



PROFITABILITY OF THE BANKING SECTOR IN POLAND BETWEEN 2015-2019

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Abstract

Our research objective was to assess how the main profitability indicators of the banking sector have been used in Poland in the years 2015-2019 and to analyse the elements that make up their value. Return on assets (ROA) and return on equity (ROE) were used to measure the profitability of the banking sector in Poland. The research methods used included an analysis of available literature and statistical data published by the Polish Financial Supervisory Authority, the National Bank of Poland and the European Central Bank. We used dogmatic, statistical, and comparative methods. We put forward the following research hypothesis: the reason for a decrease in the profitability index of the Polish banking sector in the face of growing profits was an increase in the value of assets and equity. The research results confirmed this hypothesis. The reasons for the decreasing profitability of banks in Poland included excessively low levels of generated profits in relation to the increase in the value of capital and assets. Moreover, we identified the factors influencing this phenomenon.

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Słowa kluczowe: sektor bankowy, rentowność sektora bankowego.

Abstrakt

Celem badań była ocena kształtowania się głównych wskaźników rentowności sektora bankowego w Polsce w latach 2015–2019 oraz elementów składających się na ich wartość. Do pomiaru rentowności sektora bankowego wykorzystano wskaźnik zwrotu z aktywów (ROA) oraz wskaźnik zwrotu z kapitału własnego (ROE). W badaniach zastosowano metodę analizy dostępnej literatury przedmiotu oraz danych statystycznych publikowanych przez Komisję Nadzoru Finansowego, Narodowy Bank Polski i Europejski Bank Centralny. Zastosowano metodę dogmatyczną, statystyczną i porównawczą. W badaniach postawiono następującą hipotezę badawczą: powodem spadku wskaźników rentowności polskiego sektora bankowego w warunkach jego rosnących zysków był wzrost wartości aktywów i kapitału własnego. Wyniki badań potwierdziły postawioną hipotezę. Wśród przyczyn malejącej rentowności banków w Polsce wskazano zbyt niskie poziomy generowanych zysków w stosunku do wzrostu wartości kapitałów i aktywów oraz zidentyfikowano czynniki wpływające na to zjawisko.

Introduction

Modern science recognises the importance of the financial sector for economic development, claiming that a well-developed financial system plays a significant role in the efficient allocation of resources and is directly correlated with economic growth (Włodarczyk & Szturo, 2018, p. 8). As opposed to other forms of economic activity, banking plays a very important role, which consists, among others, in providing financial support to the economy, conditioning the functioning and development of individual economic entities and, in the macroeconomic perspective, influencing the development of the entire economy, as well as its individual sectors (Kopiński, 2008, p. 12). Bank profitability is one of the basic categories determining the condition of the banking sector. It is very important both for the profitability of any business activity and the assessment of the current financial situation of banks in Poland.

Our research objective was to assess how the main profitability indicators of the banking sector have been functioning in Poland in the years 2015-2019

and to analyse the elements that make up their value. Our analysis confirmed the research hypothesis concerning the reasons for the decreasing profitability index of the Polish banking sector despite growing profits and a growing value of assets and equity. Moreover, we identified the main factors that influenced this phenomenon. This study indicates that the aggregated financial result of the banking sector in Poland has assumed increasingly higher values in the period under review, which is indicative of its growing profits in that time period. At the same time, assets and equity values had also increased. Despite this, decreasing profitability indexes were observed for this sector. In this article, the profitability of the banking sector was assessed using two indicators, i.e. return on assets (ROA) and return on equity (ROE). As their value is determined as the ratio of achieved profit to assets or capital, they show the proportions between their individual components. For this reason, in this paper, we discuss the aggregated values of the entire banking sector in Poland, without distinguishing between commercial and cooperative banks. We assumed that the ratio of the above-mentioned values depicts the general trend in the banking services market in Poland, and thus our conclusions would pertain to both groups of entities. With this assumption, it was possible to obtain data comparable to an international context. Our analysis was based mainly on statistical data and information provided by the Polish Financial Supervision Authority, the National Bank of Poland, and the European Central Bank. We compared the obtained data with the values recorded in other European countries. The research period covered the years 2015-2019. Such a choice was dictated by the desire to show the discussed trend in the period of tax, social contribution, and capital charges of the Polish banking sector and the availability of data. In this paper, we also propose a subjective evaluation of the results, forecasts, and reasons for these trends.

