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Impact of COVID-19 Pandemic on Safety Level of Polish Listed Banks: The Capital Adequacy Ratio in 2015-2020

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Abstract:

Purpose: *The article aims to determine the impact of the COVID-19 pandemic on the safety level of the Polish-listed banks. The safety level will be determined using a classic measure: the capital adequacy ratio (solvency ratio). The objective of the empirical study is to measure the safety level of 12 Polish-listed banks in 2015-2020 and classify them according to their level of safety.*
Design/Methodology/Approach: *In the empirical part, an attempt was made to measure the safety level of Polish-listed banks in the 2015-2020 years by using statistical data from the Bank Focus database and financial statements. The sample consisted of 12 Polish-listed banks. The empirical part used descriptive statistics, ratio analysis, and correlation analysis between the variables.*
Findings: *The analyzed banks were differentiated according to their safety level. Furthermore, the most and the minor safe banks were be identified, as well as banks that do not meet the minimum regulatory requirements.*
Practical Implications: *The results of the conducted research can be used in the practical activities of banks in terms of adjusting their operation to regulatory requirements and the development of the COVID-19 pandemic. Research results can also be used as a benchmark for decisions and actions taken by regulatory and supervisory authorities. As well the research results can increase the trust the stakeholders have in the banking sector.*
Originality/value: *An assessment of the safety level of the Polish-listed banks and consequences and threats caused by the COVID-19 pandemic will be of significant cognitive importance.*

Keywords: *Bank safety, regulatory requirements, polish listed banks, capital adequacy ratio, COVID-19 pandemic.*

JEL classification: *G21, G28, G32, K22.*

Paper Type: *Research study.*

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1. Introduction

At the beginning of 2020, the spread of the COVID-19 epidemiological threat contributed to an unprecedented situation – restrictions in interpersonal contacts and the development of the COVID-19 pandemic worldwide. The global COVID-19 pandemic has affected every person's existence, their unique way of life, and the functioning of the entire society and the real economy. Unlike the 2008 global financial crisis that started with the financial sector, in 2020, the deepening economic slowdown caused by the closure of economies started from the real economy.

More than ten years after the 2008 global financial crisis, national economies, and governments in an era of high and stable economic growth have had time to accumulate sufficient reserves to prepare for the next recession that began in 2020. Nevertheless, the effects of the COVID-19 pandemic are felt in all economies, including national financial systems and banking sectors.

2. Literature Review

Bank safety is one of the most critical challenges of the modern economy due to the significant variety and number of determining factors. Both internal and external factors influence the bank's safety. Internal factors include the following safety determinants: the amount and quality of own funds, liquidity norms, level of reserves and capital buffers, quality of assets, and financial leverage. One of the primary safety determinations is the amount and quality of own funds, which should reflect the bank's risk and the additional surplus that may cover a possible underestimation of risk (Chaikovska, 2020; Thalassinos *et al.,* 2015).

The amount of own funds, in other words, regulatory capital, is determined according to the applicable prudential standards introduced by Basel III (BIS, 2010) and then implemented in the EU as part of the CRD IV/CRR (European Council, 2013). These regulations define a detailed methodology for calculating a capital adequacy ratio, which measures a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. It indicates the size of the safety zone for depositors and creditors in the event of unexpected losses (Chaikovska, 2019). To maintain safety, each bank is obliged to keep the capital adequacy ratio at the level of 8%, within which the CET1 core capital ratio may not be lower than 4.5%, and the Tier 1 capital ratio - not lower than 6% (European Council, 2013; Rupeika-Apoga *et al.,* 2018).

The supervisory authorities treat the capital adequacy ratio as the basic indicator of the financial situation and the primary safety measure. This means that maintaining this ratio at an appropriate level ensures that the bank develops its operations with proper capital safety, including the higher the capital adequacy ratio, the lower the risk. About the above, it is essential to analyze the level of the capital adequacy ratio before and during the COVID-19 pandemic.

