The improvement in their financial performance may also increase their profitability.There are studies in the literature that support these results.

Kalsum (2023) found that ROA has a significant positive impact on earnings growth, and it was confirmed in the presented research. Andriani and Setiawati (2024) showed a negative impact of company size on profit growth. Large companies may have higher operating costs due to their scale, which can limit profit growth. Lubis and Rokhim (2021) found that ESG had a negative impact on companies' financial performance, and it was confirmed in the presented study. In the study of Cherkasova and Nenuzhenko (2022) it was found that the region in which a company is based affects the relationship between financial performance therefore in this research paper the authors focused on one region that is Europe.

However, it should be remembered that the relationship between ESG factors and company valuation is complex and not always clear. There are many factors that influence company valuations, and ESG factors are just one of them. Additionally, measuring ESG performance is complex and subjective, making it difficult to clearly assess the impact of ESG factors on valuation.

Empirical research confirms the relationship between ESG factors and company valuation. For example, companies with higher ESG ratings tend to have lower costs of capital, which translates into higher valuations. Moreover, changes in ESG ratings can be a useful financial indicator. For example, an improvement in an ESG rating can signal to investors that a company is making steps to improve its ESG performance, which could lead to a higher valuation.

Contrary to this expected result, the conclusion that ESG negatively affects profit growth should be analyzed carefully. However, it is worth noting that not all ESG components significantly determine net profit growth and corporate governance is not important in this respect. Although this result is different from our expectations before building the model, it is noteworthy that many studies find similar results in the literature. There have been numerous empirical studies proving that ESG negatively affects profit growth. In these works, different explanations were offered for the results found. There are studies stating that the company's costs increased with the ESG practices, and as a result, their profitability decreased. This impact on profitability may be due to the actual increase in costs as well as their perception in the eyes of investors. Investors may act with the thought that the expenses they make due to the company's ESG practices will not benefit the company and may not support the company's long-term investments. Decreasing trust in the company and increasing risk perception can make the company's resources costly. Additionally, studies are emphasizing the importance the company attaches to ESG practices, and the resulting score distracts the company from its main field of activity, which will increase the company's profitability. Engaging in these practices instead of activities that will increase company profits may lead to negative investor perceptions. This could negatively impact profitability.

Cherkasova and Nenuzuhenko (2022) stated that the high cost of expenses made by companies for ESG activities leads to this result. It was particularly emphasized that internationalizing companies need to bear additional costs to successfully expand their business outside the country and that simultaneous costs for sustainability projects are not affordable. Folger-Laronde et al. (2022) concluded that during market downturns, higher sustainability performance does not ensure protection. They analyzed the COVID-19 period and suggested that investors should not assume that the sustainability performance of ETFs does not guarantee that investments will be resilient (Folger-Laronde et al., 2022). Giannopoulos et al. (2022), in their study on Norwegian listed companies, indicated that ESG practices have a negative impact on profitability. They attributed this outcome of ESG disclosure regulations, which results in a company's ESG practices not being reflected in its rating. Saygili et al. (2022) discussed the ESG pillars separately, drawing attention to their different effects on financial performance. Accordingly, while environmental disclosures have a negative impact on financial performance, social and governance dimensions of ESG have a positive effect. In our study, the results support considering ESG pillars separately. The emphasis a company places on environmental, social, and governance factors can differ, and this variation can influence financial performance to different extents. Our findings indicate that environmental and social practices negatively impact profitability, while governance practices did not show a statistically significant effect. This shows us that both the investor and the company should pay attention to the details of these scores and consider their individual impacts on profitability.

The landscape of Environmental, Social, and Governance (ESG) assessment in Europe between 2013 and 2023 has been characterized by both increasing recognition of its importance and significant challenges in standardization and comparability. This period witnessed a notable evolution in how institutions approached ESG, particularly in the context of a still-developing regulatory framework.

One of the primary hurdles during the examined period was the incomplete legislative process for a standard ESG calculation methodology across Europe. This regulatory gap led to a situation where various institutions, including rating agencies, data providers, and even companies themselves, adopted diverse methods for evaluating and scoring ESG performance. This heterogeneity in methodologies inherently resulted in a lack of comparability of ESG Scores between different rating agencies. An ESG score assigned by one agency might weigh different factors more heavily, utilize distinct data sources, or employ unique calculation algorithms compared to a score from another agency. This lack of standardization created confusion for investors seeking to compare the sustainability profiles of different companies and hindered the development of a truly transparent and efficient market for sustainable finance.

Furthermore, the development of ESG considerations across EU countries exhibited significant divergence at the beginning of the examined period (2013). Factors such as national regulations, investor awareness, and the maturity of sustainable finance ecosystems varied considerably. Some countries were early adopters, with established frameworks and greater market demand for ESG information, while others lagged behind. This initial disparity meant that the context and drivers for ESG adoption were not uniform across the continent.

The latter part of the examined period, particularly the last two years (approximately 2021–2023), witnessed a more intensified focus on ESG. This surge in activity can be attributed to several factors, including increasing societal pressure, growing investor demand, and the advancement of the EU's sustainable finance agenda (e.g., the Action Plan on Financing Sustainable Growth and related legislative initiatives, even if not fully complete). Notably, this more intense engagement was primarily driven by large international enterprises who faced greater scrutiny from global investors and stakeholders and were more likely to proactively seek ESG Scores to demonstrate their sustainability credentials and attract capital. Smaller and medium-sized enterprises (SMEs) often faced different pressures and resource constraints, leading to a potentially slower adoption rate of formal ESG scoring.

It is crucial to acknowledge that this analysis, and any conclusions drawn from it, are subject to several restrictions. The availability and quality of ESG data have improved over the decade, but inconsistencies and gaps likely persisted, particularly in the earlier years and for smaller companies. The evolving nature of ESG reporting standards and the lack of a universally agreed-upon definition of "sustainability" also contribute to the complexity of comparing data and scores across time and agencies. Moreover, the focus on large international enterprises in the later period might skew the overall picture of ESG development across the entire European business landscape.

Conclusions

Our findings reveal a nuanced relationship between ESG scores and profit growth, with certain dimensions of ESG exerting a negative impact. This has critical implications for investors and companies. Instead of solely focusing on companies with high sustainability scores, investors must carefully evaluate the potential costs and financial implications of these practices for individual companies. This understanding is crucial to avoid deterring companies from pursuing sustainability initiatives. Companies should prioritize integrating ESG considerations into their core business strategies, creating "shared value" for both society and shareholders. This requires a shift from solely focusing on regulatory compliance to proactively integrating social and environmental concerns into business decisions.

Financial professionals must consider the long-term impact of ESG factors on industry structure and company performance, rather than solely focusing on short-term financial gains. They should support companies that effectively utilize capital to address societal needs, fostering a "virtuous cycle" of sustainable growth. Policymakers and regulators should play a more active role in evaluating ESG performance and encouraging effective ESG management practices. Companies should focus on improving their ESG scores strategically, recognizing that this translates into long-term benefits for their business and market position. Integrating ESG data into investment strategies is essential for identifying high-quality companies and building more resilient portfolios.

Future research should expand beyond Europe, considering regional variations within the continent and exploring the impact of ESG in other regions globally.

References

Andriani, E., & Setyawati, E. (2024). Determinants of profit growth. *International Journal of Economics Development Research (IJEDR)*, *5*(1), 649–664. https://journal.yrpipku.com/index.php/ijedr/article/view/4636/2731 or https://doi.org/10.37385/ijedr.v5i2.4636

Bax, K., Şahin, Ö., Czado, C., & Paterlini, S. (2023). ESG, risk, and (tail) dependence. *International Review of Financial Analysis*, *87*, 102513. https://doi.org/10.1016/j.irfa.2023.102513

Chang, C.-C. (2018). Cash conversion cycle and corporate performance: Global evidence. *International Review of Economics and Finance*, *56*, 568–581. https://doi.org/10.1016/j.iref.2017.12.014

Chen, Y., Li, T., Zeng, Q., & Zhu, B. (2023). Effect of ESG performance on the cost of equity capital: Evidence from China. *International Review of Economics & Finance*, *83*, 348–364. https://doi.org/10.1016/j.iref.2022.09.001

Cheng, X., & Feng, C. (2023). Does environmental information disclosure affect corporate cash flow? An analysis by taking media attentions into consideration. *Journal of Environmental Management*, *342*, 118295. https://doi.org/10.1016/j.jenvman.2023.118295

Cherkasova, V., & Nenuzhenko, I. (2022). Investment in ESG projects and corporate performance of multinational companies. *Journal of Economic Integration*, *37*(1), 54–92. https://doi.org/10.11130/jei.2022.37.1.54

Cornell, B., & Damodaran, A. (2020). Valuing ESG: Doing good or sounding good? *NYU Stern School of Business.* https://ssrn.com/abstract=3557432 or http://dx.doi.org/10.2139/ssrn.3557432

Danbolt, J., Hirst, I.R., & Jones, E. (2011). The growth companies puzzle: Can growth opportunities measures predict firm growth? *The European Journal of Finance*, *17*(1), 1–25. https://doi.org/10.1080/13518470903448432

Dash, S.R., & Sethi, M. (2024). The impact of economic policy uncertainty on investment – cash flow sensitivity: Does ESG make any difference? *Australasian Accounting, Business and Finance Journal (AABFJ), 18*(3), 202–222. https://doi.org/10.14453/aabfj.v18i3.11

Doğan, M., & Kevser, M. (2020). The determinants of cash conversion cycle and firm performance: An empirical research for Borsa Istanbul Turkey. *Management and Economics Review*, *5*(2), 197–206. https://doi.org/10.24818/mer/2020.12-01

Endri, E., Sari, A.K., Budiasih, Y., Yuliantini, T., & Kasmir, K. (2020). Determinants of profit growth in food and beverage companies in Indonesia. *Journal of Asian Finance, Economics and Business*, *7*(12), 739–748. https://doi.org/10.13106/jafeb.2020.vol7.no12.739

Folger-Laronde, Z., Pashang, S., Feor, L., & El Alfy, A. (2022). ESG ratings and financial performance of exchange-traded funds during the COVID-19 pandemic. *Journal of Sustainable Finance & Investment*, *12*(2), 490–496. https://doi.org/10.1080/20430795.2020.1782814

Giannopoulos, G., Fagernes, R.V.K., Elmarzouky, M., & Hossain, K.A.B.M.A. (2022). The ESG disclosure and the financial performance of Norwegian listed firms. *Journal of Risk and Financial Management*, *15*(6), 237. https://doi.org/10.3390/jrfm15060237

Giese, G., Lee, L.E., Melas, D., Nagy, Z., & Nishikawa, L. (2019). Foundations of ESG investing: How ESG affects equity valuation, risk, and performance. *The Journal of Portfolio Management*, *45*(5), 69–83. https://doi.org/10.3905/jpm.2019.45.5.069

Gregory, R.P. (2022). ESG activities and firm cash flow. *Global Finance Journal*, *52*, 100698. https://doi.org/10.1016/j.gfj.2021.100698

Kalsum, U. (2023). Factors affecting profit growth. In *Proceeding Medan International Conference on Economic and Business*, *1*, 2565–2575.

Lubis, M.F.F., & Rokhim, R. (2021). The effect of environmental, social, and governance (ESG) disclosure and competitive advantage on companies performance as an implementation of sustainable economic growth in Indonesia for period of 2015–2019. *IOP Conference Series: Earth and Environmental Science*, *940*(1), 012059. https://doi.org/10.1088/1755-1315/940/1/012059

Miller, M.H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, *34*(4), 411–433. http://dx.doi.org/10.1086/294442

Oprean-Stan, C., Oncioiu, I., Iuga, I.C., & Stan, S. (2020). Impact of sustainability reporting and inadequate management of ESG factors on corporate performance and sustainable growth. *Sustainability*, *12*(20), 8536. https://doi.org/10.3390/su12208536

Pérez, L., Hunt, V., Samandari, H., Nuttall, R., & Biniek, K. (2022). Does ESG really matter – and why. *McKinsey Quarterly*, *59*(2), 1–9.

Porter, M., Serafeim, G., & Kramer, M. (2019). Where ESG fails. *Institutional Investor*, *16*(2), 1–17.

Ramirez, A.G., Monsalve, J., Gonzalez-Ruiz, J.D., Almonacid, P., & Pena, A. (2022). Relationship between the cost of capital and environmental, social, and governance scores: Evidence from Latin America. *Sustainability*, *14*(9), 5012. https://doi.org/10.3390/su14095012

Sabbaghi, O. (2022). The impact of news on the volatility of ESG firms. *Global Finance Journal*, *51*, 100570. https://doi.org/10.1016/j.gfj.2020.100570

Saygili, E., Arslani, Ş., & Birkan, A.Ö. (2022). ESG practices and corporate financial performance: Evidence from Borsa İstanbul. *Borsa Istanbul Review*, *22*(3), 525–533. https://doi.org/10.1016/j.bir.2021.07.001

Shad, M.K., Lai, F.-W., Shamim, A., & McShane, M. (2020). The efficacy of sustainability reporting towards cost of debt and equity reduction. *Environmental Science and Pollution Research*, *27*, 22511–22522. https://doi.org/10.1007/s11356-020-08398-9

Starks, L.T. (2009). EFA keynote speech: Corporate governance and corporate social responsibility: What do investors care about? What should investors care about? *The Financial Review*, *44*(4), 461–468. https://doi.org/10.1111/j.1540-6288.2009.00225.x

Westort, P., Kashian, R., & Cummings, R. (2010). Does ownership form in community banking impact profitability? *Managerial Finance*, *36*(2), 122–133. https://doi.org/10.1108/03074351011014541

Zhou, G., Liu, L., & Luo, S. (2022). Sustainable development, ESG performance and company market value: Mediating effect of financial performance. *Business Strategy and the Environment*, *31*(7), 3371–3387. https://doi.org/10.1002/bse.3089

Received: 11.02.2025
Accepted: 29.04.2025
Available online: 30.06.2025

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •
Czerwiec/June 2025 • vol. 2(46): 73–96

Funding information: The article presents the result of the Project no 024/EFB/2023/POT financed from the subsidy granted to the Krakow University of Economics. **Conflicts of interests:** None. **Ethical considerations:** The Authors assure of no violations of publication ethics and take full responsibility for the content of the publication.

REGULATORY DEFICIENCIES IN INVESTOR PROTECTION ON THE CFD MARKET IN POLAND

Wojciech Jarosz*, Mikołaj Górny**

https://doi.org/10.18778/2391-6478.2.46.05

REGULATORY DEFICIENCIES IN INVESTOR PROTECTION ON THE CFD MARKET IN POLAND

ABSTRACT

The purpose of the article. Retail investors in capital markets have enhanced accessibility to a broad spectrum of financial instruments via online trading platforms operated by investment firms. However, these instruments are inherently complex and high-risk, making independent analysis and informed decision-making particularly challenging for non-professional investors. Leveraged products amplify both gains and losses, posing heightened risks in volatile markets like cryptocurrencies. This article critically examines the limitations of the current regulatory framework governing contracts for difference (CFDs) in Poland, following regulations introduced (Decision No. DAS.456.2.2019) by the Polish Financial Supervision Authority (KNF). This decision established restrictions on the offering, distribution, and sale of CFDs to retail clients.

Methodology. This study adopts a regulatory and market analysis approach to identify critical deficiencies and challenges in investor protection within the Polish CFD market. It relies on a review of legal frameworks, supervisory reports, and publicly available data from CFD brokers. Key areas of analysis include supervisory reports from the KNF, assessment of risk disclosures, examination of brokerage models, evaluation of cross-border activities, and review of marketing strategies.

Results of the research. The analysis highlights persistent issues such as the circumvention of restrictions by cross-border brokers, the continued use of aggressive marketing strategies, and unresolved conflicts of interest within brokerage models. By reviewing legal frameworks, reports, and CFD broker data highlights regulatory shortcomings in investor protection. The findings suggest that while regulatory interventions have introduced certain protective measures, significant loopholes allow brokers to maintain high-risk practices. The article calls for enhanced regulatory oversight and provides recommendations for strengthening investor protection in the Polish financial market.

Keywords: CFD, ESMA, MIFID II, Capital markets.

JEL Class: G15, G24, G41, K22.

* MA, Krakow University of Economics, Department of Banking and the Global Financial System, https://orcid.org/0000-0001-5683-7596 Corresponding Author. E-mail: jaroszw@uek.krakow.pl
** MA in Law, Jagiellonian University, https://orcid.org/0000-0003-1363-2077

Regulatory Deficiencies in Investor Protection on the CFD Market in Poland

Individual investors in the capital markets have an increasingly easy access to a wide range of financial instruments offered by online trading platforms operated by investment firms. However, the financial instruments offered through these brokerage platforms are inherently high-risk and complex, posing significant challenges for retail clients attempting independent analysis and evaluation (UKNF, 2020). Such financial instruments frequently incorporate leverage mechanisms, wherein the underlying assets are often subject to significant price fluctuations, particularly in highly volatile markets such as cryptocurrencies. Concurrently, there has been a notable rise in fraudulent activities involving the impersonation of entities within the broader financial sector, targeting investment products and services (CSIRT KNF, 2023, p. 7).

In recent years, substantial efforts have been undertaken at both the European level and within individual EU member states to enhance the protection of individual investors, including those engaged in CFD trading. CFDs have gained significant popularity over the past decade, largely due to the potential for exceptionally high returns, amplified by extensive promotional campaigns led by both licensed brokerage entities and unlicensed brokers operating outside regulatory frameworks.

The Markets in Financial Instruments Directive 2014 (hereafter MiFID II), incorporated into Polish legislation through an amendment to the Act of July 29, 2005, on trading in financial instruments, alongside the Markets in Financial Instruments Regulation (MiFIR) and other delegated acts, introduced substantial enhancements to investor protection within the European Union. Under these regulatory frameworks, all communications by investment firms to clients must be fair, clear, and non-misleading (MiFID II, 2014, Art. 24, sec. 3). Additionally, firms are obligated to execute orders under conditions most favourable to the client (MiFID II, 2014, Art. 27, sec. 1) and to effectively manage conflicts of interest (MiFID II, 2014, Art. 23, sec. 1).

On May 22, 2018, pursuant to Article 40 of MiFIR, the European Securities and Markets Authority (ESMA) implemented a temporary product intervention, which included leverage limit restrictions and safeguards against negative account balances (ESMA, 2018a). This decision was subsequently renewed three times, extending its validity until July 31, 2019, through successive ESMA renewals (ESMA, 2018c; ESMA 2019a; ESMA 2019b). These measures were subsequently adopted by the national supervisory authorities of most member states, including Poland. Currently, efforts are focused on the EU Commission’s Retail Investment Strategy, which is expected to substantially influence the regulation and promotion of CFD trading (European Commission, 2023). Based on the literature review and the regulatory context, the following research hypotheses are formulated:

- H1: The current regulatory framework in Poland does not provide adequate protection for participants in the capital market;

- H2: The regulatory measures introduced in Poland as a result of ESMA’s and subsequent KNF’s product intervention contributed to a measurable decline in retail investor losses associated with CFD trading;
- H3: Cross-border operations of CFD brokers increase the risk of regulatory circumvention and limit the effectiveness of national enforcement mechanisms;
- H4: The Market Maker model used by CFD brokers creates a conflict of interest detrimental to clients;
- H5: Aggressive marketing practices, including affiliate schemes, persist despite regulatory restrictions

Literature review

The literature review was divided into two segments:

1. Characteristics of contracts for differences.
   This section will discuss the characteristics of CFDs, their structure and mechanisms of operation.
2. ESMA's product intervention and its implications for Polish regulation of CFD brokers.
   This section presents the actions of the ESMA regarding the regulation of the CFD market and their further implications for the Polish law.

Characteristics of contracts for differences

Contracts for Difference (CFDs) are derivative financial instruments that do not meet the criteria for classification as transferable securities (Act on Trading, 2005, Art. 2, Sec. 1, Pt. 2, Letter h). These instruments are inherently complex and lack standardization, posing significant risks to individual participants in the capital market (ESMA, 2018a). The primary sources of risk stem from the leverage mechanism, which amplifies both potential gains and losses, and the fact that CFDs are traded over-the-counter (OTC), exposing investors to counterparty risk and reduced market transparency (Brown, Dark & Davis, 2010, p. 1109).

CFDs are generally understood as contracts between a buyer and a seller based on the difference between the current price of the underlying asset and its price at the contract’s close (Gołębiowski, 2012, p. 26). These instruments are predominantly utilized for speculative purposes, effectively representing a “bet” between the investment firm and the speculator on whether the underlying asset's price will rise (resulting in a gain for the long position holder) or fall (benefiting the short position holder).

Investment firms often promote CFDs as a convenient alternative to traditional securities investments, frequently employing aggressive marketing strategies that fail to comply with relevant legal standards (European Commission, 2016 – Regulation 2017/565, Art. 44 sec. 2 letter b). Advertisements for CFDs commonly lack a balanced presentation of potential benefits and associated risks, instead presenting a one-sided narrative aimed at encouraging clients to purchase these instruments, irrespective of their suitability for the individual investor (ESMA, 2018a, sec. 2.5, pts. 41–52; KNF, 2019, p. 7).