The profitability of the banking sector – concept and measurement

Next to liquidity and solvency, a bank's profitability is one of the three basic foundations for assessing the bank's financial standing (Romanowska & Kowalik, 2016, p. 244). Profitability can be defined in most general terms as the capacity to generate profits that link these profits to the expenditures used to achieve them (Majewska & Pacuła, 2016, p. 208). According to Kopiński (2016, p. 225), the bank's profitability fulfils several basic functions:

- profitability is the primary objective behind a bank's operations;
- profitability is an aggregated measure of a bank's economic efficiency;
- profitability is a source of financing a bank's further development;
- profitability provides motivation for the bank's management;
- profitability has a positive impact on public finance.

Profit identified with a positive financial result is the basis for the assessment of the bank's profitability. In turn, the financial result is determined as the relationship between income and costs generated by the bank. The rational business of banking consists of obtaining an appropriate relation between the income earned and the costs incurred. Banks gain their income primarily as a result of the sale of banking products and the provision of services (Kopiński, 2016, p. 226).

Pursuant to art. 43.1 of the Accounting Act of 29/09/1994, the financial result of banks consists of:

- an operating result (including banking activity);
- the result of extraordinary operations;
- the obligatory taxation of the financial result with income tax for which an individual is a taxpayer and contributes payments equal to it, which are subject to separate regulations.

According to the above-mentioned act, the result of banking activity includes net income from interest and commissions; income from shares, interests, and other securities; as well as being the result of financial operations and foreign exchange. The operating revenue includes the results of banking activity, adjusted for the difference between the remaining operating income and the remaining operating costs, the costs of banking activity, the depreciation of fixed and intangible assets, and the results from the value of the reserves update. Meanwhile, the result of extraordinary operations is the difference between extraordinary profits and extraordinary losses.

The financial result is the basic measure of banking profitability. Maintaining positive financial results allows the bank to operate safely, maintain its credibility as a public trust institution and expand. A high profit for the bank is proof of good management and it strengthens its market position. It also allows for a preliminary assessment of the effectiveness of a given bank or the entire sector (Gabrusiewicz, 2002, p. 42).

Thus, profitability can be identified by earning capacity if the financial result is positive, or by a deficit if the financial result is negative, i.e. a loss is observed. The financial result is an absolute category that can be used as a basis for the assessment of the bank's efficiency. On the contrary, to assess a bank's profitability, the ratios of the financial result against other categories, such as assets or equity, are usually examined (Albertazzi & Gambacorta, 2009, p. 393-409). Therefore, to measure the profitability of the banking sector, two basic indicators are most frequently used (Porębski, 2014, p. 45-57; Redecka, 2014, p. 280). These indicators were also used in this article and they include:

- ROA (*return on assets*) – calculated as the ratio of the financial result to the total value of assets;
- ROE (*return on equity*) – calculated as the ratio of the financial result to the value of equity.

The former shows the amount of net profit per unit of assets, while the latter shows the level of profit from every single zloty invested. Thus, ROA determines the assets' ability to generate profits, assesses the bank's management with respect to assets, and the use of assets to generate results. On the other hand, ROE estimates the rate of return achieved by shareholders, i.e. the benefits they get by investing capital (Rose, 1997, p. 150-152).

Moreover, apart from the indicators discussed above, there are other indicators such as net return on sales (ROS), return on base equity (Majewska & Pacuła, 2016, p. 208), cost level ratio and/or PM (profit margin) (Kochaniak, 2010, p. 57).

To sum up, profit that is understood to be a positive result of conducting banking activity is usually defined not as a relative value, but as a factor of generating income which exceeds the costs of doing business. The above-mentioned profitability ratios illustrate the intensity of this phenomenon (Kopiński, 2008, p. 12). The higher their value, the higher the bank's profitability and its financial standing. No rational range is defined for profitability ratios. This means that the value range has not been defined for this measure. Such a range is usually perceived as desirable, and its value should be comparable to that obtained by similar entities (Kałużny, 2012, p. 223). Therefore, positive values are generally considered desirable, but their level depends both on the type of business and the current developmental phase (both for the market, and the specific company or bank).