The first wave of the COVID-19 pandemic began in spring 2020 (including March 13, 2020), and the second wave – in autumn 2020 (including November 7, 2020). Despite the high level of safety of the Polish banking sector, recorded in 2015-2019 based on an empirical study, the COVID-19 pandemic adversely affects the security and stability of the Polish banking sector (Chaikovska, 2021). In the Polish banking sector, the effects of the economic slowdown in the first half of 2020 were reflected in the emergence of new risk areas, including (Financial Stability Report. Special Issue: Effects of the COVID-19 Pandemic, 2020):

- an increase in credit risk related to a decline in the debt service capacity of firms and households, which results in losses on existing loans and an increase in write-offs for expected credit losses related to the pandemic;
- Credit crunch risk, excessive limitation of credit availability adversely affects the real economy and, consequently, the financial system, including the banking sector. The risk of imbalances in the segment of corporate loans that are sensitive to the economic situation. At the same time, limiting their supply may adversely affect the liquidity situation of enterprises and their solvency, and, consequently, the financial situation of the country;
- The risk related to the downward trend in the banking sector's profitability about the COVID-19 pandemic. This makes it difficult to raise equity capital and increases the risk of reducing lending;
- external risk related to a substantial decline in activity in many economies, including the countries of origin of strategic investors of Polish banks;

The risk of a difficult financial situation of some banks in 2018-2019, which did not have adequate capital surpluses (including Idea Bank and Getin Noble Bank). Possible problems of individual banks may adversely affect other banks and the entire banking sector due to the necessity to bear the costs of replenishing deposit guarantee funds or resolution.

Cyber risk is a consequence of introducing more widespread remote work and the increased use of internet banking.

3. Results

The impact of the COVID-19 pandemic on the capital adequacy ratio in the 2015-2020 years: Bearing in mind the newly created risk areas in the Polish banking sector, the impact of the COVID-19 pandemic on the Polish banking sector will be presented by analyzing the capital adequacy ratio as a main safety determinant of 12 Polish listed banks, namely:

- Powszechna Kasa Oszczędności Bank Polski S.A. (PKO Bank);
- Santander Bank Polska S.A. (Santander Bank);
- Bank Polska Kasa Opieki S.A. (Pekao Bank);
- ING Bank Śląski S.A. (ING Bank);

- mBank S.A. (mBank);
- BNP Paribas Bank Polska S.A. (BNP Paribas);
- Bank Handlowy w Warszawie S.A. (Bank Handlowy w Warszawie);
- Bank Millennium S.A. (Millennium Bank);
- Alior Bank S.A. (Alior Bank);
- Getin Noble Bank S.A. (Getin Noble Bank);
- Bank Ochnony Środowisko S.A. (Bank Ochrony Środowiska);
- Idea Bank S.A. (Idea Bank).

The empirical study used data from the Bank Focus database and the annual financial statements of the analyzed banks in the 2020 year. This made it possible to obtain the source data, which is presented in Table 1.

Table 1 presents the analysis results of the dynamics of the capital adequacy ratio of 12 Polish-listed banks in 2015-2020. This analysis indicates that in the 2015-2019 years, the value of the capital adequacy ratio varied considerably. The banks with the highest capital adequacy ratio in this period include mBank, Pekao Bank, Bank Handlowy w Warszawie and Bank Millennium. The banks with the lowest this ratio in the analyzed period include Idea Bank and Getin Noble Bank. It should be emphasized that the capital adequacy ratios for all banks (except Idea Bank) were higher than the minimum values (8%) specified in art. 92 of the CRR. In the case of Idea Bank in the 2018-2019 years, the minimum regulatory requirements regarding the capital adequacy ratio were not met.

This means that in the period before the COVID-19 pandemic, on average, the Polish banking sector was characterized by a high level of the capital adequacy ratio, which was higher than the required minimum (8%), namely in 2015 14.92%, in 2016 15.84%, in 2017 16.61%, in 2018 15.8% and in 2019 16.35% (Table 1). This proves that the banking sector entered 2020 well, characterized by stable financing, a solid capital base, and high liquidity.

Table 1 also shows that at the beginning of 2020, as in 2018-2019, a weakening of banks' capital positions should be noted. In particular, in the first quarter of 2020, the capital adequacy ratios of all analyzed banks decreased compared to its value in December 2019. The largest decrease in this ratio in the first quarter of 2020 was characterized by PKO Bank (by 1.08 pp), ING Bank (by 1.11 pp) and Getin Noble Bank (by 1.24 pp)[2]. In turn, a slight decrease in the value of capital adequacy ratios in the first quarter of 2020 was recorded by mBank (by 0.08 pp), Bank Handlowy w Warszawie (by 0.2 pp) and Santander Bank (by 0.28 pp). In March 2020, the first effects of the economic slowdown because of the COVID-19 pandemic could be felt by making the risk of credit losses related to the decline in the ability of companies and households to service debt more realistic.

