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# **CFO gender and financial reporting transparency in banks**

## **Abstract**

We investigate the effect of CFO gender on the timeliness of loan loss provision (LLP) reporting using a large sample of US banks from 2007 to 2016. Our findings show that women CFOs are associated with timelier forward-looking provisioning than men counterparts, suggesting that they follow a more transparent approach to financial reporting policies. Our results hold under different model specifications, including the use of bank and CEO fixed effects. We further address endogeneity concerns by showing that the timeliness of LLP reporting improves significantly for banks experiencing a man-followed-by-woman CFO transition. Overall, our study supports the notion that women CFOs are associated with higher financial reporting transparency and provides further insights into how CFO gender affects risk-aversion and ethics in banks, with wider implications about the importance of women's representation in the finance-based industry.

**Keywords:** CFO Gender; Financial Reporting Transparency; Loan Loss Provision; Gender Diversity; Corporate Governance

*“What would have happened if Lehman Brothers were Lehman Sisters?”*

Christine Lagarde, President elect of the European Central Bank (ECB) & former Managing Director of the International Monetary Fund (IMF)

*“The collapse of Lehman Brothers would never have happened if there'd been Lehman Sisters there with them! Why? Because women managers are naturally more risk-averse.”*

Neelie Kroes, former European Union Commissioner for Competition (2004-2010)

## **1. Introduction**

Banks were at the heart of the 2008/09 financial crisis, with a number of them arguably engaging in excessive risk-taking and the use of aggressive accounting methods in the preceding years (Barth and Landsman 2010). A large body of research indicates that women are more risk-averse and hold higher ethical standards than men (Eagly, Karau, and Makhijani 1995; Niessen and Ruenzi 2007; Croson and Gneezy 2009; Ibrahim and Angelidis 2009; Gul, Hutchinson, and Lai 2013; Huang and Kisgen 2013); as a corollary, it has been suggested that behavioural differences between men and women could play an important role in the avoidance of financial crises or, at least, in making them less severe (Van Staveren 2014). Academics and regulators have proposed actions related to preventing such crises in the future and focused, inter alia, on gender-diversity-related issues endemic to the financial services industry. For example, as a way to reduce excessive risk-taking, there have been arguments calling for an increase in the number of women in top positions in banking (Palvia, Vähämaa, and Vähämaa 2015; Skala and Weill 2018). However, Adams and Ragunathan (2017) argue that women who seek top positions in risky industries have similar characteristics to their men counterparts, while Berger, Kick, and Schaeck (2014) argue that gender-diverse boards do not operate as efficiently as homogeneous boards during financial crisis periods. Overall, the conclusions of these studies are mixed and conflicting, suggesting that the effect of women executives on the stability of the banking industry still requires further investigation.

Motivated by this debate in the literature, our study examines the relationship between women executives and financial reporting transparency, arguably an important determinant of stability in banking institutions. Our examination is supported by literature, as discussed above, which suggests that the quality of financial reporting played a central role in the 2008/09 financial crisis (e.g. Barth and Landsman 2010). Similarly we are motivated by studies providing evidence that women CFOs are associated with improved financial reporting transparency (Barua et al. 2010; Francis et al. 2015). Reporting transparency is associated with a decreased risk, since it allows external stakeholders to take early actions (Bushman and Williams 2012); it can also be considered a manifestation of higher ethical

standards, since it limits managerial opportunism (Bushman, Piotroski, and Smith 2011; Ho et al. 2015). We thus add to existing research on gender-related issues in the banking industry, which has so far mainly focused on the effect of gender on risk-taking.

One of the areas most useful for examining the effects of financial reporting on the banking industry during the financial crisis was the recognition of loan loss provision (LLP), an amount set aside to cover future credit losses. Overall, earnings management studies in banking focus almost exclusively on LLP reporting for a number of reasons. First, LLP is the largest single bank accrual, accounting for more than 50% of bank accruals (Beatty and Liao 2014; Bushman and Williams 2015). Second, LLP has a material effect on bank performance, and its estimation involves a substantial degree of managerial discretion (Beatty and Liao 2014). Third, since loans comprise a significant fraction of banks' assets, LLP is considered an important indicator of a bank's risk. Evidence suggests that banks that failed to report LLP in a timely manner prior to the financial crisis were more likely to fail during that period (Jin, Kanagaretnam, and Lobo 2018). In addition, Bushman and Williams (2012) show that banks reporting timelier LLP have more external discipline over risk-taking<sup>1</sup>, while Bushman and Williams (2015) find that banks associated with timelier LLP reporting are less risky. For these reasons, LLP provides an excellent avenue for analysing and gaining further insights into managerial risk-taking in the banking industry (Nichols, Wahlen, and Wieland 2009).

The literature on the timeliness of LLP reporting follows a view on the timeliness of earnings developed by Basu (1997), and regards earnings to be timely when bad news is recognised faster than good news. In the LLP context, timelier LLP reporting means that reported LLP should better reflect an anticipation of future credit losses generated from the current loans. Empirically, this is captured by regressing reported LLP on forward and current changes in non-performing loans (NPL) (Beatty and Liao 2014). That is, for LLP to be timely, it should incorporate bad loans before they become non-performing.

In this study, we examine whether the presence of women (men) CFOs is associated with more (less) transparent LLP reporting practices. We focus on CFOs in particular, because accounting literature suggests that they are the executives playing the most influential role in financial reporting decision-making (e.g. Chava and Purnanandam 2010; Ge, Matsumoto, and Zhang 2011; Feng et al. 2011). Our study is also informed by psychology-related research providing evidence of gender-related differences relative to men's and women's approaches to decision-making processes (Born, Bleichrodt, and Van Der Flier 1987; Eagly and Karau 1991; Eagly, Karau, and Makhijani 1995; Croson and Gneezy 2009). Overall, extant research indicates that women are more risk-averse and apply higher ethical standards than men (Vermeir and Van Kenhove 2008; Croson and Gneezy 2009). Following up on these studies, scholars in accounting and finance provide empirical evidence that women directors and executives are more risk-averse and more compliant with regulations than men executives (Francis et al. 2014; Francis

et al. 2015; García-Sánchez, Martínez-Ferrero, and García-Meca 2017; Zalata, Tauringana, and Tingbani 2018; Zalata et al. 2018; Skala 2008). Prior research has also investigated the effect of the CFO's gender on the firm's financial reporting quality, and the relevant findings show that women CFOs are associated with higher earnings quality (Barua et al. 2010; Liu, Wei, and Xie 2016) and income-decreasing discretionary accruals (Peni and Vähämaa 2010). In the same spirit, Francis et al. (2015) show a positive relationship between conservative accounting policies and the presence of women CFOs, which is more pronounced when there is high litigation, systematic or default risk.

Based on the above literature, we predict that women CFOs are associated with timelier LLP recognition than men CFOs. This can mainly be attributed to two reasons: First, their lower tolerance of risk motivates women executives to use conservative accounting methods and, second, their arguably higher ethical standards are likely to encourage more transparent financial reporting decision-making than will happen under men CFOs.

We use a sample of US bank holding companies available in ExecuComp. We believe that the US banking system is an interesting setting for our research for two reasons. First, the US banking system played a significant role in the financial crisis by engaging heavily in risky investments. It is therefore interesting to examine how the genders of CFOs could have affected this relationship. Second, the gender diversity discourse in the US is particularly active, with the majority of gender studies investigating the US setting.

We apply a model developed by Beatty and Liao (2014) to estimate the discretionary component of LLP that relates to future NPL. As discussed above, the assumption is that timely LLP should include bad loans before they become non-performing. Assuming that women CFOs are risk-averse and more ethical in their reporting decisions, we expect them to report timelier LLP than men CFOs. However, if women in the banking industry are no different to men, we will not observe any significant difference between the two groups. Our results suggest that women CFOs report timelier LLP than men CFOs and that women CFOs incorporate more forward-looking information in their LLP reporting. Moreover, since the level of bank risk influences financial reporting decisions (Hodder, Kohlbeck, and McAnally 2002), we use regulatory capital as a proxy for banks' attitude towards risk<sup>2</sup> and repeat our analysis after splitting our sample in risky and non-risky banks. Our results suggest that women CFOs in both groups report LLP in a timelier manner than men CFOs.

To address endogeneity concerns related to omitted variable biases, we use bank or CEO fixed effects. Bank fixed effects control for time-invariant firm characteristics, such as bank culture, while CEO fixed effects control for omitted variable bias associated with time-invariant characteristics of the CEO. In addition, since a change in a firm's culture is usually associated with a change in CEO (Van den Steen

2010), CEO fixed effects control, to a certain extent, for changes in firm culture. In an additional test, we also find that the effect of CFO gender on the timeliness of LLP reporting is incremental to the effect of the financial expertise of the audit committee and the gender diversity of the board of directors.

Finally, to better establish a causal link and alleviate reverse-causality concerns, we use CFO replacement as a quasi-natural experiment. We argue that a causal relationship may be more evident if banks with man-followed-by-woman (MFW) CFOs experience an improvement in the timeliness of their LLP reporting. We find that these banks do experience an improvement in the timeliness of their LLP reporting after the transition, while firms with man-followed-by-man (MFM) CFO transitions do not experience such an improvement. We use prior literature to classify CFO transitions as voluntary (Parrino, Sias, and Starks 2003; Naveen 2006; Gao, Harford, and Li 2017) and the results hold when we limit our analysis to this type of CFO replacement. Voluntary CFO transition rules out the possibility of the CFO being replaced as part of a strategic change by the bank, which in return alleviates self-selection bias concerns. Overall, our results show that LLP reported by women CFOs is more representative of the riskiness of the loan portfolios and, hence, is more transparent.

