

THE IMPACT OF IFRS 9 ON CREDIT RISK AND PROFITABILITY IN THE EUROPEAN BANKING SECTOR

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Abstract

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The accounting standard IFRS 9 Financial Instruments of the International Financial Reporting Standards (IFRS) has introduced a new model to estimate credit loss, requiring entities to assess the credit risk associated with financial assets and recognize impairment losses based on expected credit losses (ECL), rather than the incurred credit losses (ICL) of the former IAS 39 by the International Accounting Standards Board (IASB). The adoption of IFRS 9 has led to various application issues and challenges, particularly in assessing economic conditions and specific borrower circumstances that may impact creditworthiness, resulting in a significant impact on business performance. Specifically, banks are now required to estimate the future cash flows of their borrowers and adjust their provisions, considering forward-looking information. This includes not only an analysis of company characteristics but also macroeconomic factors to assess credit losses. Given the aforementioned considerations, our study aims to investigate the adoption of IFRS 9 in the banking sector industry, focusing on the effects of the credit risk assessment model and its impact on banks' performance. The analysis is based on a sample of European listed banks spanning the 2014–2021 period. We compare the period during which the banks adopted IFRS 9 and the ECL model with the period in which the banks used IAS 39 and the ICL model to understand the effects on the provisioning costs, non-performing loans (NPLs) and capital adequacy. In this perspective, the adoption of IFRS 9 forced European banks to make more accurate assessments of their credits and associated risks, leading to significant changes in their risk management and internal control practices, in order to reduce the impact on the performance and capital of banks.

Keywords: IFRS 9, Provisioning Costs, Non-Performing Loans, CET 1, Index of Justice

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1. INTRODUCTION

The standard IFRS 9 of the International Financial Reporting Standards (IFRS) was issued by the International Accounting Standards Board (IASB) in July 2014 and became effective in 2018, superseding the previous IAS 39 and implementing

substantial modifications to the accounting regulations governing financial instruments (IASB, 2014). The key feature of IFRS 9 is the measurement of credit loss allowances in accordance with the expected credit losses (ECL) model, in contrast to the incurred credit losses (ICL) model used in IAS 39.

This new standard adopts a forward-looking methodology for the assessment and valuation of financial instruments, wherein the ECL calculation comprises the sum of discounted future cash flows adjusted for variations in the likelihood of borrower default and fluctuations in interest rates (Novotny-Farkas, 2016). Consequently, the ECL framework under IFRS 9 mitigates the abrupt spikes in impairments, often referred to as the “cliff-effect”, that were prevalent under IAS 39, thereby facilitating a more timely and gradual recognition of potential losses by companies, which in turn lessens volatility in earnings. Furthermore, the standard introduces a “staging framework” that categorizes financial assets based on shifts in credit risk from the point of initial recognition. Specifically, IFRS 9 mandates the classification of financial assets into a three-stage impairment model (IASB, 2014). In stage 1, assets are considered to have low credit risk, with impairment calculated based on the annual ECL. In stage 2, assets that have undergone a significant increase in credit risk are assessed using the lifetime ECL, which reflects the probability of default over the entire duration of the exposure. Finally, stage 3 encompasses assets that are classified as credit-impaired, with ECL also determined on a life-expiration basis. In this context, IFRS 9 incorporates both historical and forward-looking data, taking into account not only the characteristics of the company but also broader macroeconomic factors to evaluate credit losses.

A higher probability of default requires banks to allocate higher credit-loss provisions for their exposure, resulting in increased costs and decreased profits. In this way, it serves two essential objectives: aligning financial exposures with the underlying risks associated and monitoring the credit risks to prevent a migration of exposure from stage 1 to stage 2 and stage 3. From this perspective, the relationship between IFRS 9 and risks appears to be quite significant, because its application incorporates risk considerations into the reporting process, allowing the probability of default and the magnitude of potential credit losses to be estimated.

Many authors argue that credit losses are often the primary reason behind bank failures (Ahmed et al., 1999; Gebhardt & Novotny-Farkas, 2011). In this regard, the application of IFRS 9 has given rise to major structural changes in the internal control process because risk management frameworks now encompass the establishment of robust internal controls and processes to identify, measure, monitor, and mitigate credit risk. Companies need to ensure that their risk management systems align with the requirements of IFRS 9 to facilitate proper reporting and provisioning. Effective risk management frameworks must also include strong governance structures, risk committees, regular reporting processes and risk mitigation strategies. These measures ensure that credit risk exposures are properly measured, controlled and reported in accordance with the requirements of the standard. At the same time, its application has led to various challenges in assessing economic conditions and specific borrower circumstances that may impact creditworthiness, which will significantly affect business performance. The approach to credit losses under IFRS 9 is more prudent and the measurement is highly subjective as it relies on an assessment

with a high level of managerial discretion (Novotny-Farkas, 2016; Dong & Oberson, 2022; Kvaal et al., 2024). This element of forecasting can potentially lead to volatile results. Moreover, during periods of recession, losses could increase even if current economic circumstances are positive. In light of the above considerations, the objective of our study is to investigate the adoption of IFRS 9 on the banking sector and, in particular, the impact of the credit risk assessment model and its impact on banks' performance and, in particular, the impact on provisioning costs, profitability, non-performing loans (NPLs) and capital adequacy.