[2] *pp - percentage points.*

Table 1. *The capital adequacy ratio of Polish listed banks in the 2015-2020 years*

Bank	2015, %	2016, %	2017, %	2018, %	2019, %	2020, %				Dynamics of change, pp.				
						Q1	Q2	Q3	Q4	Q1 2020 vs 2019	Q2 2020 vs Q1 2020	Q3 2020 vs Q2 2020	Q4 2020 vs Q3 2020	2020 vs 2019
Santander Bank	14.62	15.05	16.69	15.98	17.07	16.79	18.89	18.84	20.04	-0.28	2.10	-0.05	1.20	2.97
mBank	17.25	20.29	20.99	20.69	19.46	19.38	19.26	19.53	19.86	-0.08	-0.12	0.27	0.33	0.40
PKO Bank	14.61	15.81	17.37	18.88	18.42	17.34	18.21	19.58	18.18	-1.08	0.87	1.37	-1.40	-0.24
Bank Millennium	16.7	17.4	21.99	21.68	20.09	19.53	20.02	20.02	19.49	-0.56	0.49	0.00	-0.53	-0.60
Pekao Bank	17.7	17.64	17.1	17.4	17.10	16.42	17.97	18.77	18.66	-0.68	1.55	0.80	-0.11	1.56
Bank Handlowy w Warszawie	17.1	17.4	17.9	16.8	17.20	17.00	19.90	20.40	22.50	-0.20	2.90	0.50	2.10	5.30
Alior Bank	12.54	13.65	15.21	15.85	16.20	15.52	15.72	15.41	15.85	-0.68	0.20	-0.31	0.44	-0.35
Bank Ochrony Środowiska	12.1	14.28	15.01	17.95	16.39	15.98	16.64	16.64	14.86	-0.41	0.66	0.00	-1.78	-1.53
ING Bank	13.74	14.73	16.71	15.6	16.87	15.76	17.47	18.64	18.72	-1.11	1.71	1.17	0.08	1.85
BNP Paribas Bank	13.45	14.4	13.75	14.63	15.03	14.74	15.21	15.79	18.65	-0.29	0.47	0.58	2.86	3.62
Getin Noble Bank	14.3	15	12.58	11.4	10.00	8.76	8.70	8.56	8.60	-1.24	-0.06	-0.14	0.04	-1.40
Idea Bank	14.9	14.38	14.04	2.74	1.46	0.76	0.86	0.78	0.78*	-0.70	0.10	-0.08	0.00	-0.68
Average value	14.92	15.84	16.61	15.80	15.44	14.83	15.74	16.08	16.35	-				

Note: *For Idea Bank, data for the third quarter of 2020 was used due to the lack of data for 2020 due to forced restructuring and takeover by Pekao Bank S.A. based on the decision of the Bank Guarantee Fund of 31 December 2020 (Compulsory restructuring of Idea Bank S.A., 2020).*
Source: *Own study based on Bank Focus database and the annual financial statements of the analyzed banks in 2020 year.*

Significant attention should be paid to the public activities undertaken in the first quarter of 2020, supporting the movement of economic entities. In particular, to strengthen the banks' capital base, on March 16, 2020, the Minister of Finance, taking into account the opinion of the Polish Financial Supervision Authority, signed an ordinance on the solution of the systemic risk buffer (3%) (Ordinance of the Minister of Finance of March 18, 2020, 2020). The abolition of the systemic risk buffer, recommended by the Financial Stability Committee, aimed to limit the coronavirus's negative impact on the domestic banking sector and, consequently, on the Polish economy by releasing part of the Common Equity Tier 1 capital.

About the above, the solution of the systemic risk buffer, applicable at the level of 3%, contributed to an increase in the value of the capital adequacy ratio in the second quarter of 2020 in almost all analyzed banks. In particular, in the second quarter of 2020, ten analyzed banks out of twelve showed positive dynamics of changes in the value of their ratio compared to the first quarter. The most significant increase in the capital adequacy ratio in the second quarter of 2020 was recorded by Bank Handlowy w Warszawie(by 2.9 pp), Santander Bank (by 2.1 pp), and ING Bank (by 1.71 pp). In turn, mBank and Getin Noble Bank recorded a slight decrease in the level of this ratio in the second quarter of 2020 (by 0.08 pp and 0.06 pp, respectively).