This study contributes to the literature in several ways. First, we contribute to the banking literature by showing that women in top banking management positions can play an important role in improving the transparency of financial reporting. Our findings hence complement prior research, mainly focusing so far on the links between women's representation in top management positions in the banking industry and a reduction in risk (Stephanou 2010; Bushman and Williams 2012). Our study also contributes to the wider stream of literature that links women to ethical decisions (Bernardi and Arnold Sr 1997; Weeks et al. 1999; Valentine and Rittenburg 2004; Simga-Mugan et al. 2005; Lund 2008; Vermeir and Van Kenhove 2008; Ibrahim and Angelidis 2009; Ho et al. 2015). We specifically show that women CFOs are associated with conservative financial reporting decisions, which have a negative association with managerial opportunism (Nikolaev 2010) and accounting fraud (Schrand and Zechman 2012).

Second, our study contributes to the literature on gender and financial-reporting-related choices, by investigating the effect of women CFOs in banks on accounting policy. Our study is substantially different to that of García-Sánchez, Martínez-Ferrero, and García-Meca (2017), who investigate the effect of a gender-diverse board of directors on banks' financial reporting, in the following ways. First, while García-Sánchez, Martínez-Ferrero, and García-Meca (2017) investigate the effect of gender diversity in the board of directors as a whole, this study focuses on the CFO role. CFOs, as insiders, have different incentives to outsiders (non-executive board members) regarding financial reporting decisions. In addition, we argue that, since CFOs are responsible for the preparation of financial reports, they have an informational advantage over the board of directors, who monitor the preparation process. Consistent with this argument, we find that the gender of the CFO has an influence on the timeliness of

the LLP reporting that is incremental to and stronger than that of the gender diversity of the board of directors or the audit committee. In addition, our study covers the period between 2007 and 2016, while García-Sánchez, Martínez-Ferrero, and García-Meca (2017) cover the period between 2004 and 2010. We thus make use of a longer and more contemporaneous time-series, including the post-financial-crisis years. Finally, this study focuses exclusively on US banks, while García-Sánchez, Martínez-Ferrero, and García-Meca (2017) cover a set of international banks. By limiting our sample to a single country, we ensure that our results are not affected by unobservable differences in accounting and legal rules (Tran, Hassan, and Houston 2018).

Third, our study informs the literature related to upper echelons theory (Hambrick and Mason 1984), which considers firms to be a reflection of their top executives. Our analysis suggests that women are associated with more conservative LLP reporting, which may indicate executives' attitude towards risk in companies where CFOs are women. In addition, since LLP has a material effect on bank earnings and capital strength, and requires a substantial degree of managerial judgment, it provides a good indication of managers' tolerance of risk (Nichols, Wahlen, and Wieland 2009). Moreover, existing accounting research provides evidence that risk-averse managers are more likely to choose conservative accounting policies (Ahmed and Duellman 2013; Kanagaretnam, Lim, and Lobo 2013; Plöckinger et al. 2016). Therefore, we argue that our results improve our understanding of how gender differences affect bank risk (Huang and Kisgen 2013; Palvia, Vähämaa, and Vähämaa 2015; Faccio, Marchica, and Mura 2016).

Finally, despite the considerable attention paid to LLP reporting in the existing literature, little attention has been given to the factors that cause heterogeneity in LLP reporting in the first place. We thus contribute to the bank accounting literature by showing that CFO gender differences have a significant influence on LLP reporting decisions at a firm level.

We believe our findings have practical implications and enlighten the discussion on the effectiveness of imposing gender quotas in corporate boards. Our findings suggest that an increase in the number of women top executives could drive change in the finance-based industry by improving transparency in corporate decision-making and hence reducing banking risks. In addition, the results of this study are particularly informative for the implementation of the new expected-loss model in LLP reporting (Beck and Narayanamoorthy 2013; Norden and Stoian 2014; Curcio and Hasan 2015; Cohen and Edwards 2017). Although the expected-loss model is more conservative than the incurred-loss model, it gives more discretion to the managers in relation to LLP reporting. Thus, we expect to observe an increase in the heterogeneity in LLP reporting across banks. Our findings give an early suggestion that gender differences will play a major role in this heterogeneity. We show that, under the incurred-loss system, women CFOs use their judgment to report timelier LLP than men CFOs.

The remainder of this paper is organised as follows. In section 2, we review the relevant literature, and in section 3, we present the study's methodology. Section 4 reports the main findings of the study, while section 5 reports the results of robustness tests. Finally, we conclude in section 6.

## **2. Literature review and hypotheses development**

### ***2.1 LLP reporting, bank risk and the financial crisis***

Studies argue that LLP reporting contributed heavily to the global financial crisis of 2008/09 (Barth and Landsman 2010; Olszak et al. 2017). Relatedly, a number of studies conclude that timely recognition of LLP leads to a reduction in bank risk and an improvement in bank performance. For example, Akins, Dou, and Ng (2017) find that timely LLP recognition helps banks take corrective actions in a timely manner and reduces lending corruption. Beatty and Liao (2011) report banks that recognised LLP in a timelier manner as having been more able to issue loans during the financial crisis, which, in turn, improved their performance during the crisis and saved them from failing. Bushman and Williams (2015) report that banks delaying LLP recognition have higher systematic and liquidity risks. Finally, Jin, Kanagaretnam, and Lobo (2018) show banks that built higher loan loss reserves before the crisis to have been more likely to survive it.

In addition, the literature identifies transparency of reporting as a way in which LLP reporting affects bank risks. Timelier LLP reporting is considered a more transparent reporting behaviour, which better reflects a bank's risks. Bushman and Williams (2012) argue that timelier LLP provides better information to the shareholders, which allows them to more effectively monitor banks' activities and discipline banks' risk-taking. In particular, they find a negative association between timelier LLP recognition and risk-taking.

### ***2.2 Gender differences***

Psychology studies suggest that women are more risk-averse and less optimistic than men and that they have higher moral standards (Born, Bleichrodt, and Van Der Flier 1987; Eagly, Karau, and Makhijani 1995; Eagly and Karau 1991; Hinz, McCarthy, and Turner 1997; Collins 2000; Simga-Mugan et al. 2005; Niessen and Ruenzi 2007; Niederle and Vesterlund 2007; Ibrahim and Angelidis 2009; Croson and Gneezy 2009). Accounting and finance literature supports many of the findings from the above psychology studies. Findings suggest that women executives are less overconfident in their financial decisions (Huang and Kisgen 2013), and associated with lower overall firm risk, as measured by leverage, earnings volatility, and likelihood of survival (Faccio, Marchica, and Mura 2016). A higher number of women is also associated with a more ethical work climate, which eventually discourages



earnings management (Ho et al. 2015), and the valuing of ethics as an important selection criterion for recruiting accountants (Ibrahim and Angelidis 2009).

In closer relation to the banking context, Bellucci, Borisov, and Zazzaro (2010) find that women loan officers are stricter in awarding loans to new borrowers and are also associated with lower amounts of loan defaults than men loan officers (Beck, Behr, and Guettler 2012). Palvia, Vähämaa, and Vähämaa (2015) show that banks led by women CEOs or women chairpersons held higher regulatory capital during the global financial crisis. However, Berger, Kick, and Schaeck (2014) show that higher gender diversity in German bank boards is associated with higher risk-taking, while Adams and Ragunathan (2017) show that women in the banking industry have a higher tolerance of risk than women in other industries. More generally, Hagendorff and Keasey (2012) report that higher gender diversity in bank boards is not associated with positive market reactions in terms of the expected value of mergers. Overall, this conflicting evidence encourages further studies on the effect of women on decision-making processes in banks.

### ***2.3 The effect of gender on financial reporting***

The literature on the effect of CFO gender on financial reporting decisions suggests that women CFOs tend to apply conservative accounting policies. Barua et al. (2010) show that firms with women CFOs are associated with higher accrual quality, while Peni and Vähämaa (2010) find that firms with women CFOs are associated with income-decreasing discretionary accruals. Consistent with the previous findings, Francis et al. (2015) show that women CFOs are positively associated with accounting conservatism, as measured by the market-to-book ratio, non-operating accruals, and the time-series skewness of earnings. Specifically, they find that the level of accounting conservatism increases following men-to-women CFO transition. Liu, Wei, and Xie (2016) extend this literature by exploring the Chinese market and show findings that are similar to those in the US. They also find that women CFOs are associated with lower total accruals, discretionary accruals, and real earnings management. In addition, they report that departing men CFOs use more aggressive accounting to increase earnings than departing women CFOs, while newly appointed men CFOs manage earnings downwards more than newly appointed women CFOs. Confirming the perception that women are more risk-averse, Francis et al. (2015) show that women CFOs report more conservatively when there is a legal risk, systematic risk, default risk, or management turnover risk.

According to Gul, Hutchinson, and Lai (2013), having more women on the board results in more accurate analyst forecasts. Srinidhi, Gul, and Tsui (2011) find that firms with gender-diverse boards produce financial reports with higher earnings quality, and (Zalata, Taurigana, and Tingbani 2018) show that a higher number of women on the audit committee significantly decreases earnings management. Finally, García-Sánchez, Martínez-Ferrero, and García-Meca (2017) find that a diverse

board is positively associated with the timeliness of LLP. This finding indicates that gender diversity enhances the information content of LLP reporting. We extend the findings of García-Sánchez, Martínez-Ferrero, and García-Meca (2017) to include the effect of women CFOs on the timeliness of LLP recognition. Insiders, such as CFOs (executives), have different incentives than outsiders (independent board members). Insiders have incentives to hide bad information, to avoid a reduction in compensation or dismissal. On the other hand, outsiders have the incentive to monitor managers and ensure a higher quality of financial reporting, to preserve their reputation as independent board members (Jensen and Meckling 1976; Fama and Jensen 1983; Srinidhi, Gul, and Tsui 2011). Since CFOs have the most direct impact on financial reporting decisions, we focus on the effect of women CFOs on financial reporting quality.

