

MASTER
ACCOUNTING, TAXATION AND CORPORATE FINANCE

MASTER'S FINAL WORK
DISSERTATION

THE ROLE OF STATE OWNERSHIP ON EARNINGS MANAGEMENT:
EVIDENCE FROM EUROPEAN BANKS

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ABSTRACT

This study aims to investigate the practice of income smoothing through loan loss provisions in European banks, providing new insights on the difference of discretionary behaviours between state and non-state-owned banks. The sample comprises 248 commercial banks, of which 35 are state-owned and 213 are non-state-owned, from 15 European countries and is drawn from the 2011 to 2018 period. Following a modified version of the model used by Ahmed *et al.* (1999), Anandarajan *et al.* (2007), Leventis *et al.* (2011), Bouvatier *et al.* (2014), Curcio and Hasan (2015) and Ozili and Arun (2018), the results show that state-owned banks engage in a lower degree of earnings smoothing when compared to their non-state counterparts, entailing that government protection is an important factor in mitigating earnings smoothing practices. Finally, the findings do not provide clear evidence for a relation between elections years and income smoothing, suggesting that European banks do not face political pressure for earnings management in the period of analysis.

KEYWORDS: Earnings management, income smoothing, loan loss provisions, state-owned banks, non-state-owned banks, elections, Europe.

RESUMO

O presente estudo tem como objetivo investigar a prática de alisamento de resultados através de provisões para perdas com empréstimos nas instituições bancárias europeias, contribuindo com uma nova perspetiva sobre a diferença de comportamentos discricionários entre Bancos estatais e não estatais. A amostra é composta por 248 Bancos comerciais, dos quais 35 são estatais e 213 são não estatais, provenientes de 15 países europeus, e é relativa ao período compreendido entre 2011 e 2018. De acordo com uma versão modificada do modelo utilizado por Ahmed *et al.* (1999), Anandarajan *et al.* (2007), Leventis *et al.* (2011), Bouvatier *et al.* (2014), Curcio e Hasan (2015) e Ozili e Arun (2018), os resultados demonstram que os Bancos estatais se envolvem num menor grau de alisamento de resultados quando comparados com os seus homólogos não estatais, sugerindo que a proteção estatal é um importante fator mitigador de práticas de alisamento de resultados. Por último, os resultados não fornecem evidências claras de uma relação entre anos eleitorais e alisamento de resultados, sugerindo que os Bancos europeus não enfrentam pressão política para gerir resultados no período analisado.

PALAVRAS-CHAVE: Gestão de resultados, alisamento de resultados, provisões para perdas com empréstimos, Bancos estatais, Bancos não estatais, eleições, Europa.

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GLOSSARY

LLPs – Loan Loss Provisions.

Non-SOB – Non-state-owned banks.

SOB – State-owned banks.

SSM – Single Supervisory Mechanism.

U.S. – United States.

1. INTRODUCTION

The role of financial reporting and standards setting is to provide information about a firm's performance to stakeholders, implying that accounting standards are only valuable if they enable financial statements to effectively represent the firm's economic position and performance (Healy and Wahlen, 1999). However, prior research has recognized that companies use flexibility in accounting standards to manage their reported earnings. In fact, Bushman (2014) adds that accounting rules define the boundaries within which accounting discretion occurs.

The banking industry has been a primary focus of numerous academic research mainly driven by the specificities of this industry such as the bank's dominant accrual: loan loss provisions (LLPs); the preponderance of financial assets and liabilities and the importance of financial reporting in regulation (Beatty and Liao, 2014). In this context, prior literature provides insights about three main objectives pursued by bank managers through LLPs: capital management to avoid the costs associated with the violation of capital requirements; earnings management with the purpose to stabilize the bank net profit over time; and signalling future earnings (Curcio and Hasan, 2015; Anandarajan, Hasan and Lozano-Vivas, 2003; Ahmed, Takeda and Thomas, 1999; Anandarajan, Hasan and McCarthy, 2007; Azzali, Fornaciari and Mazza, 2014).

The study of earnings management in the banking industry is particularly relevant given the importance of banks in the allocation of capital (Bushman, 2014), their inherent lack of transparency (Beatty and Liao, 2014; Bushman, 2014) and ultimately the central role they play for financial stability (Bushman, 2014; Ozili and Outa, 2017).

Earnings management can be described as the management of reported earnings in such a way that the end-of-year financial statements do not represent the accurate economic result of a bank's activity (Curcio and Hasan, 2015). Income smoothing is a specific kind of earnings management that aims to stabilize the net profit over time, reducing its variability through the discretionary use of LLPs (Curcio and Hasan, 2015). This specific practice will be the focus of this study.

The majority of existing literature suggests that bank managers use LLPs in order to manage earnings (Anandarajan *et al.*, 2003; Ahmed *et al.*, 1999; Collins, Shackelford and Wahlen, 1995; Beatty and Liao, 2014; among others). In theory, the purpose of LLPs is

to reflect expected future losses on bank loan portfolios (Ahmed *et al.*, 1999; Anandarajan *et al.*, 2003; Anandarajan *et al.*, 2007). However, since future losses cannot be accurately estimated, there is margin for discretion when bank managers set aside this provision (Anandarajan *et al.*, 2003).

Although the large majority of the banking literature provides significant evidence on the use of LLPs as a tool to manage income, the contributes of prior research are mixed: while Ma (1988), Wahlen (1994), Collins *et al.* (1995), among others, find evidence to support the idea that banks use LLPs to manage income, Moyer (1990), Beatty, Chamberlain and Magliolo (1995), and Ahmed *et al.* (1999) do not find support for this behaviour.

Furthermore, ownership structure is widely accepted in the literature as a determining factor of firm performance (Cornett, Guo, Khaksari and Tehranian, 2010). By analysing firms in 45 different countries, Ben-Nasr, Boubakri and Cosset (2015) provide evidence that state ownership is associated with lower earnings quality and more specifically, more earnings management.

Previous authors such as Barth, Caprio and Levine (2001) and La Porta, Lopez-de-Silanes and Shleifer (2002) find that state ownership of banks has major impact in financial development. The study of state ownership in the banking industry is particularly relevant given the importance of this sector to the economy, as it has been demonstrated by the recent financial crisis (Bushman, 2014).

Therefore, an important dimension to further investigate is the impact of state versus non-state ownership on earnings management practices in the banking sector. Taking this into account, the main motivation of this study is to determine whether there is a greater extent of income smoothing behaviour in state-owned banks (SOB) relative to non-state-owned banks (non-SOB). Additionally, the study analyses the effect of political influences in the banking industry using as a proxy the national election years of each European country.

To accomplish the research objectives, we analyse a sample of 248 European commercial banks, of which 35 are state-owned and 213 are non-state-owned, for the years 2011 to 2018. We follow Ahmed *et al.* (1999), Anandarajan *et al.* (2007), Leventis, Dimitropoulos and Anandarajan (2011), Bouvatier, Lepetit and Strobel (2014), Curcio

and Hasan (2015) and Ozili and Arun (2018) and employ a modified version of their model in order to investigate the presence of income smoothing through LLPs.

The results do not provide conclusive evidence to support the use of LLPs to smooth income by European commercial banks. Nevertheless, the findings indicate a significant decline in earnings smoothing behaviour by SOB when compared to their non-state counterparts, suggesting that government protection constrains earnings smoothing practices. Moreover, the results show that the level of earnings smoothing decreases in the severely affected countries of the 2008 financial crisis, indicating that high monitoring from different stakeholders in periods of crisis enhances the quality of financial reporting (Azzali *et al.*, 2014; Filip and Raffournier, 2014). Finally, we do not find clear evidence to support the relationship between election years and income smoothing in SOB and also, in a more general setting, in all our sample banks, which suggests that the banking industry in Europe is not subject to political pressure to manage earnings during the electoral cycle.

This study contributes to the research on earnings management in the banking sector in several ways. First, we provide updated evidence on the use of LLPs as a tool for income smoothing by using a recent period of analysis between 2011 and 2018. Second, by comparing the behaviour of state and non-SOB, we contribute to a better understanding of the influence of state ownership on income smoothing practices in the European banking industry. Third, the inconclusive findings for the role of state ownership in earnings management in non-financial companies and the lack of evidence in the existing banking literature makes this an interesting topic to further research. Finally, it is important for bank regulators and supervisors to understand if and how mechanisms such as LLPs are used as a tool to smooth earnings and to misrepresent financial reports in the banking industry.