Among the analyzed banks, trends in the capital adequacy ratio in the third quarter of 2020 were varied, in particular:

- some banks increased their capital base, namely PKO Bank (by 1.37 pp), ING Bank (by 1.17 pp), Pekao Bank (by 0.8 pp), BNP Paribas (by 0.58 pp), Bank Handlowy w Warszawie (by 0.5 pp) and mBank (by 0.2 pp);
- some banks lowered their capital base, namely Alior Bank (by 0.31 pp), Getin Noble Bank (by 0.14 pp), Idea Bank (by 0.08 pp), Santander Bank (by 0.05 pp);
- some banks maintained their capital base at the same level, namely Bank Millennium (by 0 pp) and Bank Ochrony Środowiska (by 0 pp).

At the end of 2020, the capital adequacy ratios of 12 Polish-listed banks indicate that most of the analyzed banks have adequate levels of equity. As in 2018-2019, the exception is Idea Bank, which in the third quarter of 2020 was characterized by a low level of the capital adequacy ratio, namely 0.78%. It should be emphasized that at the end of 2020 (due to the large scale of losses caused by the effects of the pandemic), this bank had difficulties in meeting capital standards, including the capital adequacy ratios were lower than the minimum capital requirements (the level of the Common Equity Tier 1 ratio at the end of the third quarter of 2020 was 0.3%). This resulted in the need for an apparent intensification of restructuring activities by the Bank Guarantee Fund.

Given the above, in December 2020, the Bank Guarantee Fund decided to compulsorily restructure Idea Bank and take it over by Bank Pekao from 3rd January 2021 (Compulsory restructuring of Idea Bank S.A., 2020). As it is mentioned in the Bank Guarantee Fund, this decision was made as a result of meeting three conditions, including 1) bankruptcy risk; 2) there are no indications that possible supervisory actions or actions of Idea Bank will remove the risk of bankruptcy promptly; 3) the necessity to initiate forced restructuring in the public interest, understood as the stability of the financial sector and limiting the involvement of public funds.

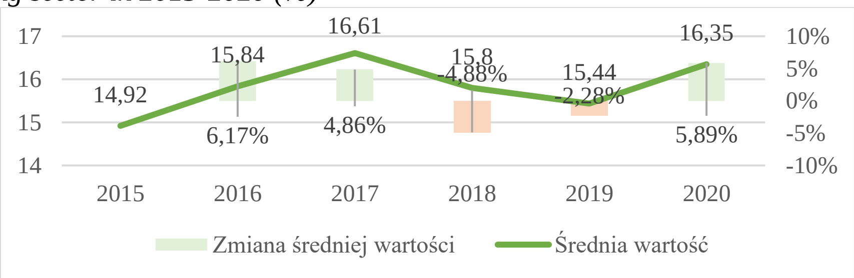
As pointed out by the President of the Bank Guarantee Fund Management Board, "compulsory restructuring was the safest solution from the point of view of Idea Bank depositors and the stability of the financial sector in Poland" (Statement of the President of the Management Board of the Bank Guarantee Fund, 2020). The initiation of the compulsory restructuring process allowed to reduce the effects of the risk of Idea Bank bankruptcy and, consequently, the adverse impact on the safety of the entire banking sector.

4. Discussion

Dynamics of the capital adequacy ratio in the Polish banking sector: the impact of the COVID-19 pandemic: When analyzing the averaged value of the capital adequacy ratios of 12 Polish listed banks, it should be noted that at the end of 2020, the Polish banking sector was characterized by a more substantial capital base, e.g., at the level of 16.35%, compared to 15.44% at the end of 2019 (Figure 1). Moreover, the dynamics of increasing the average level of the capital adequacy ratio in 2020 was positive (except for the first quarter of 2020, Table 1) and amounted to 0.5% quarterly on average. Despite the negative impact of the economic slowdown and recorded credit losses resulting from the COVID-19 pandemic, in 2020, the Polish banking sector managed to maintain the average level of equity at an adequate level, which significantly exceeds the minimum capital requirements. This has become possible thanks to the implemented activities of the financial safety net institutions in Poland in 2020, aimed at strengthening the safety and stability of the banking sector in Poland, including dissolving the systemic risk buffer at the level of 3% and applying the retained earnings policy of 2019 (Ordinance of the Minister of Finance of March 18, 2020, 2020).

