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Loan loss provisions and income smoothing in Banks: Literature Review in the context of IFRS 9

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Abstract

Income smoothing using loan loss provisions is a phenomenon that has been described in the literature for many years. In 2018, IFRS 9 came into force in the banking sector, which introduced a new expected loss model and was intended to reduce risk in the banking sector. This article presents the theoretical and empirical background of the income smoothing phenomenon in the banking sector. Empirical research from recent years was analyzed, which both indicates various determinants of income smoothing in banks and analyzes the potential impact of IFRS 9 on banking activities. The literature conducted allows us to draw the conclusion that the phenomenon of income smoothing using loan loss provisions is observable in the period after the introduction of IFRS 9. Moreover, thanks to the analysis carried out many years back, it is possible to draw further conclusions and plans for further research: the next step in research should be extensive empirical investigation. Since several years have passed since the introduction of IFRS 9, the data needed for the empirical study will be available in the near future.

Keywords: income smoothing; loan loss provisions; banking sector, IFRS 9

JEL classification: E32, G21, G38

1. Introduction

Cyclicality of loan loss provisions has been observed in the economy for many years. In the case of the banking sector, cycles can also be observed in the amount of loan loss provisions and profits before taxes and provisions. In 2018, IFRS 9 came into force, which introduced an expected loss model for calculations of loan loss provisions - the main purpose of which was to reduce risk in the banking sector and, indirectly, to limit the cyclicality of loan loss provisions. IFRS 9 did not apply strictly to income smoothing, but to loan loss provisions in its entirety, however, in the field of research on earnings management in banks, the levels of provisions for credit risk and combinations of banking variables are analyzed to determine whether banks use provisions for credit risk for income smoothing. For this reason, 2018 and the introduction of IFRS 9 is a significant date in recent years from the point of view of analyzing loan loss reserves and income smoothing in the banking industry. IFRS 9, by introducing a new expected loss model, also introduced three phases into which a credit exposure may be classified. The main difference in individual phases is the level of mandatory reserves to be created and the period in which the reserve is created. If the credit risk hasn't increased significantly

(Stage 1), IFRS 9 mandates allowances based on 12-month expected losses. If the credit risk has increased significantly (Stage 2) and the loan is deemed 'credit-impaired' (Stage 3), the standard requires allowances based on lifetime expected losses.

The following study presents a literature review that shows the path from the 1960s until after the introduction of IFRS 9 and describes various determinants that could influence income smoothing using loan loss provisions in particular years and economies.

2. Earning management in banking industry

Income smoothing is part of a broader phenomenon called earnings management. In accordance with the adopted definitions and market practice, this phenomenon means that the earnings published by the company are influenced by the management. The motivation and consequences of such action may vary.

The phenomenon of income smoothing in enterprises has been observed for many decades (Copeland, 1968). As Copeland points out, however, there is no conclusive evidence of this phenomenon. In his study, he emphasizes that he finds evidence of income smoothing, but not always and not in all analyzed companies, and points out that it is difficult to confirm the hypothesis about the widespread use of income smoothing without first replicating the results. As subsequent studies show, the results regarding the phenomenon of income smoothing can be replicated (Beidleman, 1973; Douglas Moses, 1987)and the intensity of activities varies due to the influence of the method of managing a given company and due to changes in accounting. On this basis, it can be concluded that in fact income smoothing, and more broadly speaking, profit management, is a process observed in various entities. As more recent research indicates, (Bhat, 1996; El Sood, 2012; Kilic et al., 2013)these phenomena are also observed in the banking sector.

As research from around the world shows, we can point out *good* and *bad* income smoothing assessed in the context of the reasons why such earnings management occurs. On the one hand, we can point to *good* if it occurs:

- save profits for bad times (Greenawalt and Sinkey, 1988),
- reduce information asymmetry between bank managers and owners (DeFond and Park, 1997),
- improve the bank's financial stability by smoothing out individual financial events (Wall and Koch, 2000).