CFDs are leveraged financial instruments that require traders to commit only a fraction of the total position value as margin. Leverage allows traders to control larger amounts than they actually possess, which can lead to significantly higher profits but also amplifies potential losses. Given the high volatility of underlying assets, investors face the risk of rapidly losing their entire invested amount (AMF, 2019, pp. 6–7, pts 21–30). Consequently, CFDs are suitable only for investors with a high capacity for loss absorption. Unlike similar financial instruments, such as non-deliverable forwards (Sobol & Szmelter, 2022, pp. 112–113), CFDs are characterized by leverage and the absence of an expiration date, enabling traders to maintain open positions indefinitely. This feature, however, may lead to additional costs, including transaction commissions, bid-ask spreads, and overnight swap fees for holding positions overnight (Barnes, 2018, p. 6).

The settlement of a CFD is contingent upon changes in the value of the un-derlying asset (for instance, the level of a stock market index) over the contract's duration, with settlement occurring at the contract's closing price. ESMA highlights the common practice among CFD brokers of requiring clients to acknowledge that the reference prices for contracts may deviate from those available in the market where the underlying asset is traded. This discrepancy can complicate clients' ability to verify the reliability of prices used for contract settlement (ESMA, 2018a, sec. 2.1, pts 14–16).

ESMA's product intervention and its implications for Polish regulation of CFD brokers.

Before 2015, CFDs were not subject to specific regulation in Poland. The Polish Financial Supervision Authority (KNF) recognized the growing popularity of this market and addressed some relevant issues in its Position of July 17, 2013, regarding the conduct of investment firms in the Forex market (UKNF, 2013). This Position highlighted the aggressive advertising and promotional practices within this market and emphasized that derivatives are complex financial instruments associated with high levels of investment risk. The KNF discussed the inherent risks of leverage mechanisms and noted that, based on its research conducted in 2011, 82% of active customers using online Forex trading platforms experienced financial losses. Due to statutory and constitutional limitations on its authority, the KNF's Position was restricted to clarifying the existing legal framework and providing a non-binding interpretation of the relevant law.

The first regulatory restrictions affecting CFDs in Poland were introduced in 2015, establishing a maximum leverage of 1:100 for derivatives (including CFDs) by requiring a minimum margin of at least 1% of the nominal value of the financial instrument (Amendment of Act on Trading, 2014). Despite this leverage re-striction, instances of regulatory circumvention were reported, with traders declaring foreign residency based on varying levels of documentation reliability. This workaround was noted by anonymous contributors on a Polish Forex trading forum (Forex Forum Navigator, 2015).

In 2016, ESMA issued a warning regarding CFDs, expressing concerns about the unsuitability of this financial instrument, particularly in terms of advertising and offering it to clients who may not fully comprehend the associated risks (ESMA, 2016). On March 27, 2018, ESMA invoked Article 40 of the MiFIR Regulation to introduce temporary intervention measures on binary options and CFDs (ESMA, 2018b).

These measures formally took effect on August 1, 2018 (ESMA, 2018a) and remained in place until July 31, 2019 (ESMA, 2020, p. 3). In its decision on product intervention, the European regulator highlighted several key concerns:

- significant increase in the popularity of CFDs within the EU;
- speculative, complex, and high-risk nature of this financial instrument;
- widespread use of high leverage levels, reaching up to 1:500;
- complexity of fee structures and lack of standardization in CFDs;
- potential discrepancies between the quotes provided by contract issuers and actual market quotes;
- aggressive marketing strategies employed by CFD brokers;
- numerous complaints from retail clients;
- the high rate of losses among retail clients;
- Instances where higher leverage was offered to retail clients than to professional clients;
- absence of suitability assessments to match the client's knowledge, alongside insufficient risk warnings,
- inadequacy of existing EU regulations in providing sufficient investor protection.

As part of its product intervention, ESMA established detailed requirements for the minimum initial margin in Annex I to its Decision (ESMA, 2018a, Appx. 1), resulting in a substantial reduction in permissible leverage. The regulation linked allowable leverage levels to the volatility of the underlying instrument, effectively limiting the maximum investment risk. The maximum allowable leverage was set at 1:30 for major currency pairs, while the lowest limit applied to cryptocurrencies, with a maximum leverage of 1:2. This intervention marked a substantial reduction in leverage, particularly considering that, prior to its implementation, leverage levels in some EU countries reached up to 1:500, and in Poland, 1:100 across all underlying instruments.

Standardized risk warnings were defined in terms of both content and visual format, depending on the medium of display. For example, if published information is delivered in websites and durable media, a more detailed format is required (Figure 1). In the further part of the article, the obligation to publish risk disclosures is used to analyse the percentage of losing clients among European CFD brokers.

Figure 1

Durable medium and webpage provider-specific risk warning

CFDs are complex instruments and come with a high risk of losing money rapidly due to leverage. **[insert percentage per provider] % of retail investor accounts lose money when trading CFDs with this provider.** You should consider whether you understand how CFDs work and whether you can afford to take the high risk of losing your money.

Source: ESMA (2018a, Appx. 2 sec. B).

As part of these standardized warnings, CFD providers are required to disclose the percentage of retail client accounts that have incurred losses, updated quarterly and based on a rolling 12-month period. An account is classified as "losing" if the net sum of all realized and unrealized transactions within this period is negative, inclusive of all associated CFD costs (ESMA, 2018a, Appx. 2, Sec. A, Pt 4). As part of its product intervention decision, ESMA established requirements for retail customer protection, including safeguards against negative balances, automatic position closing, and a ban on monetary and non-monetary incentives in the offering of CFDs. No additional granular rules were introduced regarding best execution, conflict of interest management, crossborder activities of non-EU firms, or specifically, the inducements regime established by MIFID II.

In Poland, a key regulation governing CFDs is the KNF's Decision of August 1, 2019, which imposes restrictions on the marketing, distribution, and sale of contracts for differences (CFDs) to retail clients (KNF, 2019). Under this Decision, issued pursuant to Article 42(1)(A) of the MiFIR Regulation, the KNF limits the distribution and sale of CFDs to retail customers by setting specific conditions for CFD providers. This action by the KNF continues the European Securities and Markets Authority's (ESMA) earlier product intervention in this area and aligns with similar product interventions implemented across Europe. Under these regulations, CFD providers must fulfill several conditions to offer their services. Thus, they are forced to introduce specific measures to protect the retail client, in particular by:

- requirement to establish an initial margin (the inability to open positions without blocking certain funds in the account);
- requirement to protect the client from negative balances (preventing the client from incurring a loss exceeding the value of the deposited funds);
- requirement to apply leverage limits for specific types of underlying assets:
  - major currency pairs – 1:30;
  - major stock market indices, other currency pairs, gold – 1:20;
  - commodities or other stock market indices – 1:10;
  - equities and unlisted stocks – 1:5;
  - cryptocurrencies – 1:2;

- requirement to close a customer's most loss-making transactions if the value of deposited funds falls below a certain level;
- requirement to include standardized warnings in advertising materials about risks;
- prohibition on providing the client with any benefits beyond the realized profits from the delivered CFDs ("prohibition on offering bonuses").

The above regulations are analogous to those applied by ESMA under the now-defunct product intervention.

Methods

This study adopts a regulatory and market analysis approach to identify key gaps and challenges in investor protection related to CFDs in Poland. The research is based on a review of legal frameworks, supervisory reports, and publicly available data from CFD brokers. The key areas of analysis include:

- supervisory reports and industry data – review of KNF publications on CFD market activity, with attention to investor losses, compliance trends, and enforcement actions between 2011 and 2023;
- risk disclosure assessment – comparison of standardized risk warnings from 26 EU-based CFD brokers and 5 brokers registered in Poland, focusing on reported loss rates among retail clients as of Q2 2024;
- analysis of brokerage models – examination of execution practices used by CFD providers, particularly the Market Maker (MM) and Straight-Through Processing (STP) models, and their implications, including conflicts of interest;
- cross-border activity evaluation – investigation of the presence of 739 investment firms notified to the KNF, including 398 entities permitted to offer CFDs, to explore potential regulatory arbitrage;
- marketing strategies review – identification of promotional techniques used by CFD brokers, including aggressive advertising, social media outreach, brand recognition and the role of influencers.

The study does not employ econometric modeling due to limited access to data but instead provides a structured examination of regulatory developments and market practices. The findings highlight persistent regulatory loopholes and the need for stronger enforcement mechanisms to enhance investor protection in the Polish financial market.

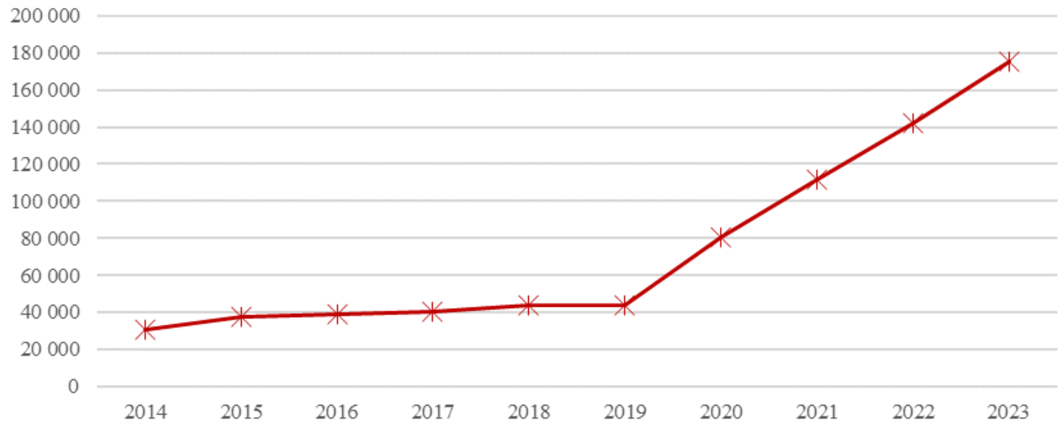
Results

Traders' results in relation to CFD trading before and after ESMA product intervention

ESMA's product intervention initially faced criticism from the Polish brokeage community. A 2019 survey by the Polish Chamber of Brokerage Houses (IDM) and Comparic.pl (n=459) suggested that the measures did not improve trading outcomes (IDM, 2019, p. 1). The study linked leverage restrictions to increased trader migration to non-ESMA jurisdictions, where regulatory arbitrage allowed easier access to higher leverage. Despite these restrictions, the number of clients trading OTC derivatives grew, highlighting the ongoing challenge of cross-border brokerage oversight (see Figure 2).

Figure 2

Number of active clients trading OTC derivatives in Poland



Source: own study based on UKNF data.

From a legal perspective, it is important to note that current regulations do not prohibit clients residing in EU Member States from entering into agreements with investment firms that operate exclusively outside the EU. According to Article 42 of MIFID II: »Member States shall ensure that where a client (…) established or located in the Union causes, on its own exclusive initiative, the provision of an investment service or investment activity by a firm from a third country, the requirement to obtain an authorisation (…) shall not apply«. Without the requirement to obtain authorization, these entities are not subject to oversight by EU supervisory authorities and are not obligated to comply with provisions implementing MiFID II.

Recital 111 of MiFID II provides a key interpretative framework for the provision of financial services by third-country firms within the EU. It clarifies that services initiated solely at the request of an EU-based client are not considered to be provided within the EU. However, if a non-EU firm engages in solicitation, advertising, or marketing targeting EU clients, these services cannot be deemed as client-initiated, serving as a safeguard against regulatory circumvention under Article 42 of the Directive. While this provision aims to prevent third-country firms from bypassing EU regulations by falsely attributing service initiation to clients, its effectiveness is undermined by the global nature of digital marketing and online platforms. The internet enables firms to reach EU-based clients through indirect promotion, algorithmic targeting, and affiliate partnerships, making enforcement of this rule challenging.

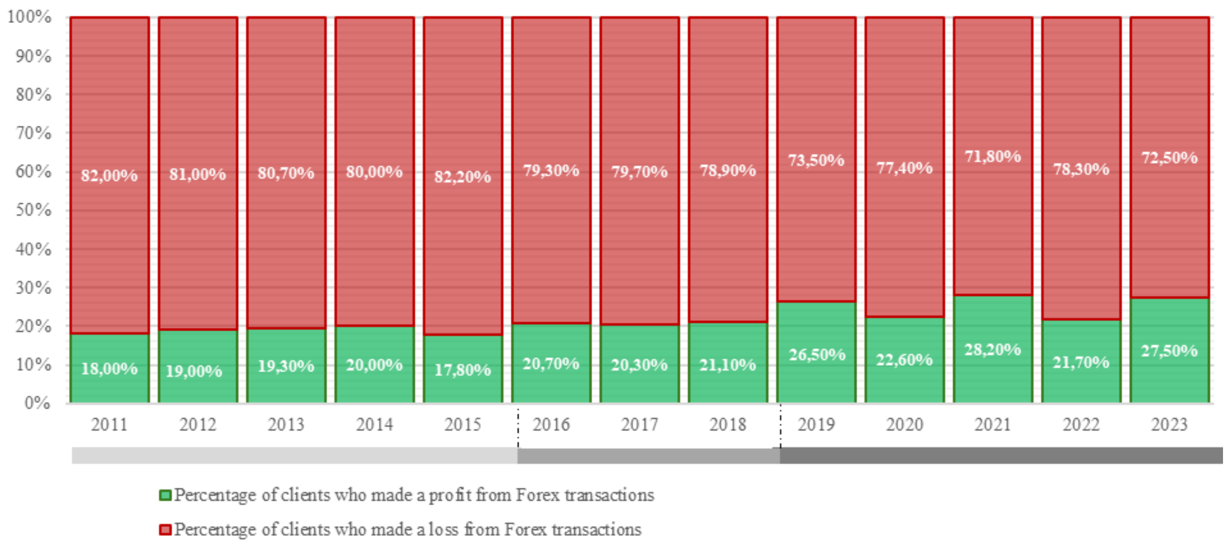
Addressing the IDM study's conclusions, it reported that most traders did not perceive an improvement in their CFD trading outcomes following ESMA's product intervention, with 36% even claiming a deterioration in results. However, this perception is inconsistent with more reliable data from the Office of Polish Financial Supervision Authority (UKNF) regarding capital market paticipants' losses in Poland associated with CFD trading (see Figure 3).

In the period under review (2011–2023), three additional periods were marked;

1. period before the ban on leverage higher than 1:100, i.e. before the amendment of the Act on Trading in Financial Instruments (2011–July 16, 2015);
2. period from the entry into force of the amended Act, but before ESMA intervention and the subsequent decision of the KNF (July 16, 2015–August 1, 2018) (Amendment of the Act on Trading, 2014, Art. 73. changes).
3. period starting from the date of application of the aforementioned ESMA intervention, with continued regulation in connection with the 2019 KNF Decision (from August 1, 2018).

Figure 3

Ratio of booked annual losses or profits of capital market participants in Poland in 2011–2023 from transactions using over-the-counter derivatives



Source: own study based on UKNF data available in annual publications.

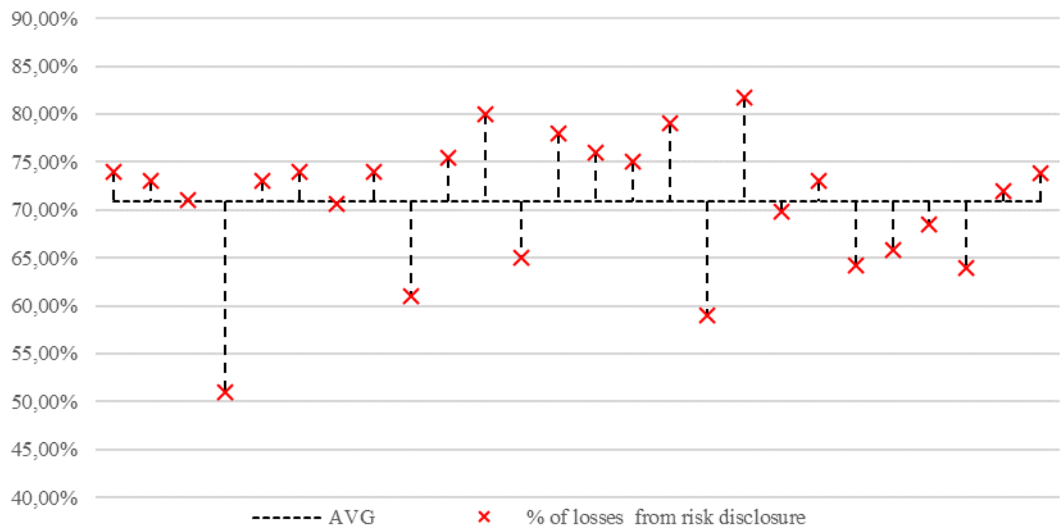
Prior to the introduction of leverage-limiting regulations, losses among individual clients using derivatives consistently exceeded 80% of all such clients. After leverage was restricted to 1:100, the percentage of individual market participants incurring losses from these transactions decreased slightly, fluctuating between just below 80% and slightly above 78%. A significant reduction in retail investor losses became evident only following ESMA's product intervention. Notably, even during the heightened market volatility of the COVID-19 pandemic, losses among retail investors remained lower than in the pre-intervention period. Since the implementation of these regulatory measures, the proportion of retail clients in Poland concluding the calendar year with a net loss from OTC derivatives, including CFDs, has declined, despite an overall increase in the number of active users of these instruments (see Figure 2).

In 2023, retail clients represented 99.8% of Forex transaction participants through brokerage houses and offices, accounting for 87.1% of the nominal value of transactions (UKNF, 2024a, p. 1). A similarly high proportion of retail client participation in the Forex market has been observed in prior years, according to UKNF data. Over the period from 2014 to 2023, client losses totaled PLN 9.316 billion.

An analysis of 26 standardized risk disclaimers concerning the percentage of retail clients who incurred losses with a given broker through CFD trading over the past 12 months shows that major brokers registered in the EU reported a comparable average loss rate of 70.86% (Figure 4.). According to ESMA data from various EU jurisdictions, this average was between 74% and 89% prior to the product intervention. EU-based brokers were included in this analysis because they have the capability to serve Polish clients, a factor not covered in KNF statistics, whichis limited to data from CFD brokers based in Poland. During the analyzed period, there were only five such brokers operating domestically.

Figure 4

Percentage of losing clients from CFD trading with 26 selected brokers based inthe EU excluding Poland



Source: own study based on data from brokers offering CFDs in the EU. As of June 30, 2024.

Both data from the 2024 risk disclosures of European CFD brokers and UKNF data from the post-ESMA intervention period (2019–2023) indicate a reduction in the percentage of losing CFD traders following the introduction of regulatory measures. However, studies suggest that traders with a higher risk tolerance may, due to the reduced availability of financial leverage, shift toward using higher risk underlying instruments to achieve similar levels of volatility, potentially limiting the intervention's effectiveness (Pelser, 2024, p. 21). Furthermore, significant gaps remain in safeguarding individual investors within the financial market concerning CFDs. According to the ESMA TRV Risk Monitor report for Q3 2023, a quarter of all customer complaints to NCAs in the EU pertained to CFDs (data from 13 NCAs, excluding the Netherlands and Poland both key CFD markets). The proportion of complaints related to CFD trading has been declining since the COVID-19 pandemic, when record complaints were driven by heightened market volatility (ESMA, 2024a, p. 20; ESMA, 2024b, p. 26).

CFD brokers' order execution models and related conflicts of interest

Contracts for difference (CFDs) are not classified as transferable securities and are therefore not subject to registration in the deposit systems managed by central securities depositories (CSDs). These contracts are typically executed outside of regulated markets (such as stock exchanges), often directly between two financial parties without the involvement of a Central Counterparty (CCP). In most cases, one party is a broker operating under the market maker ("MM") model. In this model, the broker profits not only from standard brokerage fees and commissions but also from client losses upon contract settlement and position closure, as the broker functions both as the market maker and a counterparty to the transaction.

According to Article 33(a) of Commission Delegated Regulation (EU) 2017/565, identifying potential conflicts of interest in the provision of investment services involves assessing situations in which an investment firm, or individuals directly or indirectly associated with it, could gain a financial benefit or avoid a financial loss at the client's expense. These conditions suggest that the market maker model is particularly vulnerable to conflicts of interest, necessitating effective risk management and control measures (European Commission – Regulation 2017/565, p. 34, pt. 2b). However, neither the current regulations nor subsequent product interventions provide specific guidance on how this management should be implemented.

An alternative to the MM model is the ECN (Electronic Communication Network) model, in which the broker does not act as a counterparty to the transaction but serves as an intermediary, routing orders to a network of liquidity providers and charging a transaction commission for this service (Mackiewicz, 2016). In this model, the pricing of underlying instruments is derived from transaction rates within the ECN network, which generally align closely with rates on the interbank market. Additionally, this model facilitates access to the interbank market by enabling transactions from ECN network participants (e.g., investment banks) to be transmitted directly to that market.

In the STP (Straight Through Processing) model, brokers transmit client orders directly to specific liquidity providers with whom they have established relationships, rather than routing them through an ECN network. The pricing offered by STP brokers is typically derived from the quotes of these affiliated liquidity providers, and brokers may apply a markup to the spread. Consequently, while an order processed by an STP broker might reach the interbank market, it could also be executed by a liquidity provider functioning as a market maker broker (Solanki, 2024).