The rest of this paper is organised as follows. Section 2 provides an overview of the literature and the development research hypothesis. Section 3 describes the methodological approach adopted in the empirical study, describing the data, variables and research method. Section 4 presents the results and discussion of the findings. Finally, Section 5 outlines the concluding remarks.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Several studies have focused on the impact of the adoption of IFRS 9, particularly on the banking sector. One of the most important aspects of IAS 39 lies in how it evaluates and accounts for credit losses. The ICL model is based on actual losses that have already been observed and identified. In other words, under this model, credit losses are recognized only when there is evidence that a financial asset is impaired. The ICL model is defined as a backwards-looking approach because it relies primarily on historical data, while the ECL model is based on a forward-looking approach since it relies primarily on future data (Bernhardt et al., 2014; Novotny-Farkas, 2016; Abad & Suarez, 2017; Seitz et al., 2018; Loew et al., 2019; Dong & Oberson, 2022; Kyiu & Tawiah, 2023).

Although these issues were examined from different perspectives, many scholars stated that the new standard has led to an increase in the expense of ECL provisions and has negatively affected the regulatory levels in banks (Hashim et al., 2016; Abad & Suarez, 2018; Krüger et al., 2018; Seitz et al., 2018). Moreover, the introduction of the stage model (Novotny-Farkas, 2016; Hashim et al., 2016), more specifically the transition from stage 1 to stage 2, contributes to a significant increase in loan-loss allowances. Many authors suggest that the implementation of IFRS 9 has various impacts on banks. The new standard leads to increased volatility of loan-loss allowances in the banking sector and credit-loss charges, reducing the net profits of banks, and potentially requiring higher levels of equity capital (Fatouh et al., 2020, 2023; Lopez-Espinosa & Penalva, 2023; Eyalsalman et al., 2024). However, the impact on the cost of funding for banks in Europe is found to be minor. The market rate of financial institutions is more affected by the volume of financial instruments and impairments under IFRS 9 (Szücs & Márkus, 2020). Finally, the expected impact of IFRS 9 on the banking system raises the coverage of non-performing exposures (NPEs) but has a negative regulatory capital effect (Salazar et al., 2023). However, some studies suggest that banks can react to these negative effects by engaging in asset sales or reducing their loan

offerings (Abad & Suarez, 2017; Zampella & Ferri, 2024). In this perspective, there is a great emphasis on the relationship between credit risk assessment and banks' performance, in order to understand whether and how the adoption of the ECL model can affect the banking industry.

Despite valuable studies on IFRS 9, the analysis of the impact on the banks' performance remains largely unexplored. In addition, many empirical studies have examined the relationship between accounting standards and the court system. Radcliffe (1990) discovered that courts view Statements of Standard Accounting Practice (SSAPs) as influential evidence of accounting practice. Hassoon et al. (2021) delved into the impact of judicial accountability in curbing creative accounting practices, concluding that it can be instrumental in reducing such behaviours. Mills (1993) scrutinized how common law, and the judicial process shape the evolution of accounting standards, underscoring the significance of contracts in accounting procedures. Freedman (2005) discussed the mismatch between taxable and accounting profit, arguing for a continued role for the courts in determining taxable profit. In essence, these papers collectively indicate that the legal system has a role in interpreting and implementing accounting standards, addressing creative accounting practices, and delineating taxable profits. To advance the understanding of the research area, we intend to move forward with the current body of knowledge on the effect of the IFRS 9 application in European banks, by investigating the following research questions:

RQ1: What is the impact of IFRS 9 on loan loss provisions?

RQ2: How does the court system moderate the relationship between IFRS 9 and loan loss provisions?

RQ3: Is the impact of IFRS 9 on banks' Common Equity Tier 1 (CET 1) positive or negative?

RQ4: How does the court system moderate the relationship between IFRS 9 and CET 1?

RQ5: Since the introduction of IFRS 9, have European banks increased or decreased non-performing loans?

RQ6: How does the court system moderate the relationship between IFRS 9 and non-performing loans?

We believe that banks, aware of the negative impact of the new accounting standard, have changed their approach to credit management practices to mitigate the impact on their earnings and capital. Furthermore, we find that the effectiveness of the court system may influence the impact of IFRS 9. In countries where the court system is less effective, banks are less motivated to grant loans to avoid incurring additional costs

associated with the protracted legal proceedings, providing an explanation of why banks in less efficient judicial systems might be less inclined to grant loans.