Assessment of banking sector profitability in Poland in 2015-2019

The analysis of financial results served as the basis for assessing the bank's profitability (Romanowska & Kowalik, 2016, p. 246). At the end of November 2019, the banking sector in Poland consisted of 30 commercial banks, 538 cooperative banks, and 32 branches of credit institutions, of which 3 commercial banks and 15 cooperative banks reported a total loss of PLN 582.5 million, which means that they had a negative financial result. These banks accounted for 4.3% of assets of the banking sector in Poland (KNF *Monthly Banking Sector Data*, 2019). Other banks showed a profit, which means that they had a positive financial result in the total amount of PLN 15.0 billion.

The positive financial result of the banking sector in Poland in 2015-2019 merits a good assessment from the point of view of the profitability of this sector. In 2015, the profit of the banking sector amounted to PLN 13.1 billion, it kept increasing annually and at the end of November 2019 reached PLN 14.5 billion. Thus, the banking sector in Poland keeps increasing its profitability every year. Only in 2017 did the banking sector in Poland record a decrease in profitability (Fig. 1). According to the opinion of the Polish Financial Supervision Authority

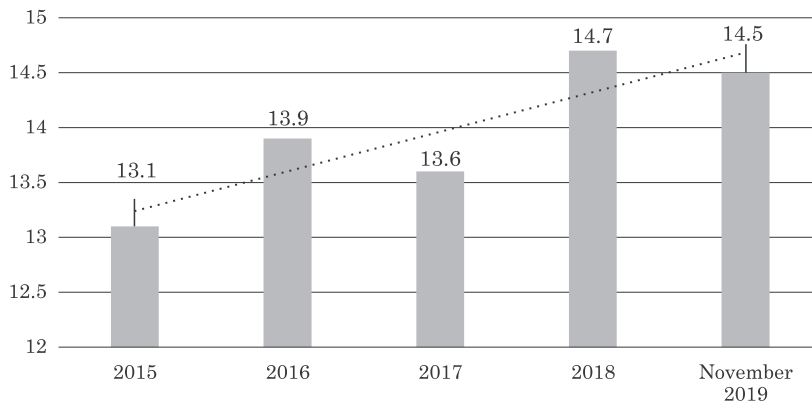


Fig. 1. Financial results of the banking sector in Poland [PLN billion]

Source: own data analysis based on Statistics Poland data provided by the National Bank of Poland and KNF for November 2019. Retrieved from <https://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiębiorstwa-finansowe>.

(KNF), the main reason included charges resulting from the introduction of the bank tax in 2016 (*Report on the situation of banks, 2017*). For us, it was also one of the premises for choosing 2015 to 2019 as the research period. The bank tax in Poland was one of the highest applied in Europe and amounted to 0.0366% of the tax base per month, i.e. 0.44% per year. The decrease visible in 2017 never repeated and in subsequent years the increase in profit was observed again, which indicates that the tax had no further negative impact on profitability. This may also result from the good economic conditions in the years under review. In 2018, economic growth in Poland exceeded 5%. In the same period, the unemployment rate fell to its lowest historical levels (GUS 2020). In the period under analysis, progressive financialization of households, understood as the growing importance of financial factors in their functioning, was observed (Ostrowska & Dondalski, 2020 p. 105). It manifested itself in a growing willingness of households to incur debts, which was a stimulus to the development of the banking sector in Poland. Moreover, a good situation in the labour market translated into rising wages, which was indirectly favourable to banks as well. Recently, banks have also optimised the structure of their operations, among others, by closing unprofitable branches and reducing employment. This resulted in a significant reduction in costs incurred by the banks (Włodarczyk & Burchi, 2017, p. 292, 293), which also translated into an increase in profit. Despite all these favourable conditions, the increase in the profitability of the banking sector oscillated around 3% annually on average.

A steady increase in the value of assets of the Polish banking sector was observed in the period under analysis. The upward trend has continued since 2015, when the value of assets amounted to PLN 1,599.97 billion, whereas at the

end of 2018 it reached PLN 1,896.20 billion. At the end of November 2019, this value exceeded the PLN 2,000 billion threshold, reaching PLN 2,015.9 billion. In the period under study, the assets of Polish banks grew at a steady pace, averaging 6% per year (Fig. 2). This tempo was much faster than the profits discussed previously. A review of the financial statements of the largest banks in Poland allowed for an analysis of the volume of assets at the end of 2018. Bank PKO Bank Polski S.A. held the largest assets, with a total of 300 billion PLN. Bank Pekao S.A. proved the second largest bank with assets of PLN 184 billion. BOŚ Bank S.A. was the smallest of the commercial banks listed on the Warsaw Stock Exchange with the value of its assets at the level of PLN 18 billion.