The order execution models presented, with the exception of the ECN model, raise significant concerns regarding their compliance with applicable regulations. Pursuant to Article 27 paragraph 1 of MIFID II: »Member States require investment firms to take all sufficient steps to obtain, when executing orders, the best possible results for the client, taking into account price, costs, speed, probability of execution and settlement, size, nature or any other aspects related to the execution of the order«. By independently executing orders under the Market Maker (MM) model or exclusively routing them to a predetermined liquidity provider, as may occur under the Straight Through Processing (STP) model, an investment firm disrupts competitive market dynamics, potentially leading to suboptimal client outcomes. This practice is unlikely to satisfy the requirements of the best execution principle, which mandates that firms take all reasonable steps to achieve the most favorable terms for their clients.

Table 1

List of all CFD brokers based in Poland Q2 2024.

Name	% of losses from risk disclosures	Model
OANDA TMS Brokers S.A.	72,00%	Market Maker
X-Trade Brokers (XTB S.A.)	77,00%	Market Maker
Brokerage House of Bank Ochrony Środowiska S.A.	70,00%	Market Maker
mBank SA (mForex)	77,00%	ECN
Alior Bank SA	75,00%	ECN

Source: own study based on broker websites and KNF data. As of June 30, 2024.

Table 2

List of the most popular CFD brokers in the EU excluding PL Q2 2024

Name	% of losses from risk disclosures	Model
Admirals Europe Ltd	74,00%	STP
CMC Markets Germany GmbH	73,00%	MarketMaker
Dukascopy Europe IBS AS	71,03%	ECN
eToro (Europe) Ltd.,	51,00%	Market Maker
FXCM (Stratos Europe Limited)	73,00%	Market Maker
FxPro Financial Services Ltd	74,00%	Market Maker
IC Markets (EU) Ltd	70,64%	Market Maker
IG Europe GmbH	74,00%	Market Maker
LYNX B.V. (“LYNX”)	61,00%	STP
Pepperstone	75,50%	Market Maker
Plus500	80,00%	MarketMaker
Saxo Bank (Saxo Bank A / S)	65,00%	MarketMaker
Trading 212	78,00%	MarketMaker

Source: own study based on CFD broker websites and broker popularity rankings in Europe, excluding entities on the KNF warning list or illegal risk discolsure (e.g. Teletrade). As of June 30, 2024.

Given the above, it is noteworthy that the market maker model is the most offered execution model among CFD brokers, both for those based in Poland (see Table 1) and for the most popular brokers across the EU (see Table 2). This prevalence is further substantiated by the comprehensive list compiled by the authors (Appendix A).

It is notable that brokers offering accounts in the market maker model often also provide clients with the option to open an account with access to the ECN network (or similar direct market access – DMA). However, such accounts typically require higher minimum trading amounts and apply a commission fee, allowing clients to trade at the market spread rather than the spread set by the CFD broker (Mosionek, 2020).

The problem of supervision over the cross-border activity of CFD brokers

The authors analyzed data on 739 investment firms that operate or have reported their willingness to operate in Poland (notified entities) based on UKNF data, including:

- 688 entities with KNF notification that conduct brokerage activity on cross-border basis, without opening a branch pursuant to permits obtained in an EU/EEA country (of which 57.85% [398 pcs.] with a permit to offer CFDs in accordance with Annex I, Section C9 to MiFID II (2014));
- 13 entities with KNF notification that opened a branch in Poland with a registered office in an EU/EEA country (of which 61.54% [8 pcs.]with a permit to offer CFD);
- 29 brokerage houses based in Poland (of which 10.34% [3 pcs.] offer CFD),
- nine banks conducting brokerage activities through brokerage houses (of which 22.22% [2 pcs.] offer CFD).

Most entities that can offer CFDs are companies located outside the country (98.78%), a trend that has been ongoing since at least 2016. It should be noted, however, that the presence of numerous foreign entities offering CFDs does not directly reflect their market share in terms of client numbers, and authorization to offer CFDs does not necessarily imply that the broker is actively promoting or engaging in such activities.

Nearly half of the entities authorized to offer CFDs in Poland through EU/EEA permits are registered in Cyprus, a jurisdiction often seen as less restrictive (Table 3). A significant number of Cypriot firms present a high risk of investor detriment due to their frequent engagement in speculative products paired with aggressive marketing practices (ESMA, 2022b).

Furthermore, non-EU/EEA firms may unlawfully extend their services to Polish clients by localizing their websites for Polish speakers, leveraging affiliate partnerships, or legally offering services through globally accessible online platforms. Notably, the actual number of entities operating in the Polish CFD market exceeds official figures, as foreign firms frequently provide brokerage services without the required authorization. This issue, underscored in NIK's audit report (NIK, 2017, p. 20), highlights the prevalence of unregulated market participants and the challenges of enforcing regulatory compliance.

Table 3

Entities notified to the Polish Financial Supervision Authority without opening a branch, with their registered office in the EU/EEA, offering contracts for differences "C9" in accordance with Annex 1 to Directive 2014/65/EU of the European Parliament and of the Council (MiFID II).

Country	National Competent Authority (NCA)	No. of entities	Share
Cyprus	Cyprus Securities and Exchange Commission (CySEC)	194	48,74%
Netherlands	Autoriteit Financiële Markten (NL-AFM)	33	8,29%
Germany	Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)	29	7,29%
Malta	The Malta Financial Services Authority (M-FSA)	21	5,28%
France	Autorité de contrôle prudentiel et de résolution (ACPR)	20	5,03%
Bulgaria	Bulgarian Financial Supervision Commission (B-FSC)	11	2,76%
Austria	Austrian Financial Market Authority (A-FMA)	9	2,26%
Luxemburg	Commission de Surveillance du Secteur Financier (CSSF)	9	2,26%
Irland	Central Bank of Ireland (CBI)	8	2,01%
Other (<2%)	others	64	16,08%

Source: own study based on data from the national supervisory authority (KNF).

It seems justified to exercise special supervision over brokerage activities provided by entities notified to the KNF, based in EU/EEA countries, including monitoring the relationship of such an institution with the client through appropriate reporting, as permitted by law (Act on Trading, 2005, Art. 88 & Art. 118). The prevalence of cross-border investment firms is not unique to Poland; many CFD firms operating across Europe choose to register in Cyprus under CySEC, even when their operations primarily target a local market (e.g., Conotoxia). This trend is driven by a comparatively less restrictive supervisory approach from certain authorities. Securing a license in one EU member state enables firms to operate across the EU/EEA on a passporting basis, which requires only a notification rather than authorization from each national authority.

The cross-border operations of investment firms pose substantial challenges for NCAs in enforcing regulations and overseeing these entities. In 2022, ESMA identified deficiencies in the effectiveness of NCA supervision over cross-border activities of regulated entities. CySEC, the supervisory authority for investment firms in Cyprus, was highlighted for its insufficient supervisory actions relative to the scale of the issue (see Table 4), and due to the high volume of complaints received from clients, companies, and other supervisory authorities concerning the cross-border activities of firms under its jurisdiction (ESMA, 2022a, pp. 8, 34).

Table 4

Summary of complaints received by NCAs subject to ESMA peer review 2021–2022

NCA	Country	Received complaints	Share
Cyprus Securities and Exchange Commission (CySEC)	Cyprus	4194	93,10%
The Malta Financial Services Authority (M-FSA)	Malta	147	3,26%
Commission de Surveillance du Secteur Financier (CSSF)	Luxemburg	96	2,13%
Autoriteit Financiële Markten (NL-AFM)	Netherlands	52	1,15%
Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)	Germany	15	0,33%
Czech National Bank (CNB)	Czech Republic	1	0,02%

Source: own study based on ESMA (2022a, p. 34).

The high volume of complaints received by CySEC is unsurprising, given that Cyprus is the primary jurisdiction for investment firms in Europe that aim to operate across the entire EU/EEA. The issue with cross-border CFD firms lies in their choice of favorable jurisdictions for such operations. ESMA has highlighted the large number of Cypriot firms offering speculative products alongside aggressive marketing strategies, creating significant risks for investors (ESMA, 2022a, p. 8). The German supervisory authority, BaFin, also reported that Cyprus-based CFD brokers accounted for the highest proportion of product intervention violations, representing 50% of all detected breaches (BaFin, 2020). However, BaFin lacks direct oversight authority over firms operating in other countries under the "European passport" framework, meaning that reports of violations must generally be relayed to the supervisory authority in the firm’s home jurisdiction.

ESMA’s review of five additional supervisory authorities in its report on the oversight of cross-border activities also revealed shortcomings, notably from the perspective of authorities in the target countries where entities, often registered in Cyprus, operate. These deficiencies include limited awareness of the extent of firms' cross-border activities and insufficient supervisory measures in identifying, assessing, and monitoring risks associated with cross-border operations (ESMA, 2022a, pp. 8–9).

Problems with CFD marketing

In its justification for product intervention, ESMA highlighted observations from the Belgian FSMA, the Spanish CNMV, the French AMF, and the Italian CONSOB regarding aggressive and misleading marketing practices related to CFDs. One such practice involved brands associating with or sponsoring major sports teams, creating a misleading impression that complex, speculative products like CFDs are suitable for the retail mass market by fostering general brand awareness (ESMA, 2018a, Sec. 2.5, Pt 44). This concern about brand promotion was echoed in ESMA’s 2023 Final Report on the Common Supervisory Action and Mystery Shopping Exercise on marketing (ESMA, 2024c, p. 30).

More than five years after the ESMA product intervention and the KNF decision on CFDs, practices that seem to adhere to regulations yet exhibit traits of high-impact marketing are still observed in Poland. Such practices include, among others:

- creating associations between CFD trading and investing, despite the fact that contracts for differences are not a financial instrument with a long-term time horizon and using the term “CFD Investor” (Appendix B);
- using popular events, such as high-profile stock exchange debuts, to promote CFDs (Appendix C).

CFD brokers within the EU increasingly employ innovative services to attract clients, with copy-trading and social-trading emerging as prominent elements of this strategy. Social-trading enables users to observe the investment and trading activities of other investors using contracts for difference, fostering a sense of community and transparency in trading behaviors. Conversely, copy-trading offers a distinct yet related service, allowing users to automatically replicate transactions in real-time based on the actions of a "followed" account (eToro, n.d.; AvaSocial, n.d.). These services represent significant technological advancements aimed at enhancing user engagement and participation in CFD markets.

Although these services were not explicitly included in the framework of MiFID II, the European Securities and Markets Authority (ESMA) issued supervisory guidelines for National Competent Authorities (NCAs) outlining supervisory expectations for firms offering copy-trading services. ESMA indicated that, in certain situations, copy-trading might be classified as portfolio management, a type of brokerage service (ESMA, 2023). Additionally, the Polish Financial Supervision Authority (UKNF) issued an interpretative position on this service, complementing ESMA’s guidelines by highlighting the diversity of services under the umbrella of copy-trading. The UKNF noted that certain operational schemes of copy-trading could have legal implications if they align with definitions of regulated services, such as portfolio management and investment advice, as specified under the law (Act on Trading, 2005, Art. 69). Moreover, the UKNF recognizes "social trading" as a distinct model within copy-trading, attributing features similar to investment advice to it (UKNF, 2024b).

A case exemplifying the application of the discussed service in Poland is the activity of the broker X-Trade Brokers SA, which, on March 28, 2024, introduced a "social trading" service. This service allowed account holders to view statistics and transactions conducted by other clients within the firm, as well as receive notifications on new transactions, though without the option to automatically copy them (XTB, 2024, p. 75). Following a KNFs position concerning copy-trading, the broker subsequently ceased offering the "social investing" service.

Nonetheless, foreign CFD brokers offering copy-trading and social-trading services continue to reach Polish clients by providing Polish-language website versions and promoting their offerings through sponsored media content via marketing agencies operating in Poland (Mosionek, 2024, p. 88). According to a UKNF announcement on social media, the regulator has observed the presence of entities in Poland that offer copy-trading services without being subject to Polish regulatory oversight. In response, the UKNF has engaged in EU-level actions to uphold regulatory equality among investment firms (Barszczewski, 2024). This case highlights the challenge of cross-border operations by CFD brokers, and the complexities involved in overseeing foreign firms.

Some jurisdictions have implemented more stringent regulations surpassing EU-wide standards in the marketing of CFD. The CNMV implemented a resolution on July 11, 2023, imposing further restrictions on CFD advertising in Spain due to previous limitations being deemed insufficient (CNMV, 2023, p. 1). This resolution bans advertising of CFDs to retail clients or the general public. Beyond standard marketing prohibitions, it extends to training, seminars, demo accounts, and tools related to CFDs. The ban applies universally to all CFD service providers, whether based in Spain or elsewhere. These regulations are particularly restrictive, prohibiting not only direct CFD marketing but also event sponsorships, brand advertisements, and use of public figures in advertising, even if promoting other products indirectly benefiting CFD promotion. The CNMV permits brand advertising by an investment firm offering CFDs only if it can demonstrate that the advertising or sponsorship is not aimed at promoting CFDs. Specifically, this is allowed if CFDs make up only a minimal part of the firm's offerings on its website relative to its broader activities (CNMV, 2023, p. 5). Restrictions have also been taken by similar bodies in individual EU countries. For example, the French AFM banned electronic advertising communication in the field of CFDs (AFM, 2019), while the Belgian FSMA completely banned the offering of CFDs to retail clients (FSMA, 2016).

Affiliate CFD marketing

One of the primary concerns regarding the marketing of investment services in Poland is the widespread use of affiliate and refer-a-friend programs (UKNF, 2023). Notably, affiliates engaged in promoting investment services are not subject to the same regulatory scrutiny as tied agents under Article 79 of the Act on Trading (IDM, 2016, p. 8), despite the KNF's guidelines to the contrary (KNF, 2016, Guideline 3). Unlike tied agents, who operate under the direct supervision and liability of an investment firm and must be registered with the KNF, affiliates act independently and are not required to be formally integrated into the firm's compliance framework. Although the general restriction preventing affiliates from directly targeting individual prospective clients (Act on Trading, 2005, Article 79 section 2b) mitigates some risks, it remains insufficient in addressing regulatory concerns, particularly given the potential for indirect solicitation and misleading marketing practices.

This regulatory gap enables affiliates to engage in aggressive or misleading marketing practices without being held to the same legal standards as tied agents. As a result, investment firms can leverage affiliate networks to bypass investor protection regulations, posing a significant compliance risk, particularly in the context of high-risk financial instruments such as CFDs. Affiliates are typically compensated through revenue-sharing or cost-per-action (CPA) models, which incentivize client acquisition rather than responsible investment practices. The KNF correctly identifies these compensation structures as inducements prohibited under MiFID II (UKNF, 2023, p. 5).

Affiliate schemes continue to pose a significant compliance risk within the financial sector. Equally concerning, however, is the growing influence of unregulated individuals providing investment recommendations via social media (ESMA, 2024c). Often incentivized by ongoing affiliate programs, these actors may promote high-risk financial instruments without regulatory oversight or real accountability, undermining investor protection. Their activities can facilitate misinformation and even market manipulation, further complicating efforts to enforce consumer safeguards and ensure fair market practices.

While the activities of self-proclaimed financial experts and social media influencers fall outside the scope of this article, they remain highly relevant to the broader discussion on investor protection. Even if case of decline in CPA or revshare-based affiliate programs, these individuals may find new ways to monetize their influence by charging clients for access to trading groups, exclusive signals, or investment courses-services previously subsidized by investment firms through affiliate schemes. This absence of regulatory oversight in that regard poses significant risks, as unverified advice and speculative strategies can mislead retail investors, often leading to substantial financial losses, particularly when trading CFDs, whose high-risk nature has been extensively analyzed in this paper.

Conclusion

The KNF’s decision (after ESMA’s intervention) has contributed to enhancing the financial security of individual investors in Poland’s capital market. Despite these positive developments, numerous issues remain unresolved under current regulations or are challenging to enforce due to the limited scope of supervisory tools available. These include:

- cross-border, internet-based activity of brokers and the ability to use services from entities outside the EU, which facilitates the circumvention of EU regulations;
- lack of strict regulatory action concerning Market Maker (MM) execution models, particularly with respect to the best execution principle and conflict of interest management rules;
- aggressive or high-impact marketing practices, including affiliate marketing;
- increase in the number of new, inexperienced retail clients using CFDs, raising concerns about adherence to the principle of financial instrument appropriateness;
- rise of “financial gurus” whose operations are subject to only fragmented regulation (MAR rules on recommendations) and no supervision from competent authorities.

In line with the study’s research framework, the findings confirm that the current regulatory regime does not ensure adequate protection for retail investors (H1), despite partial improvements in investor outcomes following the implementation of domestic post-ESMA rules (H2). The analysis also highlights risks related to regulatory circumvention through cross-border activities of CFD brokers (H3), conflicts of interest under the Market Maker model (H4), and the continued use of aggressive promotional practices by brokers and affiliates (H5). While all five research hypotheses are supported by the evidence, it should be noted that H3 is only partially verified, as the study identifies conditions that facilitate regulatory circumvention but does not empirically assess the actual effectiveness of national supervision in cross-border contexts. This distinction reflects the limitations of the available data and the qualitative nature of the regulatory analysis.

The issues highlighted in this article illustrate some of the supervisory challenges confronting regulators. Nonetheless, as the authors suggest, this remains a research problem warranting further exploration.

In light of the above, it is recommended that joint actions be undertaken with other supervisory authorities to ensure legal equality among cross-border entities. The presence of restrictions imposed on domestic entities, while certain foreign entities simultaneously evade compliance with the same regulations, is concerning. Special attention should be directed toward the lack of standardized data collection on CFDs by the supervisory authorities, as this gap hinders the comprehensive study of these financial instruments and their effects on consumers.

References

Act on Trading. (2005). *The Act of 29 July 2005 on Trading in Financial Instruments.* Dz.U. 2005, nr 183 poz. 1538. https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=wdu20051831538

Amendment of Act on Trading. (2014). *The Act of 5 December 2014 amending the Act on trading in financial instruments and certain other acts.* Dz.U. 2015, poz. 73. https://isap.sejm.gov.pl/isap.nsf/download.xsp/WDU20150000073/T/D20150073L.pdf

AMF. (2019). *Decision restricting the marketing, distribution, or sale, in France or from France, of contracts for differences to retail investors*. https://www.amf-france.org/en/amfs-decision-1-august-2019-restricting-marketing-distribution-or-sale-france-or-france-contracts

AvaSocial. (n.d.). *AvaSocial trading platform*. https://www.avatrade.com/trading-platforms/avasocial

BaFin. (2020). *Risks of CFDs – every other provider fails to comply with the requirements*. https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Fachartikel/2020/fa_bj_2011_CFD_en.html

Barnes, P. (2018). Recent developments in investment fraud and scams: Contracts for Difference ('CFD'), spread betting and binary options and foreign exchange ('Forex') sometimes collectively known as 'forbin' – the UK experience. *Munich Personal RePEc Archive*, *No. 85061*. https://mpra.ub.uni-muenchen.de/85061/

Barszczewski, J. (2024, October 13). *About copy trading on behalf of UKNF*. https://x.com/JMBarszczewski/status/1796550397487731107

Brown, C., Dark, J., & Davis, K. (2010). Exchange traded contracts for difference: Design, pricing, and effects. *Journal of Futures Markets*, *30*(12), 1108–1149. https://doi.org/10.1002/fut.20475

CSIRT KNF. (2023). *Annual report CSIRT KNF 2023*. KNF. https://cebrf.knf.gov.pl/images/Raport_roczny_CSIRT_KNF.pdf

CNMV. (2023). *Resolution on CFDs (July 11, 2023)*. https://www.cnmv.es/docportal/aldia/Resolucion_CFD_en.pdf

eToro. (n.d.). *CopyTrader*. https://www.etoro.com/en/copytrader/

European Commission. (2016). *Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU.* Official Journal of the European Union, L 87/1. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R0565

European Commission. (2023). *Retail investment strategy*. https://finance.ec.europa.eu/publications/retail-investment-strategy_en

ESMA. (2016). *Warning on CFDs, binary options, and other speculative products*. ESMA/2016/1166. https://www.esma.europa.eu/sites/default/files/library/2016-1166_warning_on_cfds_binary_options_and_other_speculative_products_0.pdf

ESMA. (2018a). *Decision (EU) No 2018/796 to temporarily restrict contracts for differences in the Union*. Official Journal of the European Union, L 136/50. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018X0601%2802%29

ESMA. (2018b). *Press release: ESMA agrees to prohibit binary options and restrict CFDs to protect retail investors*. https://www.esma.europa.eu/sites/default/files/library/esma71-98-128_press_release_product_intervention.pdf

ESMA. (2018c). *Notice of ESMA's product intervention (first) renewal decision in relation to contracts for differences*. https://www.esma.europa.eu/document/cfd-renewal-decision-notice

ESMA. (2019a). *Notice of ESMA's product intervention (second) renewal decision in relation to contracts for differences*. https://www.esma.europa.eu/document/cfd-renewal-decision-2-notice

ESMA. (2019b). *Notice of ESMA's product intervention (third) renewal decision in relation to contracts for differences*. https://www.esma.europa.eu/document/cfd-renewal-3-notice

ESMA. (2020). *Technical advice to the EC on product intervention*. https://www.esma.europa.eu/sites/default/files/library/esma35-43-2134_technical_advice_to_the_ec_on_product_intervention.pdf