The remainder of the study is organized as follows. Chapter 2 provides a literature review, followed by the hypothesis development in Chapter 3. Next, in Section 4 we describe the data, the sample selection process and explain the model we adopt in our analysis. Chapter 5 presents the results of the statistical analysis and Chapter 6 provides the additional analysis and robustness tests. Finally, in Chapter 7 we discuss the results and present the conclusions of the study.

2. LITERATURE REVIEW

2.1. *Earnings management in the banking industry*

Healy and Wahlen (1999) define earnings management as the incorporation in financial reporting of the manager's judgement and the consequent alteration of a company's reported economic performance to mislead some stakeholders or even to influence contractual outcomes.

Income smoothing is a specific kind of earnings management with the purpose to stabilize banks' net profit over time, using LLPs as a discretionary tool. Bank managers will increase the amount of LLPs when earnings before taxes and LLPs are high and will decrease the amount of this accrual when earnings are low (Curcio and Hasan, 2015). Ma (1988) argue that earnings smoothing is the deliberated reduction of earnings variations regarding some normal level. According to Anandarajan *et al.* (2007), managers have incentives to smooth earnings because reduced volatility is generally assumed as a signal of lower risk.

The banking industry has been a primary focus of numerous academic research for several reasons: the importance of banks' balance sheets, the exposure of economies to the banking sector' systemic risk, the complexities of its governance and regulation (Bushman, 2014), the preponderance of financial assets and liabilities, the importance of financial reporting in regulation and the bank's dominant accrual: LLPs (Beatty and Liao, 2014).

The primary activity of a financial institution such as banks consist in collecting deposits or savings and issuing loans, either to individuals, firms or governments, in order to finance consumption, investment and capital expenditure, therefore contributing to economic growth (Ozili and Outa, 2017). However, a bank's lending activities might lead to credit risk if borrowers are unable to repay their debts. To mitigate this risk, bank managers set aside LLPs as a management tool for expected future losses on loans (Ozili and Outa, 2017).

In fact, LLPs are accruals for expected future losses on a bank loan portfolio (Collins *et al.*, 1995). Thus, they are set aside to face a possible future deterioration of the quality in a banks' credit portfolio (Curcio and Hasan, 2015).

However, the assessment of expected loan losses may involve a significant element of subjectivity and judgement that allows banks a certain degree of latitude in managing earnings (Bouvatier *et al.*, 2014). Therefore, banks may have the ability to engage in income smoothing by increasing LLPs when income is high, and understating this accrual when income is low (Bouvatier *et al.*, 2014). Federal banks and regulators recognize that these provisions cannot precisely match actual losses and might include a margin for imprecision that has been exploited by banks (Anandarajan *et al.*, 2007).

The study of a specific accrual in the banking literature contrasts with the literature reviewing non-financial firms, which has the tendency to study overall earnings or total accruals (Beatty and Liao, 2014). Beatty and Liao (2014) argue that the focus on LLPs in the banking literature is enlightened by (i) the predominance of this accrual for banks, explaining a great part of the variability in bank's total accruals, (ii) its impact to bank performance, (iii) the importance of estimated losses in evaluating opaque assets such as bank loans and (iii) the effect of this provision on regulatory capital ratios.

The banking research suggest that smoothing can mitigate pro-cyclical behaviour by allowing an increase in reserves in good times in order to decrease the amount of profits, and a reserve draw down in bad times (when the economy slows down and potential defaults become real) by reversing the discretionary items in order to increase the amount of profit that would otherwise have been reported (Bushman, 2014; Curcio and Hasan, 2015). However, discretionary provision practices with the aim of smoothing earnings may obscure the real risk of a bank's loan portfolio (Bushman, 2014).

This view is consistent with the regulators interest in reducing bank pro-cyclical behaviour: banks are required to set LLPs aside against expected credit losses but they also have to raise an adequate amount of capital to face unexpected credit losses. Consequently, earnings management practices might also be the result of a bank manager's attempt to meet capital requirements (Curcio and Hasan, 2015).

Prior studies indicate that managers use LLPs in the banking industry as a management tool extensively used for the purposes of: capital management to avoid costs associated with the violation of capital requirements; earnings management, aiming at stabilizing the bank net profit over time; and, finally, as a signal to investors about future

earnings (Curcio and Hasan, 2015; Anandarajan *et al.*, 2003; Ahmed *et al.*, 1999; Anandarajan *et al.*, 2007; Azzali *et al.*, 2014).

In this context, there has been conducted considerable work mainly in the United States (U.S.), focusing on the relation between LLPs and earnings management (Greenawalt and Sinkey, 1988; Ma, 1988; Beatty *et al.*, 1995; Ahmed *et al.*, 1999; among others), LLPs and capital management (Beatty *et al.*, 1995; Collins *et al.*, 1995; Moyer, 1990; among others) and the use of LLPs as a tool for signalling future intentions to outsiders (Liu and Ryan, 1995; Wahlen, 1994; among others).

The focus of our work is the investigation on earnings management practices and more precisely the income smoothing behaviour. Existing research conducted mostly in the U.S. provides mixed evidence on the use of LLP to manage earnings. While Ma (1988), Greenawalt and Sinkey (1988), Wahlen (1994), Collins *et al.* (1995), among others, find evidence to support the practice of earnings management through LLPs, Moyer (1990), Beatty *et al.* (1995), and Ahmed *et al.* (1999) do not find evidence to support for this behaviour.

Ma (1988) provides evidence that U.S. commercial banks smooth reported earnings by using LLPs, but found no relation between the quality of a bank's loan portfolio and LLPs. Greenawalt and Sinkey (1988) find that regional banks engage in income smoothing to a greater extent than money-centred banks. Collins *et al.* (1995) also find strong evidence for a positive relation between earnings and LLPs, supporting the idea that banks use LLPs to manage earnings. The authors find that profitable banks decrease LLPs when their earnings are relatively low and increase this provision when earnings are relatively high, consistent with the income smoothing theory.

On the other side, Ahmed *et al.* (1999) find no significant relation between earnings (before taxes and LLPs) and LLPs and attribute this difference of results to the different model used, when comparing to Collins *et al.* (1995).

There is also a large body of literature examining the use of LLPs in European banks. Using a sample of listed European banks that adopt IFRS standards, Leventis *et al.* (2011) provide evidence for earnings management practices using LLPs, although this behaviour is significantly reduced after the implementation of IFRS standards. Curcio and Hasan (2015) examine the case of Euro and non-Euro Area during the 1996-2006 period, and

conclude that earnings management is strongly supported for banks in the Eurozone but not for non-Eurozone banks.

Bouvatier *et al.* (2014) find that European commercial banks with more concentrated ownership use LLPs to smooth reported earnings. The authors suggest that earnings management practices are less pronounced in countries with stronger supervisory regimes or higher external audit quality. Bonin and Kosak (2013) investigate the pro-cyclical behaviour of LLPs and find evidence that banks in the emerging European region use LLPs to smooth reported earnings.

As to Australian banks, Anandarajan *et al.* (2007) show that they use LLPs to engage in earnings management, indicating that reported earnings might not reflect the true economic reality of Australian financial institutions. Furthermore, the authors find that listed commercial banks engage in earnings management to a greater extent relative to non-listed banks.

Studying banks around the world, Fonseca and González (2008) find that the national characteristics of regulation and supervision in banking is the most relevant factor to explain the differences across countries in bank income smoothing. The authors suggest that income smoothing decreases with investor protection, the extent of accounting disclosure, restrictions on bank activities and official and private supervision, while it increases with market-orientation and development of the financial system.

Overall, the majority of existing studies on this topic provide evidence to support the existence of earnings management practices in the banking industry worldwide.

2.2. The incentives of earnings management practices

Shen *et al.* (2005) argue that there are three main reasons explaining why the banking industry have different incentives to manage earnings, comparative to the general industry. First, a bank's balance sheet reflects significantly higher leverage, facing a potential problem of lack of liquidity and being exposed to the risk of bank runs. Thus, banks have a strong incentive to present positive earnings in order to keep the depositors' confidence. Second, the specific characteristic of their asset portfolio, which is inherently more opaque, present managers with ample opportunities for risk management. Lastly, banks are heavily regulated such as through capital adequacy ratios, liquidity ratios,

among others. Therefore, banks might engage in earnings management to avoid violating regulations.