On the other hand, we can point to *bad* income smoothing if this phenomenon occurs due to:

- willingness of managers in the bank to receive bonuses (Healy, 1985),
- the desire to reduce the financial transparency of reported income (Leventis et al., 2011),
- avoid taxation and maintain a constant dividend ratio (Vander Bauwhede and Willekens, 1998).

Due to the highly regulated banking sector and the available sector analyzes that will be cited in this article the author assumed *good* reasons for earnings management in banking industry.

2.1. Income smoothing as earnings management

In the case of the banking sector, various studies on loan loss provisions are important for several reasons. Firstly, loan loss provisions, regardless of the economic cycle, have a significant impact on the bank's interest margin. Even in times of slowdown in lending, the impact of credit risk is the greatest of any type of risk to which the bank is exposed (except for very extreme situations, e.g. when too much exposure to currency risk and large turbulences in international markets at the same time). Moreover, the method of calculating provisions for credit risk and their presentation is related to the general supervision of the financial market, which causes particular interest of supervisory authorities in the way of calculating provisions for various risks to which a bank is exposed. Since in a standard deposit and loan bank, the largest and most important risk is credit risk, supervisors pay particular attention to loan loss provisions.

Researchers dealing with loan loss provisions in banks extensively describe their impact on banking activities (Bouvatier and Lepetit, 2008; Danisman et al., 2021). In the simplest way, we could distinguish two different paths of research on loan loss provisions. On the one hand, we can find research on loan loss provisions as an element of the bank's credit risk policy, while on the other hand, they are analyzed as a tool in the hands of bank managers to manage earnings (Bushman and Williams, 2012; Fonseca and González, 2008). In this paper, I focus on the phenomenon of income smoothing using loan loss provisions.

2.2. First evidence of earnings smoothing in banks using loan loss provisions

The first studies discussing the use of loan loss provisions in smoothing bank earnings are several dozen years old, but in the field of economic sciences they are still quite a young branch. A large empirical study from 1988 (Greenawalt and Sinkey, 1988)tested the hypothesis of using loan loss provisions in income smoothing. This is one of the first studies to confirm the income smoothing hypothesis in banks. Previous studies were unable to confirm such a hypothesis due to various limitations. One of the most important is the fact that loan loss provisions were part of Tier 1 capital before 1988, which may have resulted in lower use of these reserves for earnings management in banks. In a 1981 study that analyzed 107 large banks between 1969 and 1976, (Scheiner, 1981)the author found only limited evidence of income smoothing in banks (only 21.5% of the time, making it impossible to confirm the income smoothing hypothesis). The author summarized his study by pointing out that, in general, banks did not use loan loss provisions to smooth income in the analyzed period.

Research from subsequent years (Greenawalt and Sinkey, 1988)indicated an assumption in the predecessor's research (Scheiner, 1981)that could prove problematic and which was eliminated in the subsequent study ((Scheiner, 1981)it assumed that managers' judgments were the basis that determined the probability of losing a loan during the study period - in 1976 there was a change in this approach in the banking sector in Usa [1]). They used a sample of 106 large US banks from 1976 to 1984 and showed that there was a phenomenon of income smoothing in the sample. At the same time , it has been proven

[1] In 1976, a "judgmental approach *to determine the loan-loss provisions* " was introduced, which was less sensitive to managers' independent judgment.

Greenawalt i Sinkey, (1988)that the phenomenon is more observable in regional (smaller) banks than in the case of large banks serving primarily other institutions and the government (*money-center banks*). As the research results show, this state of affairs could be caused by the fact that regional banks during the analysis period were not under strict control by investors and banking market analysts, although they were under the control of the market regulator. This indicates that banks that are less "watched" by the broadly understood market were more willing to smoothen their earnings.

In contrast to the above study, we can find research indicating that there is no clear evidence of income smoothing in banks in the United States (Wetmore and Brick, 1994). Researchers inspired by research results conducted by Greenawalt i Sinkey, (1988), used data from the 100 largest banks in the Moody's database from 1986 to 1990 to test the earnings smoothing hypothesis. The study is not as extensive as the others cited here and is only one of the few opinions that in the 1980s, a hypothesis about banks' income smoothing using loan loss provisions could be added.