ESMA. (2022a). *Peer review on supervision of cross-border activities of investment firms: Peer review report*. https://www.esma.europa.eu/sites/default/files/library/esma42-111-5534_report_peer_review_cross_border_activities_investment_firms.pdf

ESMA. (2022b). *ESMA finds shortcomings in supervision of cross-border investment activities and issues specific recommendations to CySEC*. https://www.esma.europa.eu/press-news/esma-news/esma-finds-shortcomings-in-supervision-cross-border-investment-activities-and

ESMA. (2023). *Supervisory briefing on supervisory expectations in relation to firms offering copy trading services*. https://www.esma.europa.eu/sites/default/files/2023-03/ESMA35-42-1428_Supervisory_Briefing_on_Copy_Trading.pdf

ESMA. (2024a). *TRV Risk Monitor: ESMA report on trends, risks and vulnerabilities*. No. 1, 2024. https://www.esma.europa.eu/sites/default/files/2024-01/ESMA50-524821-3107_TRV_1-24_risk_monitor.pdf

ESMA. (2024b). *TRV Risk Monitor: Statistical annex*. No. 1, 2024. https://www.esma.europa.eu/sites/default/files/2024-01/ESMA50-524821-3106_TRV_1-24_Statistical_annex.pdf

ESMA. (2024c). *Requirements when posting investment recommendations on social media*. https://www.esma.europa.eu/press-news/esma-news/requirements-when-posting-investments-recommendations-social-media

FSMA. (2016). *Regulation of the Financial Services and Markets Authority governing the distribution of certain derivative financial instruments to retail clients*. https://www.fsma.be/sites/default/files/legacy/sitecore/media%20library/Files/fsmafiles/wetgeving/reglem/en/reglem_26-05-2016.pdf

Forex Forum Navigator. (2015). *Discussion form 2015*. https://forex-nawigator.biz/forum/dzwignia-t1780-180.html

Gołębiowski, P. (2012). Kontrakty na różnice kursowe (CFDs). *Przegląd Prawa Handlowego*, 6, 26–35. https://sip.lex.pl/komentarze-i-publikacje/czasopisma/kontrakty-na-roznice-kursowe-cfds-151144472

IDM. (2016). *Comments of the Chamber of Brokerage Houses on the document "Guidelines on the provision of brokerage services on the OTC derivatives market"*. https://idm.com.pl/wpcontent/uploads/2016/02/160210-_Uwagi%20do%20Wytycznych%20KNF%20%20OTC%20instr.%20pochodnych.pdf

IDM. (2019). *Badanie wpływu interwencji produktowej ESMA na inwestorów*. https://idm.com.pl/images/2017/aktualnosci/Wyniki%20Badania%20wpywu%20interwencji%20produktowej%20ESMA%20na%20inwestorw.pdf

KNF. (2016). *Guidelines concerning the provision of brokerage services on the OTC derivatives market*. https://www.knf.gov.pl/knf/pl/komponenty-/img/wytyczne%20otc_24_43962.05_43962.2016_43962.pdf

KNF. (2019). *Decision No. DAS.456.2.2019*. https://dziennikurzedowy.knf.gov.pl/DU_KNF/2019/27/akt.pdf

Mackiewicz, P. (2016). *ECN, STP czy MM, czyli czy broker na rynku FOREX może mieć wpływ na osiągane wyniki*. https://www.sii.org.pl/9847/analizy/newsroom/ecn-stp-czy-mm-czyli-czy-broker-na-rynku-forex-moze-miec-wplyw-na-osiagane-wyniki.html

MiFID II. (2014). *Directive 2014/65/EU on markets in financial instruments*. Official Journal of the European Union, L 173, 349–496. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014L0065

Mosionek, P. (2020). *Rodzaje brokerów FOREX – ECN, STP, MM*. https://forexclub.pl/rodzaje-brokerow-ecn-stp-mm/

Mosionek, P. (2024). *eToro Opinie i recenzja | Platforma social tardingowa.* https://forexclub.pl/etoro-opinie-recenzja-platformy/

NIK. (2017). *Ochrona praw nieprofesjonalnych uczestników rynku walutowego (forex, kantorów internetowych i rynku walut wirtualnych)* KBF.430.011.2016. https://www.nik.gov.pl/plik/id,12996,vp,15405.pdf

Pelser, M. (2024). Leverage constraints and investors' choice of underlying. *Journal of Banking & Finance*, *162*. https://doi.org/10.1016/j.jbankfin.2024.107150

Sobol, M., & Szmelter, A. (2022). Nierzeczywiste transakcje terminowe – czynniki rozwoju i struktura rynku. *Przegląd Prawa Ekonomicznego*, *1*, 112–113. https://doi.org/10.31743/ppe.12882

Solanki, J. (2024). *STP Broker vs ECN Broker Explained.* https://admiralmarkets.com/education/articles/general-trading/types-of-brokers-ecn-stp

UKNF. (2013). *Position on the conduct of investment firms in the Forex market*. https://www.knf.gov.pl/knf/pl/komponenty/img/stanowisko_Forex_35192.pdf

UKNF. (2020). *Position on selected aspects of the provision of investment advisory services by investment firms and banks referred to in Article 70 section 2 of the Act*. https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_UKNF_ws_doradztwa_inwestycyjnego.pdf

UKNF. (2023). *Position of UKNF on referral programs and partnership programs*. https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_UKNF_ws_programow_polecen_oraz_programow_partnerskich_84269_84429.pdf

UKNF. (2024a). *Results of clients in the Forex market for 2023*. https://www.knf.gov.pl/?articleId=88644&p_id=18

UKNF. (2024b). *Position of UKNF on the use of copy trading*. https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_UKNF_dot_wykorzystania_copy_tradingu_przy_swiadczeniu_uslug_maklerskich_89502_89507.pdf

XTB. (2024). *Annual report: Report of the XTB Capital Group for Q1 2024*. https://ircdn.xtb.com/files/2024/05/08235443/Raport-Q1.2024-PL.pdf

Received: 18.03.2025
Accepted: 01.06.2025
Available online: 30.06.2025

Appendix A

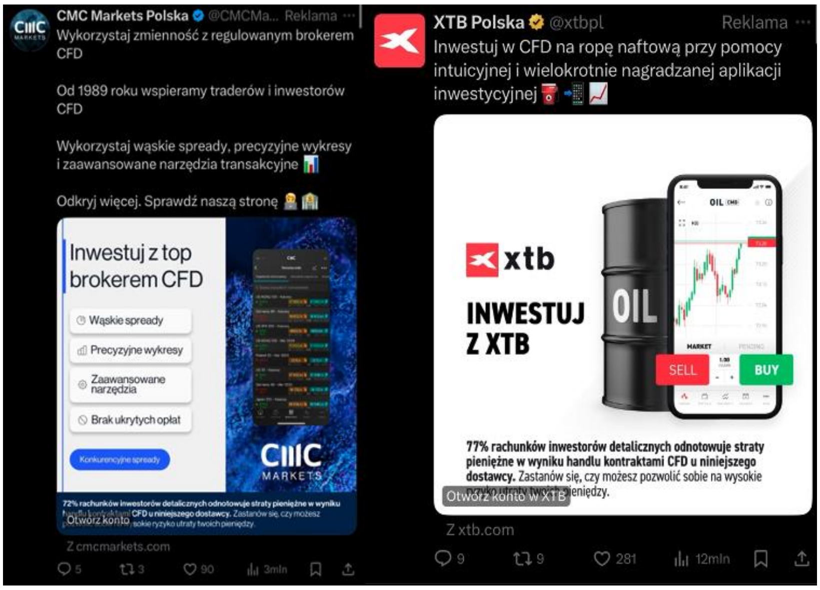
List of selected CFD brokers based in the EU excluding Poland

Name	% of losses from risk disclosure Q2 2024	Registration Country & NCA	Model
Admirals Europe Ltd.	74,00%	Cyrpus (CySEC)	STP
CMC Markets Germany GmbH	73,00%	Germany (BaFin)	Market Maker
Dukascopy Europe IBS AS	71,03%	Latvia (FKTK)	ECN
eToro (Europe) Ltd.,	51,00%	Cyrpus (CySEC)	Market Maker
FXCM (Stratos Europe Ltd.)	73,00%	Cyrpus (CySEC)	Market Maker
FxPro Financial Services Ltd.	74,00%	Cyrpus (CySEC)	Market Maker
IC Markets (EU) Ltd.	70,64%	Cyrpus (CySEC)	Market Maker
IG Europe GmbH	74,00%	Germany (BaFin)	Market Maker
LYNX B.V. ("LYNX")	61,00%	Nederlands (NL-AFM)	STP
Pepperstone	75,50%	Cyrpus (CySEC)	Market Maker
Plus500	80,00%	Cyrpus (CySEC)	Market Maker
Saxo Bank (Saxo Bank A / S)	65,00%	Dennmark (D-FSA)	Market Maker
Trading 212	78,00%	Cyrpus (CySEC)	Market Maker
AVA Trade EU Ltd	76,00%	Ireland (CBI)	Market Maker
Capital Com SV Investments	75,00%	Cyrpus (CySEC)	Market Maker
Conotoxia Ltd.	79,03%	Cyrpus (CySEC)	STP
Deltastock AD	59,00%	Bulgaria (B-FSC)	Market Maker
Eightcap Global Ltd.	81,76%	Cyrpus (CySEC)	Market Maker
INSTANT TRADING EU LTD. (instaforex)	69,82%	Cyrpus (CySEC)	Market Maker
Just2Trader (Lime Trading Ltd)	73,00%	Cyrpus (CySEC)	Market Maker
JustMarkets ltd	64,29%	Cyrpus (CySEC)	Market Maker
Royal Financial Trading (Cy) Ltd (One Royal)	65,79%	Cyrpus (CySEC)	Market Maker
Solaris EMEA Ltd (AXI)	68,50%	Cyrpus (CySEC)	Market Maker
Spreadex Ltd	64,00%	UK (FCA)	Market Maker
Tickmill	72,00%	UK (FCA)	STP
Trading Point of Financial Instruments Limited (XM Group)	73,91%	Cyrpus (CySEC)	Market Maker

Above list excludes 5 significant CFD brokers from Poland, including one that is significant from the point of view of the European market (XTB). Data based on brokers' websites in Q2 2024. In the event that the broker offers CFD trading in the market maker model by default, it has been marked in this way, which does not exclude that the same broker also offers the possibility of participating in the ECN.

Appendix B

Example of CFD broker social media ads creating an association between investing and CFDs



Advertisement within the x website, accessed on 16/10/2024 and 17/07/2024. https://x.com the advertisements, which are reached between 3 and 12 million recipients on portal X (according to portal statistics). The advertisements mentioned are not isolated cases, and CFD marketing is directed at retail, non-professional customers.

Appendix C

Example of a CFD broker social media ad, using the popular IPO at Polish WSE

Advertising on the Facebook website accessed 20/10/2024.

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •

Czerwiec/June 2025 • vol. 2(46): 97–122

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Author assures of no violations of publication ethics and takes full responsibility for the content of the publication.

NBP MONETARY POLICY IN 2020–2022 IN THE LIGHT OF CENTRAL BANKS' RESPONSES TO EXTERNAL SHOCKS

Kamila Szmigiel*

https://doi.org/10.18778/2391-6478.2.46.06

NBP MONETARY POLICY IN 2020–2022 IN THE LIGHT OF CENTRAL BANKS' RESPONSES TO EXTERNAL SHOCKS

ABSTRACT

The purpose of the article. The aim of the article was to assess the effectiveness of monetary policy implementation under conditions of strong external shocks on the example of selected central banks and its implications for the formation of inflation expectations, taking into account the socio-demographic characteristics of selected groups of respondents.

Methodology. Study on the assessment of the scale and effectiveness of selected central banks' actions under monetary shocks caused by the COVID-19 pandemic and Russia's aggression against Ukraine, data analysis, analysis of results of two surveys conducted by the Author.

Results of the research. The survey results showed that the activity of the central bank in the area of monetary policy in Poland under conditions of shock is characterized by low effectiveness in the opinion of financial market customers. The chi^2 analysys proved that socio-demographic factors such as place of residence, gender, age, occupational status, current level of monthly net income, loan liabilities held and the scale of savings held may influence the evaluation of the effectiveness of the central bank's policies in Poland.

Keywords: NBP, monetary policy, crises, monetary shocks, non-standard monetary policy instruments.

JEL Class: E42, E50, E52, E58.

* MA, Krakow University of Economics. Corresponding Author. E-mail: s210560@student.uek.krakow.pl

NBP Monetary Policy in 2020–2022 in the Light of Central Banks' Responses to External Shocks

During the Covid-19 pandemic, it became a challenge for central banks to maintain the stable operation of payment systems that underpin national economies. Central banks had to develop a number of preemptive measures to limit the negative effects of the pandemic on the economy, prevent payment bottlenecks, curb the rising unemployment rate and the scale of corporate bankruptcies, and thus the declining manufacturing potential. Monetary policy during the pandemic period had to take into account the risk of deflation, which is characterized by negative consequences for economic growth over the long term (Financial Observer, 2022). In addition, central banks also had to grapple with the economic challenges brought on by the Ukraine war.

The main objective of the paper is to assess the effectiveness of the implementation of monetary policy under conditions of strong external shocks illustrated by the example of selected central banks andtheir implications for the formation of inflation expectations, taking into account the socio-demographic characteristics of selected groups of respondents. The first part of the article presents the results of the research on the evaluation of the scale and effectiveness of the actions of selected central banks under monetary shocks caused by the COVID-19 pandemic and Russia's aggression against Ukraine, which took place in 2020–2022. An analysis of the use of standard and non-standard monetary policy instruments under shock conditions introduced by selected central banks (ECB, Fed, NBP and NBU) was conducted. Currency derivatives used by central banks in Latin America were also reviewed. In addition, the scale of deviations of the inflation rate from the inflation target adopted by selected central banks (ECB, Fed, NBP, MNB and BNS) is presented.

The empirical part of the article focuses on analyzing the assessment of the effectiveness of the implementation of NBP monetary policy under shocks based on the results of the survey. A total of 250 people took part in the survey (117 in the first round and 133 in the second round). The first survey was conducted from July 2022 to January 2023 (a period of strong inflationary growth), and the second survey was conducted between March–April 2023 (the beginning of the disinflationary period). On this basis, two main research hypotheses were formulated stating that: (1) the first the monetary policy of the central bank in Poland under the conditions of the shock was characterized by low effectiveness in the opinion of financial market clients, which influenced the formation of inflation expectations; (2) socio-demographic factors such as place of residence, gender, age, occupational status, current level of monthly net income, loan liabilities held and the scale of savings held influenced the assessment of the effectiveness of central bank policy in Poland.

Standard and non-standard monetary policy instruments in a shock environment

Monetary policy can be considered in various aspects. Broadly speaking, it encompasses all government, banking and government-related activities that shape money and bank credit. Monetary policy is thus responsible for shaping the national monetary system and determining for a given country a monetary unit that can be related to the valuation of bullion and foreign currencies. It also aims to determine the scale and type of monetary operations that can be carried out by the public authority, establishing and regulating the central banking system and commercial banking (Rutkowski, 2016, p. 31).

To regulate the credit money supply more effectively, the central bank uses a wide range of instruments offered by monetary policy. These instruments are divided into instruments of general control, selective control and persuasive influence (Kazmierczak, 2000, pp. 101–102). Events accompanying monetary shocks or financial crises make it difficult for the central bank to continue to conduct monetary policy undisturbed. Due to fluctuations in demand for bank reserves and liquidity disruptions, the central bank's ability to control short-term market rates diminishes. As a result of contagion to other financial market sectors from interbank market fluctuations, the correct transmission of monetary policy impulses is impeded. When a central bank has very low or almost zero interest rates, its situation is further aggravated because it cannot counteract the crisis with interest rate cuts. Therefore, central banks may opt for more active, non-standard instruments. These are defined as interventions by monetary authorities that aim to restore the appropriate level of transmission of monetary policy impulses and create stimulus to trigger the economy despite low or zero interest rates.

Non-standard monetary policy instruments are primarily intended to mitigate liquidity shortages occurring in depository institutions and relevant institutions in the financial market, direct purchase of securities from both the private and public sectors, and communication policy tools (Żywiecka, 2012, pp. 72–74).

Prior to the COVID-19 pandemic, many central banks pursued an expansionary monetary policy in which they did not provide for an additional reduction in interest rates or provided for it only to a very narrow extent. However, the pandemic shock forced central banks to increase the flexibility of monetary conditions to protect domestic economies from collapse. Therefore, those central banks that could, decided to cut interest rates. The others could not perform such an operation because they already had interest rates at zero or even negative levels. In addition to the aforementioned interest rate cut, central banks decided to use the widest possible range of monetary policy instruments. They implemented liquidity-providing operations and repos and currency swaps. Many central banks created or expanded asset repurchase programs and introduced credit easing. Some central banks also carried out currency interventions or directly financed governments in the short term (Niedźwiedzińska, 2020, p. 12).

The first and most popular line of defense against a pandemic used by both developed and developing country central banks was to cut interest rates and use liquidity measures. Asset repurchase programs and credit easing programs, along with their subsequent extensions, were much less popular in the first phase of defense against a pandemic shock, especially for central banks in developing countries. In the case of currency interventions, only Russia and Ukraine chose to use such a monetary policy instrument in the first phase of the pandemic, as shown in Table 1 (Forsal.pl, 2022).

Table 1

Monetary policy instruments used under COVID-19 pandemic conditions in selected countries

Instruments of monetary policy	Chosen countries
Interest rate cuts	Austria, Brazil, Canada, Chile, Czech Republic, Hungary, Iceland, India, Indonesia, Israel, South Korea, Mexico, New Zealand, Norway, Philippines, Poland, Romania, Russia, South Africa, Thailand, Turkey, Ukraine, United Kingdom, USA
New asset purchase programs with expansions	Austria, Chile, Hungary, Iceland, India, Indonesia, Israel, Japan, South Korea, New Zealand, Philippines, Poland, South Africa, Sweden, Thailand, Turkey, United Kingdom, USA
New credit easing programs with expansions	Austria, Chile, Hungary, India, Israel, Japan, South Korea, Mexico, New Zealand, Philippines, Poland, Romania, Russia, Sweden, Switzerland, Thailand, Turkey, United Kingdom, USA
Liquidity measures	Austria, Brazil, Canada, Chile, Czech Republic, Estonia, Hungary, Iceland, India, Indonesia, Israel, Japan, South Korea, Mexico, New Zealand, Norway, Philippines, Poland, Romania, Russia, South Africa, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, USA
Currency interventions	Russia, Ukraine

Source: own elaboration based on: Niedźwiedzińska (2020, p. 14).

As ECB interest rates had been close to zero since 2016, the bank could not conduct any further rate cuts in response to the pandemic crisis. Therefore, the ECB did not pursue expansionary measures using non-standard monetary policy instruments. In order to guarantee liquidity in the financial system and allow households and businesses indirect access to funding, one of the first actions taken by the ECB was the continuation of the Assets Purchase Program (APP). The premise of the program was the purchase of net assets, which would amount to €20 billion per month, and the purchase of €120 billion in excess. Another extraordinary program was the Pandemic Emergency Purchase Program (PEPP), which was an intensifying supplement to the APP. However, unlike the APP, the PEPP was characterized by greater flexibility in terms of asset structure, which made the program more responsive to disruptions in both the economy and the financial market. The PEPP allowed Euro system entities to purchase the entire instrumentation of assets that was available in the APP. This includes (Czuchryta & Kowalik, 2010, p. 45):

- government bonds,
- securities issued by supranational institutions from Europe,
- corporate bonds,
- securities that are asset-backed,
- bonds with collateral.

The ECB allocated a total of €1,850 billion to the PEPP. The main objective of the PEPP became to reduce credit prices and expand lending in the euro area, so that households, businesses and governments received financing as a relief in the crisis. Through the direct purchase of bonds from banks under the PEPP, individuals and companies received more credit, while the purchase of bonds from companies generated an alternative source of credit. The purchase of bonds from banks and corporates had a positive impact on the growth of consumption and investment and thus contributed to economic growth. In addition, the ECB highlighted six key actions that played an important role in supporting the euro area economy. These were to seek to increase the lending capacity of banks, maintain lending despite current problems, increase the availability of credit to businesses and households, ensure affordable credit prices, support the economy in reducing pandemic shocks and ensure financial stability through cooperation with international institutions (ECB, 2023).

In March 2020 the ECB decided to implement an oversubscribed long-term refinancing operation (LTRO), which matured in June of that year. In addition, banks received liquidity assistance, which lasted until the implementation of the next phase of TLTRO III. In April 2020 the ECB decided, for the duration of the pandemic, to add new non-targeted extraordinary long-term refinancing operations (PELTROs) to its instrumentation. Their aim was to support liquidity protection in euro area monetary markets (Czuchryta & Kowalik, 2010, pp. 46–48).

The PELTROs consisted of seven over-the-counter operations, conducted by quota tender. The first of the operations took place in May 2020 and the maturity of the subsequent operations fell within the relaxation of collateral requirements. The PELTRO interest rate was 25 bps below the average rate of the main refinancing operations (ECB, 2020). In July 2021, one PELTRO operation reached a record high of around €28 billion (Corsi & Mudde, 2022, p. 19). As the ECB has strong links with economies outside the euro area, it has decided to introduce repo operations dedicated to selected central banks. In addition, the ECB has reactivated swap lines for the euro and for the currencies of payment in Denmark, Croatia and Bulgaria.