Furthermore, previous empirical research suggest management compensation and debt contracts as being incentives for managers to engage in earnings management (Moyer, 1990; Healy and Wahlen, 1999). Studying publicly traded bank holding companies in U.S., Cornett, McNutt and Tehranian (2009) find evidence of earnings smoothing, suggesting that CEO pay-for performance is positively related to earnings management, while more independent boards appear to limit this practice.

Cimini (2015) adds that another incentive for managers to behave opportunistically is the presence of asymmetric information and conflicting interests between insiders and outsiders, using financial information to misrepresent the performance of the firm through the practice of earnings management. Kanagaretnam, Lobo and Mathieu (2004) argue that the motivation of bank managers to smooth earnings through LLPs is affected by bank-specific factors such as incentives to reduce the cost of external borrowing. The authors argue that well-capitalized banks have less regulatory supervision, which allow them more margin to smooth earnings when compared to less well-capitalized banks.

On the other hand, prior studies provide evidence that stronger regulatory quality constrains the incentives to manage income. Bouvatier *et al.* (2014) find that in countries with stronger supervisory regimes, banks reduce their income smoothing behaviour. Leuz, Nanda and Wysocki (2003) argue that earnings management decrease with investor protection and suggest a direct relation between corporate governance and the quality of earnings reported. Ozili and Arun (2018) claim that reduced income smoothing can reflect higher transparency in financial reporting and Burgstahler, Hail and Leuz (2006) confirms the central role of enforcement mechanism by showing that earnings management are more pronounced in countries with weaker legal systems and enforcement. Finally, there are also recent research suggesting that an increase in monitoring can lead to a decrease in earnings management practices (Azzali *et al.*, 2014; Filip and Raffournier, 2014).

2.3. The influence of state ownership in the banking industry

An increasing number of studies suggest that a better developed financial system enhances economic growth on the long run by allocating capital to more productive investments (Barth *et al.*, 2001; Levine, 2005). If we look at the primary functions of a

country's financial system, they include production of information about allocation of capital and investment opportunities; monitor investments; facilitate the trading; mobilizing and assembling savings; among others (Bushman, 2014; Levine, 2005). Each of these financial functions may influence savings and investment decisions and therefore hence economic growth (Levine, 2005), confirming the crucial role that banks play in the development of an economy (Yang and Lee, 2018).

Taking into account the importance of the banking system in the economy, an important subject to investigate is the influence of their ownership structure. When banks are directly controlled by the government, the state's role in finance is much wider than just regulation and enforcement functions. Therefore, it is important to take the state's control of financial resources in consideration whenever investigating a financial system in countries that have SOB (Dinç, 2005).

Two competing theories have been developed in the literature to explain the economic role of SOB. First, the social view suggests that state-owned companies are created to address market failures in financial and credit markets (Greenwald and Stiglitz, 1986) and that SOB contribute to economic development and to the improvement of general welfare. Under this theory, the objective of SOB is to improve welfare, so they should finance socially important projects (Sapienza, 2004; Ashraf, Arshad and Yan, 2018), even if doing so does not maximize profits (Chen, Chen, Lin and Sharma, 2016). Thus, state ownership of banks should benefit subsequent financial and economic development, and specifically productivity growth (La Porta *et al.*, 2002).

On the other side, the political view suggests that state-owned enterprises are created to maximize politicians' personal objectives such as maximizing employment or finance political connected companies (Sapienza, 2004). Also, SOB face political pressure in that politicians use them for political purposes, such as obtaining and maintaining political support (Ashraf *et al.*, 2018). Therefore, according to the political view, state ownership enables the government to finance the inefficient but politically desirable projects, which are detrimental to productivity growth (La Porta *et al.*, 2002).

Previous studies suggest that state ownership of banks is correlated with poor financial development. Barth *et al.* (2001) provide empirical evidence that government ownership of banks is associated with a lower level of financial development and La Porta

et al. (2002) document that government ownership of banks is associated with slower subsequent financial development and with lower subsequent economic growth.

There are also several researches suggesting that state ownership usually leads to underperformance of SOB. Banerjee and Velamuri (2015) provide evidence that SOB underperform when compared to non-SOB due to social outreach commitments. Cornett *et al.* (2010) find that SOB present an inferior performance than their non-state counterparts prior to 2001 and state that the performance differences are more significant in countries where the government is heavily involved in the banking system. Micco, Panizza and Yanez (2007) document that SOB operating in developing countries are less profitable than non-SOB but find no strong correlation between ownership and performance for banks located in developed countries.

As described, existing banking literature focus mostly on the relationship between ownership structure and banks' profitability. There are some studies concerning the influence of state ownership in earnings management practices but they are related to non-financial firms (Ding, Zhang and Zhang, 2007; Wang and Yung, 2011; Chen, Chen, Lobo and Wang, 2011; Ben-Nasr *et al.*, 2015). Therefore, the lack of evidence for the role of state ownership in earnings management in the banking industry warrant further research on this topic.

2.4. The influence of political connections in the banking industry

Because SOB play an important role in the financial system and in the process of economic development (La Porta *et al.*, 2002), the degree of political influence on the banks' performance is important from both a policy and a regulatory perspective.

Previous literature has investigated the possibility that the actions of SOB are motivated by political concerns. Politicians have objectives that are often influenced by political interests but in conflict with social welfare improvements and firm value maximization (Cornet *et al.*, 2010), suggesting that the performance of SOB is inferior to that of non-SOB predominantly because of the contradictory incentives of bank managers and political officers (Cornett *et al.*, 2010). Sapienza (2004) find that SOB charge lower interest rates for firms affiliated with the ruling party than for firms without such an affiliation, suggesting that these banks serve as a mechanism to supply political support.

In this sense, the election years have been widespread in the banking literature as an indicator for political influence on SOB. The empirical results in Dinç (2005) indicate that SOB increase their lending in election years when compared to non-SOB in major emerging markets in the 1990s and that these actions are influenced by political motivations. However, the authors are not able to find a similar election-year increase in developed economies. Ashraf *et al.* (2018) found that SOB in developing countries over the period 1998-2012 face significant political pressure: their loan growth is significantly higher and the net interest income is significantly lower in election years.

Jackowicz, Kowalewski and Kozłowski (2013) examine the behaviour of 11 Central European countries over the period 1995–2008 and found only partial support for political pressure on SOB. Specifically, they concluded that SOB have significantly lower net interest income ratios during the years of parliamentary elections.

3. HYPOTHESIS DEVELOPMENT

3.1. Income smoothing

As stated, the banking literature has shown that one of the main accrual expenses for the banking sector are LLPs and that they are used as a tool for earnings management. In order to smooth earnings through LLPs, bank managers will induce a positive relation between LLPs and earnings (before taxes and LLPs), meaning that they will increase LLPs when earnings are high and deliberately understate it when earnings are low (Curcio and Hasan, 2015).

Following prior studies (Ahmed *et al.*, 1999; Anandarajan *et al.*, 2007 and Leventis *et al.*, 2011), our paper focuses on income smoothing, a specific kind of earnings management that aims to reduce income volatility by stabilizing banks' net profit over time using LLPs as a discretionary management tool (Curcio and Hasan, 2015).

The initial findings of Ma (1988) and Greenawalt and Sinkey (1988), supported by the large majority of previous research about this subject, provide evidence that banks use LLPs to smooth reported earnings.

Collins *et al.* (1995) find a positive relation between LLPs and earnings management. Anandarajan *et al.* (2007) found evidence that banks in Australia use LLPs to manage earnings. Leventis *et al.* (2011) also show that banks manipulate earnings through LLPs, despite the significantly decrease of this opportunistic behaviour after the implementation of IFRS. Fonseca and González (2008) find that income smoothing increases in the presence of more developed and market-oriented financial systems. Finally, Curcio and Hasan (2015) argue that banks in the Eurozone use LLPs to smooth earnings in a more aggressive way when compared to banks not in the Eurozone.