In this perspective, we formulated the following research hypotheses:

H1: With the introduction of IFRS 9, European banks reduced their provisions costs for credit impairment. The efficiency of the judicial system negatively moderates the above relationship.

H2: With the introduction of IFRS 9, European banks increased their regulatory capital (CET 1). Judicial efficiency positively moderates the above relationship.

H3: With the introduction of IFRS 9, European banks reduced their non-performing loans. The efficiency of the judicial system negatively moderates the above relationship.

3. RESEARCH METHODOLOGY

3.1. Sample selection

The empirical analysis is based on a sample of European banks covering the period from 2014 to 2021. We compare the period during which banks adopted IFRS 9 and the ECL model with the period during which banks used IAS 39 and the ICL model to identify their impact on provisioning costs, CET 1 and NPL. Methodologically, we use a panel data model to examine the impact of IFRS 9 adoption on the above-mentioned dependent variables. The sample was collected from the Refinitiv Eikon database (Datastream). In particular, we conducted a comprehensive search of all European banks, as well as banks in Switzerland, the United Kingdom and Russia, collecting data for eight years (2014-2021). The initial sample consists of 233 banks. However, after excluding banks with missing values for at least one year in the time interval and for at least one of the variables included in the regressions, we obtained a final sample of 78 individual firms and 624 firm-year observations.

3.2. Empirical model

To test our hypotheses, panel-data regression analysis was performed. Hence, the empirical models are the following:

- to assess the relationship between IFRS 9 and provisioning costs *H1*, we estimate Model 1;
- to test *H2* on the relationship between IFRS 9 and CET 1, we run Model 2;
- to test *H3* on the relationship between the IFRS 9 and NPL, we estimate Model 3.

Model 1

$$\text{Prov/Tot_loans}_{i,t} = \alpha_0 + \alpha_1 \text{IFRS9}_{i,t} + \alpha_2 \text{IOJ}_{i,t} + \alpha_3 \text{IFRS9} * \text{IOJ}_{i,t} + \alpha_4 \text{Size}_{i,t} + \alpha_5 \text{LEV}_{i,t} + \alpha_6 \text{ROA}_{i,t} + \alpha_7 \text{CFO}_{i,t} + \varepsilon_{i,t} \quad (1)$$

Model 2

$$\text{CET1}_{i,t} = \alpha_0 + \alpha_1 \text{IFRS9}_{i,t} + \alpha_2 \text{IOJ}_{i,t} + \alpha_3 \text{IFRS9} * \text{IOJ}_{i,t} + \alpha_4 \text{Size}_{i,t} + \alpha_5 \text{LEV}_{i,t} + \alpha_6 \text{ROA}_{i,t} + \alpha_7 \text{CFO}_{i,t} + \varepsilon_{i,t} \quad (2)$$

Model 3

$$\text{NPL/Tot_loans}_{i,t} = \alpha_0 + \alpha_1 \text{IFRS9}_{i,t} + \alpha_2 \text{IOJ}_{i,t} + \alpha_3 \text{IFRS9} * \text{IOJ}_{i,t} + \alpha_4 \text{Size}_{i,t} + \alpha_5 \text{LEV}_{i,t} + \alpha_6 \text{ROA}_{i,t} + \alpha_7 \text{CFO}_{i,t} + \varepsilon_{i,t} \quad (3)$$

3.3. Definition of variables

3.3.1. Dependent variables

In terms of provisioning costs, we intend to estimate the amount of credit losses that banks choose to recognize in their financial statements before and after the adoption of IFRS 9. For its calculation, we selected a specific proxy which is the ratio computed as annual loan loss provisions, divided by the total amount of gross loans ($Prov/Tot_loans$). For regulatory capital, instead, we use Common Equity Tier 1 ($CET1$) as a percentage of risk-weighted assets. Finally, for NPL, we used the NPL ratio, obtained by dividing the number of NPLs by the total number of loans (NPL/Tot_loans).

3.3.2. Independent variable

We considered the adoption of IFRS 9 by European banks ($IFRS9$). More in particular, the independent variable is a dummy variable which equals 1 if IFRS 9 has been adopted and 0 otherwise (i.e., if the previous IAS 39 was adopted).

3.3.2. Control variables

In line with a previous study, we selected the following control variables: 1) firm size ($Size$), measured by the natural logarithm of total assets;

2) leverage (LEV), calculated as total debt divided by total assets; 3) return on assets (ROA), measured by dividing firm's net income by the average of its total assets; 4) cash flow from operations (CFO), calculated as: $Net\ Income + Non-Cash\ Items - Change\ in\ Working\ Capital$.

3.3.3. Moderating variable

The Index of Justice (IOJ) has been used as a moderating variable. In particular, the latter is determined on the basis of *European judicial systems CEPEJ Evaluation Report* drafted by the European Commission for the Efficiency of Justice, which evaluates the functioning of judicial systems of 44 Council of Europe member states.