In addition, the ECB extended its cooperation with the central banks of Romania and Croatia for another six months (Czuchryta & Kowalik, 2010, p. 45).

The Fed started with standard monetary policy instruments, namely interest rate cuts. On 03.03.2020 and 15.03.2020, the US central bank decided to cut the federal funds rate (the interest rate charged to commercial banks for overnight deposits) by a total of 1.5 pp. As the federal funds rate is the benchmark for the other short-term interest rates used by the Fed and influences long-term rates, its reduction helped to reduce the cost of borrowing for households and businesses. The Fed has also benefited from quantitative easing. As the pandemic caused significant breaches in the Treasury securities and mortgage-backed securities (MBS) markets, the Fed defined as its initial priority ensuring that these markets functioned properly, as they are important for the rotation of credit in the economy. On 15.03.2020 the Fed decided that the main objective of quantitative easing should be to help the US economy and announced the purchase of a minimum of $500 billion worth of Treasury securities and $200 billion worth of government-guaranteed mortgage-backed securities.

In June 2020 the Fed decided to purchase Treasury bonds estimated at a minimum monthly amount of $80 billion and to purchase $40 billion worth of residential and commercial mortgage-backed securities. However, as early as December 2020 the Fed decided to reduce the pace of bond purchases due to the progress made by the US economy in terms of employment and price stability, which it was aiming to achieve. In November 2021 the Fed continued to reduce its purchases (of Treasury bonds by $10 billion and MBS by $5 billion). A month later, the Fed doubled the reduction in asset purchases (Milstein & Wessel, 2024).

In addition to using normal repo operations, the Fed also introduced a new facility, called the Foreign and International Monetary Authorities (FIMA) Repo Facility. Foreign central banks that obtain a FIMA account enter into a repurchase agreement with the Fed, during which they exchange Treasury securities in exchange for dollars at a special exchange rate. This creates an additional source of temporary dollar liquidity and relieves pressure on global markets, helping them to operate more smoothly. The FIMA Repo Facility was first implemented on 31.03.2020 and was intended to remain only a temporary instrument for the duration of the pandemic, but on 28.07.2021 it entered the Fed's instrumentation on a permanent basis (Fed, 2023).

The Fed also decided to reinstate the Term Asset-Backed Securities Loan Facility (TALF), which required approval from the US Treasury Department. From 23.03.2020, households, consumers and small businesses were able to receive financing from the US central bank under the program for holders of asset-backed securities that were backed by new loans. Such loans included, for example, student loans, auto loans, credit card loans and loans guaranteed by the Small Business Administration (SBA). The Fed also added current commercial mortgage-backed securities and newly issued prime loan obligations with collateral to the list of eligible collateral. According to estimates, the TALF was expected to support a maximum of $100 billion in new loans in its initial phase. The TALF ended on 31.12.2020 (Milstein & Wessel, 2024).

Some central banks also used currency intervention in the pandemic. Latin American central banks used currency derivatives most frequently, and a listing of these is presented in Table 2 (Cantú et al., 2021, p. 16).

Table 2

Currency derivatives used by central banks in Latin America

Selected central banks	Preferred currency derivative	Goal
Banco Central do Brasil, Banco Central de Chile, Banco De La República i Banco Central de Reserva del Perú	Expansion of currency swap programs	To guarantee exchange rate hedging for market participants so that they become less exposed to foreign exchange risk
Banco Central de Chile, Banco De La República i Banco de México	Use of non-deliverable forwards	

Source: own elaboration based on: Cantú et al. (2021, p. 16).

Central banks of emerging Asian economies have also opted for foreign exchange interventions to counter destabilizing exchange rates. Bank Indonesia made foreign exchange intervention in the spot foreign exchange markets and domestic NDFs. The purpose of Bank Negara Malaysia's intervention was to curb excessively high exchange rate volatility and maintain healthy levels of foreign exchange liquidity. The reverse was the case in Hong Kong, whose central bank had to undertake foreign exchange interventions to weaken the domestic currency against the US dollar due to a fixed exchange rate. The Monetary Authority of Singapore reintroduced a centered exchange rate band with a zero appreciation rate (Cantú et al., 2021, p. 16). The National Bank of Poland, in response to the pandemic, also made use of a wide range of monetary policy instruments in order to contribute as much as possible to limiting the negative effects caused by the crisis.

In the opinion of the Supreme Audit Office, monetary policy instruments were applied by the NBP in a manner conducive to stimulating economic activity during the pandemic. The implementation of new instruments or the modification of existing ones was preceded by an ongoing analysis of the Polish and international economic situation and scenarios examining the course of the pandemic and its effects. One of the first monetary policy instruments applied was the reduction of interest rates.

It was intended to support the financial situation of households and businesses, as there had been a decline in economic activity, a reduction in consumer and business sentiment and a reduction in wages and employment due to government tightening. The interest rate reduction process for 2020 is presented in Table 3 (NIK, 2021, p. 3).

Table 3

Modification of the main NBP rates in 2020 (data in percent)

Rate	From March 5, 2015	March 18, 2020	April 9, 2020	May 29, 2020
Reference	1,50	1,00	0,50	0,10
Lombard	2,50	1,50	1,00	0,50
Deposit	0,50	0,50	0,00	0,00
Rediscount of bills	1,75	1,05	0,55	0,11
Discount of bills	–	1,10	0,60	0,12

Source: NBP.

The NBP also implemented a non-standard monetary policy instrument, quantitative easing (QE). The scale of the program was thought to be the largest in Europe taking into account direct spending, with a value of 6.5% of GDP excluding loans and guarantees. The only countries to announce larger-scale quantitative easing were Australia, Japan and the US. According to the ING report, the NBP has allocated around 4% of GDP to QE (as of April 2020). During the program, Treasury bonds were bought, as well as bonds issued by BGK and PFR with maturities ranging from one to ten years. As of April 2020, as many as 85% of the bonds purchased were five-year bonds or instruments with longer maturities. ING's analysis shows that quantitative easing has had a positive impact on the Polish budget and made a difference to the economy through fiscal programs. QE is estimated to have helped preserve jobs and enabled the economy to rebound more easily in 2020, albeit to a limited extent (Business Insider Polska, 2023). By buying bonds from the secondary market, the increase in the supply of Treasury and Treasury-guaranteed debt was neutralized (NIK, 2021, p. 9). Since the beginning of 2020 the NBP has repurchased bonds to the tune of PLN 144 billion, and the proceeds from the sale of bonds have been used by the government to finance "crisis shields" for companies most affected by pandemic austerity (Markowiak, 2022, pp. 65–66).

In April 2020 the NBP allowed commercial banks to obtain a promissory note loan, which enabled them to obtain a higher level of liquidity. The essence of the credit was the option to discount bills of exchange, which commercial banks received as a form of collateral for business loans. The promissory note credit did not gain much popularity, which the NBP explained by the potentially high level of liquidity that commercial banks had. In addition, in December 2020 the NBP decided to carry out a currency intervention, buying foreign currencies. This operation was aimed at preventing the negative effects of the appreciation of the zloty, which could have negatively affected economic growth and indirectly contributed to an increase in the inflation rate. From October to December 2020, the Polish zloty showed an increasing trend against other currencies (by 4% against the euro), while after the NBP's intervention, by the end of 2020 the zloty had depreciated (by 2.8% against the euro). The weakening of the zloty continued until March 2021 (NIK, 2021, p. 11).

The Polish central bank decided to help Ukraine and, on 21.03.2022, allowed the NBU to use the UAH/USD currency swap for one year (extendable), which may not exceed USD 1 billion (Financial Observer, 2023). In addition, the NBP applied its proprietary idea of buying the hryvnia. The program was conducted from 25.03.2022 to 09.09.2022. PKO Bank Polski was also involved in the operation, which made its branches available to carry out the action. According to data available as of 05.09.2022, the assistance to the Ukrainian central bank amounted to as many as 97,000 foreign exchange transactions, with an estimated value of UAH 690 million (Bankier.pl, 2023).

The National Bank of Ukraine also implemented non-standard solutions. On 21.02.2022 NBU introduced the possibility to purchase "cashless dollars" from its foreign exchange reserves and gold at its own current exchange rate. The use of such a solution was intended to protect Ukrainian citizens from the devaluation of the hryvnia. Dollars could be deposited for a minimum period of six months with the possibility of extending it, and as the maturity date approached, the accumulated currency could be exchanged for hryvnias. For the duration of the deposit, the dollars were kept with the NBU so that other financial institutions would not use them to carry out their own transactions. The new product was made available for sale in designated hourly banking sessions, and commercial banks were given a daily limit to purchase $50,000.

The NBU introduced this non-standard instrument to minimize pressure on the cash market and reduce demand for cash. The rate used by the Ukrainian central bank was, by design, more favorable than that offered in the market to encourage consumers to buy and reduce currency purchases at exchange offices, allowing the UAH exchange rate to be maintained at around 40 hryvnias per $1.

‘Cashless dollars’ contributed to the NBU's maintenance of foreign exchange reserves and gold. Ukrainian citizens were given the opportunity to insure their savings not only against devaluation but also against other market risks (EDialog, 2022).

Ukrainian commercial banks were able to hedge their foreign exchange risk by purchasing at the official NBU rate such dollar volume as corresponded to their deposit transactions, and deposit the currency thus obtained in a special account provided by the NBU, with the proviso that they would only be able to use such foreign exchange reserve to resell it to the central bank at the current exchange rate when the deposits matured. Deposit transaction costs have been compensated by the NBU through the introduction of interest payable in hryvnias on the foreign currency balance (NBU, 2023).

Evaluation of the effectiveness of the implementation of the NBP monetary policy – results of surveys

In order to analyze the evaluation of the effectiveness of the implementation of the NBP monetary policy in the examined period, two surveys were conducted with a total of 250 participants (117 in the first round and 133 in the second round). A diagnostic survey was used as the research method, while a survey questionnaire was the research tool. The survey was conducted in two cycles (no sample heterogeneity was used). The first survey was conducted between July 2022 and January 2023, where 117 responses were obtained. The second survey, was conducted in March–April 2023, where 133 responses were obtained. In both cases, the survey group included only people aged 18 and over. The surveys were designed to determine Poles' inflation expectations and their assessment of the price dynamics stabilization tools being introduced. A correlation analysis of demographic and social characteristics with the results obtained was also conducted.

The questionnaires for both surveys consisted of seven questions on the socio-demographic characteristics of the respondents (place of residence, gender, age, occupational status, current level of net monthly income, credit/loan liabilities held and savings held) and three extended, multi-faceted substantive questions. Both groups of respondents were diverse in terms of socio-demographic factors. Respondents' financial education was not relevant to the survey, as monetary policy decisions affect every Polish citizen, among other things, indirectly translating into commodity prices and loan instalments.

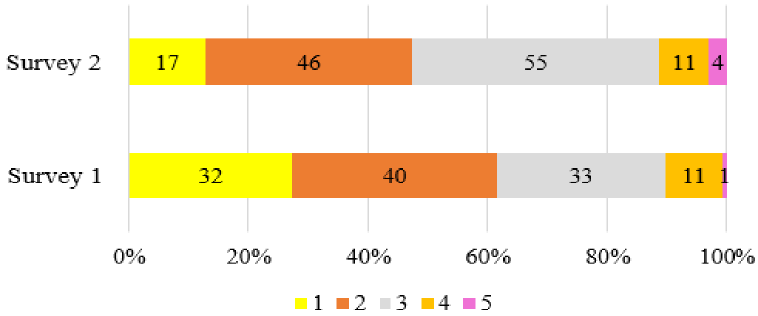
The place of residence was categorized in the survey into four main categories: rural area, city of up to 100 000, city of 100 500 000 and city of more than 500 000 inhabitants. The age was categorized between four groups: 18–25 years, 26–40 years, 41–60 years and above 60 years. All age ranges were represented in both surveys, which should be explained by the diversified way in which the questionnaire was distributed – it was not only made available on various online forums and groups, but was also handed out to respondents physically at the same time, in order to avoid the digital exclusion that often affects older people. However, people aged 18–25 made up the second largest group (25.6%). For those aged 60 and over, the same number of respondents took part in both surveys (19 people). When analyzing the occupational status of the respondents (Figure 9), it can be seen that the majority in both surveys are employed under a contract of employment (42.7% and 59.4% respectively). This is also a consequence of the age of the respondents, who made up the largest age groups (18–25 and 41–60). These are therefore recent university graduates and those with significant work experience. The second largest group were students: 37.6% in the first survey and 18% in the second. Eight respondents in both surveys indicated that they were self-employed. One respondent in survey 1 and seven respondents in survey 2 are employed under civil law contracts (contract of mandate and contract for specific work). The least numerous group of respondents were unemployed: one unemployed person took part in the first survey and two in the second survey. The salary was categorized into fourcategories: below PLN 3,000.00, PLN 3,000.00-6,000.00, PLN 6,000.00-10,000.00 and above PLN 10,000.00. The vast majority of respondents in both surveys do not have any commitments of this kind (70.1% in the first survey and 60.9% in the second survey). In the first survey, the second most common answer was ‘up to PLN 10,000’, indicated by 15.4% of the sample, while 12.8% of respondents admitted to having credit or loan commitments in the range of PLN 10–300,000. In the second survey, the second most frequently indicated answer was ‘PLN 10–300 thousand’, which was selected by 21.1% of the respondents, and 14.3% have credit or loan commitments of less than PLN 10 thousand. Credit or loan commitments in the range of PLN 300–500 thousand were taken by two people in the first survey and five people in the second survey. In the first survey, 36.8% admitted to having savings of less than PLN 10,000. 34.2% chose the answer ‘PLN 10–300 thousand’ and 24.8% had not accumulated any savings. In the second survey, the most popular answer was PLN 10-300k, which was selected by 39.1%. 33.8% have no savings and 24.1% have accumulated savings of up to PLN 10k. The answer ‘PLN 300–500 thousand’ was selected by three and two people respectively. Two respondents in the first and second surveys admitted to having savings above PLN 500 thousand.

In the first question respondents were asked to assess various aspects of the central bank's functioning in Poland, including an assessment of the NBP's organization, its response to monetary shocks or the formation of interest rates, an estimation of the level of inflation and an assessment of government programs. In the next question, respondents were asked to estimate the level of inflation in the following six-month periods (in the first survey from 31.12.2022 to 31.12.2024, and in the second survey from 30.06.2023 to 30.06.2025). Questions also included requests to assess the impact of government assistance programs on price stability, including a reduction in the VAT rate on food, carbon subsidies or free ‘credit holidays’.

Respondents were asked to assess the effectiveness of the NBP's activities in the area of monetary policy, broken down into such aspects as: the organization of the NBP, maintaining a stable price level (implementation of the inflation target: CPI 1.5–3.5%), the chosen strategy of direct inflation targeting, responding to monetary shocks, interest rate formation, use of non-standard monetary policy instruments – purchase of assets on the market, information policy, trust in the central bank, accuracy of projections/forecasts of inflation rate formation and the central bank's ability to bring the inflation rate back to the inflation target in the medium-term horizon of three years. Five answers were available for each question: 1 – definitely bad, 2 – rather bad, 3 – hard to say, 4 – rather good, 5 – definitely good.

Figure 1

Assessment of the NBP organization

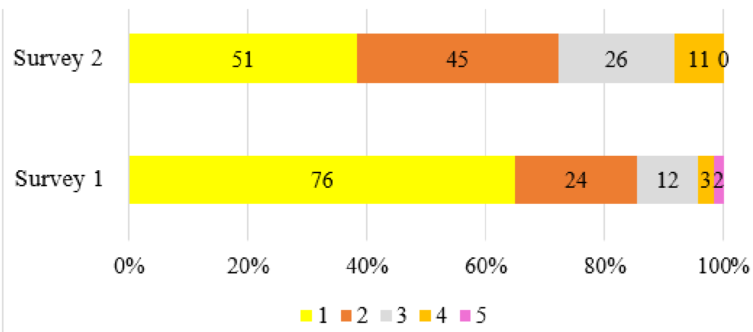


Source: own elaboration.

In the first survey, 61.5% respondents assessed the organization of the NBP negatively (27.4% chose the answer definitely bad and 34.2% rather bad). For 28.2% respondents, the assessment of the NBP in this respect was difficult to determine. 12 people rated the organization of the NBP positively, but only one thought it was definitely good. In the second survey, 47.4% rated the organization of the NBP as bad, with 12.8% as definitely bad and 34.6% as rather bad. 41.4% chose the answer difficult to say. As in the first survey, the smallest group of respondents was the group that assessed the organization of the NBP as good (11 respondents thought it was rather good and 4 thought it was definitely good). In the first survey, there is an apparent trend towards a poorer assessment of the organization of the NBP, while in the second survey there is a clear increase in the number of people who had no opinion on the subject (an increase of 166.7%). The least susceptible to change were the good response options (Figure 1).

Figure 2

Assessment of the maintenance of a stable price level (achievement of the inflation target: CPI 1.5–3.5%)

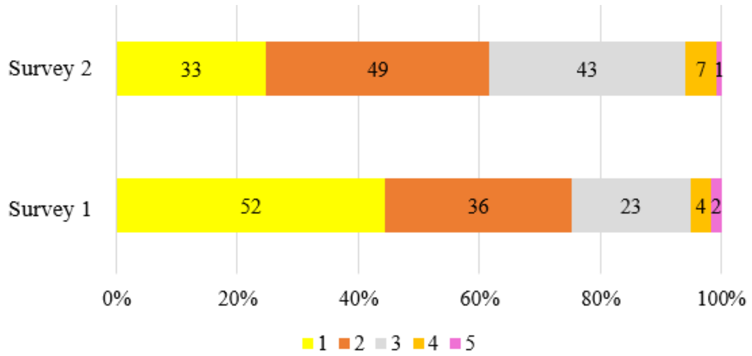


Source: own elaboration.

In the second segment of the question on the effectiveness of the NBP, respondents commented on the topic of maintaining a stable price level, which manifests itself through the implementation of the inflation target (CPI between 1.5% and 3.5%). In the first survey, as many as 85.6% respondents considered that the activities leading to the maintenance of a stable price level were carried out ineffectively (65% definitely bad, and 20.5% as rather bad). 10.3% gave the answer difficult to say. Only 5 respondents assessed the implementation of the inflation target as effective (3 persons chose the option rather well and 2 persons definitely well). In the second survey, 72.2% assessed the implementation of the inflation target as ineffective (38.4% as definitely bad and 33.8% as rather bad). According to 19.6% of respondents, it was difficult to say whether the stable price level had been realized. Both in the first and the second survey, it can be noted that the willingness to answer it is difficult to say is one of the smallest in the survey, which may indicate a high awareness of the respondents about the level of inflation in Poland and the NBP's activities related to maintaining a stable price level. 11 respondents chose the rather good option, but no respondent answered definitely good (Figure 2).

Figure 3

Evaluation of the chosen direct inflation targeting strategy

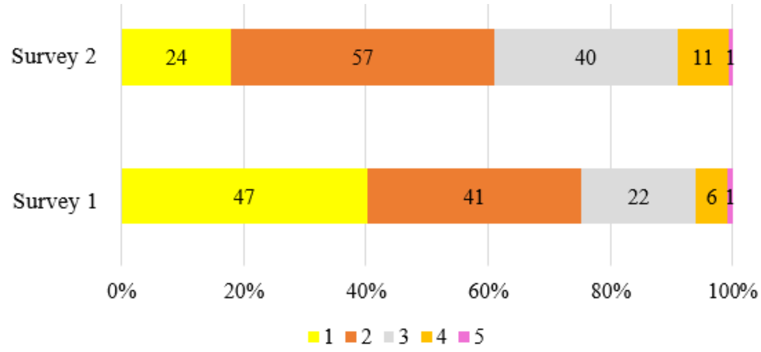


Source: own elaboration.

In the first survey, 75.9% of respondents considered the direct inflation targeting strategy to be inappropriate (44.4% of votes for definitely wrong and 30.8% for rather wrong). 19.7% of respondents answered difficult to say. According to only six people, the direct inflation targeting strategy is correctly chosen (four people described it as rather good and two as definitely good). In the second survey, 61.6% rated the direct inflation targeting strategy as wrong (24.8% chose the option definitely wrong and 36.8% rather wrong). 32.3% of respondents found it difficult to assess the direct inflation targeting strategy. However, the number of respondents who assessed it positively increased. According to seven respondents, the strategy was chosen well, and according to one respondent, it was definitely well chosen. Comparing the two surveys, it can be seen that, in the second survey, the number of respondents who gave the answer difficult to say increased by 12.6 pp. (Figure 3).

Figure 4

Assessing the response to monetary shocks

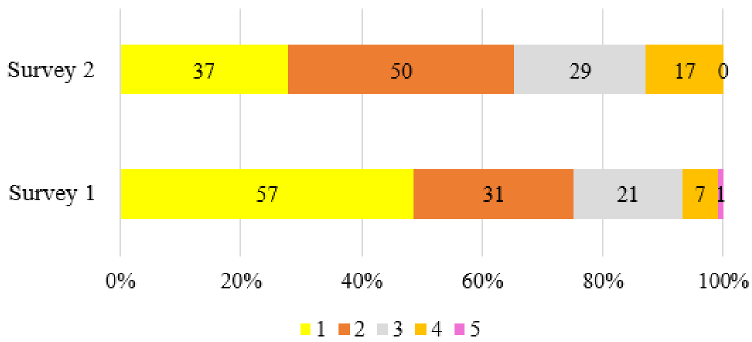


Source: own elaboration.