Therefore, we investigate the relation between LLPs and earnings before taxes and provisions and state our first hypothesis as follow:

H1: Bank managers use LLPs to smooth earnings.

3.2. State ownership and income smoothing

Previous literature suggests that the type of corporate ownership affects corporate decisions. This can be explained by the agency theory, which indicates that managers

acting as agents for owners reveal tendencies to pursue strategies that meet their own goals, rather than those of the owners (Jensen and Meckling, 1976). According to Becht, Bolton and Röell (2011), the traditional conflicts between shareholders, managers, and boards are also present in banks.

Cornett *et al.* (2010) confirm the role of ownership structure as an instrumental determinant of firm performance. An important dimension of the ownership structure, in addition to insider versus outsider stock ownership, is state versus non-state ownership structure (Cornett *et al.*, 2010). The state's role in finance becomes broader and beyond the regular functions of regulation and enforcement when the bank assets are directly controlled by the state (Dinç, 2005).

Because SOB play an important role in the process of economic development (La Porta *et al.*, 2002) and have impact in financial systems (Dinç, 2005), the extent of political influence on the banks' performance is of great importance from both a policy and a regulatory perspective. Besides the possible influence of state ownership in banks' performance, it is also interesting to investigate their influence on earnings management practices such as income smoothing through LLPs.

Empirical evidence on the relation between state ownership and earnings management is still limited and provides mixed results. The majority of existing studies focus on Chinese firms, reflecting the specific nature of this market where the government plays a key role in the economy. Thus, an important dimension to further investigate is the role of state ownership in the banking industry and more specially, in developed economies such as European countries.

Ben-Nasr *et al.* (2015) study a sample composed by non-financial firms from 45 countries and demonstrate that state ownership affects negatively the quality of reported earnings, highlighting that state ownership is associated with more earnings management.

Contrarily, Wang and Yung (2011) find lower levels of earnings management among state-owned firms than non-state-owned companies, suggesting that government protection might have been an important factor in mitigating the pressure on managers to manage firm-specific information. Studying Chinese listed companies, Ding *et al.* (2007) suggest that state-owned firms demonstrate a lower degree of earnings management than

non-state-owned firms. Accordingly, Chen *et al.* (2011) argue that managers of state-owned enterprises have weaker incentives to manage earnings.

As to European firms, Gaio and Pinto (2018) document that state-owned firms engage in earnings management in a lower degree than their non-state-owned counterparts. The authors reinforce the idea that government protection reduces incentives to manage earnings.

Laeven (2013) claims that governance in the banking industry is different from that of non-financial companies mainly because of the existence of deposit insurance, implicit state guarantees and prudential regulation. Because governments usually implicitly guarantee banks' liabilities, SOB do not face serious liquidity problems and stringent leverage constraints as non-SOB do in periods of crisis (Chen *et al.*, 2016).

Thus, we anticipate that SOB may have stronger incentives to improve their accounting practices and consequently mitigate earnings management practices. We therefore hypothesize that government protection over SOB strengthens the negative relation between state ownership and earnings management:

H2: SOB are less likely to engage in earnings smoothing than non-SOB.

3.2. Election years and income smoothing

Furthermore, it is possible that the actions of SOB are motivated by political concerns. In particular, the general elections that determine the head of government are a specific event that could motivate politicians in power to use SOB with a political purpose, for example to increase their chances of re-election (Dinç, 2005). Thus, an important issue to further investigate is whether SOB, or even banks in a more general setting, behave differently around elections cycle.

Previous studies suggest that political interference on SOB activities usually leads to its underperformance when compared to their non-state counterparts (Sapienza, 2004; Dinç, 2005; Micco *et al.*, 2007). Micco *et al.* (2007) presents two possible explanations for these results: (i) following banks' social or development role, SOB are less profitable because they address market imperfections that would leave social but financially unprofitable projects not financed; (ii) following a political view, SOB are inefficient

because they are influenced by politicians whose main interest is maximizing their personal objectives.

Rogoff and Sibert (1988) argue that politicians have incentives to take actions to induce favourable economic outcomes before elections. When macroeconomic factors are controlled for, no statistical relationship between the electoral cycle and the state interventions should exist unless the government influences regulatory actions. However, if politicians can influence regulators there are good reasons to expect the electoral cycle to affect regulatory actions (Brown and Dinç, 2005).

As previously stated, banks' income smoothing practices aims to reduce income volatility by stabilizing banks' net profit over time (Curcio and Hasan, 2015). Given that reduced volatility is generally assumed as a signal of lower risk, managers have incentives to smooth earnings (Anandarajan *et al.*, 2007).

Although there are some previous studies analysing the impact of political influences on banking performance, this is to the best of our knowledge, the first research to study the impact of a country's general elections on income smoothing practices by the banking sector. Thus, we argue that in election years, state-owned bank managers may be more strongly persuaded to report stable results as a sign to stakeholders of lower risk and therefore might have a greater incentive to smooth earnings than non-state-owned bank managers. Accordingly, we propose the following hypothesis:

H3: In election years, SOB are more likely to engage in earnings smoothing than non-SOB.

4. METHODOLOGY

4.1. Sample characterization

Our study focuses on European commercial banks for an eight-year period (2011-2018), for which we extracted both bank financial statements and banks' individual ownership information from Moody's Analytics BankFocus database. Country-level data were collected from Eurostat. The definition of ultimate owner used by BankFocus is a path of minimum 50,01% known or unknown shareholders. Therefore, a bank is classified as state-owned if government ownership is at least 50,01%.

Following prior studies such as Brown and Dinç (2005), Dinç (2005) and Micco *et al.* (2007), we use the national elections years of each country to investigate the existence of political influences in the banking system. Accordingly, we first determine whether the head of government is the president or prime minister from the European Union official website. Then, the dates of all the elections that decided the head of government between 2011 and 2018 are documented using Parties and Elections website and various internet sources.

In order to control for differences in the accounting for LLPs, we focus on European countries where banks adopt uniform IFRS procedure in the estimation of LLPs. We then use the following criteria to obtain a cleaner sample. First, we use data from banks' consolidated balance sheets and income statements in order to avoid financial information duplications. Second, we choose only commercial banks in order to select a sample of banks as homogeneous as possible in regards to their activities. Third, we remove all countries that do not have any SOB, so that we can assure the comparability between the countries in our sample.

Then, we exclude extreme bank year observations for all variables of interest by eliminating outliers at the top and bottom at 99% and 1%, respectively. Lastly, based on the sample of SOB, we then identify the sample of non-SOB by maintaining only the banks with total loans closest to those of SOB (+/- one standard deviation of loans), in order to obtain a more homogeneous sample.

Therefore, our final dataset consists of annual end-of-year information for 248 commercial banks originating from 15 European Union countries, of which 35 are state-owned and 213 are non-state-owned. Our sample comprises a majority of non-listed

banks, including 47 listed banks and 201 non-listed banks (representing 81% of the total sample banks). The total number of bank-year observations are 719. Table I gives a breakdown of the sample by ownership type and country.

TABLE I - SUMMARY OF SAMPLE DISTRIBUTIONS BY OWNERSHIP TYPE AND COUNTRY.