In 2020, the abolition of the systemic risk buffer contributed to the strengthening of the capital of the Polish banking sector, despite the negative impact of the crisis caused by the COVID-19 pandemic. As noted in the report of the National Bank of Poland on the stability of the financial system, the crisis phenomena related to the COVID-19 pandemic should not cause a significant increase in the number of banks with weak capital and pose a threat to the stability and safety of the Polish banking sector (Financial Stability Report, Assessment of the consequences of the COVID-19 pandemic, 2020). According to the data of the National Bank of Poland, at the end of June 2020, commercial banks, whose total share in the sector's assets amounted to 3%, did not meet the capital requirement of Pillars I and II. Moreover, according to the reference scenario, at the end of 2022, the share of institutions with low capital ratios and low profitability may increase to 4.1% (Financial Stability Report, Assessment of the consequences of the COVID-19 pandemic, 2020).

Figure 1. *Dynamics of the average level of the capital adequacy ratio of the Polish banking sector in 2015-2020 (%)*



Source: *Own study based on Bank Focus database and the annual financial statements of the analyzed banks in 2020 year.*

Before the outbreak of the COVID-19 pandemic, there were individual institutions in the Polish banking sector that operated with low capital ratios and were characterized by a shortage of equity (Table 1). The outbreak of the COVID-19 pandemic additionally aggravated the problematic situation of these entities (e.g., Idea Bank), characterized by low profitability (which made it difficult to accumulate capital from internal sources as well as obtaining financing from investors) and/or a shortage (or a small surplus) of money. In December 2020, the Bank Guarantee Fund decided to compulsorily restructure Idea Bank to maintain the safety and stability of the Polish banking sector (Compulsory restructuring of Idea Bank S.A., 2020).

The analysis shows that the COVID-19 pandemic has a significant impact on the financial condition of individual banks and the level of safety of the entire banking sector. However, it should be emphasized that in 2020 it was possible to maintain (and in some respects even strengthen) the high level of safety of the Polish banking sector thanks to the introduced public measures aimed at improving the resilience of the banking sector and the possibility of financing the economy in connection with the COVID-19 pandemic.

In particular, at the beginning of the COVID-19 pandemic in the Polish economy, steps were taken to support the activity of economic entities by launching public activities and introducing aid programs. In the banking sector, some regulatory requirements have been loosened. Some new regulatory obligations have been postponed, e.g., the commitment to implement Recommendation R (gov.pl, 2020) was delayed by the Polish Financial Supervision Authority due to the COVID-19 epidemic (originally Recommendation R was to enter into force by the end of 2020). As well as the postponement of the implementation date of Recommendation S until 30/06/2021 (Announcement of the Polish Financial Supervision Authority on the decisions taken by the Polish Financial Supervision Authority on July 14, 2020, 2020). In addition, financial support was provided to companies. There was a substantial loosening of the monetary policy by lowering the NBP interest rates, thus reducing the risk for the solvency of companies and households, which reduces bank credit losses (Financial Stability Report. Special Issue: Effects of the COVID-19 Pandemic, 2020).

5. Conclusions

It should be emphasized that the measures mentioned above were aimed at preventing an excessive reduction in the supply of loans in Poland and maintaining a high level of safety for the banking sector. In addition, in the conditions of the COVID-19 pandemic, compared to the years after the global financial crisis, a change in the approach to maintaining the safety of individual banks and entire banking sectors becomes visible. This change consists in focusing during the COVID-19 pandemic on maintaining a balance between ensuring the appropriate safety indicators of the banking sector and maintaining and supporting economic activity.

Achieving this balance is a crucial priority for banking supervisors and regulators in the face of the COVID-19 pandemic, which can be achieved by relaxing some regulatory requirements, postponing the entry into force of some new regulatory obligations, and the temporary use of capital buffers. At the same time, it is still important to increase the resilience and safety of the banking sector, both by raising capital, meeting liquidity standards, minimizing the level of financial leverage, and increasing the quality of assets, as well as by improving the quality of management of new types of risks arising in connection with the COVID-19 pandemic.

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