In the first survey, 75.2% respondents gave negative answers regarding the assessment of the response to monetary shocks (40.2% ranked it definitely bad and 35% rather bad). 18.8% respondents found it difficult to assess. Only seven people rated the NBP's response to monetary shocks as adequate (six people as rather good and one person definitely good). In the second survey, 60.9% respondents thought that the NBP reacted to monetary shocks in an inappropriate way (18% chose the option definitely bad and 42.9% rather bad). 30.1% respondents had no opinion on this issue. 12 respondents thought that the NBP reacted well to monetary shocks (11 people thought it reacted rather well and 1 person thought it reacted definitely well). In the first survey, the magnitude of the negative assessment of the response to monetary shocks was 14.3 percentage points higher. In the second survey, the willingness to answer hard to say increases by 11.3 pp. (Figure 4).

Figure 5

Assessment of interest rate developments

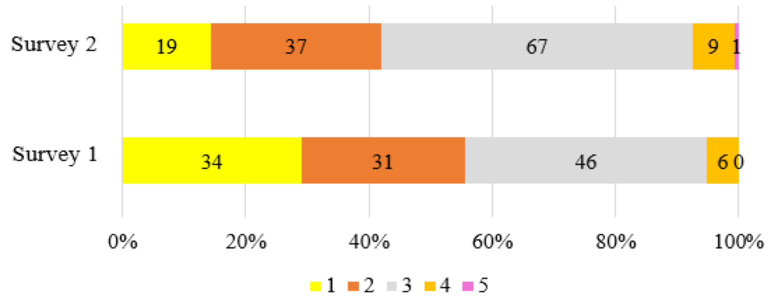


Source: own elaboration.

In the first survey, 75.2% o respondents assessed the formation of interest rates by the NBP as bad, of which 48.7% chose the option definitely bad and 26.4% rather bad. 17.9% of respondents answered difficult to say. Only one respondent rated the central bank's interest rate formation as definitely good and seven respondents as rather good (6%). In the second survey, the tendency to give negative assessments decreased. According to 65.4% respondents, the NBP shapes interest rates inappropriately (27.8% answered definitely bad and 37.6% rather bad). 21.8% respondents (which is 3.9 percentage points more than in survey 1) had no opinion on this issue. In survey 2, the propensity to give positive answers almost doubled, with 12.8% rating the formation of interest rates as rather good (Figure 5).

Figure 6

Evaluation of the use of non-standard monetary policy instruments – asset purchases on the market

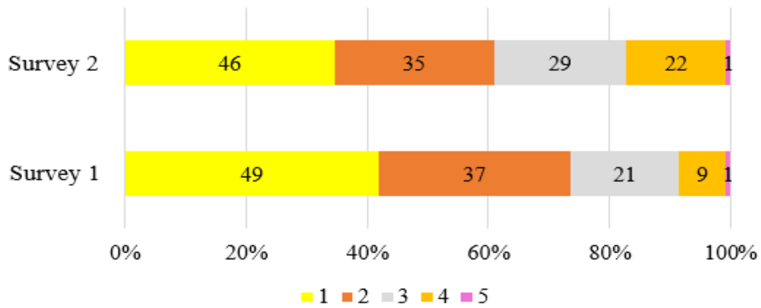


Source: own elaboration.

55.6% respondents in the first survey rated the use of non-standard monetary policy instruments negatively. 29.1% chose the option definitely bad and 26.4% rather bad. 39.3% respondents answered difficult to say. Only six people rated the use of non-standard monetary policy instruments as rather good. In the second survey, the propensity to rate the use of non-standard monetary policy instruments negatively decreased by 13.5 percentage points. 42.1 per cent of respondents rated the purchase of assets on the market as bad (14.3 per cent answered definitely bad and 27.8 per cent as rather bad). The frequency of selecting the answer difficult to say increased by 15 pp. (50.4% responses). The fact that so many people did not have an opinion on this subject may reflect the public's low awareness of the details of asset purchases in the market and knowledge of non-standard monetary policy instruments. Nine respondents rated the use of non-standard NBP monetary policy instruments as ‘rather good’ and one as definitely good (Figure 6).

Figure 7

Evaluation of the NBP information policy

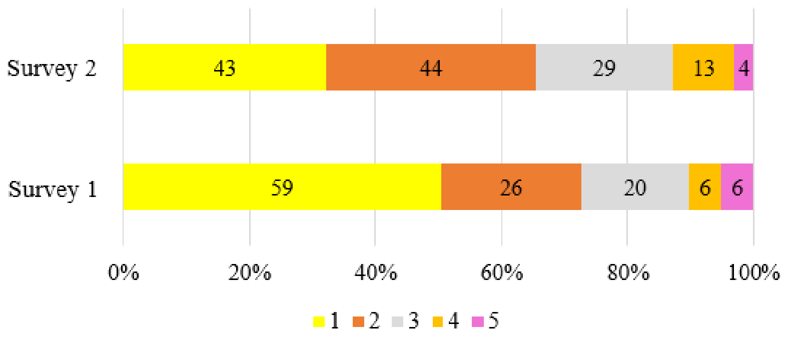


Source: own elaboration.

In the first survey, 73.5% respondents felt that the NBP's information policy is badly conducted (according to 41.9% it is definitely badly conducted and according to 31.6% it is rather badly conducted). 17.9% respondents chose the option difficult to say. Nine people assessed the information policy rather well and only one definitely well. In the second survey, the NBP's information policy was bad according to 60.9% respondents. As in the case of answers to the previous questions, there was a decreasing trend of negative answers. Their share decreased by 12.6 percentage points. 34.6% respondents assessed the information policy as definitely bad and 26.3% as rather bad. 21.8% had no opinion. 16.5% rated the NBP's information policy rather well. This is the first time that the share of respondents giving a positive answer on an indicated aspect of the NBP has been so high compared to previous questions (Figure 7).

Figure 8

Assessment of confidence in the central bank

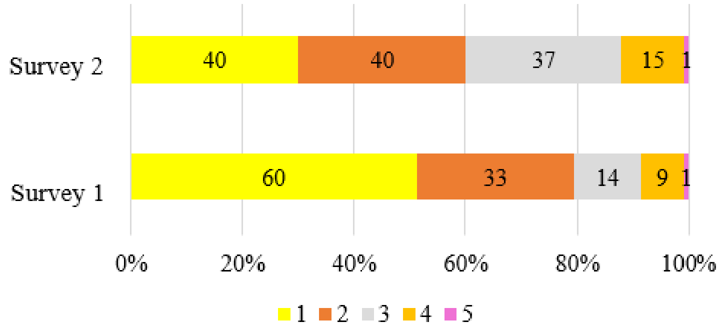


Source: own elaboration.

In the first survey, 72.6% respondents said that they did not trust the Polish central bank (50.4% definitely bad and 22.2% rather bad). 17.1% answered it is difficult to say. Six respondents (5.1%) rather trust the NBP and six respondents definitely trust the NBP. In the second survey, 65.4% respondents expressed negative trust in the NBP (32.3% have a definitely bad attitude towards trusting the Polish central bank and 33.1% have a rather bad attitude). 21.8% have no opinion on trust in the NBP. About 10% rated their trust in the NBP as rather good and 4 respondents rated it as definitely good. Comparing the two surveys, it can be seen that the tendency is to assess trust in the NBP positively significantly (for the answer rather good). Also the scale of negative assessment of trust in the Polish central bank decreased (7.2 percentage points), and the share of hard to say answers increased by 4.7 percentage points (Figure 8).

Figure 9

Assessment of the accuracy of projections/forecasts of inflation developments

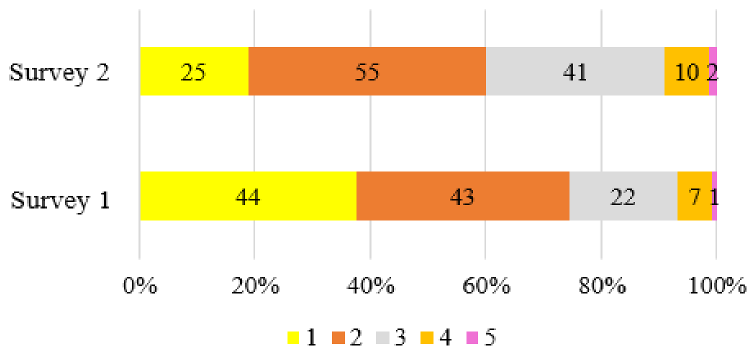


Source: own elaboration.

In the first survey, 79.5% respondents considered the accuracy of projections and forecasts of the inflation rate to be bad, with 51.3% rating it definitely bad and 28.2% rather bad. 12% of respondents answered difficult to say. Nine respondents rated the accuracy of the projections and forecasts of the inflation rate as rather good and one respondent as definitely good. In the second survey, 60.2% participants expressed a negative assessment of the accuracy of the above projections. For each of the negative options, the share of respondents was 30.1%. Compared to the first survey, it can be noted that the propensity to choose answers indicating a negative assessment of the accuracy of the projections and forecasts of the evolution of the inflation rate decreased by 19.3%. The share of hard to say answers was 27.8%, so there was an upward trend (by 15.8 points) compared to survey 1. 11.3% respondents rated the accuracy of projections and forecasts of the inflation rate as rather good. This is one of the higher results for this response option, as in other questions the 10% threshold is rarely exceeded for positive ratings (Figure 9).

Figure 10

Assessing the central bank's ability to return the inflation rate to the inflation target over a medium-term horizon of three years



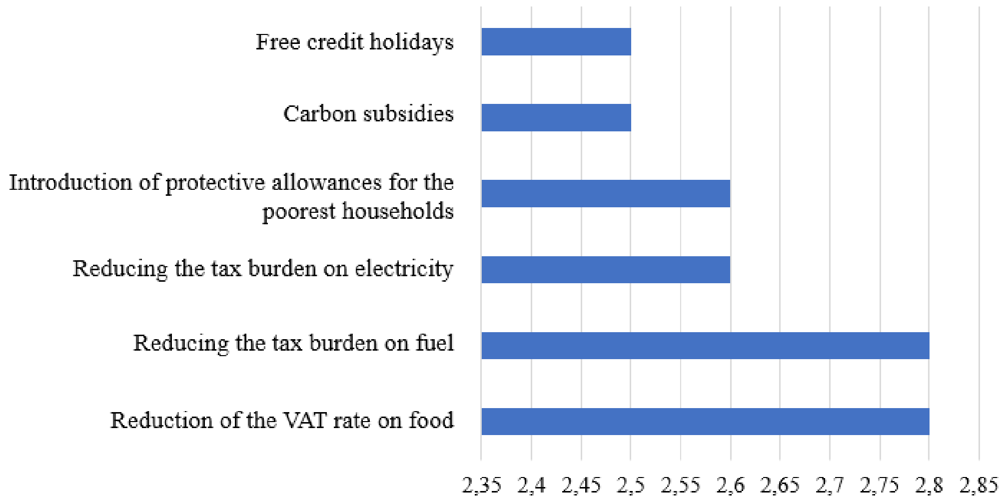
Source: own elaboration.

In the first survey, 74.4% respondents rated the central bank's ability to return the inflation rate to the inflation target over a medium-term horizon of three years as low. 37.6% answered definitely bad and 36.8% rather bad. 18.8% of respondents found it difficult to assess the NBP's ability to bring the inflation rate back to the inflation target. Seven respondents chose the option rather well and one definitely well. In the second survey, 60.3% of respondents felt that the NBP's ability to restore the inflation rate was low, in particular 18.9% rated it very bad and 41.4% rated it rather bad. Compared to survey 1, there was a 14.1 pp. increase in the share of this response in the sample. 30.8% of the respondents had no opinion on the subject, which represents a 12 pp. increase in respondent uncertainty compared to the first survey. In terms of positive response options, ten respondents rated the central bank's ability to bring the inflation rate back to the inflation target over a medium-term horizon of three years rather well and two rated it strongly well (Figure 10).

On the other hand, when analyzing the results from both surveys on the issue of the evaluation of non-monetary measures to mitigate the effects of inflation in Poland, it can be seen that the average rating ranges from 2.5 to 2.8 (Figure 11). The lowest rated measures according to respondents were credit holidays and carbon subsidies (2.5). The best rated ones were the reduction in the tax burden on fuel and the reduction in the VAT rate on food (2.8).

Figure 11

Average rating of non-monetary inflation mitigation measures in survey 1 and survey 2



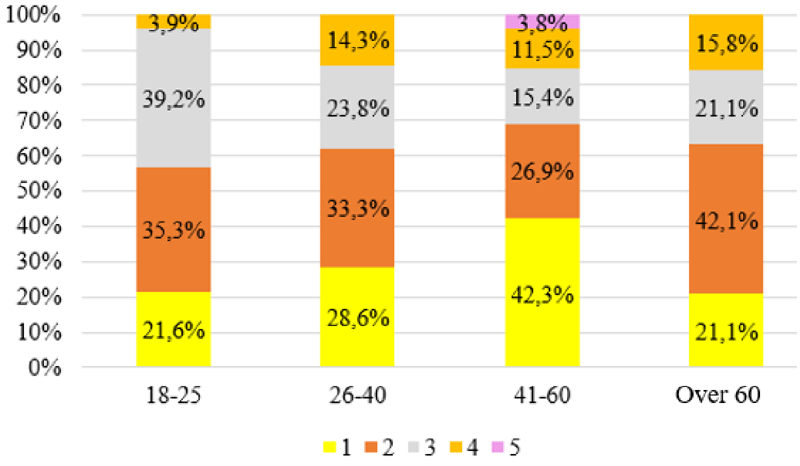
Source: own elaboration.

A chi-square test of independence was used to assess the significance of the association of selected socio-demographic factors with the evaluation of individual elements of monetary policy and the evaluation of individual non-monetary inflation mitigation activities.

In study 1, the age of the respondents was shown to influence the evaluation of central bank activities at the 5% significance level (NBP organization). With 12 degrees of freedom, a p-value of 0.000 was obtained there.

Figure 12

Relationship between age and assessment of NBP organization



Source: own elaboration.

In the 18–25 age group, the most popular answer was hard to say, which was selected by 39.2%, and rather bad, which was ticked by 35.3% of respondents. 33.3% of respondents aged 26 to 40 thought the NBP organization was rather bad and 28.6% thought it was definitely bad. 42.3% of respondents in the 41–60 group answered definitely bad, while 26.9% answered rather bad. 42.1% of respondents aged 60 and over thought the NBP organization was rather bad, while 21.1% thought it was neutral or rather bad. The group that assessed the NBP organization most negatively was the 41–60 age group, where 69.2% selected the answers definitely bad and rather bad together. Only 3.8% of respondents in the 41–60 group rated the organization of the NBP as definitely good (Figure 12).

Table 4

Relationship between socio-demographic factors and assessment of central bank performance – chi-square test results (maintaining a stable price level - meeting the inflation target: CPI 1.5–3.5%)

Variable	Survey 1			Survey 2		
	Degrees of freedom	p-value level	Verification of hypothesis	Degrees of freedom	p-value level	Verification of hypothesis
Sex	**4**	**0,011**	**Dependent variables**	**3**	**0,034**	**Dependent variables**
Age	12	0,821	Independent variables	**9**	**0,002**	**Dependent variables**
Residence	12	0,678	Independent variables	**9**	**0,003**	**Dependent variables**
Occupational status	20	0,725	Independent variables	**15**	**0,004**	**Dependent variables**
Savings held	**16**	**0,003**	**Dependent variables**	12	0,690	Independent variables

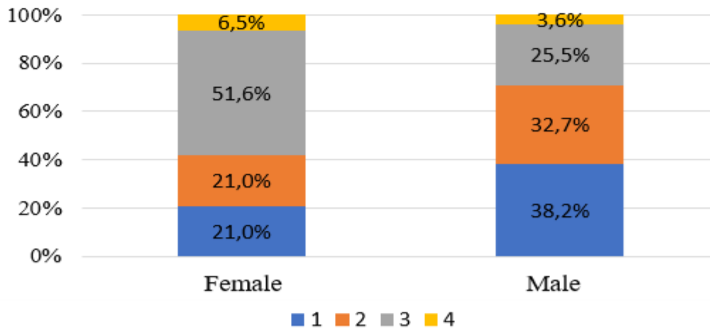
Source: own elaboration.

The highest correlation of selected socio-demographic factors with the evaluation of individual elements of monetary policy occurred in the case of the evaluation of the maintenance of a stable price level (achievement of the inflation target: CPI 1.5–3.5%), as presented in Table 4. It was shown that at the significance level of 5%, a significant relationship could be confirmed for six variables from both surveys (gender, age, place of residence, occupational status and savings held).

Relevance from other tests were demonstrated on the figures below.

Figure 13

Relationship between gender and assessment of the use of non-standard monetary policy instruments (asset purchases) in survey 1

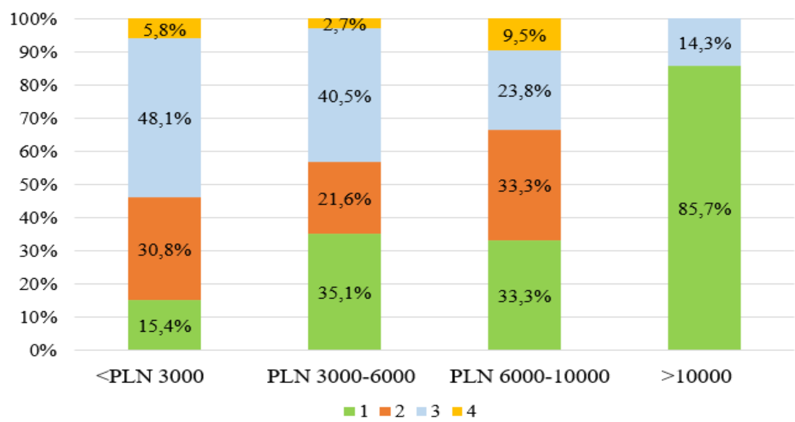


Source: own elaboration.

Male respondents rated the use of non-standard monetary policy instruments significantly worse than female respondents. 70.9% male respondents assessed the purchase of assets in the market negatively, while 42% female respondents gave combined answers of rather bad and definitely bad. Among women, the tendency to choose the neutral response option difficult to say also prevailed: this was chosen by 25.5% male respondents and almost twice as many female respondents.

Figure 14

Relationship between net monthly income and the assessment of the use of non-standard monetary policy instruments (asset purchases) in survey 1

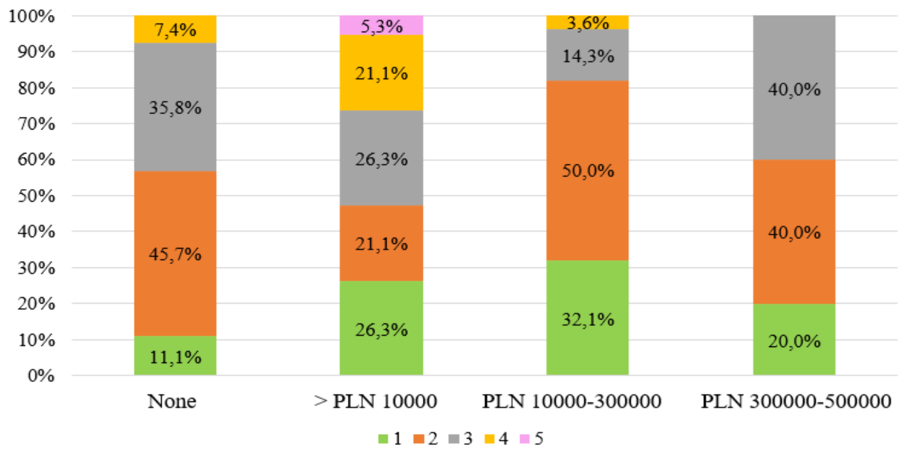


Source: own elaboration.

The most negative responses were given by respondents earning above PLN 10,000 where 85.7% assessed the use of non-standard monetary policy instruments as definitely bad. Respondents earning more than PLN 10,000 were the least diverse group, as in addition to the definitely bad response option, 14.3% chose the hard to say response. The highest total share of negative responses of 66.6% occurred in the group earning between PLN 6k and PLN 10k. At the same time, in this group, 9.5% respondents answered rather well, which was the highest share of positive answers compared to other groups of respondents.