Country	SOB	%	non-SOB	%	Total	%
Austria	2	6%	14	7%	16	6%
Belgium	2	6%	8	4%	10	4%
Cyprus	1	3%	6	3%	7	3%
France	3	9%	27	13%	30	12%
Germany	1	3%	12	6%	13	5%
Hungary	1	3%	11	5%	12	5%
Ireland	4	11%	6	3%	10	4%
Italy	1	3%	22	10%	23	9%
Latvia	1	3%	12	6%	13	5%
Netherlands	4	11%	12	6%	16	6%
Poland	2	6%	14	7%	16	6%
Portugal	3	9%	7	3%	10	4%
Slovenia	2	6%	6	3%	8	3%
Spain	1	3%	27	13%	28	11%
United Kingdom	7	20%	29	14%	36	15%
Total	35	100%	213	100%	248	100%

4.2. Empirical model

We test the income smoothing hypothesis by applying an empirical baseline panel specification based on a modified version of the model used by Ahmed *et al.* (1999), Anandarajan *et al.* (2007), Leventis *et al.* (2011), Bouvatier *et al.* (2014), Curcio and Hasan (2015) and Ozili and Arun (2018):

$$LLP_{it} = \beta_0 + \beta_1 LLP_{it-1} + \beta_2 EBT_{it} + \beta_3 CAP_{it} + \beta_4 NPL_{it} + \beta_5 LOANS_{it} + \beta_6 SIZE_{it} + \beta_7 GDP_{it} + \beta_8 LISTED_{it} + \varepsilon_{it} \quad (1)$$

where:

LLP ratio of LLPs to total assets for bank i at year t

LLP_{t-1} lagged LLP

EBT ratio of earnings before taxes and LLPs to total assets

CAP	ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserves to the minimum required regulatory capital
NPL	ratio of non-performing loans to total assets
LOANS	ratio of customer loans to total assets
SIZE	natural logarithm of total assets
GDP	annual growth rate of the gross domestic product for each country
LISTED	dummy variable that takes the value of one for listed commercial banks and zero otherwise

Consistent with Bikker and Metzmakers (2005), Bouvatier *et al.* (2014) and Ozili and Arun (2018), we consider the lagged dependent variable (LLP_{t-1}) to control for dynamic adjustments to LLPs in anticipation of potential losses on a bank loan portfolio. Thus, we would anticipate a positive coefficient if banks managers engage in dynamic adjustments to LLPs. Although we include this variable, we estimate the model through a linear regression with GLS random effects and not with dynamic panel data, given to the small size of our sample.

Based on the majority of prior literature - Ahmed *et al.* (1999), Anandarajan *et al.* (2007), Fonseca and González (2008), Leventis *et al.* (2011), Bouvatier *et al.* (2014) among others - we use the ratio of earnings before taxes and LLPs to total assets to examine the use of LLPs for earnings management. If commercial banks in our sample use LLPs to smooth earnings, we would expect a positive and significant relation between EBT and LLP.

Following prior research, our model in regression (1) includes several control variables to isolate the non-discretionary components of LLP from its discretionary components (Curcio and Hasan, 2015; Fonseca and González, 2008; Ozili and Arun, 2018).

GDP is a proxy for the change in economic growth that capture the effects of macroeconomic conditions on LLPs and aims to control for the pro-cyclical effect of LLPs (Anandarajan *et al.*, 2007; Fonseca and González, 2008; Curcio and Hasan, 2015).

We expect a negative coefficient on this variable because banks will reduce LLPs in order to inflate their earnings in the presence of an economic downturn (Leventis *et al.*, 2011).

We follow Pérez, Salas-Fumas and Saurina (2008), Anandarajan *et al.* (2007) and Leventis *et al.* (2011) and include SIZE as a control variable for bank size. Although the relation between LLP and bank size is non-monotonic (Leventis *et al.*, 2011), we expect that bigger banks might engage in a higher credit portfolio diversification, which will result in a negative coefficient for this variable (Leventis *et al.*, 2011).

LOANS is generally used as an indicator of risk of default for the overall credit portfolio that can be thought as a proxy to capture general provisions (Curcio and Hasan, 2015) and NPL is considered as a specific provision since non-performing loans reflect probable loan losses (Beaver and Engel, 1996). LLPs are expected to be positively affected by changes in these two variables.

Similar to Ahmed *et al.* (1999), Beatty *et al.* (1995) and Anandarajan *et al.* (2007), we use the ratio of actual regulatory capital before loan loss reserves to the minimum required regulatory capital to indicate the use of LLPs for capital management through our variable CAP. We expect a negative sign on this coefficient if capital management is present because we expect banks to keep higher LLPs when they have low CAP to compensate for their low regulatory capital. Lastly, we introduce the dummy variable LISTED because listed commercial banks may have different incentives to engage in earnings management (Anandarajan *et al.*, 2007).

Moreover, given the importance of ownership structure in bank's performance, we estimate the following regression in order to capture differences in earnings smoothing practices between SOB and non-SOB:

$$LLP_{it} = \beta_0 + \beta_1 LLP_{it-1} + \beta_2 EBT_{it} + \beta_3 CAP_{it} + \beta_4 NPL_{it} + \beta_5 LOANS_{it} + \beta_6 SIZE_{it} + \beta_7 GDP_{it} + \beta_8 LISTED_{it} + \beta_9 SOB_{it} + \beta_{10} SOB * EBT_{it} + \varepsilon_{it} \quad (2)$$

where SOB is a dummy variable that takes the value of one for SOB and zero otherwise. SOB*EBT is an interaction variable between ownership type and EBT that examines whether SOB demonstrate more or less propensity to smooth earnings through LLPs when compared to their non-state counterparts. Therefore, if SOB engage less in earnings smoothing than non-SOB, as we predict, we expect a negative and significant coefficient for SOB*EBT. All remaining variable are defined as before.

Finally, in order to examine whether the period of elections influences the practice of earnings smoothing, we estimate the following regression:

$$\begin{aligned}
 LLP_{it} = & \beta_0 + \beta_1 LLP_{it-1} + \beta_2 EBT_{it} + \beta_3 CAP_{it} + \beta_4 NPL_{it} + \beta_5 LOANS_{it} + \beta_6 SIZE_{it} + \beta_7 GDP_{it} \\
 & + \beta_8 LISTED_{it} + \beta_9 ELECTION_{it} + \beta_{10} ELECTION * EBT_{it} + \beta_{11} SOB_{it} \\
 & + \beta_{12} ELECTION * EBT_{it} * SOB + \varepsilon_{it}
 \end{aligned} \tag{3}$$

In regression (3) we include the dummy variable ELECTION that assumes the value of 1 if it is an election year in each country of our sample and an interaction variable ELECTION*EBT. If commercial banks engage more in earnings smoothing in election years, compared to non-election years, then we expect the coefficient of the interaction variable to be positive and statistically significant. Furthermore, we include a two-way interaction variable ELECTION*EBT*SOB that shows the interaction of SOB relative to non-SOB with earnings during the year of elections. If SOB use LLPs to more aggressively smooth earnings relative to non-SOB in election periods (as our supposition), we expect the coefficient of ELECTION*EBT*SOB to be positive and statistically significant. Once again, all variables remain as previously defined.

5. ANALYSIS AND RESULTS

5.1. Descriptive statistics

Table II presents descriptive statistics for the full sample, SOB and non-SOB samples for the period of analysis between 2011 and 2018.

Results show that on average LLPs are 0.6% of total assets for the full and non-SOB samples, and are higher for SOB at 0.7%. Thus, these results confirm that LLPs are a relatively important accrual for the banking sector. The observation of marginally lower LLP for non-SOB suggests that these banks retain less provisions when compared to SOB and perhaps are using another tool for credit risk management (Ozili and Arun, 2018).

Regarding the profitability of our sample banks, the mean ratio of earnings before taxes and LLPs to total assets (EBT) for the full sample is 1% and is 0.6% for SOB and 1.1% for non-SOB. These results imply that non-SOB are considerably more profitable than SOB in Europe, which corroborates the findings of previous studies suggesting that state ownerships leads to underperformance of SOB (Micco *et al.*, 2007; Cornett *et al.*, 2010; Banerjee and Velamuri, 2015).

The mean value for CAP is 3.776 for the full sample, 3.758 for the non-SOB sample and 3.855 for the SOB sample, implying that, on average, commercial banks in the sample are well capitalized. As to the credit quality of our sample banks, non-performing loans are, on average, 3.1% of total assets (NPL) and are lower for non-SOB at 3% and higher for SOB at 3.5%, suggesting that non-SOB have relatively better credit quality when compared to SOB. This result suggests that non-SOB might have better systems of risk management to efficiently mitigate non-performing loans to a greater extent than SOB during the period of analysis.

Loans are, on average, higher than half the total assets for our sample banks, confirming its importance for the banking activity by showing mean values of 53.6%, 54.7% and 53.4% for the full sample, SOB and non-SOB samples, respectively. SIZE is 16.9 for SOB and 15.8 for non-SOB, confirming that, on average, SOB are larger than non-SOB and that their large size may contribute to their importance to the financial system and to the process of economic development (La Porta *et al.*, 2002).

TABLE II - DESCRIPTIVE STATISTICS FOR THE SAMPLE OF 248 COMMERCIAL BANKS.