With data on the size of assets and profits in the banking sector, we calculated ROA for the banking sector in Poland for individual years (Fig. 3).

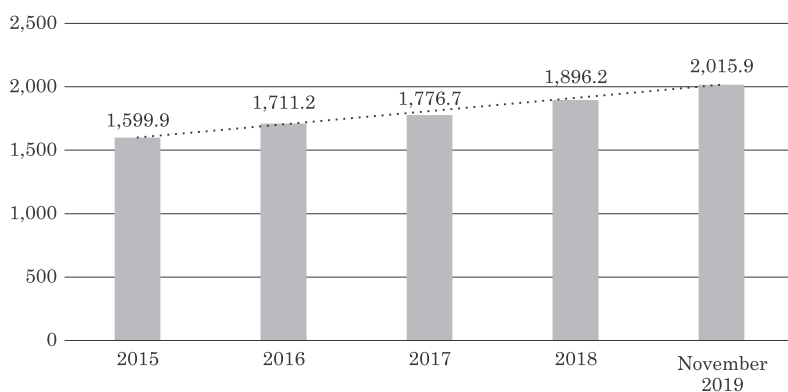


Fig. 2. Assets of the banking sector in Poland [PLN billion]

Source: own data analysis based on KNF data.

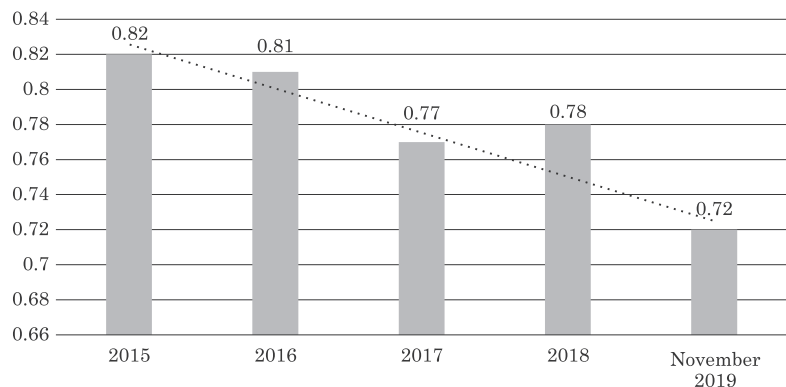


Fig. 3. ROA of the Polish banking sector [%]

Source: own study based on KNF data and the NBP report entitled "Strategic challenges for the banking sector in the EU and Poland in the coming years, dated 18.06.2019".

An analysis of the correlation between the financial result of the banking sector in Poland and the value of its assets indicates that despite both profits and value of assets increasing, the actual banks' profitability is decreasing. Every year, the return on assets of the Polish banking sector is falling. This is due to a much faster growth of the banks' assets in relation to their profits, which confirms our initial hypothesis. As receivables from the non-financial sector (excluding debt instruments) are the main asset component of Polish banks, accounting at the end of 2018 for about 55% of banks' total assets portfolio (National Bank of Poland 2019)¹, we can also conclude that the growth in credit products does not translate sufficiently into profits.

At the end of November 2019, ROA for the banking sector in Poland was calculated at 0.72% based on this data, while at the end of 2015 it was 0.82%. Therefore, a decrease in the return on assets by over 12% in the studied period can be judged significant.

The ROE of the banking sector in Poland was higher than in Western Europe. Comparing the aggregated annual results as of 31.12.2018, we can see that for Poland they were higher than the EU average (0.43%), e.g. ROE in Germany was 0.18% and in France 0.44%, while a negative return on equity was observed in Greece. The choice of 2018 as the comparison year was dictated by the availability of the latest data for individual national sectors published by the European Central Bank (ECB) and the National Bank of Poland (NBP) for a full year. We already mentioned that there is no specific model level for ROA and its value should be comparable to the values obtained by entities or sectors of a similar nature. For this very reason, we considered a comparison between the countries of Central and Eastern Europe to be the most reliable. The values obtained were the lowest when compared to these countries. In Bulgaria and Hungary, ROA amounted to 1.6% and 1.58% respectively, which was twice as high as in Poland. Higher ROA levels were also observed in Romania, Estonia, Slovenia, Lithuania, Latvia and the Czech Republic. Nowhere in Central and Eastern Europe was ROA lower than Poland (Fig. 4).