## ***2.4 Hypotheses development***

CFOs are responsible for the preparation and supervision of financial reporting; hence, they are in a position to substantially influence accounting judgments. For example, Ge, Matsumoto, and Zhang (2011) provide evidence that CFOs have a significant influence on discretionary accounting choices, whereas Ham et al. (2017) find that CFO personality traits such as narcissism have a significantly adverse effect on the quality of financial reporting. LLP reporting includes a high level of discretion; hence, CFOs exert a great influence over it. Black and Gallemore (2013) show that overconfident CFOs understate LLP in financial firms, while, on the other hand, they indicate that there is no association between overconfident CEOs and LLP. Additionally, it is the responsibility of the CFO to prevent the manipulation of financial reports. Feng et al. (2011) find that CFOs bear considerable legal costs in the event of accounting manipulation. Ultimately, CFOs are typically accountable for financial reporting quality.

Higher ethical standards held by women suggest they will use their discretion to report in an honest manner (Ho et al. 2015; Palvia, Vähämaa, and Vähämaa 2015). In addition, women tend to be more risk-averse (Croson and Gneezy 2009; Huang and Kisgen 2013; Palvia, Vähämaa, and Vähämaa 2015; Francis et al. 2014; Francis et al. 2015), and are therefore more likely to report actual earnings due to the legal and reputational costs associated with earnings manipulation. Hence, women may be motivated to report losses on a timelier basis. Given this documented impact of behavioural differences between genders on financial reporting decisions, we postulate that the gender of the CFO plays an important role in explaining the heterogeneity in LLP timeliness. This leads us to our first hypothesis.

### ***Hypothesis 1: Women CFOs are more likely to report LLP in a timely manner***

To ensure the soundness of banks, regulators monitor their capital closely (Pérez, Salas-Fumas, and Saurina 2008; Barth et al. 2017) and require them to hold a minimum amount of Tier 1 capital ratio. When a bank's capital falls below this minimum, regulators might take strong actions, such as

preventing them from lending. Prior evidence shows that this motivates low-capital banks to manage earnings and delay LLP recognition to avoid such penalties (Ahmed, Takeda, and Thomas 1999; El Sood 2012; Curcio and Hasan 2015; Barth et al. 2017). At the same time, choosing the level of tier 1 capital ratio is a strategic decision taken by the board of directors (Anginer et al. 2016). Based on this, it is plausible to assume that low-capital banks tend to implement risky strategies and hence are more likely to use aggressive accounting (Shrieves and Dahl 1992; Beatty, Ke, and Petroni 2002; Kravet 2014). Overall, it is possible that low-capital banks impose pressure on their CFOs to delay LLP recognition.

On the other hand, such a delay in LLP recognition can also be costly. In particular, it inflates banks' capital and reduces their ability to withstand a financial crisis (Cohen et al. 2014; Jin, Kanagaretnam, and Lobo 2018). During an economic downturn, banks that have delayed LLP recognition in earlier periods will be forced to reverse these delays, thus reducing their capital and lending ability. Eventually, this can accentuate the damaging effect of the economic downturn on these banks, potentially leading to their collapse (Jin, Kanagaretnam, and Lobo 2018). As a consequence, regulators scrutinise banks with low regulatory capital more than other banks (Beck and Narayanamoorthy 2013).

Based on the previous discussion of the presumption that women CFOs hold higher ethical standards and are more risk-averse than men CFOs (Vermeir and Van Kenhove 2008; Huang and Kisgen 2013), we still expect to find them to be associated with timelier LLP than their men counterparts in both high- and low-capital banks. However, due to the pressure to manage earnings, we contend that the difference between men and women CFOs' LLP reporting timeliness will be lower in low-capital banks.

***Hypothesis 2: Capital constraints moderate the association between the presence of a woman CFO and the timeliness of LLP reporting.***

### **3. Data and methodology**

#### ***3.1 Data***

Our analysis is based on a sample of listed financial institutions, accounting data from Compustat, gender and executive compensation data from ExecuComp, and board of directors' data from Institutional Shareholder Services (ISS). The sample comprises US banks within the period 2007 to 2016. The reason for choosing 2007 as a starting point relates to the availability of CFO and financial expertise data. Compustat CFO data start in 2006, while the financial expertise data from ISS start in 2007. Therefore, we start our data collection in the year 2007. We merge the data from these different sources using the six-digit CUSIP identifiers. We omit observations with missing variables. Table 1 shows the number of observations per year. We lose some more observations in 2007 due to the fact

that some of our variables are lagged. In total, our sample includes 2,760 observations from 119 unique banks.

-Insert Table 1 here-

### 3.2 Methodology

As previously discussed, LLP recognition is considered timely when it reflects changes in current and future NPL. To investigate this, we employ a model developed by Beatty and Liao (2014). This model and others that are similar have been used in prior studies investigating the timeliness of LLP recognition (Bushman and Williams 2012; Black and Gallemore 2013; García-Sánchez, Martínez-Ferrero, and García-Meca 2017; Nicoletti 2018).

Beatty and Liao's (2014) model is illustrated below:

$$\begin{aligned}
 LLP_{it} = & \alpha_0 + \alpha_1 \text{change in } NPL_{it+1} + \alpha_2 \text{change in } NPL_{it} + \alpha_3 \text{change in } NPL_{it-1} + \\
 & \alpha_4 \text{change in } NPL_{it-2} + \alpha_5 \ln \text{assets}_{it-1} + \alpha_6 \text{change in loan}_{it} + \alpha_7 \text{earnings before LLP}_{it} + \\
 & \alpha_8 \text{Tier1}_{it-1} + \alpha_9 \% \Delta GDP_t + \alpha_{10} \% \Delta \text{unemployment}_t + \alpha_{11} \% \Delta \text{Case\_Shiller house index}_t + \varepsilon_{it} \\
 & \dots\dots\dots(1)
 \end{aligned}$$

*LLP* is loan loss provision as a percentage of total loans for firm *i* and quarter *t*. The variable *change in NPL* represents the change in NPL over the quarter. An NPL is the amount of a loan on which the client does not make any interest or principal payment. The NPL is a significant factor in determining LLP. This model includes future (t+1), current (t), and prior (t-1, t-2) NPL, due to banks' use of past, current, and forward-looking information to estimate LLP (Beaver and Engel 1996; Bushman and Williams 2012; Beatty and Liao 2014; Bushman and Williams 2015). A positive association between *LLP* and *change in NPL<sub>t+1</sub>* and *change in NPL<sub>t</sub>* would indicate that LLP was recognised in a timely manner (Bushman and Williams 2012; Black and Gallemore 2013; Beatty and Liao 2014; Nicoletti 2018). In particular, a positive association between *change in NPL<sub>t+1</sub>* and *LLP* would indicate that banks incorporated their private information on loan portfolio risk by recognising LLP before bad loans became non-performing, while a positive relationship between *change in NPL<sub>t</sub>* and *LLP* would suggest that banks incorporated current NPL in their LLP recognition. Together, *change in NPL<sub>t+1</sub>* and *change in NPL<sub>t</sub>* capture the timeliness of LLP reporting by banks.

We use *ln assets* to control for bank size. It is important to control for bank size in LLP models because the level of regulatory scrutiny of LLP reporting varies according to bank size (Bushman and Williams 2012; Beck and Narayanamoorthy 2013). The variable *change in loan* controls for the change in the size of a bank's loan portfolio. To capture the effect of earnings management and capital management (Collins, Shackelford, and Wahlen 1995; Beatty, Chamberlain, and Magliolo 1995; Ahmed, Takeda,

and Thomas 1999), we extend the above model by including earnings before extraordinary items and LLP (*earnings before LLP<sub>t</sub>*), and the lagged Tier 1 capital ratio (*Tier1<sub>t-1</sub>*). Furthermore, the model includes  $\% \Delta GDP_t$ ,  $\% \Delta unemployment_t$ , and  $\% \Delta Case\_Shiller\ house\ index_t$  to control for macroeconomic factors that affect LLP levels.

To capture the effect of women CFOs on LLP reporting, we adjust model (1) as follows:

$$\begin{aligned}
 LLP_{it} = & \alpha_0 + \alpha_1 \text{change in } NPL_{it+1} + \alpha_2 \text{change in } NPL_{it} + \alpha_3 \text{change in } NPL_{it-1} + \\
 & \alpha_4 \text{change in } NPL_{it-2} + \alpha_5 \ln \text{assets}_{it-1} + \alpha_6 \text{change in } loan_{it} + \alpha_7 \text{earnings before } LLP_{it} + \\
 & \alpha_8 Tier1_{it-1} + \alpha_9 CFO\ gender_{it} + \alpha_{10} (\text{change in } NPL_{it+1} * CFO\ gender_{it}) + \alpha_{11} (\text{change in } NPL_{it} * \\
 & CFO\ gender_{it}) + \alpha_{12} CFO\ ownership_{it-1} + \alpha_{13} CEO\ ownership_{it-1} + \\
 & \alpha_{14} \% \text{ of independent directors on } BOD_{it} + \alpha_{15} \% \text{ of financial experts on audit committee}_{it} + \\
 & \alpha_{16} board\ size_{it} + \alpha_{17} CEO\_chairman\ duality_{it} + \alpha_{18} gender\ diversity_{it} + \text{fixed effects} + \varepsilon_{it} \\
 & \dots\dots\dots(2)
 \end{aligned}$$

We use a dummy variable to indicate whether the CFO is a woman. Then, we interact the *CFO gender* variable with both *change in NPL<sub>t+1</sub>* and *change in NPL<sub>t</sub>* to capture the effect of women CFOs on the timeliness of LLP. If women CFOs are associated with enhanced LLP timeliness, a positive sign will be expected for both  $\alpha_{10}$  and  $\alpha_{11}$ .