2.3. Loan loss provisions and the economic cycle

One of the trends in research on earnings management using loan loss provisions is the trend dealing with the cyclicality of these reserves and their relationship with the economic cycle. According to the theory, it can be said that the dynamic behavior of economic or financial variables is procyclical. This term is present in today's debate, but the beginnings of research on procyclicality should be sought in the period of the financial crisis of 2007. Previous research focused primarily on the direct relationship between banking data and the business cycle, and such a phenomenon was called cyclicality. Due to the development of the regulatory market on the banking market and the need to investigate (both by the market regulator, banks and researchers) how new regulations, together with the economic cycle, may influence the behavior of banks, in particular their credit policy and the policy of creating reserves for risks, to which the bank is exposed (Basel Committee on Banking Supervision and Bank for International Settlements, 2021). This view of procyclicality means that the banking sector, through various transmission channels and connections with the real economy, can exacerbate economic cycles.

In the case of analyzing the procyclicality of loan loss provisions and their variability over time, it is worth introducing the Spanish dynamic model of creating loan loss provisions into the discussion [2]. From an accounting point of view, dynamic reserves are an element of general reserves in a bank (Olszak, 2013)and are a tool that is intended to help banks survive in times of unfavourable external conditions. In Spain, dynamic provisioning was implemented in 2000, after a period in which lending accelerated significantly and, as a result, credit risk increased in the Spanish banking sector. The dynamic model itself required banks to create a general reserve in good times to be able to use it in bad times. Methodologically, these provisions were related to the level of lending activity and the timing of the credit cycle. At that time, dynamic reserves in the Spanish banking sector provided an additional buffer to cover expected losses that had not yet been identified in

[2] Due to the subject of this work and the focus on the analysis of the European banking sector, the Spanish model of dynamic reserves for credit risk was presented, while in the presented period dynamic reserves also existed in several Latin American countries: Bolivia, Colombia, Peru and Uruguay

the loan portfolio. The entire methodology has been prepared so that the level of dynamic provisions varies depending on the composition of each bank's loan portfolio, through different risk classes for different credit exposures. As empirical studies that focused on the Spanish banking sector from 1998 to 2013 show (Jiménez et al., 2017), dynamic provisioning for credit risk moderates credit supply cycles. Researchers have proven that the dynamic reserves mechanism works because banks save capital in good times and use it during economic slowdowns, when raising capital (both from profits and from shareholders) is difficult and expensive. From the point of view of this work, it is important to realize that dynamic reserves, which were introduced in several countries around the world at the turn of the 20th and 21st centuries, were analyzed by regulators who have been preparing changes in the estimation of loan loss provisions over the last 20 years. The very idea of dynamic provisions is like the model for estimating loan loss provisions in the IFRS 9 regime - the expected loss model. An important difference is that in the case of dynamic reserves in Spain, reserve estimates were based on formulas prepared by central authorities in the Spanish banking sector, while in the case of the expected loss model (IFRS 9), bank managers have greater freedom in creating reserves, especially in the case of transferring loans between phase 2 and phase 3, due to the flexible definition of impairment triggers. These conditions are defined by regulations, but they leave some interpretative freedom to decision-makers in banks.

As evidence from other studies that have focused on economic cycles and their impact on loan loss provisions shows, banks' income smoothing using these reserves is achieved by increasing the level of reserves in times of good profitability to be able to "free up" these reserves in bad times. times when the loan portfolio shows increased losses (Cavallo and Majnoni, 2001). Researchers, based on data from 1,176 commercial banks from 1988-1999, indicate that in G-10 countries an increased amount of reserves could be observed in good times, while econometric tests did not reveal such a pattern for non-G-10 countries - banks from these countries, on average, made too few provisions in bad times and were therefore forced to increase loan loss provisions in bad times. For this reason, we can point out that the creation and management of provisions themselves may be pro-cyclical and, moreover, the results show that the way loan loss provisions are managed in banks varies geographically. This differentiation may be caused, among others, by a different organizational culture, the development of the financial market or the restrictiveness of the local supervisor on the financial market.

