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Ethnic Diversity and Monitoring Effectiveness of the Board: Evidence from Banks

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Synopsis

The research problem

We investigate the effect of ethnic diversity on the reporting quality of U.S. banks.

Motivation

Although the representation of ethnic minorities in the U.S. boards has increased recently, only a few studies investigated its effect on the board's monitoring effectiveness.

The test hypotheses

An ethnically diverse board has a higher monitoring performance in the form of timelier loan loss provision (LLP) recognition.

Target population

The U.S. commercial banking sector covering the period 1996–2017.

Adopted methodology

Our main analysis used a fixed effect estimator. We address endogeneity concerns by using bank fixed effects, CEO fixed effects, and employing propensity-score-matched and entropy-balanced samples in additional tests. We use LLP, the main accrual in banks, as our measure for financial reporting quality. Our main independent variables are the ethnic diversity of the board and the ethnic diversity of the audit committee. Our ethnic diversity of the board variable is the percentage of independent non-Caucasian directors in the board.

Analyses

First, we regress LLP on our ethnic diversity variable, controlling for various board characteristics, CEO attributes, and the quality of banks' information environment. We also extend our analyses to examine the effect of ethnic diversity of the audit committee on LLP timeliness. Finally, using accounting- and market-based measures of risk, we investigate whether bank risk moderates the association between ethnic diversity and LLP timeliness.

Findings

Our findings indicate that ethnically diverse boards provide more effective monitoring, reflected by higher earnings quality in the form of timelier loan loss provision reporting. We also find that diverse boards are only associated with timelier LLP reporting in high-risk banks, indicating that ethnically diverse boards become more risk averse during periods of financial distress. In light of the recent increased levels of ethnic diversity in U.S. banks and the opaque financial reporting environment, our study provides evidence that ethnically diverse boards are better monitors than more homogenous ones.

Keywords: Ethnic diversity; bank accounting; loan loss provision; board diversity; monitoring.

JEL Classifications: M41, G30, M14, G29.

1. Introduction

The association between ethnicity and decision-making, at the individual level, has been extensively investigated in the psychology and economics literature (Brown, 2007; Cox *et al.*, 1991; McLeod *et al.*, 1996). However, ethnicity studies at the corporate level, especially for banks, are still limited. Only a few papers have focused on the effect of ethnic diversity on the boards of directors on banks' performance (García-Meca *et al.*, 2015) and for firms in other industries (Guest, 2019). This paper aims to extend this line of research by investigating the effect of the presence of non-Caucasian independent directors on bank boards' monitoring performance, as manifested by earnings quality. This renders our analysis particularly important because reporting quality issues have been identified as a major source of the banking failures that occurred during the 2007–09 financial crisis (Barth & Landsman, 2010; Beatty & Liao, 2011; Jin *et al.*, 2018). Our study can also offer insights on the effects of the recent increase in the number of non-Caucasian directors in banks.¹

We argue that the presence of non-Caucasian independent directors can play a substantial role in improving the monitoring effectiveness of the board, as it is reflected in improved loan loss provision (LLP) reporting and the timeliness of its recognition.² We believe that firms with non-Caucasian directors are associated with improved LLP reporting for a number of reasons. First, non-Caucasian directors are more sensitive to inequality and thus are expected to hamper opportunistic behaviors (Guest, 2019). Second, they appear not to be part of the “old boys club” and are thus perceived to be more independent (Broome *et al.*, 2010; Carter *et al.*, 2003; Hillman *et al.*, 2002; Ntim, 2015; Zweigenhaft & Domhoff,

¹ The proportion of directors from ethnic minorities in Fortune 500 firms increased from 12.7% in 2010 to 16.2% in 2018 (Deloitte, 2018) and to 21.5% in 2021 (Ward, 2022). Similarly, according to Institutional Shareholder Services (2019), non-Caucasian directors made up 21% of new director appointments in the United States in 2019, compared to only 12% in 2009. In our sample, we noticed an increase in ethnic minorities on banks' boards from 1% in 1996 to more than 10% in 2017.

² LLP reporting is considered timely when it reflects the current and future changes in nonperforming loans.

2006). Third, directors from ethnic minorities are more risk averse and hence more likely to encourage firms to make risk-averse decisions such as reporting timelier LLP (Bazley *et al.*, 2023). Lastly, resource dependence theory suggests that diverse boards increase the knowledge base in the boardroom and thus improve the board's competence at monitoring (McLeod *et al.*, 1996; Miller & del Carmen Triana, 2009; Watson *et al.*, 1993).