Considering that one of the primary duties of the board of directors is to monitor the financial reports produced by managers, board of directors' characteristics play a significant role in financial reporting decision-making. First, we control for the independence of the board of directors using the percentage of independent board members (*% of independent directors in the BOD*). Independent board directors are more likely to challenge managers over financial reporting decisions (Beasley 1996). Second, since banks are complex institutions, large boards are expected to be more effective in monitoring managers' actions (De Andres and Vallelado 2008; Adams and Mehran 2012). On the other hand, studies also suggest that small boards have fewer coordination problems and can thus be more effective (Yermack 1996; Bushman and Smith 2001; Pathan 2009). Consequently, we use *board size* to control for this factor. Third, boards with good knowledge of financial reporting and the banking industry are expected to challenge managers regarding their financial reporting choices (Beasley 1996; Klein 2002; Badolato, Donelson, and Ege 2014; Agrawal and Cooper 2017). Hence, we control for such expertise on the audit committee (*% of financial experts on audit committee*), using the SEC's definition of a financial expert<sup>3</sup>. Finally, we control for the gender diversity among the independent directors on the board of directors (*gender diversity*), as García-Sánchez, Martínez-Ferrero, and García-Meca (2017) show that banks with more diverse boards have timelier and more conservative financial reporting.

Governance studies show that insiders' ownership affects firms' decision-making (Westman 2011; Berger, Imbierowicz, and Rauch 2016). Therefore, we control for *CFO* and *CEO ownership*. It is plausible that CFOs with higher ownership of a firm will select accounting policies that increase firm value, which may result in the hiding of negative news. We use *CEO ownership* to control for CEO incentives that might affect the choice of accounting policies. Studies indicating that CEOs affect firms' reporting decisions are extensive (Kalyta 2009; Dechow, Myers, and Shakespeare 2010). For example, Feng et al. (2011) provide evidence that, when CEOs have relatively large ownership of a firm, they compel the CFOs to choose accounting policies that increase firm value. We also control for CEO power in the board. A powerful CEO can limit information flows to the board and hence impair its ability to adequately monitor firm decisions (Fama and Jensen 1983; Vallascas, Mollah, and Keasey 2017). For example, Farber (2005) shows that firms with CEO/chairman duality are more likely to be involved in financial reporting fraud. Consistent with this, Efendi, Srivastava, and Swanson (2007) report that firms with CEO/chairman duality are more likely to have financial reporting misstatements. Therefore, we control for *CEO\_chairman duality*. It is worth noting that *CEO ownership* and *CFO ownership* also control for executives' power. Higher levels of executive ownership can lead to managerial entrenchment and consequently increase their power against the board (Denis, Denis, and Sarin 1997; Goyal and Park 2002). Definitions of all variables are available in Appendix A.

Importantly, we control for time-variant characteristics that affect LLP reporting by using time fixed effects (quarters). We implement a fixed effects estimator to control for bank or CEO time-invariant heterogeneity. This approach is suitable for our setting because governance characteristics tend to change over a long period of time; thus, using bank fixed effects mitigates any endogeneity concerns related to omitted variables which are associated with time-invariant characteristics. Additionally, since changes in firm culture are typically connected to CEO replacements (Fiordelisi and Ricci 2014), controlling for CEO fixed effects controls for a number of omitted variables related to changes in bank culture. Following (Nicoletti 2018), we replace macroeconomic variables with time fixed effects. To control for heteroscedasticity, we use robust standard errors clustered at the bank level.

## 4. Results

### 4.1 Descriptive statistics

Table 2 provides descriptive statistics for the study sample. Continuous variables are winsorised at the 1<sup>st</sup> and the 99<sup>th</sup> percentiles. The table shows that only 4% of banks in our sample have women CFOs. The low percentage of women CFOs highlights the under-representation of women in top executive positions in banks. Additionally, the table shows that the average reported LLP scaled by lagged total loans is 0.0019, the minimum is -0.0064 and the maximum is 0.0404. In monetary terms, this translates to an average of \$148 million, and a maximum (minimum) of nearly \$13 billion (-\$543 million). LLP

is significant relative to earnings in monetary terms. Average *earnings before LLP* in our sample is 0.005 when scaled by lagged total loans, and almost \$46 million in monetary terms. On average, *change in NPL<sub>t</sub>* is 0.00018, whereas the maximum (minimum) is 0.0178 (-0.011). Loans in our sample increase by an average of 1.78% quarterly. The average bank size in our sample is \$107 billion. The largest bank has total assets of \$2.5 trillion, the smallest almost \$2 billion. Average Tier 1 capital ratio in banks is 12.3%, while the maximum is 20%. This indicates that most banks in our sample are well-capitalised. The table shows that independent women directors represent 13% of boards, while the average percentage of independent directors in total is 80%. The percentage of financial experts on banks' audit committees is approximately 45%. On average, the board size of the banks in our sample is nearly 12 members. The largest board in our sample has 18 members, while the smallest board has just 7. The CEOs (CFOs) in our sample own 0.7% (0.1%) of their firms, on average. The CEO (CFO) with the largest inside ownership owns 0.8% (0.8%) of their firm. Only 7.8% of banks in our sample have chairmen CEOs.

-Insert Table 2 here-

Table 3 presents the difference between means for samples of banks with women CFOs and samples with men CFOs. The results show that women CFOs work in larger banks. The average total assets of banks with women CFOs is \$348 billion, whereas the average for the banks with men CFOs is \$96 billion. Table 3 indicates the average Tier 1 risk-based capital ratio for banks with women CFOs to be 12.07%, compared to 12.2% for banks with men CFOs. Regarding organisational performance, the results indicate that banks with men CFOs outperform banks with women CFOs in terms of earnings before LLP scaled by total loans. Furthermore, there is an insignificant difference in the level of reported LLP between the two subsamples. With regards to governance characteristics, women CFOs tend to be employed in firms with less independent boards, more financial experts on their audit committees, and smaller boards. Women CFOs also mainly work in banks where the CEO and chairman positions are held by the same person. Due to the significant differences among the firm and governance characteristics between the two groups, we control for these elements in the multivariate analysis.

-Insert Table 3 here-

Table 4 presents the correlation matrix, which indicates the presence of a woman CFO to be positively correlated with *ln assets*, *% of independent directors on BOD*, *% of financial experts on audit committee*, and *CEO\_chairman duality*, and negatively correlated with *earnings before LLP*, *CEO ownership*, *CFO ownership*, and *board size*.

-Insert Table 4 here-

## 4.2 Multivariate analysis

### Main models

The results of model (2) are shown in Table 5. The coefficient of *change in NPL<sub>t+1</sub>* captures the extent to which the *expected (forward-looking)* change in NPL is incorporated in LLP, while *change in NPL<sub>t</sub>* represents the extent to which the *contemporaneous* change in NPL is incorporated in LLP.

Columns 1 and 3 present the results of the model in which we use bank fixed effects. On the one hand, the coefficient of *change in NPL<sub>t+1</sub>* is negative, indicating that banks in our sample are more likely to delay incorporating forward-looking information in their LLP. On the other hand, the coefficient of *change in NPL<sub>t</sub>* is positive and significant (p-value<0.01) across all columns (with at least a 5% level of significance), suggesting that banks have incorporated contemporary changes in NPL in their reported LLP. Taken together, the results indicate that banks report contemporary, but not forward-looking, information on LLP.

The coefficients on the interactions *CFO gender<sub>t</sub> \* change in NPL<sub>t+1</sub>* and *CFO gender<sub>t</sub> \* change in NPL<sub>t</sub>* capture the incremental effect of women CFOs on the timeliness of LLP reporting. The results indicate women CFOs to be associated with incorporating forward-looking information in their LLP reporting, as shown by the positive coefficient of *CFO gender<sub>t</sub> \* change in NPL<sub>t+1</sub>*. The coefficient is significant at the 1% significance level. This finding is consistent with the notion of women CFOs being more likely to report more transparently (Barua et al. 2010; Francis et al. 2014; Francis et al. 2015; Liu, Wei, and Xie 2016). In economic terms, for each standard deviation increase in NPL in period *t+1*, women CFOs tend to report \$7 million more LLP<sup>4</sup>. We believe that this is significant in economic terms, since the average LLP is \$148 million, while the average income before extraordinary item is \$195 million. However, the coefficient on *CFO gender<sub>t</sub> \* change in NPL<sub>t</sub>* is insignificant, indicating there is no difference between men and women CFOs in terms of the incorporating of contemporary changes in NPL into LLP.

Columns 2 and 4 show the results when applying CEO fixed effects. The results are consistent with those in columns 1 and 3. However, the coefficient on *change in NPL<sub>t+1</sub>* becomes negative and significant, indicating that men CFOs are more likely to delay LLP recognition when there is a change in the CEO. Regarding other control variables, our coefficient on *earnings before LLP* is positive and significant (p-value<0.01), which provides evidence that banks use LLP to smooth their reported income. This is consistent with the findings of Beatty, Chamberlain, and Magliolo (1995), Liu and Ryan (2006), and El Sood (2012), among others. However, we find no evidence that banks engage in capital



management, as the coefficient on *Tier1* is insignificant. Moreover, *CEO ownership* has a positive and significant association with LLP, indicating that loan risk increases with greater CEO ownership. However, the results show that *CFO ownership* does not affect the level of LLP. Additionally, none of the governance characteristics appear to have a significant effect on the amount of reported LLP, except for *gender diversity*. This suggests that banks with diverse boards have lower loan risk.