Another study focuses on how bank provisioning behavior is correlated with the economic cycle (Bikker and Metzemakers, 2005). The analysis was carried out in the period 1991-2001 based on data from 29 OECD countries (almost 8,000 observations). The conclusions from the study are quite clear and indicate that the method of creating risk reserves depends on the economic cycle. Such results also confirm that the general behavior of banks in creating risk reserves may be pro-cyclical, because banks must replenish their capital and reserves in periods of economic deterioration, i.e. when banks have insufficient profits to cover these buffers, which in turn may result in a reduction in lending. The results of the study also confirm previous research results on risk reserves (Laeven and Majnoni, 2003)and indicate that banks tend to create insufficient risk reserves in *good* times, which means that they must replenish reserves and capital in times of economic slowdown and when lending decreases. As the researchers point out in their conclusions, the introduction of Basel II solutions may result in a reduction in the

procyclicality of reserves in the banking sector and more accurate estimates of the probability of default by borrowers [3]. As another advantage of the new development of regulations regarding the method of calculating risk reserves in banks, the authors point out that the new methodology is more transparent, which results in greater trust in financial institutions and helps market discipline.

The cyclicality of loan loss provisions is observed in banks in Central European countries (Skała, 2015). The author examined this relationship using 244 banks from 11 Central European countries in the years 2004-2012. The main conclusions of the work are that banks from this region of the world use loan loss provisions to smooth profits. Moreover, the results indicate that in times of worsening economic conditions, bank managers, even though the banks' current losses exceed the created risk reserves, create additional reserves, which deepens the losses of banking enterprises. This action is consistent with the theory of earnings management and is called " *taking a bath " in the literature.* At the same time, the author of the study indicates that banks in Central Europe are like other sectors in that the creation of reserves is procyclical in relation to the national economic cycle. Periods of GDP growth in individual countries are not an incentive for bank managers to create additional reserves for worse times. Moreover, it is worth noting that the conclusion of the study is that countercyclical policy, created by regulators both in Europe and around the world, should be aimed at limiting the "bath bath" phenomenon occurring on the market, because it distorts the overall image of the banking sector in the long term.

Another study, using data from over 3,000 banks from the European Union from 1996 to 2011, (Olszak et al., 2017)aimed to determine the features that differentiate the procyclicality of loan loss provisions. Researchers indicate that the most procyclicality can be observed in large, commercial banks. Moreover, in the case of companies that do not consolidate their financial statements, loan loss provisions are more closely linked to the economic cycle, in banks that are listed on the stock exchange. Analyzing banks preparing consolidated financial statements, procyclicality is particularly observed in this sample. This is consistent with the assumptions that banks that consolidate their financial statements may be recognized by the financial system as too big to fail, which means that *such* banks may be more willing to take risks, which in turn coli translates into an enhanced procyclicality effect. An important point of the study is that in the case of banks that were characterized by increased income smoothing and increased loan loss provisions in good times, less procyclicality of these provisions was observed. The regulations of IFRS 9, which were not in force in the years in which this study was conducted, also indicate the need to create provisions for credit risk for the future and not when losses occur. The authors of the study also indicate that supervision of the banking sector may be of key importance in the context of the procyclicality of loan loss provisions. As indicated, microprudential supervision alone is not effective enough to limit

[3] Basel II introduced and clarified the framework for using the Internal Rating -*Based approach (IRB*), which resulted in more accurate estimation of loan loss provisions. As history shows, the course of action was right, but insufficient - further changes were introduced in Basel III a few years later, and work is currently underway to introduce changes to the methodology of internal ratings on the occasion of the introduction of the new Capital Requirements Regulation *3 Regulations – CRR 3)* – the final document is not yet known, but according to the current plan, the changes contained therein are to be in force from 2025

procyclicality, therefore macroprudential supervision tools, such as the countercyclical capital buffer, are also important for the banking sector.