4. EMPIRICAL FINDINGS AND DISCUSSION

4.1. Descriptive statistics and correlation analysis

The descriptive statistics of the studied variables are summarized in Table 1. The mean of the $IFRS9$ variable is 0.5 because the panel is symmetric, i.e., four years before and four years during the implementation of IFRS 9 were considered. The IOJ , on average, has a mean value of 0.7264, while the average leverage is 380.819%. In addition, the average ROA is 4.91% and $CET1$ has an average value of 13.03%.

Table 1. Descriptive statistics

| Variables | N | Mean | Median | Std. dev. | Q1 | Q3 | Min | Max |
|------------------------|-----|---------|---------|-----------|----------|---------|----------|---------|
| $IFRS9_{it}$ | 624 | 0.5 | 0.5 | 0.500 | 0 | 1 | 0 | 1 |
| IOJ_{it} | 624 | 0.7264 | 0.73 | 0.068 | 0.55 | 0.87 | 0.67 | 0.8 |
| $Size_{it}$ | 624 | 19.294 | 19.111 | 1.518 | 16.304 | 22.565 | 18.109 | 20.942 |
| LEV_{it} | 624 | 380.819 | 362.35 | 158.611 | 43.21 | 871.11 | 275.65 | 461.19 |
| ROA_{it} | 624 | 4.91 | 0.53 | 0.661 | -4.16 | 2.62 | 0.34 | 0.735 |
| CFO_{it} | 624 | 1337896 | 2417523 | 254.019 | -8542776 | 1546258 | -2303000 | 2458724 |
| $Prov/Tot_loans_{it}$ | 624 | 0.786 | 0.630 | 1.026 | -1.32 | 11.04 | 0.25 | 1.03 |
| $CET1_{it}$ | 624 | 13.030 | 12.4 | 1.995 | 9.75 | 19.5 | 11.6 | 13.91 |
| NPL/Tot_loans_{it} | 624 | 8.570 | 4.85 | 9.811 | 1.06 | 63.13 | 3.27 | 9.56 |

Table 2 shows the correlations of the variables. Many coefficients are statistically significant, but the highest value is equal to 0.506 (correlation between bank $Size$ and CFO). Therefore, the fact that all the correlation coefficients are below ± 0.8 or ± 0.9

suggests that multicollinearity is not an issue in estimating the models, so the explanatory variables selected for the analysis are likely to be proxies for various underlying factors.

Table 2. Correlation matrix (Pearson correlation coefficient)

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| (1) $IFRS9_{it} * IOJ_{it}$ | 1 | | | | | | | | |
| (2) $Prov/Tot_loans_{it}$ | -0.440*** | 1 | | | | | | | |
| (3) CFO_{it} | 0.091** | -0.395*** | 1 | | | | | | |
| (4) ROA_{it} | 0.203*** | -0.379*** | 0.077* | 1 | | | | | |
| (5) $Size_{it}$ | 0.251*** | -0.045 | -0.234*** | 0.125*** | 1 | | | | |
| (6) LEV_{it} | -0.018 | 0.124*** | -0.203*** | 0.015 | 0.485*** | 1 | | | |
| (7) CFO_{it} | 0.206*** | -0.015 | -0.190*** | 0.178*** | 0.506*** | 0.348*** | 1 | | |
| (8) NPL/Tot_loans_{it} | -0.326*** | 0.447*** | -0.084** | -0.322*** | -0.504*** | -0.398*** | -0.300*** | 1 | |
| (9) $IFRS9_{it}$ | 0.038 | -0.229*** | 0.289*** | -0.108*** | 0.064 | -0.053 | -0.075 | -0.425*** | 1 |

Note: *, **, and *** are significantly different from zero at the 0.10, 0.05, and 0.01 levels, respectively.

4.2. Results of regressions and discussion

Table 3 shows the results of the regressions of the models. However, several diagnostic tests implemented in both models separately need to be discussed. First, we determined whether to use fixed effects (FE), random effects (RE), or pooled data

specification to evaluate the results. Table 3 shows that the pooling of data is not suitable (p-value of the Lagrange multiplier (LM test) < 0.01) and that using FE is preferred to RE (p-value of the Hausman test < 0.01) in both models. Furthermore, the Pesaran test and the modified Wooldridge test are both significant at a value better than 0.01, indicating that

cross-sectional dependence and heteroscedasticity are a problem in the two models. The LM test for serial correlation is not significant at a value of 0.1, suggesting the absence of first-order correlation in both models. Given these results, they are estimated using FE and the standard errors are corrected as per Driscoll and Kraay (1998). To check for potential multicollinearity issues, a variance inflation factor (VIF) test was performed in both models; in both cases, the value was found to be below 2 (two), indicating that multicollinearity is not an issue in the analysis.