-Insert Table 5 here-

Overall, our results suggest that women CFOs are associated with timelier LLP reporting than men CFOs, which is consistent with our hypothesis. While our findings are similar to the literature related to the effect of CFO gender on financial reporting (Barua et al. 2010; Francis et al. 2014; Francis et al. 2015; Liu, Wei, and Xie 2016), this study extends their findings to the banking industry. Moreover, the results of this study extend those of García-Sánchez, Martínez-Ferrero, and García-Meca (2017), and suggest that women CFOs report LLP in a timelier manner than their men counterparts.

#### *Capital constraints*

We follow the banking literature and use Tier 1 capital ratio as a criterion for distinguishing between low-capital and high-capital banks (Ahmed, Takeda, and Thomas 1999; Pérez, Salas-Fumas, and Saurina 2008; Demircuc-Kunt, Detragiache, and Merrouche 2013; Beatty and Liao 2014; Bushman and Williams 2015). Among the different types of regulatory capital, Tier 1 is the most prudent. Unlike in the equity ratio, the numerator in the formula for Tier 1 capital ratio has goodwill, intangible assets, and unrealised gains and losses on available-for-sale securities deducted from equity. The reason behind this is that these items might be worthless during periods of financial difficulty (Beatty and Liao 2014). The denominator of the Tier 1 capital ratio is risk-weighted assets instead of just the book value of total assets. That is, the asset weights in the denominator are adjusted based on riskiness, i.e., less risky assets have less weights than risky assets. This adjustment leads to banks with risky assets having lower Tier 1 capital ratio than banks with less risky assets, even in cases where both banks have the same capital ratio. We consider banks with Tier 1 capital ratio above 12% to be high-capital banks and banks with Tier 1 capital ratio below 12% to be low-capital banks<sup>5</sup>.

Table 6 reports the results of this analysis. For brevity, we only report the results of the specification including bank fixed effects. Our main findings remain qualitatively the same when we include CEO fixed effects. Column 1 shows the results using the full sample, while columns 2 and 3 report the results when we split our full sample into two groups: (1) high-capital banks and (2) low-capital banks. To capture the effect of bank capital we introduce the variable *strong*, which takes the value of one if the bank is highly capitalised (Tier 1 capital ratio higher than 12%) and zero otherwise. Then, we interact

the variable *strong* with our main interactions  $CFO\ gender * Change\ in\ NPL_{t+1}$  and  $CFO\ gender * Change\ in\ NPL_t$ .

The results reported in column 1 support our main analysis and show that our main interaction  $CFO\ gender * change\ in\ NPL_{t+1}$  remains significant at the 1% level, indicating that women CFOs report timelier LLP than men CFOs, regardless of the level of Tier 1 capital ratio. The coefficient on the interaction  $CFO\ gender * change\ in\ NPL_{t+1} * Strong$  is insignificant, indicating that there is no difference between the two groups regarding LLP timeliness. Columns 2 and 3 report the results for the high and low regulatory capital subsamples, respectively. The results also support our main findings, indicating that women CFOs are associated with timelier LLP reporting in both groups. The coefficient on  $CFO\ gender * change\ in\ NPL_{t+1}$  is positive and significant in both subsamples. In addition, the results of the subsample analysis indicate that women CFOs in high regulatory capital banks report timelier LLP (coefficient=0.476) than women CFOs in low regulatory capital banks (coefficient=0.255), which is consistent with risky banks tending to use aggressive accounting policies (e.g. Beatty, Ke, and Petroni 2002). In untabulated analysis, we use different capital definitions to differentiate between high- and low-capital banks and our conclusion remains the same<sup>6</sup>.

We also contend that the results reported in Table 6 attenuate the possibility that self-selection bias drives our results in our main analysis. It is plausible that women CFOs are not randomly selected into banks. Risky banks might avoid appointing women to the top positions; hence, the relationship that we observe in our main analysis could be biased, with risky firms tending to appoint men CFOs and use aggressive accounting methods. However, by using bank capital as a criterion for distinguishing risk-taking banks from risk-averse banks, we are able to lessen the risk of selection bias.

Overall, the findings of this section confirm that women CFOs are more ethical and more risk-averse than their men counterparts. We show that women CFOs are associated with timelier LLP reporting, even for banks under increased pressure to delay LLP recognition. However, it seems that capital constraints moderate this relationship.

-Insert Table 6 here-

## 5. Endogeneity and Further Robustness tests

### 5.1 Diff-in-diff Analysis: CFO transition

To better establish a causal link between the CFO's gender and the timeliness of LLP reporting, and considering the challenge of finding a truly exogenous instrument, we use CFO transition as a quasi-natural experiment. If the hypothesis that women CFOs are likely to report timelier LLP holds, we should observe an improvement in the timeliness of LLP reporting following the replacement of a man

with a woman CFO. We follow Huang and Kisgen (2013) and apply a difference-in-differences framework. Specifically, we use man-followed-by-woman (MFW) CFO transition banks as our treated group and man-followed-by-man (MFM) CFO transition banks as our control group. To exclude interim CFOs from our analysis, we require that the new CFO stays in the position for more than one year before including them in our treatment or control sample. To support our hypothesis, we should observe that banks with MFW CFO transitions experience higher transparency following the event, while a similar change should not be observed for the banks with MFM CFO transitions. To capture this effect, we introduce the variables *post* and *treated* to the model. *Post* is a dummy variable that takes the value one for the post-CFO transition period and zero otherwise; *treated* is a dummy variable that takes the value one if a bank experiences a MFW CFO transition and zero otherwise. Finally, we interact these two variables (*post* and *treated*) with *change in NPL<sub>t+1</sub>* and *change in NPL<sub>t</sub>* to capture the marginal effect of appointing women CFOs following men CFOs on the timeliness of LLP.

$$LLP_{it} = \beta_0 post_{it} + \beta_1 post_{it} * treated_i + \beta_2 post_{it} * change\ in\ NPA_{it+1} + \beta_3 post_{it} * change\ in\ NPA_{it} + \beta_4 post_{it} * treated_i * change\ in\ NPA_{it+1} + \beta_5 post_{it} * treated_i * change\ in\ NPA_{it} + \sum other\ interactions + \sum controls + fixed\ effects + \varepsilon_{it} \dots\dots\dots(3)$$

The coefficients of the interactions *post \* change in NPL<sub>t+1</sub>* and *post \* change in NPL<sub>t</sub>* capture the effect of the newly appointed *man* CFO on LLP timeliness for MFM banks, while the coefficients of the interactions *post \* treated \* change in NPL<sub>t+1</sub>* and *post \* treated \* change in NPL<sub>t</sub>* capture the effect of the newly appointed *woman* CFO on LLP timeliness for MFW banks. We do not expect incoming *man* CFOs to be associated with a change in the timeliness of LLP reporting. On the other hand, we expect newly appointed *woman* CFOs in MFW banks to be associated with an improvement in the timeliness of LLP recognition. Therefore, positive and significant coefficients are expected for *post \* treated \* change in NPL<sub>t+1</sub>* and *post \* treated \* change in NPL<sub>t</sub>*.

The results of this test are reported in Panel A of Table 7. Banks having an MFW CFO transition report timelier LLP following the transitions compared to the control group (MFM banks). On the other hand, the results show that firms in the control group (MFM banks), as indicated by the coefficients of the interactions *post \* change in NPL<sub>t+1</sub>* and *post \* change in NPL<sub>t</sub>*, do not experience an improvement in the timeliness of their LLP reporting. The results remain the same when we use CEO fixed effects (column 2). We argue that CEO fixed effects also control for the cultural change associated with a CEO replacement.

Further, to mitigate serial correlation bias from the difference-in-differences method (Bertrand, Duflo, and Mullainathan 2004), we perform an additional test where we restrict our sample to a maximum of

three years before and three years after transition. The results of this test are reported in Panel B of Table 7. Our conclusion remains the same.

A limitation of the transition-related analysis is that the new CFO appointment and replacement decision could be endogenous. For instance, firms with a risk-taking culture are likely to appoint CFOs with risk-taking behaviour and vice versa. In our context, when a bank decides to adopt a more risk-taking strategy, it is more likely to replace its current risk-averse CFO with a risk-taking CFO and vice versa. To further control for this issue, we limit our analysis to cases of voluntary CFO turnover. Such turnover would suggest that CFO replacement has not occurred due to a change in strategy. This specification also allows us to further mitigate any self-selection biases. Following prior literature on executive turnover (Parrino, Sias, and Starks 2003; Naveen 2006; Gao, Harford, and Li 2017), we consider CFO transition as voluntary if the replaced CFO is (1) voluntarily retired, (2) promoted to CEO or chairman of the board, (3) placed in a different position (but with the same rank) in the same bank (e.g., they become chief operating officer), or (4) leaves the bank to work in a higher-ranked position at another firm. We follow Gao, Harford, and Li (2017) and consider the CFOs voluntarily retired if their age is above 60 and announce their retirement at least six months in advance. In total, we identify 23 transitions as voluntary, while 12 transitions are identified as forced. Panel E of Table 7 details the type of transition. The results of this analysis are consistent with our previous findings (reported in Panels C and D). We note that the interaction term when using bank fixed effects in Panel C, column 5 is marginally statistically insignificant (but positive) and becomes statistically significant when we restrict the sample to three years before and after the CFO transition (column 7).

Finally, we remove observations from the first year of the new CFO's tenure. Newly appointed CFOs might bring significant changes in their first year. Hence, removing first-year observations improves the robustness of our findings. Panel F of Table 7 reports the results of this model specification. The results are similar to those reported earlier in Table 7.