To sum up, in line with empirical data, the procyclicality of loan loss provisions can be observed. Such behavior, following the economic cycle, is not unheard of or unexpected, however, people preparing regulations for the banking market - as well as other financial sector institutions - should consider that individual regulations do not cause too much pro-cyclicality, or more importantly directly, did not deepen the economic downturns too much and did not contribute to overly enthusiastic actions of banks during good economic times. Looking at the provisions included in IFRS 9, it can be concluded that the financial sector supervisory authorities *have learned* their lesson from the 2007 financial crisis and the new model of expected losses is less dependent on economic changes - part of the loan loss provisions are incurred regardless of economic cycles and focuses more on the loss that may occur in the future (depending on which phase the credit product is assigned to, the future may be characterized as 12 months (Phase 1) or over the duration of the exposure (Phase 2) and 3)).

2.4. Various determinants of income smoothing using loan loss provisions

In the literature, we can find a research trend that we can define as research focusing on cross-country determinants of bank income smoothing by managing loan-loss *provisions.* One of the basic studies in this trend is a study conducted on a sample of banks from 40 countries, using over 3,000 observations, (Fonseca and González, 2008)which was intended to examine what causes smoothing of profits through the management of loan loss provisions. The researchers used the GMM estimator to control for heterogeneity and potential endogeneity of explanatory variables. Research results indicate differences in income smoothing between countries. Regardless of whether the analyzed banks are listed companies or not, the biggest difference in their way of managing profits is the country of origin. Fonseca and Gonzalez point out that any banking regulations and decisions by banking supervision that are intended to reduce the risk taken by banks, at the same time result in less willingness of these banking companies to smooth their profits. The study also used variables determining the development of a given country's financial system and market orientation. As the results of econometric research show, a greater smoothing of income can be observed in a financial system that is more developed and market - *oriented.* This is consistent with the assumptions that in such economies, bank managers have greater incentive to report more stable profits (without upward or downward deviations). The research results also confirm the validity of the changes included in Basel II (in force when the article was published in 2008), because the requirements regarding both rigorous supervision of the banking sector (Pillar 2) and disclosure of information by banks (Pillar 3) limit the smoothing of income and increase the credibility of the entire banking sector. On this basis, it can be assumed that Pillar 2 and Pillar 3 complement each other in striving to ensure stronger market discipline - this indicates the success of Basel II in this area. However, the authors of the study indicate that one should be careful when analyzing the results, because the limited period of their study (1992-2002) cannot undoubtedly explain the phenomenon of smoothing income in banks in each economic cycle.

Another study conducted on a sample of banks from 25 European Union countries between 2003 and 2015 provides evidence of the cumulative impact of various banking sector monitoring mechanisms on earnings smoothing using loan loss provisions (Di Fabio et al., 2021). The researchers tested the research hypothesis that the restrictive supervisory policy over the banking sector is strongly positively related to the smoothing of income by banks. The results confirm the main research hypothesis, and the authors emphasize that banks' tendency to smooth earnings is greater in banking systems where supervision is restrictive, because in this way banks try to avoid attracting the attention of regulatory authorities, which in turn could lead to adjustments to the reports. financial. Moreover, the study results suggest that in the light of the new provisions of IFRS 9, income smoothing using loan loss provisions may increase or remain at the same level, with the level of stringency of supervision over the banking sector remaining unchanged, because the new standard gives bank managers greater freedom. in the scope of estimating provisions for credit risk (Giner and Mora, 2019).

Subsequent research has focused on the role of prudential regulators in smoothing earnings at European banks (García Osma et al., 2019). The researchers used data from 125 banks from 14 different European countries from 2000 to 2013. The main research question was whether national supervisory authorities influence accounting practices in supervised financial market entities. Moreover, similarly to Ozili, (2019)the researchers due to the analyzed period, they asked themselves an additional question how the new accounting standard IAS 39 would affect the smoothing of income using loan loss provisions. According to the results, the effects of adopting IAS 39 are weaker in countries that are characterized by a stronger supervisory system (the strength of supervision is examined using a variable built based on previous work on this topic (Barth et al., 2013; Donzé, 2006)). It has also been proven that the influence of a supervisory authority may depend on its political and industry independence. Based on the econometric results, it can be assumed that financial market supervision institutions that have less influence on political decisions will most likely also be more effective in communicating with banks and in obtaining information from banks on forecasted results.