Return on equity (ROE) was the second of the discussed bank profitability indexes. To calculate it, the elements that make up its value must first be discussed. In addition to the profit-related element presented above, in this case, it is equity. Similarly to the case of assets, for many years banks in Poland have been significantly increasing their equity. Increasingly higher capital requirements resulting from regulations are the main factor contributing to this situation.

For equity, the upward trend is even more pronounced than for assets. In 2015, the value of the Polish banking sector's equity amounted to PLN 159 billion, while at the end of November 2019 it amounted to PLN 211 billion, which translated into an increase of over 32% (Fig. 5). In the period under review, banks quickly

¹ Own data analysis based on NBP data

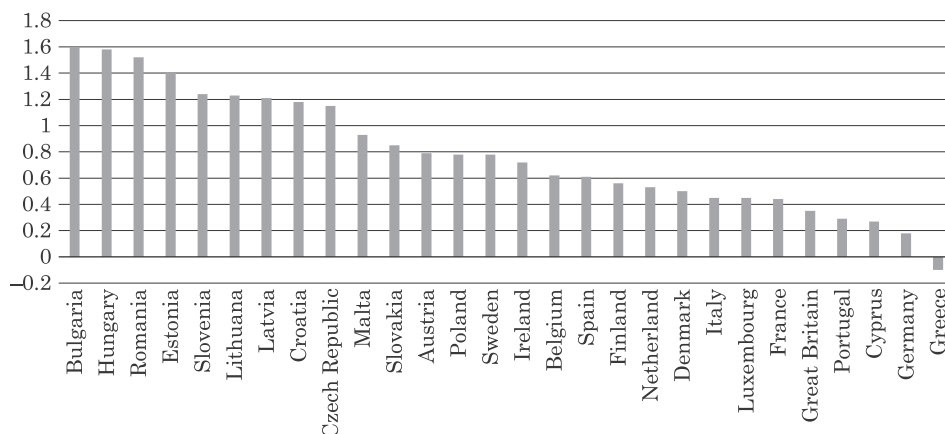


Fig. 4. ROA in the EU banking sector [%]

Source: own data analysis based on EBC and NBP data – as of 31.12.2018.

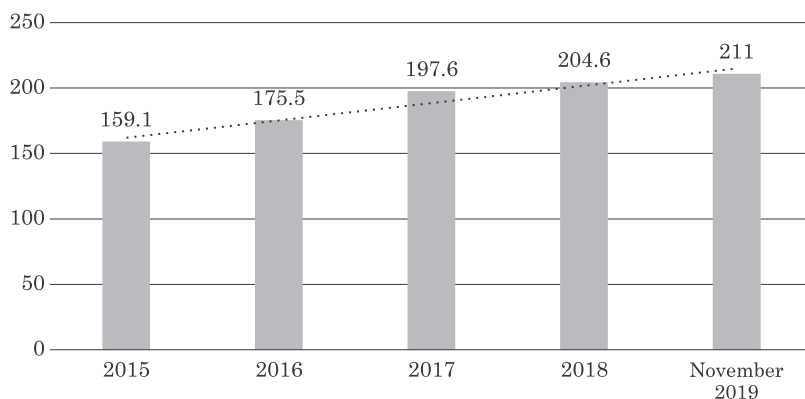


Fig. 5. Equity of the Polish banking sector (PLN billion)

Source: own data analysis based on NBP data.

kept increasing the value of their capital. This contributed to greater security in this sector, but negatively affected its profitability.

Based on data concerning the value of profit achieved by the banking sector in Poland and the amount of capital held, ROE was calculated. Similarly to the previously discussed index, its value also exhibits a downward trend in the period under review. At the end of 2015, the ROE for the Polish banking sector was 8.2%, whereas according to the end-November 2019 data, it was only 6.8%. Thus, the decrease in the period under analysis was 17% (Fig. 6).