*-Insert Table 7 here-*

## ***5.2 Financial expertise of the board of directors***

It could be argued that the financial expertise of the board of directors (or the lack of it) is a driver for our results. The descriptive statistics show that banks with women CFOs have, on average, more financial experts on their audit committee. It is therefore plausible that it is the financial expertise of the audit committee in banks with women CFOs that improves LLP timeliness and not the gender of the CFO per se. That can be explained by the fact that financial experts on audit committees are expected

to be in a better position to question the management over their accounting choices (e.g. Badolato, Donelson, and Ege 2014).

We directly control for the effect of the presence of financial experts on LLP timeliness by interacting the financial expertise variable with the change in NPL variables (*change in  $NPL_{t+1}$*  and *change in  $NPL_t$* ). In addition, this specification allows us to find the incremental effect of CFO gender on LLP timeliness over and above the effect of the board's financial expertise. To support our hypothesis, we need a positive and significant effect of the interaction *CFO gender \* change in  $NPL_{t+1}$* . The results are reported in column 1 of Table 8 and are consistent with our prediction. The coefficient of the interactive term is positive and significant at the 1% level. Interestingly, we do not observe any significant influence of the audit committee's financial expertise on the timeliness of the LLP. We also repeat the same analysis using the financial expertise of the board of directors, instead of the audit committee's, and arrive at the same conclusion.

### ***5.3 Gender diversity of the board of directors***

We also compare the effect of women CFOs on the timeliness of LLP with the effect of the board of directors' overall gender diversity. The descriptive statistics show that women CFOs are more likely to be appointed in banks with a more gender-diverse board of directors. García-Sánchez, Martínez-Ferrero, and García-Meca (2017) show how the gender diversity of the board affects the timeliness of the LLP reporting. Therefore, we explicitly control for this by interacting the board's *gender diversity* with *change in  $NPL_{t+1}$*  and *change in  $NPL_t$*  to rule out the possibility that the gender diversity of the board drives our results and not the gender of the CFO. The results reported in Table 8 show that our main interaction remains significant at the 1% level and that the interaction (*gender diversity \* change in  $NPL_{t+1}$* ) is significant but only at the 10% level. This finding supports our hypothesis that women CFOs have a direct effect on LLP timeliness. It also suggests that the effect of the CFO's gender is stronger than and incremental over the effect of the gender diversity of the independent board members. We also use different variants of gender diversity controls that might affect the banks' financial reporting decisions, such as the gender diversity of the audit committee and gender diversity of the financial experts on the board of directors (untabulated results). Our conclusion remains unchanged.

*-Insert Table 8 here-*

### ***5.4 Other sensitivity tests***

We conduct several untabulated sensitivity tests to ensure robustness of our findings. We use other proxies to control for board of director characteristics that could impact on financial reporting decision-making, as documented in previous literature. These include the percentage of financial experts on the board of directors, percentage of women directors on the audit committee, size of the audit committee,

and percentages of women with financial expertise on the board of directors and audit committee. Although we control for bank risk by using bank size and Tier 1 regulatory capital in our main model, we also use leverage, consistent with some previous studies. We use executive compensation as another proxy for managerial incentives to manage earnings. Also, we control for the gender of the CEO. Finally, we replace our fixed effects estimator with OLS and random effects estimators. Our findings remain qualitatively the same after these changes to our model specifications.

## **6. Conclusion**

This study examines whether gender differences of CFOs affect the timeliness of the LLP reporting in banks. We address this research question by analysing a panel dataset of US banks listed on the S&P 1500 between 2007 and 2016.

Our findings suggest that women CFOs report timelier LLP than men CFOs. We provide evidence that firms with women CFOs recognise expected changes in NPL in contemporary LLP. Moreover, we find that both men and women CFOs incorporate contemporary changes in NPL information in LLP. We include bank, CEO, and time fixed effects to mitigate concerns related to omitted variable biases. Our findings are robust to various model specifications. Consistent with our main findings, we find that women CFOs are associated with timelier LLP reporting even in low-capital banks, although our findings suggest that, in banks with capital constraints, this relationship becomes weaker.

In an additional analysis, we show evidence that banks with an MFW CFO transition improve their LLP timeliness post-transition. Taken together, the results suggest that women CFOs are associated with an improved information content regarding LLP reporting, which is consistent with the literature suggesting that women have more ethical standards (e.g. Weeks et al. 1999; Vermeir and Van Kenhove 2008) and are more risk-averse than men (Huang and Kisgen 2013; Palvia, Vähämaa, and Vähämaa 2015).

This study contributes to our understanding of the role of gender in enhancing bank financial reporting transparency, which improves the external disciplining of banks over risk-taking. It shows that women CFOs are associated with improved transparency of bank financial reporting, which is considered to be rather opaque (Beatty and Liao 2014; Acharya and Ryan 2016). This study also contributes to the literature related to LLP reporting by showing that the CFO's gender affects the way that LLPs are recognised. Despite the vast literature on LLP reporting, little is known about the factors driving its timeliness (Beatty and Liao 2014; Bushman 2014). We show that CFO traits, such as gender, significantly affect LLP reporting decisions. Practically, our findings inform the debate on the implementation of the new expected-loss LLP standard (Beck and Narayanamoorthy 2013; Norden and Stoian 2014; Curcio and Hasan 2015; Cohen and Edwards 2017), as well as that on advancing board of

director quotas based on gender (Van Staveren 2014; Palvia, Vähämaa, and Vähämaa 2015; Adams and Ragunathan 2017).

Our study is not without limitations. We believe that the small number of women CFOs reduces the statistical power of our tests, an inherent problem in most gender studies in a corporate setting. In addition, the data availability restricts us to working only with banks included in the S&P 1500, potentially limiting the generalisability of our findings to large listed banks. We urge future research to shed more light on smaller firms, as most of the gender studies available focus on large firms. Besides this, gender studies state that two channels guide women to be associated with higher financial reporting quality: (1) they are more risk-averse and (2) they hold higher ethical standards. However, it is unclear whether the results we observe are derived through both channels or one of them. Thus, we urge future studies to give more attention to what truly drives women to be associated with earnings of higher quality.

## Notes:

1. LLP recognition is considered timely when it reflects the changes in current and future non-performing loans.
2. Since regulatory capital is a long-term strategic decision taken by the board of directors (El Sood 2012; Anginer et al. 2016), it is reasonable to use it as a proxy for banks' attitude towards risk.
3. The SEC states that individuals who qualify as financial experts must have at least one of the following: "(i) Education and experience 1) in a position as a principal financial or accounting officer, controller, public accountant, or auditor, or 2) in a position involving similar functions; (ii) Experience in actively supervising a principal financial or accounting officer, controller, public accountant, or auditor (or an individual performing similar functions); (iii) Experience in overseeing or assessing companies or public accountants in the preparation, auditing, or evaluation of financial statements; or (iv) Other relevant experience." (SEC, 2003)
4. This is calculated as (standard deviation of change in  $NPL_{t+1}$  \* lagged total loans \* the coefficient of the interaction term  $CFO\ gender * change\ in\ NPL_{t+1}$ ) =  $0.0038293 * 7431.234 * 0.248$ .
5. We choose 12% as a cut-off point because our sample median Tier 1 capital ratio is 11.98%.
6. Specifically, we use the equity-to-assets ratio and total regulatory capital (Tier 1 capital ratio + Tier 2 capital ratio).



**Table (1) – Observations’ distribution per year**

The table below shows the number of observations and unique banks per year.

<b>Year</b>	<b>Observations</b>	<b>Number of unique banks</b>
2007	87	47
2008	231	77
2009	292	77
2010	293	76
2011	299	79
2012	313	80
2013	323	85
2014	334	86
2015	332	90
2016	256	91
<b>Total</b>	<b>2760</b>	<b>119 unique banks</b>

**Table (2) – Summary statistics**

This table reports summary statistics for the sample of US commercial banks. *Assets* is the book value of the bank's total assets in millions. All other variable definitions are available in Appendix A.

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Min.</b>	<b>Max.</b>
<i>CFO gender<sub>t</sub></i>	2760	0.0427	0.202	0	1
<i>LLP<sub>t</sub></i>	2760	0.0019	0.0033	-0.0064	0.0404
<i>Change in NPL<sub>t</sub></i>	2760	0.00018	0.003812	-0.0111	0.0178
<i>Change in loans<sub>t</sub></i>	2760	0.0178	0.04787	-0.0697	0.2890
<i>Assets (\$ million)<sub>t-1</sub></i>	2760	107169	375828	1980	2577148
<i>Earnings before LLP<sub>t</sub></i>	2760	0.00547	0.00342	-0.0043	0.0289
<i>Tier1<sub>t-1</sub></i>	2760	0.1223	0.0264	0.0681	0.2005
<i>% of independent directors on BOD<sub>t</sub></i>	2760	0.7976	0.10426	0.333	1
<i>% of financial experts on audit committee<sub>t</sub></i>	2760	0.4456	0.283	0	1
<i>CEO ownership<sub>t-1</sub></i>	2760	0.00784	0.01218	0	0.008
<i>CFO ownership<sub>t-1</sub></i>	2760	0.0012	0.0016	0	0.0083
<i>Board size<sub>t</sub></i>	2760	11.92	2.448	7	18
<i>CEO_chairman duality<sub>t</sub></i>	2760	0.07789	0.2680	0	1