Some researchers point to the level of state capital involvement in banks as one of the factors differentiating the method of smoothing income in banks (Doan et al., 2020). To examine the impact of government capital on the way banks manage earnings, researchers introduce an estimate of government capital based on a calculation La Porta et al., (2002)using proprietary techniques to appropriately classify the involvement of government capital. The researchers used data from commercial banks from the BankScope database from 2003-2012 from 78 countries. The results suggest that for developing countries, banks with more state-controlled shareholders have increased incentives to smooth earnings. However, in the case of developed countries, no differences were found between government-controlled banks and banks in which there was no significant *government shareholder participation.* It was also indicated that the scale of income smoothing using loan loss provisions varies depending on individual countries and the characteristics of the government. Based on the results, it can be concluded quite generally that income smoothing is increased in countries with greater political fluctuations and in countries where the control mechanisms over the banking market are weaker.

A study conducted on the data of cooperative banks in Poland in 2007-2012 indicates that also in cooperative banks, similarly to commercial banks, the phenomenon of income smoothing using loan loss provisions is observed (Skała, 2014). Based on the results, the author of the study concludes that the smoothing of income in cooperative banks in Poland is characterized by cyclicality consistent with the economic cycle. The shareholding and management method of cooperative banks is specific and different from that of commercial banks, however, when it comes to credit policy, it is similar. Increased provisions for credit risk can be observed in periods of economic downturn and, as the data shows, insufficient provisions created in periods of good economic conditions. Such findings are consistent with the conclusions of other researchers who have analyzed similar phenomena in various banking sectors in recent years. To sum up, the cyclical nature of lending and income smoothing using loan loss provisions in cooperative banks is like that of commercial banks, which may result, among other things, from competition on the banking market for similar customers (today, the credit offer of cooperative banks and commercial banks is similar in terms of service costs). debt). For this reason, the author of the study indicates that decision-makers and people creating banking market regulations should consider the entire banking sector, not only commercial banks, when creating new anti-cyclical regulations. In different countries, cooperative banks have a different share in the banking market, but it is worth keeping in mind their way of conducting lending and the way they manage profits.

To sum up, the literature contains many different determinants of earnings smoothing in banks. These include both intra-bank and macroeconomic variables characterizing individual countries and economic areas. Importantly, the presented empirical evidence shows that, regardless of the diversity of individual countries/economic areas, income smoothing using loan loss provisions is an observable but diverse phenomenon.

2.5. Income smoothing using loan loss provisions and the regulatory environment.

International Accounting Standards regarding provisions for credit risk have changed before and on this basis one can try to conclude how banks adopted the IFRS 9 regulations. The conclusion, however, cannot be too far-reaching and uncritical, because the new expected loss model is a revolution and not evolution of previous records. This means a completely new approach, and conclusions are made based on the fact of making the change itself, and not on its significance and *size.* There is also evidence in the literature that if regulations introduced by market regulators limit management's discretion in using alternative accounting methods, this will improve the quality of reported financial data (J. Barth et al., 2008).

Since not only banking companies are subject to International Accounting Standards, but we can also find research referring to the general situation of companies adapting the new accounting principles. The study, conducted on a sample of 327 enterprises from around the world that adopted International Accounting Standards between 1994 and 2003, tried to answer the question whether the adoption of IAS in the enterprise is associated with higher accounting quality (M. Barth et al., 2008). Data were collected for the years 1990 - 2003, which gave researchers a maximum of 4 years of preparation period for the introduction of MSR. As the research results showed, the research hypothesis about

higher accounting quality after the introduction of IAS in the company was confirmed. It has been observed that companies generally show less tendency to manage earnings and recognize losses faster if they apply IAS.