Therefore, for capital profitability equity capital clearly accumulated faster than the profit generated by the banks. This confirms another part of our hypothesis set out in this article. Instead of showing a profit and allocating it, for example, to dividend payments or development, banks accumulate a significant

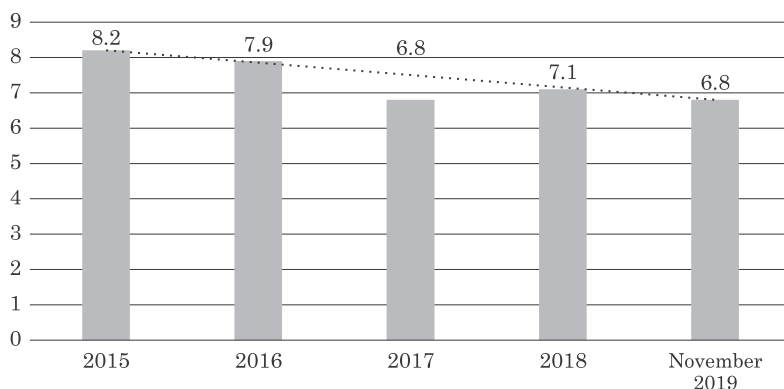


Fig. 6. ROE of the Polish banking sector [%]

Source: own study based on KNF data and the NBP report entitled “Strategic challenges for the banking sector in the EU and Poland in the coming years, dated 18.06.2019”.

amount in capital. This is not a desirable situation from an investors’ point of view, since banking activity requires the involvement of more and more capital, generating proportionally smaller profits from it.

The image that emerges in comparison with other European countries is similar to that of the ROA. Moreover, in this case, the Polish banking sector exhibits one of the lowest levels both in comparison with the CEE and Western European countries. ROE recorded in Hungary, Romania, and Czech Republic was more than twice as high as in Poland. The values observed in France (6.5%) and Italy (5.8%) were the most similar to Polish values. Altogether, only eight countries exhibited a lower return on equity than Poland, none of them in Central and Eastern Europe (Fig. 7).

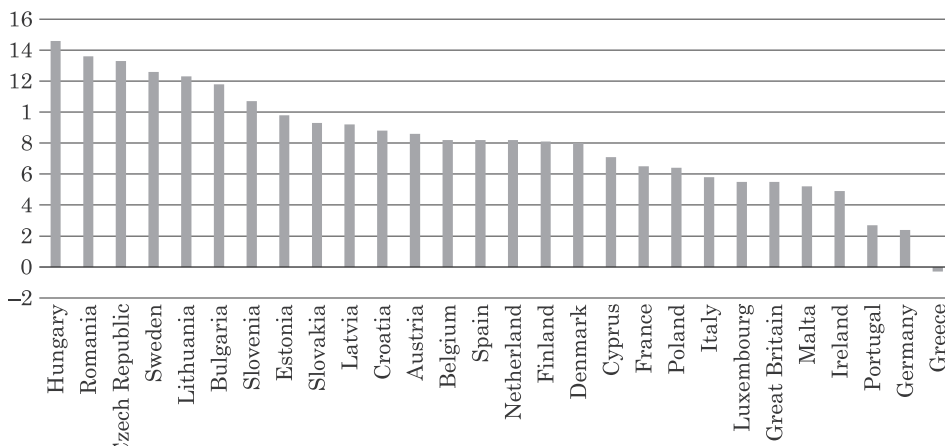


Fig.7. ROE in EU banking sectors [%]

Source: own data analysis based on EBC and NBP data – as of 31.12.2018.

The factors determining the profitability of the banking sector are related to the components of the indexes used for the profitability analysis in this paper. These include both the increasing burden on the banking sector in Poland and growing capital requirements. The former presents a constraint on the profits generated by Polish banks in spite of the favourable economic conditions and the development of the banking sector, as evidenced by increases in the level of assets. The latter, on the other hand, causes a rapid increase in equity. Especially the above-mentioned bank tax, as well as other tax and contribution burdens, such as contributions to the Bank Guarantee Fund, the Borrowers' Support Fund, and contributions to the costs of financial supervision, constitute a growing burden on banks. Increasing capital requirements, in turn, mostly result from increasing capital charges such as own fund requirements and combined buffer requirements (Capital Conservation Buffer, Countercyclical Capital Buffer, Systemic Risk Buffer and the buffers for systemically important institutions). The opinions of the Polish Bank Association (according to which the Polish banking sector counts among the most burdened in the whole of Europe) confirm this (Association of Polish Banks ZBP: Poland and Europe – challenges and limitations 2019). They specify that the maximum effective taxation of the largest Polish banks is 44%, and the nominal taxation is approx. 33%. The tax rate is 50% higher than in other countries in the CEE region. Bank Guarantee Fund fees are not recognized as an expense of income, and the additional bank tax does not contribute to the stability of the banking sector and is also not recognized as tax deductible. The above examples will translate into the situation discussed in this article.