**Table (3) – Differences in means between the two groups (men and women CFOs)**

This table reports the differences between the means for a sample of banks with men CFOs and a sample of banks with women CFOs. *Assets* is the book value of the bank's total assets in millions. All other variable definitions are available in Appendix A. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Variables	Men CFO sample [1]		Women CFO sample [2]		Diff [1]-[2]
	Observations	Mean	Observations	Mean	
<i>LLP<sub>t</sub></i>	2642	0.00196	118	0.0016	0.00036
<i>Change in NPL<sub>t</sub></i>	2642	0.00019	118	0.00006	0.00013
<i>Change in loans<sub>t</sub></i>	2642	0.01785	118	0.01777	0.00008
<i>Assets (\$ million)<sub>t-1</sub></i>	2642	96,411	118	348,039	-251,628***
<i>Earnings before LLP<sub>t</sub></i>	2642	0.0055	118	0.0049	0.0006**
<i>Tier1<sub>t-1</sub></i>	2642	12.20%	118	12.07%	0.13%
<i>% of independent directors on BOD<sub>t</sub></i>	2642	79.60%	118	82.40%	-2.8%***
<i>% of financial experts on audit committee<sub>t</sub></i>	2642	43.40%	118	70.80%	-27.4%***
<i>CEO ownership<sub>t-1</sub></i>	2642	0.008	118	0.00374	0.00426***
<i>CFO ownership<sub>t-1</sub></i>	2642	0.00118	118	0.00037	0.00081**
<i>Board size<sub>t</sub></i>	2642	11.98	118	10.44	1.54***
<i>CEO_chairman duality<sub>t</sub></i>	2642	0.075	118	0.136	-0.061***

**Table (4) – Correlation matrix**

This table reports the correlation matrix. All variable definitions are available in Appendix A. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

	$LLP_t$	$Change\ in\ NPL_t$	$Change\ in\ loans_t$	$Ln\ (assets)_t$	$Earnings\ before\ LLP_t$	$CFO\ gender_t$	$TierI_{t-1}$	$\% \text{ of independent directors on } BOD_t$	$\% \text{ of financial experts on audit committee}_t$	$CEO\ ownership_{t-1}$	$CFO\ ownership_{t-1}$	$Board\ size_t$	$CEO\_chairman\ duality_t$
$LLP_t$	1												
$Change\ in\ NPL_t$	0.296***	1											
$Change\ in\ loans_t$	-0.169***	0.105***	1										
$Ln\ (assets)_t$	0.108***	-0.0168	-0.0844***	1									
$Earnings\ before\ LLP_t$	0.226***	0.0304	-0.0552**	0.239***	1								
$CFO\ gender_t$	-0.00725	0.00874	-0.00262	0.129***	-0.0379*	1							
$TierI_{t-1}$	-0.0598	-0.182***	-0.0193	-0.189***	0.237***	-0.00504	1						
$\% \text{ of independent directors on } BOD_t$	-0.0502**	-0.0913***	-0.0329	0.273***	0.0989***	0.0488**	0.0864***	1					
$\% \text{ of financial experts on audit committee}_t$	-0.0147	-0.0239	0.0364	0.269***	0.0830***	0.196***	0.0333	0.0273	1				
$CEO\ ownership_{t-1}$	-0.00431	0.0497**	-0.00356	-0.203***	-0.0377*	-0.072***	-0.0989***	-0.234***	-0.152***	1			
$CFO\ ownership_{t-1}$	-0.0963***	-0.0288	0.0525**	-0.392***	-0.147***	-0.0963**	-0.0475*	-0.340***	-0.158***	0.270***	1		
$Board\ size_t$	0.0873***	0.0792***	-0.00322	0.316***	0.0620**	-0.127***	-0.205***	0.0884***	0.152***	0.146***	0.236***	1	
$CEO\_chairman\ duality_t$	0.0422*	0.0208	-0.0311	0.145***	0.0604**	0.0454	-0.00143	-0.00374	0.0466*	0.0288	-0.0115	-0.0290	1

**Table (5) – Main results**

This table reports the results of the main regressions. Columns 1 and 2 report the results of model 2 but excluding the control variables, while columns 3 and 4 report the results of model 2 including all the control variables. Bank fixed effects are used in the results reported in columns 1 and 3, while CEO fixed effects are used in the results reported in columns 2 and 4. Quarter fixed effects are used in all models. All variable definitions are available in Appendix A. The main variables of interests are written in bold. Robust standard errors in parentheses (clustered at the bank level). \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Variable	(1) LLP - Bank fixed effects	(2) LLP - CEO fixed effects	(3) LLP - Bank fixed effects	(4) LLP - CEO fixed effects
Change in $NPL_{t+1}$	-0.0292 (0.0270)	-0.0414* (0.0221)	-0.0417 (0.0268)	-0.0553*** (0.0187)
CFO gender <sub>t</sub>	-0.00145 (0.00109)	-0.00201 (0.00122)	-0.00119 (0.000955)	-0.00179* (0.00101)
<b>CFO gender<sub>t</sub> * change in <math>NPL_{t+1}</math></b>	<b>0.298***</b> <b>(0.0671)</b>	<b>0.181**</b> <b>(0.0874)</b>	<b>0.248***</b> <b>(0.0677)</b>	<b>0.165***</b> <b>(0.0370)</b>
Change in $NPL_t$	0.103*** (0.0321)	0.0948*** (0.0316)	0.0877*** (0.0288)	0.0606** (0.0278)
<b>CFO gender<sub>t</sub> * change in <math>NPL_t</math></b>	<b>0.0461</b> <b>(0.0623)</b>	<b>0.0103</b> <b>(0.0492)</b>	<b>0.0295</b> <b>(0.0349)</b>	<b>0.0194</b> <b>(0.0437)</b>
Change in $NPL_{t-1}$			0.107*** (0.0229)	0.103*** (0.0239)
Change in $NPL_{t-2}$			0.0887*** (0.0207)	0.0754*** (0.0186)
Change in loans <sub>t</sub>			-0.00145 (0.00174)	0.000222 (0.00152)
Ln (assets) <sub>t</sub>			0.000653 (0.000565)	0.000261 (0.000590)
Earnings before LLP <sub>t</sub>			0.306*** (0.0668)	0.287*** (0.0704)
Tier1 <sub>-1</sub>			-8.03e-05 (0.00629)	0.000461 (0.00442)
% of independent directors on BOD <sub>t</sub>			-0.00105 (0.00139)	-0.00111 (0.00126)
% of financial experts on audit committee <sub>t</sub>			-0.000773 (0.000485)	-0.000412 (0.000532)
CEO ownership <sub>t-1</sub>			0.0224** (0.00992)	0.0458*** (0.0163)
CFO ownership <sub>t-1</sub>			-0.0391 (0.131)	-0.0960 (0.118)
Board size <sub>t</sub>			-7.23e-06 (6.19e-05)	-2.46e-05 (5.55e-05)
CEO_chairman duality <sub>t</sub>			0.000131 (0.000313)	4.94e-05 (0.000262)
Gender diversity <sub>t</sub>			-0.00553*** (0.00182)	-0.00544*** (0.00164)
Constant			-0.00633 (0.00582)	-0.00238 (0.00589)
Quarter fixed effects	Yes	Yes	Yes	Yes

Bank fixed effects	Yes	No	Yes	No
CEO fixed effects	No	Yes	No	Yes
Observations	2,760	2,760	2,759	2,639
R-squared	0.359	0.326	0.458	0.454

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**Table (6) – Comparison between banks with high regulatory capital and banks with low regulatory capital**

This table presents the results of the comparison in LLP timeliness between banks with high regulatory capital and banks with low regulatory capital. Column 1 reports the results for the full sample. Column 2 reports the results for the low regulatory capital subsample while column 3 represents the results for the high regulatory capital subsample. We use 12% as a cut-off point based on our sample median. (Note: the median of regulatory capital in our sample is 11.98%. We rounded it for simplicity. All variables are explained in Appendix A . The main variables of interest are written in bold. For brevity, we do not report the results of the control variables. Quarter fixed effects, bank fixed effects, and all control variables are included in all the models. In untabulated results, we use 11%, 10%, and 9% as cut-off points and our main conclusion does not change. The results hold when we use CEO fixed effects. For brevity, we report only the results of the bank fixed effects models. Robust standard errors in parentheses (clustered at the bank level). \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

Variables	(1) Full sample	(2) Banks with Tier 1 capital ratio <12%	(3) Banks with Tier 1 capital ratio >12%
Change in $NPL_{t+1}$	-0.0849*** (0.0273)	-0.0557** (0.0264)	-0.0665** (0.0267)
CFO gender <sub>t</sub>	-0.00127 (0.000972)	-0.00115* (0.000611)	-0.000803 (0.00148)
<b>CFO gender<sub>t</sub> * change in <math>NPL_{t+1}</math></b>	<b>0.284***</b> <b>(0.107)</b>	<b>0.255**</b> <b>(0.108)</b>	<b>0.476***</b> <b>(0.106)</b>
<b>CFO gender<sub>t</sub> * change in <math>NPL_{t+1}</math> * strong<sub>t</sub></b>	<b>0.0104</b> <b>(0.110)</b>		
Change in $NPL_t$	0.0963** (0.0390)	0.137*** (0.0479)	0.0503 (0.0367)
<b>CFO gender<sub>t</sub> * change in <math>NPL_t</math></b>	<b>-0.0689</b> <b>(0.0651)</b>	<b>-0.0498</b> <b>(0.0749)</b>	<b>0.0740</b> <b>(0.0491)</b>
<b>CFO gender<sub>t</sub> * change in <math>NPL_t</math> * strong<sub>t</sub></b>	<b>0.145</b> <b>(0.0954)</b>		
Other interactions	Yes	-	-
Other controls	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes
Observations	2,759	1,415	1,344
R-squared	0.460	0.498	0.489

**Table (7) – CFO-transition analysis**

This table shows the results of our difference-in-differences analysis. Panel A reports the results of the full sample of man-followed-by-woman (MFW) and man-followed-by-man (MFM) banks. We exclude observations where the new CFO stayed in their position for one year or less. Panel B reports the results when we restrict the sample to three years before transition and three years after transition. Panels C and D repeat the analysis presented in panels A and B, respectively, limiting the observations to voluntary CFO transitions only. Panel E details the reasons for CFO transitions. Finally, Panel F repeats the analysis in panels A-D but after removing the first-year observations of newly appointed CFOs. Columns 1, 3, and 5 show the results of the bank fixed effects model while columns 2, 4, and 6 show the results of the CEO fixed effects model. Our treated group is MFW CFO transition banks while our control group is banks with MFM CFO transitions. All variables are explained in Appendix A . The variables of interest are written in bold. For brevity, we do not report the results of the control variables. Quarter fixed effects, bank fixed effects, and all control variables are included in all models. Robust standard errors in parentheses (clustered at the bank level). \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively.