Figure 15

Relationship between credit/loan liabilities held and assessment of response to monetary shocks in study 2



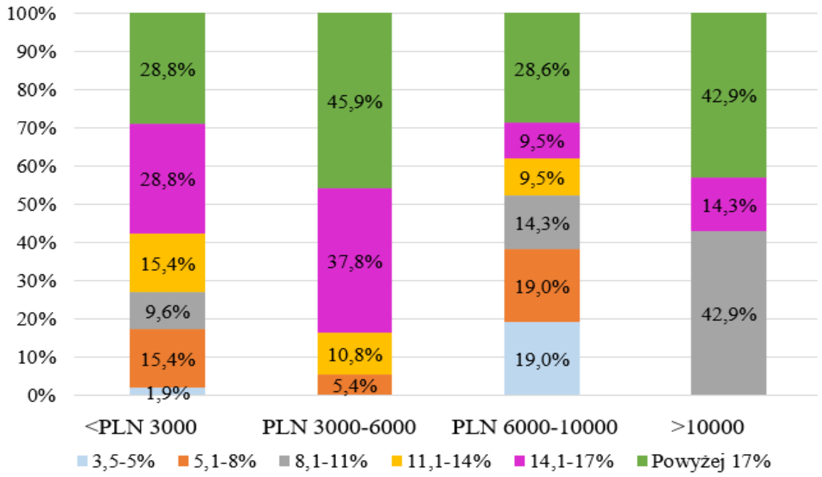
Source: own elaboration.

The group that rated the response to monetary shocks most poorly was the group with credit/loan commitments of PLN 10,000–300,000, where 72.1% respondents collectively answered rather bad and definitely bad. The smallest share of negative responses was in the group of respondents who took out a credit/loan of up to PLN 10,000, at 47.4%. This group had the highest share of positive responses – 21.1% of respondents rated the NBP's response to monetary shocks as rather good and 5.3% as definitely good (Figure 15).

For those earning up to PLN 3k, the most popular inflation expectations were the ranges of 14.1–17% and above 17%, selected by 28.8% respondents. 45.9% of those earning between PLN 3,000 and PLN 6,000 felt that the level of inflation would be above 17%, while 37.8% felt it would be between 14.1–17%. 28.6% respondents whose current level of monthly net income was between PLN 6,000 and 10,000 answered above 17%. The most popular answers given by respondents earning more than PLN 10,000 (42.9%) were above 17% and 8.1–11%.

Figure 16

Relationship between monthly net income and inflation assessment (30.06.2023) in study 1



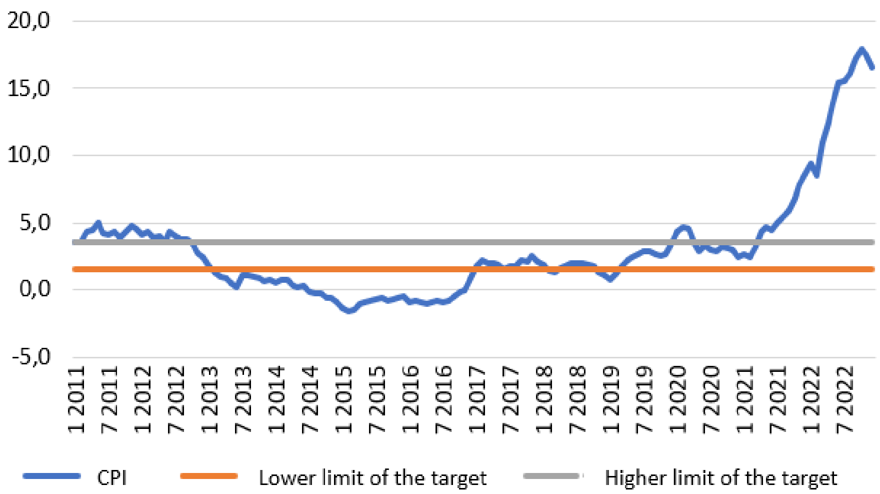
Source: own elaboration.

In Poland, the inflation target, measured using the CPI index, was set in the range of 1.5–3.5% year-on-year. In January 2020, the inflation rate exceeded the upper limit of the target by 0.8 pp. and inflation reached its highest value in 2020 in February (4.7%). In March 2020, the first official case of coronavirus infection was reported in Poland. In the following months of 2020, the downward trend in the inflation rate continued (disinflation) and the upper limit of the target was not exceeded, demonstrating the effectiveness of the inflation target. In 2021, the upper limit of the inflation target was exceeded in April (4.3%), so the implementation of the target only took place in the first two months of the year. In the following months of 2021, the inflation rate continued its upward trend and its values continued to exceed the designated upper limit of the inflation target. In the months of April–December 2021, inflation averaged 5.89%, and at its peak (December 2021) it reached 8.6%. In 2022, no month was able to keep inflation within the set inflation target. In addition, inflation continuously maintained a rising double-digit figure between March and December 2022. Inflation peaked in October 2022 with a CPI level of 17.9%, so the upper limit of the inflation target was exceeded by 14.4 pp. (511%). The evolution of the inflation rate in Poland is presented in Figure 17.

In 2021, the IMF assessed that the National Bank of Poland loosened the monetary policy stance in a quick and adequate way. In their opinion NBP effectively complemented the fiscal measures, which reduced the negative impact of the pandemic on the economy and the banking sector. The NBP's asset purchase program (PSA) was properly communicated and fulfilled its purpose of supplying liquidity to government bond markets and strengthening monetary policy transmission. The transparency of the PSA was high and all of the information about the NBP's securities purchases and holdings was publicly available (NBP, 2021). In order to compare the results of inflation forecast by respondents with a credible and professional forecast, a forecast made by the NBP has been presented (NBP, 2021).

Figure 17

Inflation rate in Poland in 2011–2022 and the NBP inflation target



Source: own elaboration based on: GUS (n.d.).

Table 5

Inflation projected by NBP in 2022–2025

Time of inflation forecast	Projected inflation in 2022–2025 [%]			
	2022	2023	2024	2025
July 2022	14,2	12,3	4,1	–
November 2022	14,5	13,1	5,9	3,5
March 2023	–	11,9	5,7	3,5
July 2023	–	11,9	5,2	3,6
November 2023	–	11,4	4,6	3,7
March 2024	–	3,0	3,4	2,9
July 2024	–	–	3,7	5,2

Source: NBP.

Analyzing the results of the respondents' inflation forecast with the inflation forecast by the NBP, it can be seen that there is a tendency for respondents to overestimate the level of inflation, particularly in the first survey, which took place between 31.12.2022 and 30.06.2024. 58.1% respondents thought that inflation would be above 17% by 31.12.2022, while the NBP estimated it at 14.5% in November 2022, a difference of three percentage points. Also by the end of June 2022 and the end of December 2022 more than 20% respondents were confident that inflation would be between 14.1% and 17%, while the NBP estimated it at 11.9 % in March 2023.

Table 6

Distribution of respondents (in %) assessing the level of inflation in the period between 30.06.2023–30.06.2025

Inflation	31.12.2022	30.06.2023	31.12.2023	30.06.2024	31.12.2024
Below 3,5%	0,9%	0,0%	0,0%	1,7%	5,1%
3,5–5%	2,6%	4,3%	3,4%	6,8%	10,3%
5,1–8%	7,7%	12,0%	12,0%	17,1%	17,9%
8,1–11%	13,7%	9,4%	16,2%	20,5%	25,6%
11,1–14%	1,7%	12,0%	20,5%	21,4%	15,4%
14,1–17%	15,4%	27,4%	23,9%	15,4%	13,7%
Above 17%	58,1%	35,0%	23,9%	17,1%	12,0%

Source: own elaboration.

Survey 2 was conducted between March and April 2023. As of 30.06.2023 37.6% respondents selected responses between 8.1% and 14%, which is lower than in the previous survey. On the other hand, in March 2022, the inflation forecast by the NBP was 11.9%, so this is already more similar to the previous forecasts.

In November 2023, the NBP projection assumed to continue extinction of the effects caused by the strong negative supply shock associated with the COVID-19 pandemic and Russia's aggression against Ukraine. The domestic demand and economic activity abroad were expected to recover, which would lead to a marked acceleration of economic growth in Poland in 2024–2025. Further fiscal instruments, including the increase of the parental benefit from PLN 500 to PLN 800 (from the beginning of 2024) and the permanent introduction of the fourteenth pension, were also said to support economic growth in this horizon according to NBP (NBP, 2023).

Table 7

Distribution of respondents (in %) assessing the level of inflation in the period 30.06.2023–30.06.2025

Inflation	30.06.2023	31.12.2023	30.06.2024	31.12.2024	30.06.2025
Under 3,5%	0,0%	0,0%	0,0%	1,5%	6,0%
3,5–5%	1,5%	2,3%	4,5%	6,8%	12,8%
5,1–8%	7,5%	7,5%	9,0%	16,5%	19,5%
8,1–11%	6,0%	7,5%	17,3%	19,5%	18,0%
11,1–14%	3,8%	17,3%	20,3%	14,3%	9,8%
14,1–17%	26,3%	21,8%	12,0%	12,0%	12,0%
17,1–20%	36,1%	19,5%	21,8%	14,3%	11,3%
20,1–23%	12,0%	20,3%	12,0%	12,8%	6,8%
Above 23%	6,8%	3,8%	3,0%	2,3%	3,8%

Source: own elaboration.

Conclusion

The main objective of the article was to analyze the use of standard and non-standard monetary policy instruments by central banks under shock conditions and to assess the public perception of the effectiveness of monetary policy of the National Bank of Poland, based on a survey carried out in two rounds. In particular, the following hypothesis were tested: (1) that the activity of the central bank in the area of monetary policy in Poland under conditions of shock is characterized by low effectiveness in the opinion of financial market customers; and (2) that socio-demographic factors such as place of residence, gender, age, occupational status, current level of monthly net income, loan liabilities held and the scale of savings held influence the evaluation of the effectiveness of the central bank's policies in Poland.

The first hypothesis was confirmed. The NBP activities were predominantly negatively rated, but there was an improvement in the evaluation during the beginning of the disinflation process (survey 2). The second hypothesis was also confirmed. In order to assess the significance of the association of selected socio-demographic factors with the evaluation of the effectiveness of the Polish central bank's actions, a chi-square test of independence was used and the significance level was set at 5%. The most frequently confirmed determinant of the evaluation of the effectiveness of central bank actions is the gender of the consumer, which showed a significant relationship with the evaluation of the NBP in terms of the effectiveness of maintaining a stable price level (in both surveys), the use of non-standard monetary policy instruments (in survey 1). Age had a significant impact on the assessment of the NBP organization (in survey 1) and the assessment of the effectiveness of maintaining a stable price level (in survey 2). A relationship was confirmed between the current level of net monthly income of customers and the central bank's use of non-standard monetary policy instruments (in survey 1). A significant relationship was found between occupational status and the assessment of the effectiveness of the NBP in maintaining a stable price level (in survey 2). The place of residence of customers also significantly affects the assessment of the effectiveness of the NBP in maintaining a stable price level (in survey 2). The assessment of the effectiveness of the central bank's response to monetary shocks depended on the level of credit/loan liabilities held by customers in study 2. The level of savings held influenced the assessment of the effectiveness of the NBP in maintaining a stable price level in study 1.

References

Bankier.pl. (2023, luty 24). *NBP kończy wymianę hrywien na złote*. https://www.bankier.pl/wiadomosc/NBP-konczy-wymiane-hrywien-na-zlote-8400893.html

Business Insider Polska. (2023, marzec 6). *Analitycy ING: Działanie NBP ws. kryzysu pomogło gospodarce, ale niesie ze sobą jedno ryzyko*. https://businessinsider.com.pl/finanse/makroekonomia/luzowanie-ilosciowe-nbp-ocena-skutkow-gospodarczych-w-raporcie-ing/q42dc1t

Cantú, C., Cavallino, P., De Fiore, F., & Yetman, J. (2021). A global database on central banks' monetary responses to Covid-19. *BIS Working Paper*, *934*. https://www.bis.org/publ/work934.htm

Corsi, M., & Mudde, Y. (2022). The use of the Eurosystem's monetary policy instruments and its monetary policy implementation framework in 2020 and 2021. *Occasional Paper Series, 304*. https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op304~7557c991fb.en.pdf

Czuchryta, M., & Kowalik, P. (2010). Reakcja Europejskiego Banku Centralnego i Narodowego Banku Polskiego na kryzys pandemiczny. *Zeszyty Naukowe Polskiego Towarzystwa Ekonomicznego w Zielonej Górze*.

ECB. (2020). *Decyzje w sprawie polityki pieniężnej*. https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.mp200430~1eaa128265.pl.html

ECB. (2023). *Our response to coronavirus (COVID-19)*. https://www.ecb.europa.eu/home/search/coronavirus/html/index.pl.html

EDialog. (2022, październik 22). *Bezgotówkowa lokata dolarowa*. https://edialog.media/2022/10/22/bezgotowkowa-lokata-dolarowa/

Fed. (2023). *Foreign and International Monetary Authorities (FIMA) Repo Facility*. https://www.federalreserve.gov/monetarypolicy/fima-repo-facility.htm

Financial Observer [Obserwator Finansowy]. (2022). *NBP łagodzi skutki pandemii i utrzymuje stabilność złotego*. https://www.obserwatorfinansowy.pl/forma/warto-wiedziec/raporty/nbp-lagodzi-skutki-pandemii-i-utrzymuje-stabilnosc-polskiego-pieniadza

Financial Observer [Obserwator Finansowy]. (2023). *Ukraiński system finansowy czasu wojny*. https://www.obserwatorfinansowy.pl/tematyka/rynki-finansowe/bankowosc/ukrainski-system-finansowy-czasu-wojny/

Forsal.pl. (2022, marzec 30). *Alternatywa dla SWIFT? Rosja proponuje Indiom specjalny system płatności za ropę i broń*. https://forsal.pl/swiat/rosja/artykuly/8390822,alternatywa-swift-rosja-indie-moskwa-proponuje-system-platnosci-za-rope-i-bron.html

GUS. (n.d.). *Miesięczne wskaźniki cen towarów i usług konsumpcyjnych od 1982 r.* https://stat.gov.pl/obszary-tematyczne/ceny-handel/wskazniki-cen/wskazniki-cen-towarow-i-uslug-konsumpcyjnych-pot-inflacja-/miesieczne-wskazniki-cen-towarow-i-uslug-konsumpcyjnych-od-1982-roku/

Kaźmierczak, A. (2000). *Polityka pieniężna w gospodarce rynkowej*. Wydawnictwo Naukowe PWN.

Markowiak, M. (2022). Ocena działań Narodowego Banku Polskiego podczas pandemii koronawirusa. *Zeszyty Studenckie „Nasze Studia", 12*.

Milstein, E., & Wessel, D. (2024, February 2). *What did the Fed do in response to the COVID-19 crisis?* Economic Studies at Brookings. https://www.brookings.edu/research/fed-response-to-covid19

NBP. (2021). *Reakcja NBP na pandemię COVID-19 – „szybka i właściwa" – Międzynarodowy Fundusz Walutowy zakończył przegląd gospodarki Polski*. https://nbp.pl/reakcja-nbp-na-pandemie-covid-19-szybka-i-wlasciwa-miedzynarodowy-fundusz-walutowy-zakonczyl-przeglad-gospodarki-polski/

NBP. (2023). *Raport o inflacji – listopad 2023 r.*

NBU. (2023). *NBU Introduces Additional Tool to Protect Households' Hryvnia Savings from Exchange Rate Fluctuations and Safeguard International Reserves*. https://bank.gov.ua/en/news/all/nbu-zaprovadjuye-dodatkoviy-instrument-dlya-zahistu-grivnevih-zaoschadjen-gromadyan-vid-riziku-kursovih-kolivan-i-dlya-zberejennya-mijnarodnih-rezerviv

Niedźwiedzińska, J. (2020). *Initial monetary policy response to the COVID-19 pandemic in inflation targeting economies*. NBP.

NIK. (2021). *Wystąpienie pokontrolne P/21/011 – Realizacja zadań antykryzysowych przez banki*.

Rutkowski, W. (2016). *Bank centralny i polityka pieniężna*. Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego.

Żywiecka, H. (2012). *Niestandardowe działania banków centralnych w warunkach globalnego kryzysu finansowego*. Uniwersytet Ekonomiczny w Poznaniu.

Received: 12.05.2025
Accepted: 07.06.2025
Available online: 30.06.2025

• FINANSE I PRAWO FINANSOWE •
• JOURNAL OF FINANCE AND FINANCIAL LAW •

Czerwiec/June 2025 • vol. 2(46): 123–132

COPE Member since 2021 JM15102

Funding information: Not applicable. **Conflicts of interests:** None. **Ethical considerations:** The Author assures of no violations of publication ethics and takes full responsibility for the content of the publication.

IMPACT OF COSTS ON LEGAL RISK OF CHF FOREIGN CURRENCY MORTGAGE LOANS IN SHAPING FINANCIAL PERFORMANCE OF SELECTED BANKS

Zofia Polkowska[*]

https://doi.org/10.18778/2391-6478.2.46.07

IMPACT OF COSTS ON LEGAL RISK OF CHF FOREIGN CURRENCY MORTGAGE LOANS IN SHAPING FINANCIAL PERFORMANCE OF SELECTED BANKS

ABSTRACT

The purpose of the article. Costs associated with legal risks, including those arising from the need to carry out loan conversions, compensate borrowers, and court or settlement costs, are an element that affects the profitability of banks that have granted such loans. The purpose of this article is to indicate the impact of costs associated with the legal risk of foreign currency mortgage loans in CHF in the context of the financial performance of selected banks in Poland. Particular attention was paid to the impact of costs related to litigation, the settlement process and loan conversions on the financial performance of banks. The article uses an analysis of studies and data published by financial safety net institutions and an analysis of the financial results of banks operating in the Polish banking sector. Due to the provisions made, banks are more prepared for the challenge of the materialization of legal risks related to foreign currency housing loans. However, it should be emphasized that this risk will be one of the main factors affecting the situation of banks in the coming years. The article complements the existing body of research on legal risk provisions with the impact of the level of provisions on the financial performance of banks operating in the Polish banking sector.

Methodology. The article uses an analysis of studies and data published by financial security network institutions, as well as an analysis of the financial results of banks operating in the Polish banking sector that have the largest share of foreign currency loans in their portfolios: PKO BP S.A., Millennium S.A., Santander S.A. and mBank S.A.

Results of the research. The analysis of the role of costs related to the legal risk of foreign currency mortgages in CHF in shaping the financial performance of selected banks in the Polish banking sector, indicates that this risk has a significant impact on the financial performance of the studied institutions. Due to the provisions made, banks are more prepared for the challenge of materialization of legal risk related to foreign currency housing loans. However, it should be emphasized that this risk will be one of the main factors influencing the situation of banks in the coming years. Based on the analysis, it is shown that the level of provisions made by banks related to the legal risk of foreign currency housing loans is increasing.

Keywords: legal risk, banking, mortgages.

JEL Class: G2, G21.

[*] MA, SGH Warsaw School of Economics, https://orcid.org/0000-0002-8894-3139 Corresponding Author.
E-mail: zpolko@sgh.waw.pl

Impact of Costs on Legal Risk of CHF Foreign Currency Mortgage Loans in Shaping Financial Performance of Selected Banks

Banks operating in the Polish banking sector introduced and granted mortgages denominated and indexed to the Swiss franc (CHF) between 2004 and 2008. Initially, they were widely promoted as a favorable solution, especially during the period of low interest rates and a stable CHF exchange rate, but in subsequent years they began to generate serious problems for both borrowers and banks. The rise in the value of the Swiss franc against the Polish zloty and the changing legal situation, especially in the context of the growing number of lawsuits related to the terms of the loan agreement, revealed legal risks that affected the functioning of the banking sector and the stability and financial performance of the banks granting such loans. Costs associated with legal risks, including those arising from the need to carry out loan conversions, compensate borrowers, and court or settlement costs, are an element that affects the profitability of banks that have granted such loans.

The purpose of this article is to indicate the impact of the cost of legal risk of foreign currency mortgage loans in CHF in the context of the financial performance of selected banks in Poland. Particular attention has been paid to the impact on banks' financial performance of costs related to legal proceedings, the settlement process and loan conversions. In addition, taking into account the changing economic conditions, an attempt was made to assess how the selected banks responded to the legal risks associated with foreign currency loans and how the management of these risks affects their financial performance in 2021–2023.

Literature review

Bank security is affected among others by institutional, structural and market conditions (Zaleska, 2022). The level of risk can also be affected by the bank's responses to government actions, including those taken in response to the crisis triggered by the increase in risk in the banking sector (Koleśnik, 2019). The literature points out that among the important systemic risks there are the so-called CHF credits and the materialization of legal risks (Zaleska, 2022). The issue of so-called CHF credits is a materialization of foreign exchange risk and legal risk (Zaleska, 2022). The legal risk situation burdening some banks in the sector affects the prospects of the entire sector (Lusztyn, 2024). Factors that seemingly only affect risk in some banks can cause an increase in systemic risk (Koleśnik, 2019).

Loans denominated and indexed to CHF were introduced into the banks' offerings and granted on a massive scale in 2004–2008 (Jura, 2021). It should be noted that loans were granted during this period at the CHF exchange rate of PLN 2.0–2.6 (Kata, 2015). The design of the loans offered at that time, allowed the application of a lower interest rate, at the expense of linking the amount of the installment to the future exchange rate (Korpalski, 2020). A significant increase in exchange rate risk initiated a decline in sales of residential loans denominated or indexed in Swiss francs (Czechowska et al., 2022). New loans in Swiss franc are granted only in very small amounts, but since 2021, there has been a materialization of the operational risk of the pre-2009 transaction (Baginski, 2022). For several years, the portfolio of foreign currency loans and mortgages has been a major risk factor in the banking sector. It is also a factor significantly affecting the financial position of banks in the Polish sector (UKNF, 2024). The National Bank of Poland emphasizes in its annual reports that the main weakness in systemic risk remains the legal risk associated with foreign currency housing loans (NBP, 2021b). In the context of financial stability, the legal risk of foreign currency housing loans is indicated as the most important risk (NBP, 2021b). The literature indicates that the stability of the Polish banking sector is not directly threatened due to issues related to credits denominated and indexed to the Swiss franc. This is influenced, among other things, by higher capital requirements, compared to other European Union countries (Jura, 2021). The area of the impact of legal risk on the situation of banks is analyzed, among other things, within the framework of non-reporting research on the legal risk of the foreign currency loan portfolio by the Office of the Financial Supervisory Commission (UKNF) (UKNF, 2024).