Another study focusing on the banking sector analyzed the issue of capital management and profit management using loan loss provisions by commercial banks from the European Union during changes in banking accounting regulations (Leventis et al., 2011). The researchers used data from listed banking companies in the period 1999-2008. It was a time of two significant changes in regulations - from January 2005, the International Financial Reporting Standards came into force in the banking sector, and at the turn of 2005 and 2006, Basel II was introduced. Both changes were significant, but they concerned different issues, therefore no confounding effect was observed in the studies. The data used to test the research hypotheses included 91 commercial banks from the European Union. According to the econometric results, we can indicate that, in general, banks manage profits using loan loss provisions, but the introduction of IFRS has significantly reduced such behavior. At the same time, it was indicated that banks that were riskier were more involved in the process of smoothing earnings before the introduction of IFRS, however, in the years when the new accounting standards were in force, profit management using loan loss provisions was limited, but not eliminated. Additionally, researchers examined the bank's capital management and found no empirical evidence to suggest that loan loss provisions are used to manage capital. The research was conducted in a comprehensive manner, considering various definitions of bank capital as well as discretionary components of loan loss provisions and variables characterizing the economies of individual countries.

Another study focused on whether European banks used loan loss provisions to smooth earnings in the period after the adoption of IFRS and regulations resulting from the Basel agreements (Vasilakopoulos et al., 2019). The authors used data from 26 European Union countries from the period 2006-2013, i.e. from the years in which IAS 39 was in force. According to the results, the researchers indicate that in the analyzed years they found a relationship between loan loss provisions and banks' results, which confirms the research hypothesis on income smoothing. Moreover, it is worth pointing out that the level of risk taken by the analyzed banks as well as market discipline influence the creation of loan loss provisions to smooth out income.

The next study examined how the regulatory environment and ownership concentration may affect the way banks manage loan loss provisions to smooth earnings (Bouvatier et al., 2014). European commercial banks from 2004 to 2009 were analyzed (the final study sample had 873 banking enterprises). To diversify ownership concentration, the study - in addition to standard econometric methods - also used a cluster approach. Thanks to this approach, the study was able to indicate that banks with a more concentrated ownership structure use discretionary loan loss provisions to smooth earnings. Such behavior is less observable in countries with stronger supervision of the banking sector. The conclusions may suggest that the more restrictive the regulatory approach of the regulator in each country, the less banks engage in various accounting activities that can be described as earnings management. The authors suggest that supervisors should bear in mind the relationship between both the ownership structure and the stringency of supervision with the use of loan loss provisions to smooth profits. To limit such behavior,

it would be necessary to ensure a high level of supervision in countries with high ownership concentration and strengthen the regulations on internal audit in banks. On the other hand, in countries where we may see weaker market regulators, they could introduce regulations that would prevent banking concentration in the hands of dominant shareholders to limit the influence of these shareholders in smoothing earnings.

The empirical evidence that the regulatory environment and accounting rules in banks influence income smoothing using loan loss provisions appears to be incontrovertible. Differential regulatory impacts on banks' behaviour can be observed and proven, as the restrictiveness of supervisory authorities may have an overall impact on a bank's provisioning and earnings management, while individual changes in regulations will not always have such a broad impact on the banking sector.

2.6. The role of IFRS 9 in smoothing profits in the light of empirical and theoretical research

Empirical research on the direct impact of the expected loss model (in accordance with IFRS 9) is only emerging and there is not much of it. Due to the above, it is also difficult to formulate research hypotheses based on the existing literature, and they will be formulated considering both the modest achievements of the literature and legal provisions, as well as the reported expected impact of new regulations that guided the banking sector supervisors.

The study, which was designed to check how the new expected loss model in accordance with IFRS 9 is related to the regulatory environment and general supervisory principles, was carried out in the banking sector in the European Union (Novotny-Farkas, 2016). As the researcher's analysis indicates, recognizing credit losses earlier than under the previous regime may lead to inflated regulatory capital. Moreover, reporting loan loss provisions requires disclosing a large amount of information regarding the estimation of reserves in the bank, which may improve market discipline. Thanks to these two effects of IFRS 9, it is possible to improve the financial stability of the banking sector. However, as the researcher concludes, banking market supervisory authorities in individual countries may play an important role in implementing the new expected loss model. From the point of view of the integrity of the European banking market, it is important that the approach to the interpretation of IFRS 9 is consistent across all jurisdictions. It is worth noting that the conclusions of this work were formulated at a time when the final date and final provisions of IFRS 9 were already known, but there was no empirical data from the moment of application.