	Statistics	LLP	EBT	CAP	NPL	LOANS	SIZE	GDP
Full sample	Mean	0.006	0.010	3.776	0.031	0.536	15.938	0.030
	Median	0.003	0.010	3.488	0.019	0.598	15.882	0.025
	Minimum	0.000	-0.054	1.458	0.000	0.014	10.675	-0.080
	Maximum	0.059	0.062	9.373	0.222	0.914	21.101	0.344
	Standard Deviation	0.008	0.013	1.366	0.036	0.224	2.038	0.043
Non-SOB	Mean (i)	0.006	0.011	3.758	0.030	0.534	15.763	0.029
	Median	0.003	0.010	3.455	0.019	0.591	15.773	0.025
	Min	0.000	-0.054	1.458	0.000	0.014	10.675	-0.080
	Max	0.059	0.062	9.373	0.212	0.914	21.101	0.344
	Standard Deviation	0.008	0.013	1.343	0.035	0.224	1.986	0.041
SOB	Mean (ii)	0.007	0.006	3.855	0.035	0.547	16.919	0.035
	Median	0.002	0.005	3.625	0.018	0.630	16.941	0.027
	Minimum	0.000	-0.037	1.553	0.000	0.015	10.984	-0.080
	Maximum	0.058	0.047	8.875	0.222	0.850	19.937	0.344
	Standard Deviation	0.010	0.010	1.466	0.040	0.224	2.054	0.054
Diff of Means	(iii) = (i) - (ii)	-0.001** (0.031)	0.006*** (0.000)	-0.097 (0.406)	-0.005* (0.056)	-0.013 (0.4437)	-1.157*** (0.000)	-0.006** (0.032)

Notes: LLP is the ratio of LLPs to total assets; EBT is the ratio of earnings before taxes and LLPs to total assets; CAP is the ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserves to the minimum required regulatory capital; NPL is the ratio of non-performing loans to total assets; LOANS is the ratio of customer loans to total assets; SIZE is the natural logarithm of total assets; GDP is the annual growth rate of the gross domestic product for each country.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively. P-values are reported in parenthesis.

In addition, we use a t-student test in order to investigate the behaviour of both types of banks: state-owned and non-state-owned. With this test, we are able to compare these two sub-samples and to determine if their difference of means are statistically significant. If the p-value is below 0.05, the results reject the null hypothesis in which the average of a certain bank-level variable for SOB is equal to non-SOB, at the 5% level.

The results show some differences between the two groups of banks: there is statistical significance for the mean differences for LLP, EBT, NPL, SIZE and GDP. More specifically, the average value of LLP for both types of banks is quite different, since the results point to a negative and statistical significance at the 5% level, confirming that SOB set aside a significantly higher amount of LLPs than non-SOB.

5.2. Pearson's correlation matrix

Table III provides Pearson correlation matrix for the full sample. Among the independent variables, EBT, NPL and LOANS are positively associated with the dependent variable LLP, while CAP, SIZE and GDP are negatively associated with LLP, although the correlation for SIZE does not reveal statistical significance.

TABLE III - PEARSON CORRELATION MATRIX FOR FULL SAMPLE.

	LLP	EBT	CAP	NPL	LOANS	SIZE	GDP
LLP	1.000						
EBT	0.144*** (0.000)	1.000					
CAP	-0.237*** (0.000)	0.085** (0.011)	1.000				
NPL	0.692*** (0.000)	0.071** (0.014)	-0.151*** (0.000)	1.000			
LOANS	0.191*** (0.000)	0.137*** (0.000)	-0.265*** (0.000)	0.233*** (0.000)	1.000		
SIZE	-0.034 (0.213)	-0.070** (0.011)	-0.208*** (0.000)	-0.050* (0.077)	0.201*** (0.000)	1.000	
GDP	-0.062** (0.025)	0.005 (0.849)	0.083** (0.011)	0.003 (0.921)	0.009 (0.726)	-0.035 (0.191)	1.000

Notes: LLP is the ratio of LLPs to total assets; EBT is the ratio of earnings before taxes and LLPs to total assets; CAP is the ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserves to the minimum required regulatory capital; NPL is the ratio of non-performing loans to total assets; LOANS is the ratio of customer loans to total assets; SIZE is the natural logarithm of total assets; GDP is the annual growth rate of the gross domestic product for each country.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively. P-values are reported in parenthesis.

More specifically, we find that LLP is positively and significantly correlated with EBT (0.144), indicating that when earnings before taxes and LLPs are higher, there is an increase of LLPs. As expected, LLP is negatively and significantly correlated with CAP (-0.237), implying that lower regulatory capital ratios are followed by increases in bank provisions. Similarly, LLP is significant and negatively correlated with GDP (-0.062), indicating that bank managers increase LLPs in periods of economic downturn, suggesting that bank provisions are associated with economic cycle fluctuations.

Regarding the remaining correlations shown in Table III for the independent variables, the results are consistent with similar studies in the literature. Overall, we conclude that the correlations coefficients are not sufficiently high to bias our results. In fact, the highest correlation value is 0.692, between LLP and NPL, which suggests that our study has no multicollinearity concerns.

5.3. Regression results

The empirical analysis has three major objectives: detect income smoothing practices in the European banking sector, investigate whether SOB behave differently in the use of LLPs as a tool for income smoothing, and lastly examine political influences in earnings management during election years. According to the hypotheses described in the previous section, table IV presents the regression results.

In contrast to the majority of existing literature (Anandarajan *et al.*, 2007; Leventis *et al.*, 2011; Curcio and Hasan, 2015), we do not find conclusive evidence to support the use of LLPs to smooth income. Our results from regression (1) show that the coefficient of the ratio of earnings before taxes and LLPs to total assets (EBT) is positive but not statistically significant across the three estimations. Thus we don't find evidence to sustain our expectations regarding hypothesis 1.

Although we are not able to draw conclusive evidence about the use of LLPs to smooth income as previously stated in the major banking literature, we believe that the differences in our findings may be due to some specificities of our sample. First, our sample comprises a very recent period of analysis, between 2011 and 2018, during which several measures were taken in order to limit the practice of earnings management, such as the implementation of the Single Supervisory Mechanism (SSM) in 2014, for example.

TABLE IV - REGRESSION RESULTS.

Variables	Expected sign	Regression 1		Regression 2		Regression 3	
		Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	?	0.005***	0.007	0.005**	0.013	0.005***	0.008
LLP _{t-1}	+	0.382***	0.000	0.380***	0.000	0.382***	0.000
EBT	+	0.002	0.902	0.015	0.404	0.003	0.878
CAP	-	-0.001***	0.000	-0.001***	0.000	-0.001***	0.000
NPL	+	0.091***	0.000	0.091***	0.000	0.091***	0.000
LOANS	+	0.000	0.617	0.001	0.482	0.000	0.608
SIZE	-	-0.000	0.157	-0.000	0.166	-0.000	0.167
GDP	-	-0.021***	0.000	-0.021***	0.000	-0.021***	0.000
LISTED	?	0.001	0.167	0.001	0.193	0.001	0.173
SOB	?	-	-	0.001	0.158	-0.000	0.999
SOB*EBT	-	-	-	-0.131**	0.019	-	-
ELECTION	?	-	-	-	-	-0.000	0.703
ELECTION*EBT	+	-	-	-	-	-0.007	0.854
ELECTION*EBT*SOB	+	-	-	-	-	0.005	0.960
Number of observations		719		719		719	

Notes: LLP is the dependent variable and is the ratio of LLPs to total assets; LLP_{t-1} is the lagged LLP; EBT is the ratio of earnings before taxes and LLPs to total assets; CAP is the ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserves to the minimum required regulatory capital; NPL is the ratio of non-performing loans to total assets; LOANS is the ratio of customer loans to total assets; SIZE is the natural logarithm of total assets; GDP is the annual growth rate of the gross domestic product for each country; LISTED is a dummy variable that takes the value 1 for listed commercial banks and 0 otherwise; SOB is a dummy variable that takes the value 1 for state-owned banks and zero otherwise.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively.

Second, our sample includes 248 banks, of which only 14% (35 banks) are state-owned, what we consider to be relatively small. This is because we follow the classification used by BankFocus database and defined a bank as state-owned if it has a minimum percentage of government ownership of 50.01%, what lead us to a significant reduction in our sample banks.