An analysis of the profitability of the Polish banking sector in comparison with other European countries allows us to conclude that, compared to similar sectors, the Polish banking sector exhibits some of the lowest values. Also, when compared to economies with similar characteristics, their negative differentiation was observed. This may be indicative of its low attractiveness for investors who, when choosing markets for their investments, are certainly suggested by the indexes discussed in this paper. Banks, alongside countries, are the most important entities subject to ratings, whose level is a sign of investment attractiveness and a guarantee of financial strength and operational stability. Since the positive image of the Polish banking sector in the financial markets contributes to the growing trust in the whole economy and its sustainable development, this image must be confirmed by the high ratings of recognized rating agencies. The profitability indexes discussed in this paper are among the important elements influencing these ratings (Capiga, 2011, p. 217).

Conclusions

In the years 2015-2019, the Polish banking sector witnessed an increasing value of both assets and equity, which is positive for both the security and stability of the sector. This phenomenon was accompanied by profits growing from year to year. However, the increasing value of assets and equity did not translate into an increase in profitability, which means that Polish banks exhibited a capacity to generate profits which were too low in relation to the increase in capital and assets. The reasons for this phenomenon mainly included the growing burden on the banking sector in Poland, as well as the growing capital requirements. Thus, the hypothesis set out in the article was confirmed. The reasons for the decreasing profitability of banks in Poland included excessively low levels of generated profits in relation to the increase in the value of capital and assets. From an investors' point of view, such a situation is not desirable, as it generates steadily increasing costs while at the same time generating less and less profit relative to these costs, and makes it less attractive compared to other European countries.

To meet our research objective, we also calculated that, in the period under review, the profitability indexes for the Polish banking sector oscillated between 6.8%-8.2% for ROE and 0.72%-0.82% for ROA. Their value decreased from year to year. In an international context, their levels were the lowest among all the Central and Eastern European countries. Since there is no specific model level for ROA and ROE, we consider the comparison of its value to European sectors of a similar nature to be the most reliable.

What is worrying is the uncertainty as to the direction of development of profitability ratios in the coming years. If the broadly understood tax, contribution and capital charges on the banking sector in Poland continue to grow, further declines in profitability can be expected followed by a less and less positive assessment of the attractiveness of the Polish banking sector. This depends primarily on the business and regulatory environment in which banks operate. Taking into account the fact that profitability is falling in economically favourable conditions, this might pose another threat when the economic situation deteriorates.

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References

- Albertazzi, U., & Gambacorta, L. (2009). Bank profitability and the business cycle. *Journal of Financial Stability*, 5(4), 393-409. <http://dx.doi.org/10.1016/j.jfs.2008.10.002>.
- Banki 2018 (2019). Warszawa: Związek Banków Polskich.
- Capiga, M. (2011). *Finanse banków*. Warszawa: Wolters Kluwer Polska.