An increase in the probability of legal risk materializing occurred in 2019, following a ruling by the Court of Justice of the European Union (Jura, 2021). Some of the institutions in 2021–2024 wrote off legal risk provisions, which were related to foreign currency mortgages, in an amount higher than the total amount of capital needed to operate in the state at that time (Lusztyn, 2024). In the case of an extreme scenario, which would involve maximizing the statute of limitations on the banks' claims, if the loan agreements were ruled invalid, the costs would exceed the capitals accumulated by the banks in the Polish sector. As a result of such a scenario, a banking crisis would be possible, burdening taxpayers with the costs (Lusztyn, 2021).

Banks began making provisions for legal risks starting in 2019, but their scale has increased significantly in subsequent years (ZBP, 2022). Banks that have a large share of mortgage loans indexed to the Swiss franc exchange rate in their portfolio may create high allowances for expected loan losses, in connection with court proceedings that may be settled to the bank's disadvantage (Czechowska et al., 2024). It is worth noting the establishment of the Borrower Support Fund, fed by banks, which was one of the solutions to support the area of foreign currency loan portfolio (ZBP, 2022).

One of the key solutions was the process of offering settlements to customers (ZBP, 2022). A report by the Polish Bank Association in 2024 indicated that the number of lawsuits against banks concerning foreign currency home loans exceeded 150,0000 cases. On this basis, the risk level of banks on this account should be described as high or very high (ZBP, 2024). A measure to reduce the legal risk associated with the portfolio of foreign-currency housing loans was the use of a mechanism making the weight of the risk dependent on the recognized costs of the settlements (ZBP, 2024). This also affected the process of amicable resolution of the bank's disputes with the borrower. The level of legal risk provsions established by banks is influenced by the process of offering settlements to borrowers, the line of court decisions that are favorable from the perspective of borrowers, as well as the growing number of settlements on the invalidity of loan agreements citing abusive clauses (UKNF, 2024).

Attention should be paid to the proposal of the Chairman of the The Polish Financial Supervision Authority, which assumes the possibility of voluntarily converting foreign currency loans in Swiss franc to gold loans (NBP, 2021b). The sector also hints at a proposal to have disputed foreign currency loans taken over by a dedicated state institution (EKF, 2020). In connection with the growing value of loan debt denominated or indexed in Swiss francs, legislative solutions are being attempted to statutorily modify the content of loan agreements concluded between consumers and banks (Jurkowska-Zeidler, 2017).

Methodology and research

The article uses an analysis of studies and data published by financial security network institutions, as well as an analysis of the financial results of banks operating in the Polish banking sector that have the largest share of foreign currency loans in their portfolios: PKO BP S.A., Millennium S.A., Santander S.A. and mBank S.A. According to data as of the end quarter of the 2022, the gross value of the portfolio of CHF-based mortgages was as follows (in PLN million): 14,731, 11,454, 9126, 8787. The analysis covers the years 2021–2023. The period adopted illustrates the situation of the sector after the so-called proposal of the Chairman of the FSC in December 2020. The proposal envisaged the conversion of franc loans to zloty loans on such terms that a franc loan would be treated as if it were a PLN loan from the beginning. The article complements the existing body of research on legal risk provisions with the impact of the level of provisions on the financial performance of banks operating in the Polish banking sector, which have the largest share of foreign currency loans in their loan portfolios.

Results

In the analyzed years 2021–2023, the Office of the Financial Supervisory Commission identified the portfolio of foreign currency loans and mortgages as one of the main risk factors in the banking sector, which significantly affected the financial position of banks (UKNF 2022; 2023; 2024). Banks two-book provisions according to individually developed models in accordance with the framework set forth in the International Financial Reporting Standards (IFRS). The criteria based on which banks calculate the value of provisions include:

- number of lawsuits (current and expected),
- average duration of proceedings,
- the probability that the case will be resolved to the bank's disadvantage, and
- the estimated amount of loss in the event of such a settlement.

Banks that offer settlements to borrowers also include in their reserves the projected number of contracts included in the settlement process and the projected costs incurred in the process (NBP, 2021a). Banks establish reserves from which they cover losses incurred in connection with court judgments or settlements. According to a simulation by the Union of Polish Banks (ZBP), in its report on the situation of the banking sector, “Banks 2023”, 25% of borrowers with active CHF loans will jump to a settlement, while 75% will file a lawsuit. In the case of repaid loans, ZBP estimates that 25% of borrowers will use the court path.

In 2021, banks in the entire Polish sector in the item of provisions for legal risk of foreign currency mortgages in CHF showed PLN 7.6 billion. In 2021, mBank tied up a total of about PLN 2.75 billion. Bank Millennium, on the other hand, made write-downs for legal risk of CHF mortgages to the tune of PLN 2.3 billion. This had an impact on the bank's financial result, specifically, the bank made a loss of PLN –1.33 billion. Santander Bank Polska periodically increased the amount of write-downs for legal risk associated with the mortgages in question.

In 2021, the value of the object of sport was 13.2 billion (an increase of 142.2% compared to 2020). The value of provisions made by banks amounted to 23.3 billion (an increase of 17.7 billion (317.2%) compared to 2020). It is worth noting that the value of provisions exceeded the total value of the subject of litigation. This was due, among other things, to the expectation of unfavorable court decisions for banks and the start of activities related to the process of offering settlements to borrowers. Provisions for settlements amounted to PLN 6 billion in total provisions.

In 2022, the value of disputed loans amounted to PLN 35.8 billion (an increase of PLN 15.6 billion (77.3%) compared to the balance at the end of 2021). The number of disputed loans (included in bank balance sheets and repaid) amounted to 105.7 thousand (up 32.6 thousand (44.6%) year-on-year). In the balance sheets of banks and branches of credit institutions, the number of housing loans for households linked to the Swiss franc was 310 thousand. It is worth noting that due to the expected judgment of the Court of Justice of the European Union, the level of legal risk of the portfolio of foreign currency mortgages increased in 2022, including, in particular, the issue concerning the possibility of demanding remuneration for the use of capital by the consumer, granted by the bank, in the event of cancellation of the contract (Case C-520/21) (KNF, 2023). Due to the increase in legal risks, banks increased their level of provisions in 2022 to 37.1 billion (an increase of 14.1 billion (61.7%) compared to 2021) (UKNF, 2023).

At the end of 2023, the number of Swiss franc-linked home loans for households across the sector was 240.0 thousand. In the same year, the value of the disputed loans was PLN 58.6 billion (an increase of PLN 22.8 billion (63.6%) over 2022). The number of disputed loans (included in the bank's balance sheets and repaid) amounted to 149.9 thousand (up 44.3 thousand (51.9%) year-on-year) (UKNF, 2024). The annual dynamics of gross foreign currency receivables from housing loans to households in 2021–2023 is presented in Table 1.

Table 1

Annual growth rate of gross foreign currency receivables from housing loans to households in 2021–2023

Receivables from housing loans	2021	2022	2023
Total [%]	106,8	92,3	96,5
Foreign currency [%]	88,5	74,2	56,1

Source: own elaboration based on the ZBP (2024).

The value of provisions in 2023 amounted to PLN 57.5 billion (an increase of PLN 20.4 billion (55.1%) compared to 2022) (UKNF, 2024). Banks in 2023 actively offered and entered into settlements with borrowers, which were based on the proposal of the Chairman of the FSC to use mediation through the Arbitration Court at the Financial Supervision Commission. Some of the banks offered settlements under the terms they set. As of the end of 2023, banks had reached 89,000 settlements, with a total value of PLN 15.2 billion (UKNF, 2024). An analysis of the level of provisions in 2021–2023 is presented in Table 2.

Table 2

Level of provisions for legal risk associated with CHF loan portfolio in 2021–2023

Year	Level of provisions for legal risk related to CHF loan portfolio (as of year-end)	Increase/decrease y/y
2021	PLN 23.3 billion (including PLN 6 billion for reserves dedicated to settlement)	increase by 17,7 billion PLN (+317,2%)
2022	PLN 37.1 billion	increase by 4,1 billion PLN (+61,7%)
2023	PLN 57.5 billion	increase by 20,4 billion PLN (+55,1%)

Source: own elaboration based on *Information on the situation of the banking sector 2021–2023*, UKNF (2022–2024).

The National Bank of Poland points out that the strong variation in the amount of provisions may be due to differences in the adequate reflection of risk at individual banks. It is worth noting that in 2020–2021, some banks have made higher provisions for legal risk than for credit risk provisions.

The legal costs associated with the foreign currency mortgage portfolio of the individual banks included in the analysis for 2021–2023 are shown in Table 3. It should be noted that for three out of four banks, legal costs increased year-on-year during the period under review.

Table 3

Legal costs associated with foreign currency mortgage portfolio in 2021–2023

Bank/ Amount of costs (million PLN)	2021	2022	2023
PKO BP S.A.	6 552	1 914	2 715
Millennium S.A.	2 086	2 017	3 065
Santander Bank Polska S.A.	231	1 611	2 405
mBank S.A.	2 758	3 112	4 908

Source: own elaboration based on banks' financial statements.

Legal costs translated directly into reduced financial results of banks in the period under review. Some of the banks (Millennium S.A, Santander Bank Polska S.A. and mBank S.A.) made a loss, resulting from the legal costs incurred. In banks' financial statements in the years under review, all of the banks surveyed indicated a significant impact of costs for legal risk on net profit. The financial results for 2021–2023 of the analyzed banks are presented in the Table 4.

Table 4

Banks' financial performance in 2021–2023

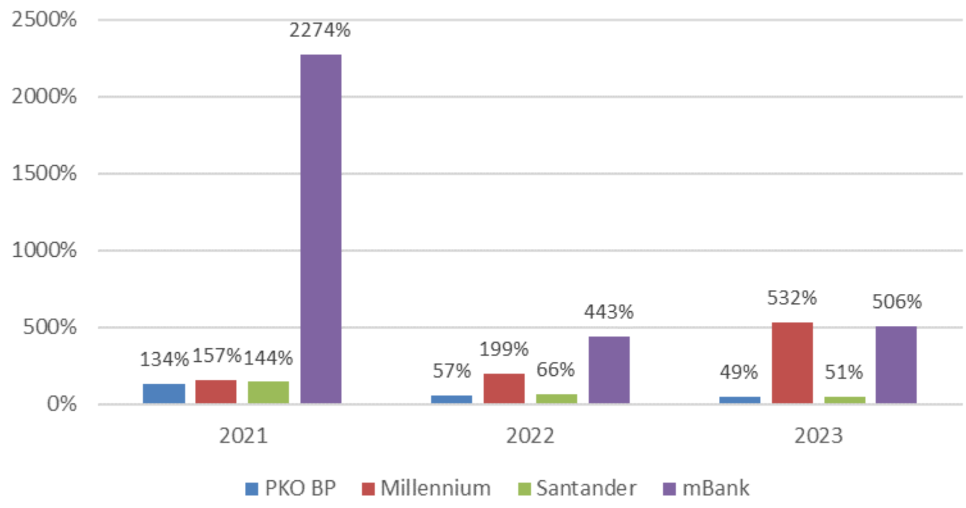
Bank/Net profit (PLN million)	2021	2022	2023
PKO BP S.A.	4 874	3 333	5 502
Millennium S.A.	–1 332	–1 015	576
Santander Bank Polska S.A.	160	–2 449	–4 672
mBank S.A.	–121,3	–702,7	970,6

Source: own elaboration based on banks' financial statements.

The share of costs in the financial results of banks in the analyzed period is presented at Figure 1.

Figure 1

Scale of legal costs associated with foreign currency mortgage portfolio in 2021–2023 in relation to banks' financial performance



Source: own elaboration based on banks' financial statements.

Conclusions

The analysis of the role of costs related to the legal risk of foreign currency mortgages in CHF in shaping the financial performance of selected banks in the Polish banking sector, indicates that this risk has a significant impact on the financial performance of the studied institutions. Due to the provisions made, banks are more prepared for the challenge of materialization of legal risk related to foreign currency housing loans. However, it should be emphasized that this risk will be one of the main factors influencing the situation of banks in the coming years. Based on the analysis, it is shown that the level of provisions made by banks related to the legal risk of foreign currency housing loans is increasing.

The banks showed stable operating results in the years under review, but their gross results were burdened by the cost of legal risks, particularly those related to foreign currency mortgages. The institutions hedged against this risk through high provisions, as well as through the settlement programs implemented. The cost element for legal risk includes the cost of litigation, as well as the level of losses on the loan exposure if the bank loses the case. Banks also consider in costs the scenario of cancellation of loan agreements without the possibility of claiming the cost of using the capital that was made available to the borrower. Note that the costs of the settlement program are also in this cost category. It is worth noting that the banks' losses related to the settlement concluded with the customer or for declaring the contracts ineffective depend on the exchange rate at which the loan is converted to zlotys or written off the balance sheet.

In the long term, a key element in the strategy for managing risks associated with foreign currency loans will be not only monitoring foreign currency risk, but also actively managing legal risk and adapting loan products to the requirements of changing legislation. An increase in provisions for legal risk will be associated with an increase in fees and commissions, as this type of risk will be taken into account by banks in the products they offer and their prices due to the need to raise additional revenues to cover the increase in costs. The challenges associated with this risk require banking institutions not only to effectively manage legal risk, but also to constantly monitor and adapt their strategies to the dynamically changing regulatory and market environment.

References

Bagiński, R. (2022). Nieważność umów od ekscesu do nowej praktyki gospodarczej. Invalidity of contracts – from excess to a new economic practice. W: M. Lisiński & J. Dzieńdziora (red.), *Współczesne kontynuacje dorobku Aleksandra Rotherta* (s. 113–128). Akademia WSB.

Czechowska, I., Lipiński, C., Stawska, J., & Zatoń, W. (2022). *Potencjał działalności kredytowej sektora bankowego w obliczu pandemii COVID-19. Perspektywa credit crunch*. Wydawnictwo Uniwersytetu Łódzkiego.

Czechowska, I., Lipiński, C., Stawska, J., Stępińska, J., Zatoń, W., & Borys, M., (2024). *Kredyty zagrożone (NPL) oraz odpisy na straty kredytowe w sektorze bankowym*. Wydawnictwo Uniwersytetu Łódzkiego.

EKF [Europejski Kongres Finansowy]. (2020). *Rekomendacje Europejskiego Kongresu Finansowego 2020*. https://www.efcongress.com/wp-content/uploads/2020/11/EKF2020_Rekomendacja-Zredukowa%C4%87-narastaj%C4%85ce-ryzyko-prawne-kredyt%C3%B3w-w-CHF.pdf

Jura, T. (2021). Kredyty waloryzowane do franka szwajcarskiego a ryzyko systemowe w polskim sektorze bankowym. *Bezpieczny Bank*, *2*(83), 121–149. https://doi.org/10.26354/bb.6.2.83.2021

Jurkowska-Zeidler, A. (2017). *Rola państwa w rozwiązywaniu kolizji interesów na rynku usług* finansowych. *Gdańskie Studia Prawnicze*, *XXXVII*, 187–201. https://www.ceeol.com/search/article-detail?id=530462

Kata, R. (2015). Kredyty hipoteczne w Polsce w kontekście stabilności finansowej i makroekonomicznej. *Zeszyty Naukowe PWSZ w Płocku. Nauki Ekonomiczne*, *22*, 83–196.

Koleśnik, J. (2019). *Bankowe ryzyko systemowe. Źródła i instrumenty redukcji*. Difin.

KNF. (2023). *Komentarz UKNF do wyroku TSUE w sprawie C-520/21*. https://www.knf.gov.pl/komunikacja/komunikaty?articleId=82692&p_id=18

Korpalski, M. (2020). *Bankowe terminowe umowy walutowe*. Wydawnictwo Wolters Kluwer.

Lusztyn, M. (2021). *Sytuacja polskiego sektora bankowego*. https://gazeta.sgh.waw.pl/insight/sytuacja-polskiego-sektora-bankowego

Lusztyn, M. (2024). *Sytuacja polskiego sektora bankowego. Niewykorzystany potencjał dla finansowania zrównoważonego wzrostu dobrobytu Polski*. https://gazeta.sgh.waw.pl/meritum/sytuacja-polskiego-sektora-bankowego-niewykorzystany-potencjal-dla-finansowania

mBank S.A. (2022). *Raport roczny Grupy mBanku S.A. za rok 2021*. https://www.mbank.pl/relacje-inwestorskie/wyniki/

mBank S.A. (2023). *Raport roczny Grupy mBanku S.A. za rok 2022*. https://www.mbank.pl/relacje-inwestorskie/wyniki/

mBank S.A. (2024). *Raport roczny Grupy mBanku S.A. za rok 2023*. https://www.mbank.pl/relacje-inwestorskie/wyniki/

Millennium S.A. (2022). *Raport roczny Banku Millennium za rok 2021*. https://www.bankmillennium.pl/o-banku/relacje-inwestorskie/raporty-finansowe/raporty-roczne

Millennium S.A. (2023). *Raport roczny Banku Millennium za rok 2022*. https://www.bankmillennium.pl/o-banku/relacje-inwestorskie/raporty-finansowe/raporty-roczne

Millennium S.A. (2024). *Raport roczny Banku Millennium za rok 2023*. https://www.bankmillennium.pl/o-banku/relacje-inwestorskie/raporty-finansowe/raporty-roczne

NBP [Narodowy Bank Polski]. (2021a). *Raport o stabilności systemu finansowego. Czerwiec 2021*. https://nbp.pl/wp-content/uploads/2022/09/rsf062021.pdf

NBP [Narodowy Bank Polski]. (2021b). *Raport o stabilności systemu finansowego. Grudzień 2021*. https://nbp.pl/wp-content/uploads/2022/09/rsf122021.pdf

PKO Bank Polski. (2022). *Raport roczny 2021*. https://raportroczny2021.pkobp.pl/

PKO Bank Polski. (2023). *Raport roczny 2022*. https://raportroczny2022.pkobp.pl/

PKO Bank Polski. (2024). *Raport roczny 2023*. https://raportroczny2023.pkobp.pl/

Santander Bank Polska S.A. (2022). *Sprawozdanie za rok obrotowy 2021*. https://www.santanderconsumer.pl/polityka-informacyjna-banku/dokumenty-do-pobrania

Santander Bank Polska S.A. (2023). *Sprawozdanie za rok obrotowy 2022*. https://www.santanderconsumer.pl/polityka-informacyjna-banku/dokumenty-do-pobrania

Santander Bank Polska S.A. (2024). *Sprawozdanie za rok obrotowy 2023*. https://www.santanderconsumer.pl/polityka-informacyjna-banku/dokumenty-do-pobrania

UKNF. (2022). *Informacja na temat sytuacji sektora bankowego w 2021 roku*. https://www.knf.gov.pl/knf/pl/komponenty/img/Raport_roczny_2021.pdf

UKNF. (2023). *Informacja na temat sytuacji sektora bankowego w 2022 roku*. https://www.knf.gov.pl/knf/pl/komponenty/img/Sytuacja_sektora_bankowego_raport_roczny-2022.pdf

UKNF. (2024). *Informacja na temat sytuacji sektora bankowego w 2023 roku*. https://www.knf.gov.pl/knf/pl/komponenty/img/Informacja_na_temat_sytuacji_sektora_bankowego_w_2023_91099.pdf

Zaleska, M. (2022). Bezpieczeństwo banków – od transformacji do COVID-19. W: G. Kotliński (red.), *Bankowość komercyjna i spółdzielcza w Polsce – refleksje po trzech dekadach transformacji. Szkice ku pamięci Doktora Ryszarda Mikołajczaka* (ss. 19–35). Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu. https://doi.org/10.18559/978-83-8211-152-1/1

ZBP [Związek Banków Polskich]. (2022). *Banki 2021. Raport o sytuacji ekonomicznej banków* (Nr 11/2022). https://www.zbp.pl/getmedia/fbdb207c-0214-40b2-a614-6a1929a111ba/Raport-Banki-2021

ZBP [Związek Banków Polskich]. (2023). *Banki 2022. Raport o sytuacji ekonomicznej banków* (Nr 13/2023). https://zbp.pl/getmedia/9d074cd0-f9d7-4a96-8f41-4036aebb1de9/RAPORT_BANKI_2022

ZBP [Związek Banków Polskich]. (2024). *Banki 2023. Raport o sytuacji ekonomicznej banków* (Nr 13/2023). https://zbp.pl/getmedia/9634ef9d-52fe-4723-ba78-0b4f76eeca06/banki2023

Received: 17.05.2025
Accepted: 06.06.2025
Available online: 30.06.2025