Despite this not being the object of our study, our results provide evidence of the presence of capital management since the coefficient of CAP is negative and statistically significant at the 1% level, which corroborates the recent findings of authors such as Ozili and Outa (2017) and Pinto and Picoto (2018).

As to the control variables, we find the coefficient of NPL to be positive and significant in all estimations for the full sample. This is an expected result, confirming the direct relation between LLPs and the deterioration in the sample banks' credit portfolio quality, implying that banks increase LLPs when they expect higher non-performing loans. LOANS coefficient reports a positive sign but it is not statistically significant, so we cannot find significant evidence for a relation with LLP.

The coefficient for SIZE is negative but it is not statistically significant, therefore not allowing us to draw significant inference about the relation with LLP. As expected, GDP coefficient is negatively associated with LLP and statistically significant at the 1% level, supporting the evidence of banks' pro-cyclical behaviour with economic fluctuations, which has already been pointed out in previous empirical studies, such as Fonseca and González (2008) and Ozili and Arun (2018).

Finally, the coefficient of the lagged dependent variable (LLP_{t-1}) shows a positive sign and is statistical significant at the 1% level, confirming that banks adjust LLPs in a gradual way to recognize potential losses in their loan portfolio.

Through regression (2), we test the second hypothesis for differential income smoothing behaviour among SOB relative to non-SOB. The interaction term SOB*EBT is negative and statistically significant at the 5% level, indicating a significant decline in earnings smoothing using LLPs by SOB relative to non-SOB. Thus, our results support our hypothesis 2, predicting that SOB use LLPs to smooth income to a less extent than non-SOB.

This finding confirms that the state implicit guarantee acts as a stronger incentive for SOB to improve the quality of their financial reports and therefore mitigating opportunistic uses of LLPs to smooth earnings. Our results corroborates and extend the findings previously documented regarding non-financial companies by Wang and Yung (2011) and Gaio and Pinto (2018) and confirms that government protection reduces incentives to smooth income on SOB.

Finally, we investigate for differences of the propensity to use LLPs to smooth income in election years of SOB through interaction variable $ELECTION*EBT*SOB$. The coefficient of this variable presented in regression (3) is not statistically significant. This indicates insufficient evidence to support our third hypothesis regarding the influence of election years on the use of LLPs by SOB to smooth income. Our results remain statistically insignificant even when we test for a more general influence of election years in all sample banks through interaction variable $ELECTION*EBT$.

Our findings suggest that the income smoothing behaviour of the European banking sector is not affected by political pressure of national electoral cycles. More precisely, SOB do not change significantly their income smoothing practices in election years, providing new evidence about the role of political influences in SOB. Despite some existing literature such as Dinç (2005) and Ashraf *et al.* (2018) finds correlation between election years and underperformance of SOB, these studies only find evidence for developing countries.

Thus, we provide new insights regarding political influences in banking in two different ways. First, we use a sample of developed economies by focusing on European countries. Second, we compare income smoothing practices through LLPs instead of analysing lending behaviours or performance differences in election years. Hence, we are able not only to present new evidence on the relation between elections and banking income smoothing, but also in developed economies.

We believe that our results confirm that in developed countries with stronger regulatory systems is more difficult for politicians to exacerbate such influence on the banking system and that the electoral cycle in particular does not affect the quality of financial reporting.

6. ADDITIONAL ANALYSIS AND ROBUSTNESS TESTS

In this section, we perform some additional tests in order to check the robustness of our main findings. First, we analyse the impact of the global financial crisis by comparing the income smoothing behaviours of the countries with financial assistance with the countries that were not subject to an economic intervention. Second, we investigate if SOB' reported earnings are likely to be influenced by whether the bank is listed or non-listed. Finally, we study the impact of the SSM' implementation in 2014 on income smoothing practices.

6.1. The effects of economic interventions

We perform further tests with the aim of analysing the impact of the 2008 Global Financial Crisis on the quality of financial reporting in the European banking sector. In order to do that, we created the dummy variable INTERV that takes the value of 1 for the European countries that were subject to an economic intervention in the course of the 2008 financial crisis and for which the sovereign debt crisis was more severe - Portugal, Ireland, Spain and Italy - and zero otherwise.

Then, we investigate the propensity of these countries to engage in earnings smoothing by interacting the dummy variable INTERV and the independent variable EBT in Test (1), which allow us to better understand the effects of the sovereign debt crisis on these two groups of countries that faced the financial crisis differentially.

Recent research suggests that increases on monitoring leads to an increase in the demand for higher quality in financial reporting. Azzali *et al.* (2014) finds that the financial crisis decreases the opportunistic behaviour through LLPs for riskier banks. Pinto and Picoto (2018) show that the countries for which the financial crisis was more severe report a decrease in the level of earnings management between 2007 and 2014. Filip and Raffournier (2014) investigate the link between the financial crisis and earnings management and find evidence for a decrease in income smoothing in the crisis period (2008-2009).

Given that the European countries with financial assistance were subject to a higher degree of monitoring from different stakeholders (Filip and Raffournier, 2014), we expect a lower propensity of these countries to engage in earnings management, compared to other European countries. The results presented in Table V confirm our expectations and

show that the coefficient for the interaction variable INTERV*EBT is negative and statistically significant at the 5% level, entailing that the severely affected countries of the 2008 financial crisis use LLPs to smooth income to a less extent when compared to other European countries in our sample.

TABLE V - THE EFFECTS OF ECONOMIC INTERVENTIONS.

Variables	Test (1)		Test (2)	
	Coefficient	p-value	Coefficient	p-value
Intercept	0.005***	0.008	0.005**	0.014
LLP _{t-1}	0.378***	0.000	0.377***	0.000
EBT	0.023	0.282	0.003	0.874
CAP	-0.001***	0.000	-0.001***	0.000
NPL	0.091***	0.000	0.094***	0.000
LOANS	0.000	0.672	0.000	0.666
SIZE	-0.000	0.189	-0.000	0.266
GDP	-0.022***	0.000	-0.021***	0.000
LISTED	0.001*	0.068	0.001*	0.072
INTERV	-0.000	0.852	-0.001**	0.044
INTERV*EBT	-0.072**	0.047	-	-
SOB	-	-	0.000	0.866
INTERV*SOB*EBT	-	-	-0.130	0.117
Number of observations	719		719	

Notes: All variables remain as previous defined in Tables II, III and IV.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively.

We also investigate if there are differences between SOB and non-SOB of the countries subject to intervention in Test (2). In order to do that, we put three variable in interaction: INTERV, SOB and EBT. However, we are not able to draw significant inference from the INTERV*SOB*EBT coefficient since the results show that this coefficient is not statistically significant.

6.2. Listed vs non-listed banks

In order to better understand the relation between state ownership and income smoothing, we investigate whether there are significant differences between listed and non-listed banks that could influence the use of LLPs to smooth bank income.

The existing literature provides conflicting results about the influence of capital markets on the quality of financial reports. Beatty, Ke and Petroni (2002) argue that listed bank managers are subject to more pressure to report constantly increasing earnings and

find that listed banks have a greater propensity than non-listed banks to use discretion in LLPs. Anandarajan *et al.* (2007) provide evidence that listed Australian banks engage in earnings management to a greater extent when compared to their non-listed counterparts. On the contrary, Burgstahler *et al.* (2006) studies European listed and non-listed firms and document that non-listed firms display higher levels of earnings management, indicating that capital markets provide incentives to improve earnings quality.

In order to test for this difference, we interact the dummy variable LISTED with the independent variable EBT. If listed commercial banks engage more in earnings smoothing than non-listed banks, we would expect a positive and significant coefficient of this interaction variable. However, our results shown in Table VI are not statistically significant, suggesting that capital markets do not influence the quality of banks' reported financial statements.

TABLE VI - LISTED VS NON-LISTED BANKS.