Turning to the regression results, in Model 1, we explore the possibility that the adoption of IFRS 9 has led to a reduction in provisions expenses for European banks and that the efficiency of national justice systems negatively moderates this relationship. The empirical results support our hypothesis *H1*, which states that IFRS 9 has a negative effect on provisioning expenses, while the interaction *IFRS9 * IOJ* negatively moderates the impact, thereby mitigating the effect. This result may appear incoherent with other studies, which instead argue that IFRS 9 has led to an increase in provisioning costs for ECL (Hashim et al., 2016; Abad & Suarez, 2018; Krüger et al., 2018; Seitz et al., 2018). However, our findings primarily focus on the implications of this new standard: European banks have responded to these negative effects by managing their granted loans, improving their quality, or reducing exposures (Abad & Suarez, 2017). Moreover, the results confirm that the Index of Justice negatively moderates the above-mentioned relationship. This can be explained by the fact that in countries where judicial systems are more efficient, banks can more easily resolve their disputes with insolvent creditors. Consequently, they are more inclined to grant loans.

In Model 2, we test the impact of IFRS 9 on regulatory capital. Our results indicate that

the introduction of the new accounting standard has led to an increase in CET 1. Once again, we believe that banks have proactively addressed the potential negative effects of implementing this accounting principle by bolstering their regulatory capital. Nevertheless, it is worth noting that this outcome has undoubtedly been influenced by the capital transitional arrangement (CTA). Under the CTA, banks are given a transition period to adopt IFRS 9, aimed at mitigating the impact of its adoption on capital resources or “own funds” (Dong & Oberson, 2022). However, in this case, we observe the absence of a significant effect of the Index of Justice on the above relationship.

Lastly, in Model 3, our results demonstrate that the introduction of IFRS 9 has led to a reduction in NPLs. This once again highlights how banks have chosen to manage their loans more effectively to mitigate any significant impact on their performance. Additionally, in this case, the Index of Justice negatively moderates this relationship, attenuating its effect. An explanation for this moderating effect can be attributed to the increased ease in recovering one’s credits. This can occur, for instance, through a simplified execution of guarantees in cases where creditors have not fulfilled their obligations. Moreover, it can be attributed to the disposal of deteriorated credits carried out by the majority of European banks over the last few years. In conclusion, although the introduction of IFRS 9 was expected to lead banks to increase provisions for credit losses and recognize more NPLs, as well as result in a decrease in regulatory capital, our findings demonstrate the exact opposite. They indicate that after the implementation of the new accounting standard, banks have changed their approach to credit management, reducing risks and preserving their financial performance.

Table 3. Main results

| <i>Independent variable</i> | <i>Model 1</i> | <i>Model 2</i> | <i>Model 3</i> |
|---|-------------------|------------------|-------------------|
| <i>IFRS9</i> | -2.234*** (0.493) | 2.621*** (0.984) | -3.136*** (3.777) |
| <i>IOJ</i> | -7.181 (8.608) | 4.536*** (5.176) | 6.245 (6.911) |
| <i>IFRS9 * IOJ</i> | 2.374*** (0.658) | -0.957 (1.313) | 3.077*** (5.041) |
| <i>Size</i> | -0.077 (0.240) | 0.601 (0.480) | -1.022 (1.842) |
| <i>LEV</i> | -0.001 (0.004) | 0.002*** (0.008) | 0.005** (0.003) |
| <i>ROA</i> | -0.906*** (0.084) | -0.015 (0.093) | 0.507 (0.360) |
| <i>CFO</i> | 0.001 (0.001) | 0.002 (0.003) | 0.001 (0.002) |
| Constant | 9.243 (10.916) | -6.722* (8.782) | 12.071 (13.587) |
| Mean VIF | 1.27 | 1.28 | 1.25 |
| LM-poolability test | < 0.01 | < 0.01 | < 0.01 |
| Hausman test | < 0.01 | < 0.01 | < 0.01 |
| Pesaran cross-sectional dependence test | < 0.01 | < 0.01 | < 0.01 |
| Modified Wooldridge test | < 0.01 | < 0.01 | < 0.01 |
| Serial correlation test | 0.60 | 0.48 | 0.46 |
| F-test for overall significance | < 0.01 | < 0.01 | < 0.01 |
| N | 624 | 624 | 624 |
| R ² | 0.295 | 0.182 | 0.235 |

Note: *, **, and *** are significantly different from zero at the 0.10, 0.05, and 0.01 levels, respectively. T-statistics are presented in parentheses. LM-poolability is the Breusch-Pagan LM test’s p-value. Hausman is the Hausman test’s p-value. Pesaran is the Pesaran cross-sectional dependence test’s p-value. Modified Wooldridge is the Modified Wald test’s p-value. Serial correlation is the LM test’s p-value. The F-test is the p-value for a test of overall significance. R² is the regression’s coefficient of determination. N is the number of observations used to estimate the model, using FE.