Using a large sample of U.S. banks for the period between 1996 and 2017, we find that ethnic diversity at the board and audit committee level positively influences banks' effectiveness, especially during times of financial distress. Importantly, we also find that such an association is more pronounced in banks with higher risk. Overall, our findings indicate that board ethnic diversity takes on greater importance during periods of financial distress. Interestingly, we also find that this relationship weakens with the increase in ethnic groups in the board, which implies that potential conflicts arising from greater diversity can cancel out the beneficial effect of diversity in opinions.

Empirical and theoretical literature has suggested that board structure is endogenously determined (for a survey, see Adams *et al.* [2010]). Therefore, we followed a number of steps to address such endogeneity concerns. To alleviate omitted variable bias concerns, we employed bank fixed effects and CEO fixed effects, while we also applied propensity score matching and entropy balancing to address potential self-selection bias. Our main results remain unchanged under all these different specifications.

We contribute to the literature in several ways. First, we contribute to the board diversity literature, which has focused primarily on issues of diversity related to gender. To the best of our knowledge, only Guest (2019) has previously investigated the relationship between boards' ethnic diversity and financial reporting quality. Compared with Guest (2019), our paper finds a positive association between reporting quality and ethnic diversity in the banking industry. Given the opacity in banks' informational environments

demonstrated by prior studies (Gallemore, 2023; Jiang *et al.*, 2016; Yue *et al.*, 2022), we show that within such a setting ethnic diversity is particularly important for improving the monitoring function of the board. Our results also provide insights on the risk tolerance of ethnically diverse boards, as we have found that ethnic diversity is particularly effective in high-risk banks.

Our study also contributes to the bank-management literature. Although banks have a significant impact on the economy, very few studies have investigated the effect of banks' board diversity on their decision-making process (Berger *et al.*, 2014; García-Meca *et al.*, 2015; García-Sánchez *et al.*, 2017; Hagendorff & Keasey, 2012; Kara *et al.*, 2022). In addition, although many LLP-related studies have focused on the economic consequences of LLP reporting for banks (Akins *et al.*, 2017; Bushman & Williams, 2012; Jin *et al.*, 2018), only a few investigated the reasons behind heterogeneity in LLP reporting in the first place. Hence, our study provides constructive evidence that adds to this stream of literature.

We also contribute to the literature that explores how cultural influences of executives and directors affect firms' decisions (Brochet *et al.*, 2019; Chaney *et al.*, 2021; Du *et al.*, 2017; Kanagaretnam *et al.*, 2011, 2014; Kim *et al.*, 2017; Merkley *et al.*, 2020). Previous studies have investigated the effect of directors' (or executives') culture on firm decisions at a cross-country (Chaney *et al.*, 2021; Kanagaretnam *et al.*, 2011, 2014) or cross-industry (Brochet *et al.*, 2019; Kim *et al.*, 2017) level, while our study specifically finds that cultural differences persist even within the same country and industry.

The remainder of this study is organized as follows. Section 2 discusses relevant prior studies and presents our hypotheses. Section 3 describes our methodology, and Section 4 discusses our results. We conclude in Section 5.

2. Literature Review and Development of Hypotheses

2.1. *Ethnicity and risk-taking*

Although prior studies have investigated the effect of ethnic background on individuals' risk-taking decisions at the personal level (Bazley *et al.*, 2023; Benjamin *et al.*, 2010; Brown, 2007), we are unaware of any study, that has investigated such an effect at the corporate level. Our study aims to fill this gap by investigating the effect of directors' ethnicity on the timeliness of LLP reporting in banks. LLP is the largest and most important bank accrual (see Section 2.3 for a review of the literature on the importance of LLP reporting for banks). It refers to the estimated losses from banks' most important business activity, lending.

Consequently, its reporting has a significant effect on banks' performance. The findings of the LLP-related literature linked conservative (i.e., timelier) LLP reporting with a decrease in bank risk (Akins *et al.*, 2017; Bushman & Williams, 2012, 2015; Jin *et al.*, 2018).