	Panel (A) Full sample		Panel (B) Restricted sample		Panel (C) Voluntary turnover – full sample		Panel (D) Voluntary turnover – restricted sample	
Variables	(1) Bank fixed effects	(2) CEO fixed effects	(3) Bank fixed effects	(4) CEO fixed effects	(5) Bank fixed effects	(6) CEO fixed effects	(7) Bank fixed effects	(8) CEO fixed effects
Post * change in $NPL_{t+1}$	-0.0866 (0.0614)	-0.0919 (0.0604)	-0.0327 (0.0792)	-0.0770 (0.0900)	-0.0300 (0.0764)	-0.0280 (0.0734)	0.00705 (0.0708)	-0.0494 (0.100)
<b>Post * treated * change in <math>NPL_{t+1}</math></b>	<b>0.258**</b> <b>(0.0985)</b>	<b>0.280***</b> <b>(0.101)</b>	<b>0.537***</b> <b>(0.168)</b>	<b>0.629***</b> <b>(0.165)</b>	<b>0.131</b> <b>(0.115)</b>	<b>0.194*</b> <b>(0.110)</b>	<b>0.351**</b> <b>(0.133)</b>	<b>0.399**</b> <b>(0.149)</b>
Post * change in $NPL_t$	-0.0439 (0.0667)	0.0338 (0.0679)	-0.0245 (0.120)	0.122 (0.130)	-0.0989 (0.0753)	0.0205 (0.0658)	-0.186** (0.0831)	-0.00904 (0.0894)
<b>Post * treated * change in <math>NPL_t</math></b>	<b>0.460***</b> <b>(0.133)</b>	<b>0.338**</b> <b>(0.143)</b>	<b>0.708***</b> <b>(0.225)</b>	<b>0.571**</b> <b>(0.222)</b>	<b>0.624***</b> <b>(0.167)</b>	<b>0.412**</b> <b>(0.169)</b>	<b>0.725***</b> <b>(0.234)</b>	<b>0.554***</b> <b>(0.153)</b>
Other interactions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	No	Yes	No	Yes	No	Yes	No
CEO fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	1,050	987	647	600	681	636	443	406



R-squared	0.605	0.560	0.586	0.542	0.621	0.561	0.665	0.636
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Panel E: CFO-transition identification

<b>Transition reason</b>	<b>Frequency</b>
Voluntary retirement	3
Promoted to a higher position	10
Moved to a higher position in another firm	3
Placed in a different position (but with the same rank) in the same bank	7
<i>Total voluntary turnover</i>	<i>23</i>
<i>Forced turnover</i>	<i>12</i>
<b><i>Total number of transitions</i></b>	<b><i>35</i></b>

Panel F: Results after removing first-year observations of newly appointed CFOs

Variables	(1) Full sample	(2) Full sample	(3) Restricted sample	(4) Restricted sample	(5) Full sample - voluntary turnover	(6) Full sample - voluntary turnover	(7) Voluntary turnover- restricted sample	(8) Voluntary turnover - restricted sample
<b>Post * treated * change in NPL<sub>t+1</sub></b>	<b>0.209*</b>	<b>0.224*</b>	<b>0.268*</b>	<b>0.233</b>	<b>0.300*</b>	<b>0.332*</b>	<b>0.637**</b>	<b>0.678**</b>
	<b>(0.110)</b>	<b>(0.113)</b>	<b>(0.156)</b>	<b>(0.152)</b>	<b>(0.163)</b>	<b>(0.168)</b>	<b>(0.261)</b>	<b>(0.295)</b>
<b>Post * treated * change in NPL<sub>t</sub></b>	<b>0.466***</b>	<b>0.481***</b>	<b>0.624***</b>	<b>0.615***</b>	<b>0.861***</b>	<b>0.904***</b>	<b>0.866**</b>	<b>0.998**</b>
	<b>(0.161)</b>	<b>(0.160)</b>	<b>(0.227)</b>	<b>(0.219)</b>	<b>(0.227)</b>	<b>(0.263)</b>	<b>(0.345)</b>	<b>(0.357)</b>
Constant	-0.00153 (0.0112)	0.00392 (0.0132)	-0.00349 (0.0166)	0.00599 (0.0214)	-0.0226*** (0.00711)	-0.0231** (0.00896)	<b>-0.0298**</b> <b>(0.0115)</b>	<b>-0.0340***</b> <b>(0.00975)</b>
Other interactions	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	No	Yes	No	Yes	No	Yes	No
CEO fixed effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	874	874	573	573	600	600	400	400
R-squared	0.596	0.548	0.609	0.534	0.597	0.532	0.695	0.586

**Table (8): Other robustness tests**

This table reports the results of the other robustness checks we performed. The column title reports the governance characteristic the model uses. Governance characteristics used are *% of financial experts on audit committee* and *gender diversity*. All variables are defined in Appendix A. For brevity, we report variables of interest only. Columns 1 and 3 report the results excluding the control variables. Quarter fixed effects, bank fixed effects, and all control variables are included in all models. The results hold when we use CEO fixed effects. For brevity, we report only the results of the bank fixed effects models. Robust standard errors in parentheses (clustered at the bank level). \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% levels, respectively

Variables	(1) % of financial experts on audit committee	(2) % of financial experts on audit committee	(3) Gender diversity	(4) Gender diversity
<b>CFO gender<sub>t</sub> * change in NPL<sub>t+1</sub></b>	<b>0.254***</b>	<b>0.234***</b>	<b>0.273***</b>	<b>0.247***</b>
	(0.0874)	(0.0651)	(0.0558)	(0.0850)
<b>CFO gender<sub>t</sub> * change in NPL<sub>t</sub></b>	<b>0.0376</b>	<b>0.00239</b>	<b>0.00331</b>	<b>0.0307</b>
	(0.0585)	(0.0580)	(0.0713)	(0.0337)
% of financial experts on audit committee <sub>t</sub>	-0.000736	-0.000784		
	(0.000592)	(0.000484)		
% of financial experts on audit committee <sub>t</sub> * change in NPL <sub>t+1</sub>	0.0483	0.0340		
	(0.0711)	(0.0610)		
% of financial experts on audit committee <sub>t</sub> * change in NPL <sub>t</sub>	0.0721	0.0495		
	(0.110)	(0.0954)		
Gender diversity <sub>t</sub>			-0.00658***	-0.00521***
			(0.00227)	(0.00183)
Gender diversity <sub>t</sub> * change in NPL <sub>t+1</sub>			0.675	0.733*
			(0.454)	(0.440)
Gender diversity <sub>t</sub> * change in NPL <sub>t</sub>			0.378	0.286
			(0.364)	(0.323)
Other controls	No	Yes	No	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes
Observations	2,760	2,759	2,760	2,759
R-squared	0.361	0.458	0.375	0.466

## Appendix (A) – Variable definitions

Variable	Definition
<b>% of financial experts on audit committee</b>	The number of financial experts on the audit committee divided by the total number of directors on the audit committee. A financial expert is a member with experience of preparing or auditing financial statements.
<b>% of independent directors on BOD</b>	The number of independent directors divided by the total number of directors on the board. We define an independent board member as an outsider with no relationship to the firm, other than board of directors membership.
<b>%Δ GDP</b>	Percentage change in the gross domestic product (GDP).
<b>%Δunemployment</b>	The percentage change in the unemployment rate.
<b>%ΔCase_Shiller house index</b>	The percentage change in Case-Shiller return.
<b>Board size</b>	Total number of directors on the board of directors.
<b>CEO ownership</b>	Total number of shares owned by the CEO (excluding options) over total number of common shares outstanding.
<b>CEO_chairman duality</b>	A dummy variable, which takes the value one if the same person holds the CEO and chairman roles, and zero otherwise.
<b>CFO gender</b>	A dummy variable that takes the value one if the CFO is a woman and zero otherwise.
<b>CFO ownership</b>	Total number of shares owned by the CFO (excluding options) over total number of common shares outstanding.
<b>Change in loan</b>	The change in loans over the quarter scaled by lagged total loans.
<b>Change in NPL</b>	Change in non-performing loans (NPL) over the quarter scaled by total loans.
<b>Earnings before LLP</b>	Earnings before extraordinary items minus loan loss provision scaled by total assets.
<b>Gender diversity</b>	Equals the total number of independent women directors on the board of directors divided by the total number of directors on the board.
<b>LLP</b>	Loan loss provision as a percentage of total loans.
<b>Ln assets</b>	The natural log of the book value of the bank's total assets.
<b>Post</b>	A dummy variable that takes the value of one if the period is post-CFO transition and zero otherwise
<b>Strong</b>	A dummy variable that takes the value one if the bank's regulatory capital is above 12% and zero otherwise.
<b>Tier1</b>	Tier 1 capital divided by risk-weighted-assets.
<b>Treated</b>	A dummy variable that takes the value one if the bank is a man-followed-by-woman CFO transition bank and zero otherwise.

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