5. CONCLUSION

This study examines the impact of IFRS 9 on European banks. In line with previous studies, we focused on the impact of the new standard on provisions for credit losses, regulatory capital, and

NPLs (Novotny-Farkas, 2016; Abad & Suarez, 2017). In addition, our study examines whether the adoption of IFRS 9 has a different impact on the effectiveness of the judicial system in the country where the banks are located. We hypothesize that, in order to anticipate the negative effects of the new

accounting rules, banks have changed their approach to credit management to reduce risks and mitigate the impact on performance. Furthermore, we find that the impact of IFRS 9 varies depending on the effectiveness of the legal system in the respective countries. To test our research hypotheses, we rely on a sample of 78 European banks from 2014 to 2021 and 624 firm-year observations. Our results showed a negative relationship between IFRS 9 and provisioning expenses and NPLs and a positive relationship with CET 1. This suggests that in order to mitigate the negative effects arising from the stricter rules set out in IFRS 9 on credit assessment, banks decided to revise their lending policies. They now focus on improving the quality of loans issued and promoting more efficient credit management practices. This is aimed at avoiding the accumulation of credit losses and safeguarding their performance. In addition, we find that the Index of Justice negatively moderates the relationship between IFRS 9 and provisioning costs, as well as between IFRS 9 and NPLs. This result suggests that in countries where the judicial system is less efficient, banks are more cautious in credit management, particularly to avoid delays, inefficiencies, and additional costs associated with enforcing guarantees or resolving disputes with risky borrowers. Further research has shown that IFRS 9 has a negative impact on financial performance due to the much more stringent rules provided by the standard.

Despite being aware of the effects stemming from the application of the new accounting rules, our aim was to understand how banks managed these effects, whether they have incurred these negative effects or managed them passively. From this perspective, the theoretical implication of our research improves the current body of knowledge on the impact of IFRS 9 on banks and how the latter

have managed the effects from its introduction. Moreover, this study has important implications in several respects. First, it enables us to understand how the introduction of an accounting standard can have a profound effect on the governance and control systems of a company. In this case, based on the obtained results, we believe that the introduction of the new accounting standard had a positive impact on credit management mechanisms, improving the company's performance. However, while from a governance perspective, by adopting the ECL model, banks improved their credit analysis mechanisms and risk management systems for predicting potential losses, from a social perspective, it is worth noting how the stricter rules regarding impairment have led to increased difficulty in accessing credit for both firms and households. Second, the empirical evidence could provide valuable insights for regulators and policymakers to enhance the efficiency of the judicial system, given that its inefficiency imposes significant operational constraints on companies, affecting not only credit granting (as in this case) but also, more broadly, investment policies.

This paper has some limitations that could be addressed in future research. We have only considered three dependent variables, but for a comprehensive measurement of business performance, we could have also included others. Additionally, we could have taken into account other variables as potential moderators, such as the size, operational sector, or legal structure of the bank. Future research should explore if and how these variables may have implications in the analysis of IFRS 9 introduction. Finally, it would be interesting to examine the impact of the standard after the CTA period, in order to understand its effects on CET 1 and how banks will be able to manage them.

REFERENCES

- Abad, J., & Suarez, J. (2017). *Assessing the cyclical implications of IFRS 9 — A recursive model* [Occasional Paper Series, 12]. European Systemic Risk Board. <https://data.europa.eu/doi/10.2849/2685>
- Ahmed, A. S., Takeda, C., & Thomas, S. (1999). Bank loan loss provisions: A reexamination of capital management, earnings management and signaling effects. *Journal of Accounting and Economics*, 28(1), 1-25. [https://doi.org/10.1016/S0165-4101\(99\)00017-8](https://doi.org/10.1016/S0165-4101(99)00017-8)
- Behn, M., Haselmann, R. F. H., & Vig, V. (2016). *The limits of model-based regulation* (ECB Working Paper No. 1928). European Central Bank (ECB). <https://doi.org/10.2139/ssrn.2804598>
- Bernhardt, T., Erlinger, D., & Unterrainer, L. (2014). IFRS 9: the new rules for hedge accounting from the risk management perspective. *ACRN Journal of Finance and Risk Perspectives*, 53(3), 1-14. <https://www.acrn-journals.eu/resources/jofrp0503a.pdf>
- Dong, M., & Oberson, R. (2022). Moving toward the expected credit loss model under IFRS 9: Capital transitional arrangement and bank systematic risk. *Accounting and Business Research*, 52(6), 641-679. <https://doi.org/10.1080/00014788.2021.1952060>
- Driscoll, J., & Kraay, A. (1998). Consistent covariance matrix estimation with spatially dependent panel data. *Review of Economics and Statistics*, 80(4), 549-560. <https://doi.org/10.1162/003465398557825>
- Engelhardt, N., Krause, M., Neukirchen, D., & Posch, P. N. (2021). Trust and stock market volatility during the COVID-19 crisis. *Finance Research Letters*, 38, Article 101873. <https://doi.org/10.1016/j.frl.2020.101873>
- European Banking Authority (EBA). (2019, July 12). *Monitoring of the LCR implementation in the EU — First report*. <https://www.eba.europa.eu/publications-and-media/press-releases/eba-reports-monitoring-lcr-implementation-eu-0>
- European Banking Authority (EBA). (2020, April 2). *Final report — On legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis*. <https://www.eba.europa.eu/regulation-and-policy/creditrisk/guidelines-legislative-and-non-legislative-moratoria-loan-repayments-applied-light-covid-19-crisis>
- European Banking Authority (EBA). (2021a, May 27). *EBA provides a comparison of provisioning in the United States and the European Union in the context of the COVID-19 pandemic*. <https://www.eba.europa.eu/publications-and-media/press-releases/eba-provides-comparison-provisioning-united-states-and>