2.2. *Ethnic diversity and board performance*

Different theories have provided explanations on the effect of diversity on board effectiveness. Agency theory suggests that increasing the diversity of the board leads to an increase in board performance through improved board independence (Carter *et al.*, 2003; Du *et al.*, 2017; Ntim, 2015). It is perceived that diversity increases board independence for several reasons. First, based on the similarity attraction paradigm (Byrne, 1971; Kunze *et al.*, 2011; Riordan & Shore, 1997), individuals are more likely to establish social bonds with other individuals with similar demographic characteristics. Hence, directors from ethnic minorities are more prone to challenge managers and other directors over their decisions. The view that board ethnic diversity increases board independence is further supported by the findings of Broome *et al.* (2010), who showed that directors from minority ethnic groups have weak social relationships with Caucasian executives. Second, being members of a discriminated-against group in society could cause directors from ethnic minorities to be

more sensitive toward inequity and thus motivate them to clamp down on agency-related issues (Guest, 2019).

Third, board diversity leads to a greater knowledge base, resulting in improved board performance (Watson *et al.*, 1993). It is anticipated that directors from different backgrounds will bring different experiences to the board. Thus, because the board will be exposed to different opinions, it is likely to be more informed and hence arrive at better decisions. Bantel (1993) investigated the effect of board cultural diversity on strategic clarity in banks and found that such diversity leads to improved strategic decision making. Consistent with this view, McLeod *et al.* (1996) compared performance at a brainstorming task between an Anglo-American group and an ethnically diverse group. Their findings showed that diverse groups produce higher-quality ideas than homogeneous ones. Finally, Miller and del Carmen Triana (2009) suggested that firms with more ethnic diversity in their boardrooms are more innovative and have better reputations.

Yet, theories from social psychology suggest that diversity brings conflict to the board and could have a negative effect on its performance (Westphal & Milton, 2000). Consistent with this view, imposing an explicit quota may induce the board to compromise on directors' skills in return, which will eventually impair the board's effectiveness (Ferreira, 2010; Guest, 2019). Empirically, Campbell and Mínguez-Vera (2008) showed that gender-diverse boards are slower and less effective in their decision-making processes. Moreover, Liao *et al.* (2022) showed that the introduction of board gender-related quotas could be related to increases in risk levels for noncompliant banks prior to the introduction. Consistent with this view, García-Meca *et al.* (2015) indicated that increasing the number of foreign directors on bank boards harms performance, as measured by Tobin's Q. Also, Coles *et al.* (2020) found that board diversity has a negative impact on complex firms, such as banks, and that diversity

increased the coordination costs of these firms' boards, ultimately leading to poorer performance.

Finally, a number of studies have suggested that there is “no relation” between board diversity (including ethnic diversity) and board performance (Carter *et al.*, 2010; Guest, 2019). Their arguments were based on the notion that the board, through the nomination committee, has a substantial impact on the appointment of new directors. Therefore, it is likely that the incumbent directors will select their new colleagues carefully, and hence select directors that are similar to them (Broome *et al.*, 2011; Guest, 2019). As a result, the appointment of a new non-Caucasian director, in such cases, might not result in actual change in the decision dynamic within the board. Tokenism theory (Kanter, 1987) also points toward no association between board diversity and efficacy. It suggests that directors from minority groups might not be able to challenge other directors' opinions because they feel they are under intensified scrutiny (Guest, 2019). This might discourage a non-Caucasian director from outperforming or questioning others' opinions.

Consistent with the “no relation” view, Carter *et al.* (2010) found that there is no association between the ethnic diversity of the board and either Tobin's Q or return on assets (ROA). In addition, Guest (2019) found no association between boards' ethnic diversity and their monitoring performance. We believe that using the timeliness of LLP recognition provides further insights about the link between board diversity and monitoring ability. Because LLP is highly related to bank credit risk and is the banks' largest single accrual, the timeliness of LLP informs us about the risk tolerance of the board.

2.3. Timeliness of loan loss provisions

LLP is the largest and most important accrual for banks (Beatty & Liao, 2014). It refers to the estimated losses from banks' most important business activity, lending. Consequently, its reporting has a significant effect on banks' performance. The findings of the LLP-related

literature link conservative LLP reporting with a decrease in bank risks. For instance, Jin *et al.* (2018) found that banks reporting lower LLP before the 2007–08 financial crisis had a higher likelihood of failure during the crisis. Also, Bushman and Williams (2012) showed that banks reporting timelier LLP have higher external discipline over risk-taking, whereas Bushman and Williams (2015) illustrate that timelier LLP reporting is associated with lower systematic risk and lower financing risk.