- European Central Bank EBC (2019). Retrieved from <https://www.ecb.europa.eu/ecb/html/index.pl.html> (02.12.2019).
- European Central Bank, banking supervision, Banking Union. Retrieved from <https://www.bankingsupervision.europa.eu/about/bankingunion/html/index.en.html> (10.12.2019).
- Gabrusiewicz, W. (2002). *Podstawy analizy finansowej*. Warszawa:, PWE, Warszawa.
- Główny Urząd Statystyczny (2019). Retrieved from <https://stat.gov.pl/> (13.12.2019).
- Główny Urząd Statystyczny (2020). Retrieved from <https://stat.gov.pl/> (23.03.2020).
- Główny Urząd Statystyczny. Retrieved from <https://stat.gov.pl/obszary-tematyczne/podmioty-gospodarcze-wyniki-finansowe/przedsiębiorstwa-finansowe> (12.02.2020).
- Kałużny, R. (2012). *Ocena i analiza sytuacji majątkowo-finansowej*. In A. Gospodarowicz, & A. Nosowski (Eds.), *Zarządzanie instytucjami kredytowymi*. Warszawa: C.H. Beck, p. 223, 224.
- Kochaniak, K. (2010). *Efektywność finansowa banków giełdowych*. Warszawa: Wydawnictwo PWN.
- Komisja Nadzoru Finansowego – Dane miesięczne sektora bankowego – listopad 2019*. (2019). Warszawa: Komisja Nadzoru Finansowego.
- Komisja Nadzoru Finansowego – Raport o sytuacji banków 2017* (2018). Warszawa: Komisja Nadzoru Finansowego.
- Kopiński, A. (2008). *Analiza finansowa banku*. Warszawa: PWE, Warszawa.
- Kopiński, A. (2016). Analiza rentowności wybranych banków komercyjnych w Polsce. *Annales Universitatis Mariae Curie-Skłodowska Lublin-Polonia, Sectio H, L(4)*, 225-236.
- Majewska, M., & Pacuła, W. (2016). *Wskaźniki rentowności i ich analiza na przykładzie sektora bankowego., Ewolucja rachunkowości w teorii i praktyce gospodarczej*. VI Ogólnopolska Konferencja Naukowa „Sigma maraton”, p. 206-217, <http://dx.doi.org/10.18778/8088-119-8.19>.
- Narodowy Bank Polski – Rozwój systemu finansowego w Polsce w 2018 r.* (2019). Warszawa: Narodowy Bank Polski.
- Ostrowska, A., & Dondalski, P. (2020). Finansyzacja gospodarstw domowych w wybranych krajach Europy Środkowo-Wschodniej. *Poszerzamy Horyzonty, XVII*, 104-113.
- Polska i Europa – wyzwania i ograniczenia* (2019). Warszawa: Związek Banków Polskich.
- Porębski, D. (2014). *Macierz optymalności biznesu i modelu Gordona – zastosowanie w zarządzaniu przedsiębiorstwem*. In M. Jabłoński (Ed.), *Współczesne trendy i wyzwania w zarządzaniu wartością przedsiębiorstw*. Dąbrowa Górnicza: Wyższa Szkoła Biznesu w Dąbrowie Górniczej, Dąbrowa Górnicza.
- Redecka, A. (2014). Związek między efektywnością i rentownością banków komercyjnych w Polsce. *Ruch Prawniczy, Ekonomiczny i Socjologiczny, LXXVI(4)*, 279-296. <http://dx.doi.org/10.14746/rpeis.2014.76.4.19>.
- Romanowska, M., & Kowalik, J. (2016). Analiza powiązań między rentownością a płynnością na przykładzie sektora bankowego w Polsce. *Studia i Prace WNEiZ Uniwersytetu Szczecińskiego, 44(1)*, 243-253.
- Rose, P. S. (1997). *Zarządzanie bankiem komercyjnym. Wytwarzanie i sprzedaż usług finansowych*. Warszawa: Związek Banków Polskich, Warszawa.
- Sprawozdania finansowe PKO Banku Polskiego S.A. za rok 2018* (2019). Warszawa: PKO Bank Polski SA
- Sprawozdanie finansowe Santander Bank Polska S.A. za rok 2018* (2019). Warszawa: Santander Bank Polska S.A.
- Sprawozdanie z sytuacji finansowej ING Bank Śląski S.A za rok 2018* (2019). Katowice: ING Bank Śląski S.A
- Sprawozdanie finansowe mBank S.A za rok 2018* (2019). Warszawa: mBank S.A.
- Sprawozdanie finansowe skonsolidowane grupy Bank BGŻ BNP Paribas S.A za rok 2018* (2019). Warszawa: Bank BGŻ BNP Paribas S.A.
- Sprawozdanie finansowe roczne skonsolidowane grupy BOŚ Bank S.A. za rok 2018* (2019). Warszawa: BOŚ Bank S.A.
- Ustawa o podatku od niektórych instytucji finansowych z dnia 15 stycznia 2016 r. (Dz.U. z 2016 r., poz. 68.)
- Ustawa o rachunkowości z dnia 29.09.1994 r. (Dz.U. z 2019 r., poz. 351).

Ustawa Prawo bankowe z dnia 29 sierpnia 1997 r., Dz.U. z 1997 r., nr 140, poz. 939.

Włodarczyk, B., & Szturo, M. (2018). The impact of the financial sector on economic growth., *Finanse, 1*, Czasopismo Komitetu Nauk o Finansach PAN, Warszawa, 7-25. <http://dx.doi.org/10.24425/finanse.2018.125389>.

Włodarczyk, B., & Burchi, A. (2017). The rationalization for bank branches: Italy vs. Poland., *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 482, 272-294. <http://dx.doi.org/10.15611/pn.2017.482.22>.