- European Banking Authority (EBA). (2021b, October 6). *EBA risk dashboard points to stabilising return on equity in EU banks but challenges remain for those banks with exposures to the sectors most affected by the pandemic* [Press release]. <https://www.eba.europa.eu/publications-and-media/press-releases/eba-risk-dashboard-points-stabilising-return-equity-eu-banks>
- European Banking Authority (EBA). (2022, March 23). *EBA updates list of institutions involved in the 2022 supervisory benchmarking exercise* [Press release]. <https://www.eba.europa.eu/publications-and-media/press-releases/eba-updates-list-institutions-involved-2022-supervisory>
- European Banking Federation (EBF). (2017, March 16). *EBF position on IFRS 9 transition period* (Proposed Article 473a of CRR2). https://www.ebf.eu/wp-content/uploads/2017/04/EBF_026190-EBFPosition-on-IFRS-9-Transition-Period-Proposed-Article-.pdf
- European Central Bank (ECB). (2004). The impact of fair value accounting on the European banking sector — A financial stability perspective. In *Monthly bulletin* (pp. 69-81). <https://www.ecb.europa.eu/pub/pdf/mobu/mb200402en.pdf>
- European Commission. (2016). Proposal for a Regulation of the European parliament and of the council amending Regulation (EU) No 575/2013. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A0850%3AFIN>
- European Commission. (2019). *Economic forecasts and surveillance*. https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts_en
- Eyalsalman, S., Alzubi, K., & Marashdeh, Z. (2024). The impact of IFRS 9, liquidity risk, credit risk, and capital on banks' performance [Special issue]. *Journal of Governance & Regulation*, 13(1), 396-404. <https://doi.org/10.22495/jgrv13i1siart13>
- Fatouh, M., Bock, R., & Ouenniche, J. (2023). Impact of IFRS 9 on the cost of funding of banks in Europe. *Journal of Banking Regulation*, 24(2), 115-145. <https://doi.org/10.1057/s41261-021-00177-x>
- Fatouh, M., Bock, R., & Ouenniche, J. (2020). *Impact of IFRS 9 on the cost of funding of banks in Europe* (Bank of England Working Paper No. 851). Bank of England. <https://doi.org/10.2139/ssrn.3520669>
- Freedman, J. (2005). Aligning taxable profits and accounting profits: Accounting standards, legislators and judges. *eJournal of Tax Research*, 2(1). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=643991
- Gaffney, E., & McCann, F., (2019). *The cyclical in SICR: Mortgage modelling under IFRS 9* (ESRB Working Paper No. 2019/9). European Systemic Risk Board (ESRB). <https://doi.org/10.2139/ssrn.3723448>
- Gaffney, E., Mccann, F., Lane, P., O'brien, M., Lyons, P., Mcinerney, M., & Velasco, S. (2018). *Credit risk under IFRS 9 accounting reforms: An application to Irish mortgages*. European Central Bank (ECB). https://www.ecb.europa.eu/press/conferences/shared/pdf/20180906_2nd_annual_ws/Gaffney_McCann_paper.pdf
- Gaston, E., & Song, I. W. (2014). *Supervisory roles in loan loss provisioning in countries implementing IFRS* (IMF Working Paper No. 14/170). International Monetary Fund (IMF). <https://doi.org/10.5089/9781484381120.001>
- Gebhardt, G., & Novotny-Farkas, Z. (2011). Mandatory IFRS adoption and accounting quality of European banks. *Journal of Business Finance & Accounting*, 38(3-4), 289-333. <https://doi.org/10.1111/j.1468-5957.2011.02242.x>
- Hashim, N., Li, W., & O'Hanlon, J. (2016). Expected-loss-based accounting for impairment of financial instruments: The FASB and IASB proposals 2009-2016. *Accounting in Europe*, 13(2), 229-267. <https://doi.org/10.1080/17449480.2016.1210179>
- Hashim, N., Li, W., & O'Hanlon, J. (2019). Reflections on the development of the FASB's and IASB's expected-loss methods of accounting for credit losses. *Accounting and Business Research*, 49(6), 682-725. <https://doi.org/10.1080/00014788.2018.1526665>
- Hassoon, F. S., Khilkhali, N. S., & Hamzawi, A. L. (2021). The role of judicial accounting in limiting creative accounting practices in light of International Accounting Standards (An exploratory study in the Iraqi judiciary). *The Journal of Contemporary Issues in Business and Government*, 27(1), 3681-3697. <https://cibgp.com/au/index.php/1323-6903/article/view/816>
- International Accounting Standards Board (IASB). (2014). *IFRS 9 financial instruments*. IFRS Foundation. <https://www.ifrs.org/content/dam/ifrs/project/fi-impairment/ifrs-standard/published-documents/project-summary-july-2014.pdf>
- Krüger, S., Rosch, D., & Scheule, H. (2018). The impact of loan loss provisioning on bank capital requirements. *Journal of Financial Stability*, 36, 114-129. <https://doi.org/10.1016/j.jfs.2018.02.009>
- Kvaal, E., Löw, E., Novotny-Farkas, Z., Panaretou, A., Renders, A., & Sampers, P. (2024). Classification and measurement under IFRS 9: A commentary and suggestions for future research. *Accounting in Europe*, 21(2), 154-175. <https://doi.org/10.1080/17449480.2023.2253808>
- Kyiu, A., & Tawiah, V. (2023). IFRS 9 implementation and bank risk. *Accounting Forum*, 1-25. <https://doi.org/10.1080/01559982.2023.2233861>
- Loew, E., Schmidt, L. E., & Thiel, L. F. (2019). *Accounting for Financial Instruments under IFRS 9 — First-time application effects on European banks' balance sheets* (European Banking Institute Working Paper No. 48). European Banking Institute (EBI). <https://doi.org/10.2139/ssrn.3462299>
- Lopez-Espinosa, G., & Penalva, F. (2023). Evidence from the adoption of IFRS 9 and the impact of COVID-19 on lending and regulatory capital on Spanish Banks. *Journal of Accounting and Public Policy*, 42(4), Article 107097. <https://doi.org/10.1016/j.jaccpubpol.2023.107097>
- Mills, P. A. (1993). The courts, accounting evolution and freedom of contract: A comment of the case law research. *Accounting, Organizations and Society*, 18(7-8), 765-781. [https://doi.org/10.1016/0361-3682\(93\)90051-7](https://doi.org/10.1016/0361-3682(93)90051-7)
- Novotny-Farkas, Z. (2016). The interaction of the IFRS 9 expected loss approach with supervisory rules and implications for financial stability. *Accounting in Europe*, 13(2), 197-227. <https://doi.org/10.1080/17449480.2016.1210180>
- Oberson, R. (2021). The credit-risk relevance of loan impairments under IFRS 9 for CDS pricing: Early evidence. *European Accounting Review*, 30(5), 959-987. <https://doi.org/10.1080/09638180.2021.1956985>
- Pesaran, M. H., & Smith, R. P. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics*, 68(1), 79-113. [https://doi.org/10.1016/0304-4076\(94\)01644-F](https://doi.org/10.1016/0304-4076(94)01644-F)