In the same manner, Beatty and Liao (2011) showed that banks with timelier LLP reporting were more capable of issuing new loans during the financial crisis and performed better. Consistent with that, Kim (2022) found that banks that delay LLP have higher likelihood in reducing their loan supply during the 2007–08 credit crisis. In the same vein, Akins *et al.* (2017) highlighted that banks reporting LLP in a timelier manner have better-quality loan portfolios because timelier recognition of LLP leads banks to take corrective actions earlier and, as a result, have more chance of improving loan quality. In addition, investors punish banks that do not report LLP in a timely manner through imposing a discount on their share prices (Wheeler, 2021).

2.4. Research hypothesis

LLP is the provision that a bank sets aside to cover future losses on its loans. Thus, its level is dependent on loan quality. Considering that loan quality is private information for shareholders, bank managers may exploit this information asymmetry and delay LLP recognition to manage earnings at the expense of shareholders. On the other hand, LLP timeliness improves the information environment of the bank (Beatty & Liao, 2014; Bushman & Williams, 2012; Wheeler, 2021), results in decreasing bank risk (Bushman & Williams, 2015), and improves loan quality (Akins *et al.*, 2017; Kim, 2022). Hence, we would expect that an effective board should hinder managers' attempt to manage earnings through LLP.

We argue that directors from minority groups are expected to monitor managers more effectively. Minority group members are more sensitive toward inequity; thus, they are expected to challenge managers' decisions (Guest, 2019). In a similar way, Broome *et al.* (2010) suggested that directors from non-Caucasian ethnic backgrounds have weaker relationships with Caucasian board members, which shows that they are more independent than Caucasian directors. Moreover, Bazley *et al.* (2023) suggested that individuals from minority groups are risk averse. This characteristic may apply to board members from minority groups and drive them to support more risk-averse decisions, such as timelier recognition of LLP. In addition, diverse boards are generally expected to outperform nondiverse boards because diversity allows for more ideas and viewpoints to be discussed in the boardroom, which helps the board arrive at better decisions (Coles *et al.*, 2020; Hillman *et al.*, 2002). In other words, the knowledge base of a diverse board, arguably, allows it to perform its duties more effectively, and accordingly be more able to reduce agency costs and deter the managers from gaining private benefits at the expense of the shareholders.

Hence, we expect banks with diverse boards to use conservative LLP reporting.

H₁: An ethnically diverse board has a higher monitoring performance in the form of timelier LLP recognition.

3. Methodology

3.1. Directors' ethnicity

The majority of the data related to directors' ethnicities are available from Institutional Shareholder Services (ISS). When information on ethnicity is missing, we determined the ethnic group by using name ethnic classifier software (Ye *et al.*, 2017; Ye & Skiena, 2019). The name ethnic classifier software uses a news/blog analysis system, called Lydia, to predict the ethnicity of the entered name (Ambekar *et al.*, 2009). The software categorizes names into Caucasian, Hispanic, African, or Asian.

An inherent limitation of our approach is the use of this software to estimate some of our ethnicity data. Hence, the accuracy of the software in predicting directors' ethnicities is vital for the reliability of our tests. To ensure the accuracy of our software predictions, we compared the directors' ethnicities that we collected from the ISS database with the software's predictions. The results showed that the software correctly predicted director ethnicity in approximately 99% of the cases, confirming its reliability. We also emphasize that there is no reason to believe that the trivial number of errors in our ethnicity data are systematic in a way that could be driving our results.³

Interestingly, we found a significant increase in the percentage of non-Caucasian directors on banks' boards from 1996 to 2017. Figure 1 illustrates our relevant findings in a graph. Specifically, we found that the percentage increases from 1% in 1996 to 11% in 2017, which highlights the relevance of our study.

-Insert Figure 1 here-

3.2. LLP Model

We started with the following modified model of Beatty and Liao (2014):

$$LLP_{it} = \alpha_0 + \alpha_1 \text{Change in } NPL_{it+1} + \alpha_2 \text{Change in } NPL_{it} + \alpha_3 \text{Change in } NPL_{it-1} + \alpha_4 \text{Change in } NPL_{it-2} + \alpha_5 \ln Assets_{it-1} + \alpha_6 \text{Change in } loan_{it} + \alpha_7 \text{Earnings before } LLP_{it} + \alpha_8 \text{Tier 1 Capital } \%_{it-1} + \alpha_9 \text{Loan loss reserves }_{it-1} + \alpha_{10} \text{Charge-off}_{it} + \sum \text{Board-level controls} + \text{Fixed effects} + \varepsilon_{it} \quad (1)$$

LLP is the loan loss provision as a percentage of the total loans for firm *i* and time *t*. The *Change in NPL* variables represent the change in nonperforming loans (NPL) over the quarter. A loan is considered nonperforming when its associated borrower fails to make any interest or principal payment for a specific period, typically 90 days.