Another analysis conducted on a sample of 100 commercial banks in 2011-2019 was one of the few to focus on the impact of IFRS 9 on profit management in banks (Nnadi et al., 2023). The fact that there is little research on this issue is due to the short time that has passed since the introduction of IFRS 9, and since so much has happened after 2018 (COVID-19 pandemic, war in Ukraine) that the study of phenomena arising from the introduction of new accounting regulations was not a priority. Researchers focused both on new accounting standards and on the quality of auditing within banking enterprises. Bank data from 37 countries were used to test the econometric models. The authors of the study indicated that the introduction of IFRS 9 did not significantly increase the smoothing of income using loan loss provisions. Moreover, the results show that banks in

Europe smooth earnings using loan loss provisions more noticeably if they are listed on a stock exchange. This may suggest that managers and other people responsible for bank lending policy and creating reserves are more willing to report more *liquid* profits when it is a stock report.

In the literature, we can also find one study that focuses on the comparison of banks in Europe and Sub-Saharan Africa in the context of the impact of IFRS 9 on the income smoothing policy (Taylor and Aubert, 2022). The study was carried out using data from 104 commercial banks listed on stock exchanges in the period 2016-2019 (the moment of entry into force of IFRS 9). The researchers show that there is evidence that the use of loan loss provisions to smooth profits in banks has declined in the post-IFRS 9 phase - these are the results for the entire research sample covering both European and sub-Saharan African countries. Broken down by region, evidence was found of an increase in income smoothing using credit reserves in European countries and a decline in African countries. The authors of the study therefore indicate that the method of smoothing banks' income is diverse and may depend, among other things, on national regulations or the size of the bank. The limitation of this study is that it was conducted in a very short period and using only data from banks listed on stock exchanges.

Moreover, referring to the latest empirical research, conducted using qualitative data, which was intended to check how decision-makers in banks can consider forecasts and information about contractors in the context of their future from the perspective of potential shifting of credit exposure data between II and III phase in accordance with IFRS 9 (Du et al., 2022). In their study, researchers used surveys completed by 72 respondents from Europe, the Middle East, and North America. These were professionals and managers from banks who had appropriate knowledge and experience in estimating loan loss provisions in accordance with IFRS 9. The study was conducted in such a way as to examine how respondents react to individual impairment indicators and how they react when such premises are no longer valid. As the results show, bank managers are reluctant to take good news into account and are more willing to remain conservative. Moreover, decision-makers in banks are more willing to consider short- and medium-term forecasts, while remaining distrustful of forecasts made for a long-term horizon. Such results show that IFRS 9 is generally well-built. Managers have some freedom in determining *the validity* and *materiality* of impairment indicators, but as the data shows, they are quite conservative and consider not only forecasts and the future, but also the overall market environment and the economic cycle.

The changes that have been in force since the adoption of IFRS 9 by banks are so significant that we should expect banks to have a different approach to smoothing their income using loan loss provisions in the period both preparatory to the adoption of IFRS 9 and in the first years of the new standard's application. . The research results also show that these changes have been positively received by the banking market (Du et al., 2022), and bank managers remain conservative in their judgments regarding impairment indicators, which may limit the opportunistic use of loan loss provisions to manage earnings in banks.

3. Conclusion

To sum up, it can be pointed out that there is a diverse approach to income smoothing using loan loss provisions in banks.

As the above-mentioned studies show, a diverse legal environment and macroeconomic environment may influence this phenomenon. IFRS 9 introduced in 2018, which was intended to reduce risk in the banking sector, as empirical research shows, did not limit income smoothing using loan loss provision in all of the analyzed regions.

Moreover, empirical data indicate that after the introduction of IFRS 9, differences in income smoothing can be observed depending on whether banks are listed on the stock exchange. Such conclusions are largely consistent with analyzes that were performed in the periods before the introduction of IFRS 9.

The next steps in examining income smoothing using loan loss provisions should be cross-sectional empirical studies focusing on both micro banking data and macroeconomic data. Using this approach, it will be possible to identify various determinants of income smoothing in the analyzed countries.

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