- Pesaran, M. H. (2006). Estimation and inference in large heterogeneous panels with a multifactor error structure. *Econometrica*, 74(4), 967-1012. <https://doi.org/10.1111/j.1468-0262.2006.00692.x>
- Radcliffe, G. W. (1990). Accounting standards and the judiciary. *Accounting and Business Research*, 20(80), 329-336. <https://doi.org/10.1080/00014788.1990.9728891>
- Salazar, Y., Merello, P., & Zorio-Grima, A. (2023). IFRS 9, banking risk and COVID-19: Evidence from Europe. *Finance Research Letters*, 56, Article 104130. <https://doi.org/10.1016/j.frl.2023.104130>
- Seitz, B., Dinh, T., & Rathgeber, A. (2018). Understanding loan loss reserves under IFRS 9: A simulation-based approach. *Advances in Quantitative Analysis of Finance and Accounting*, 16, 311-357. https://doi.org/10.6293%2fAQAF.201812_16.0010
- Szücs, T., & Márkus, G. (2020). The impact of IFRS 9 impairment calculation on European banks' market rating. *Economy and Finance*, 7(3), 326-351. <https://doi.org/10.33908/EF.2020.3.5>
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press
- Zampella, A., & Ferri, L. (2024). Value relevance of IFRS 9: The influence of country factors and heterogeneous strengths in the European banking sector. *Journal of International Financial Management & Accounting*, 35(1), 115-139. <https://doi.org/10.1111/jifm.12193>