Variables	Listed vs non-listed		Listed banks		Non-listed banks	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	0.005***	0.007	0.005	0.227	0.004*	0.063
LLP _{t-1}	0.381***	0.000	0.329***	0.000	0.402***	0.000
EBT	-0.002	0.924	0.041	0.248	0.011	0.604
CAP	-0.001***	0.000	-0.001**	0.018	-0.001***	0.001
NPL	0.091***	0.000	0.098***	0.000	0.087***	0.000
LOANS	0.000	0.602	0.002	0.248	0.000	0.866
SIZE	-0.000	0.155	-0.000	0.381	-0.000	0.380
GDP	-0.021***	0.000	-0.037***	0.002	-0.017***	0.000
LISTED	0.000	0.578	-	-	-	-
LISTED*EBT	0.015	0.693	-	-	-	-
SOB			0.005**	0.020	0.000	0.481
SOB*EBT			-0.621**	0.011	-0.098*	0.090
Number of observations	719		232		487	
Number of banks	248		47		201	

Notes: All variables remain as previous defined in Tables II, III and IV.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively.

We believe that this lack of evidence regarding the relation between listed banks and earnings smoothing may be related to our sample characteristics, including only European Union commercial banks. All listed companies in the European Union are required to comply with International Financial Reporting Standards (IFRS) since 2005, which may improve the reliability of financial reporting (Barth, Landsman and Lang, 2008). Leventis

et al. (2011) find a decline in earnings management practices through LLPs after the implementation of IFRS in European Union. Moreover, supervisors are more likely to apply greater scrutiny to the bigger banks, given their importance in the event of a banking crisis. This focus might reduce the incentives to manage earnings in publicly traded banks (Fonseca and González, 2008).

Importantly though, our main results remain unchanged when we compare the two sub-samples of listed and non-listed commercial banks. Our previous results stating that SOB display lower levels of discretionary behaviour through LLPs remain statistically significant, independent of whether they are listed or non-listed.

6.3. The effects of the Single Supervisory Mechanism

Finally, we study the impact of the SSM' implementation on income smoothing practices in our sample banks. Effective 2014, the ECB takes the role of ultimate authority and prudential supervisor of all banks in the Euro Area (Ferran and Babis, 2013). Prior literature suggests that an increase in monitoring can lead to a decrease in earnings management practices (Azzali *et al.*, 2014; Filip and Raffournier, 2014).

With the aim of testing the impact of the SSM's implementation on earnings smoothing behaviour, we create the dummy variable DSSM that takes the value of 1 for the years between 2014 and 2018 (right after this program came into operation) and 0 otherwise and then interact this with EBT. If our sample banks demonstrate lower propensity to engage in earnings smoothing after the adoption of the SSM in Europe, when compared to the period before of its implementation, we would expect a negative and significant coefficient for the interaction variable DSSM*EBT.

According to our findings presented in Table VII, there is no sufficient evidence to establish a relation between the implementation of the SSM and earnings smoothing. Our results remain insignificant even when we exclude from the sample the countries that, not belonging to the Euro Area, haven't yet chosen to participate in SSM, which are Hungary, Poland and United Kingdom.

To some extent, we believe that these results may be influenced by the period of our analysis, from 2011 to 2018, and wonder if they would be different if we extended the period to several years before the beginning of operation of the SSM in 2014.

TABLE VII - THE EFFECTS OF THE SINGLE SUPERVISORY MECHANISM.

Variables	Full sample		Sample without Hungary, Poland and United Kingdom	
	Coefficient	p-value	Coefficient	p-value
Intercept	0.008***	0.000	0.007***	0.001
LLP _{t-1}	0.369***	0.000	0.282***	0.000
EBT	-0.038	0.297	-0.027	0.537
CAP	-0.001***	0.000	-0.001***	0.000
NPL	0.092***	0.000	0.098***	0.000
LOANS	0.001	0.512	-0.000	0.935
SIZE	-0.000*	0.055	-0.000	0.220
GDP	-0.013***	0.004	-0.313***	0.000
LISTED	0.001	0.181	0.000	0.759
DSSM	-0.003***	0.000	-0.002***	0.000
DSSM*EBT	0.059	0.140	0.053	0.283
Number of observations	719		559	

Notes: All variables remain as previous defined in Tables II, III and IV.

***, ** and * represent statistical significance at 1%, 5% and 10% levels, respectively.

7. CONCLUSION

The study of earnings management in the banking industry has been the focus of numerous previous research largely because the central role that banks play for financial stability (Bushman, 2014; Ozili and Outa, 2017). Ownership structure has been demonstrated to be a determining factor of firm performance (Cornett *et al.*, 2010). In this context, previous studies such as Barth *et al.* (2001) and La Porta *et al.* (2002) find that state ownership of banks has major impact in financial development.

This study extends the literature as we examine the effect of state ownership on income smoothing practices in the banking industry using a sample of European commercial banks in the 2011-2018 period. We also provide new insights concerning political influences in banking by investigating the relation between national election years and banks' income smoothing behaviour in developed economies.

In contrast to the large majority of existing literature, our results do not provide clear evidence for the existence of earnings smoothing using LLPs in European banks. Nevertheless, when we examine the influence of ownership structure, our results suggest that SOB engage in earnings smoothing in a lower degree than their non-state counterparts, suggesting that government protection is an important factor in mitigating the pressure on bank managers to engage in earnings smoothing. Moreover, we do not find a strong relation between national election years and income smoothing, implying that the discretionary use of LLPs is not affected by political influence in the electoral cycle.

Additional tests entail that the influence of state ownership previously documented is independent of whether a bank is listed or non-listed, implying that capital markets do not play an important role in explaining the relation between state ownership and income smoothing. In the period of analysis, we also document that commercial banks located in the severely affected countries of the 2008 financial crisis use LLPs to smooth income to a less extent than other European countries in our sample, suggesting that increases on monitoring lead to an increase in the quality of financial reporting.

Overall, our study demonstrates that government protection and increasing monitoring limit the use of LLPs as a tool for income smoothing purposes, contributing to higher quality in financial reporting of the banking sector. On the other side, capital

markets and political influences in election years do not seem to influence earnings smoothing. Our results confirm that in developed countries with stronger regulatory systems is more difficult for politicians to exacerbate political influence on the banking system and that the electoral cycle in particular does not affect the quality of reported earnings.

We believe this study makes important contributions to the existing literature. Considering the increasing importance of corporate governance, we use an up-to-date sample with both state-owned and non-SOB, which allows us to contribute to a yet underdeveloped topic on banking literature and therefore to a better understanding of the role of state ownership on income smoothing. In addition, our conclusions may also be interesting from a regulatory point of view, as a way to improve banking authorities' perception of earnings smoothing practices, because lower accounting discretion power can contribute to the production of more reliable financial reporting. This may help regulators and supervisors to improve legislation in the banking sector and to better allocate public resources.

Our study has three major limitations. First, our data does not include years before the global financial crisis of 2008, reflecting only the effects of posterior years. Second, we have not used dynamic panel data in our estimations. Third, we identified a bank as state-owned if state ownership is more than 50% what lead to a decrease in our sample banks, while prior studies use a metric of only 20% such as La Porta, Lopez-de-Silanes and Shleifer (1999) and Dinç (2005).

Regarding future research, it would be interesting to investigate the relationship between state ownership and earnings smoothing practices in other areas of the world. Since the degree of state ownership varies across countries (La Porta *et al.*, 2002), the geographic location can play a significant role in earnings smoothing practices and the results can be quite different from those presented in Europe. For example, it would be interesting to compare the results obtained in Europe with Eastern Europe countries such as Russia where the state plays a more significant role in the economy.

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APPENDICES

Appendix 1 – Summary of sample distribution by country (listed and non-listed banks).

Country	Listed	%	Non-listed	%	Total	%
Austria	5	11%	11	5%	16	6%
Belgium	0	0%	10	5%	10	4%
Cyprus	1	2%	6	3%	7	3%
France	2	4%	28	14%	30	12%
Germany	0	0%	13	6%	13	5%
Hungary	1	2%	11	5%	12	5%
Ireland	3	6%	7	3%	10	4%
Italy	15	32%	8	4%	23	9%
Latvia	0	0%	13	6%	13	5%
Netherlands	2	4%	14	7%	16	6%
Poland	10	21%	6	3%	16	6%
Portugal	1	2%	9	4%	10	4%
Slovenia	1	2%	7	3%	8	3%
Spain	4	9%	24	12%	28	11%
United Kingdom	2	4%	34	17%	36	15%
Total	47	100%	201	100%	248	100%