³ If our argument that the software errors are unsystematic did not hold, then we should find no association between ethnicity and financial reporting quality, which is in contrast to our actual findings.

Model 1 includes future ($t+1$), current (t), and prior ($t-1$, $t-2$) NPL because banks use forward-looking, current, and past information to estimate LLP (Beatty & Liao, 2014; Beaver & Engel, 1996; Bushman & Williams, 2012, 2015). LLP will be considered timely if there are positive associations between *LLP* and *Change in NPL_{t+1}* and *Change in NPL_t* respectively (Beatty & Liao, 2014; Bushman & Williams, 2012). In particular, a positive association between *Change in NPL_{t+1}* and *LLP* will indicate that banks incorporate their private information about loan portfolio risk by recognizing LLP before bad loans become nonperforming; a positive relationship between *Change in NPL_t* and *LLP* will suggest that banks incorporate current nonperforming loans in LLP recognition. Together, *Change in NPL_{t+1}* and *Change in NPL_t* capture the timeliness of LLP reporting by banks.

We also used a vector of bank-specific and board-level controls. We controlled for time-variant characteristics that might affect LLP reporting using quarter-year fixed effects, and for time-invariant characteristics using bank fixed effects.

3.3. Ethnic diversity measures

The aim of this paper is to investigate the effect of the ethnic diversity of the *board* on financial reporting. Our diversity measure is *Non-Caucasian Nonexecutive Director(NED)%*. This variable is computed as the proportion of non-Caucasian *independent* directors on the board. We included independent directors only because the monitoring responsibilities rest mainly on them. Table 1 shows that on average, in our sample, only 7% of the independent directors are from ethnic minorities.⁴

⁴ Our measure for ethnic diversity is driven by the prevalence of Caucasian directors on banks' boards; however, we also used alternative measures for diversity, incorporating variation within the group of Caucasian directors and the number of ethnic groups sitting on the board (see Section 6).

Finally, to capture the effect of ethnic diversity on the timeliness of LLP, we interacted the ethnic diversity variables with both *Change in NPL_{t+1}* and *Change in NPL_t*. We expected a positive association between LLP and at least one of these interactions.

Hence, our final model is as follows:

$$\begin{aligned}
 LLP_{it} = & \alpha_0 + \alpha_1 \text{Change in } NPL_{it+1} + \alpha_2 \text{Change in } NPL_{it} + \alpha_3 \text{Non-Caucasian } NED\%_{it} + \alpha_4 \\
 & \text{Change in } NPL_{it+1} * \text{Non-Caucasian } NED\%_{it} + \alpha_5 \text{Change in } NPL_{it} * \text{Non-Caucasian } NED\%_{it} \\
 & + \alpha_6 \text{Change in } NPL_{it-1} + \alpha_7 \text{Change in } NPL_{it-2} + \alpha_8 \ln Assets_{it-1} + \alpha_9 \text{Change in loan}_{it} + \alpha_{10} \\
 & \text{Earnings before LLP}_{it} + \alpha_{11} \text{Tier 1 Capital } \%_{it-1} + \alpha_{12} \text{Loan loss reserves}_{it-1} + \alpha_{13} \text{Charge-} \\
 & \text{off}_{it} + \sum \text{Board-level controls} + \text{Fixed effects} + \varepsilon_{it}
 \end{aligned}
 \tag{2}$$

3.4. Sample

Our analysis is based on a sample of listed U.S. banks, as we used accounting data from COMPUSTAT, daily stock returns data from CRSP, and board of director data from ISS. Our sample period starts in 1996 and ends in 2017. As mentioned above, the ethnicities of the directors are mainly obtained from ISS. However, when the data are missing from ISS, we used the name ethnic classifier software mentioned earlier to predict the ethnicity of the directors. We deleted observations where there are missing variables. We also limited our analysis to the S&P1500 because ISS only provides board data for those firms. Finally, we trimmed all the continuous variables at the 1% and 99% levels. Our sample comprises 5,109 observations.⁵

4. Results

4.1. Descriptive statistics

Table 1 provides descriptive statistics for the study sample, while Table 2 shows the correlation matrix. Table 1 shows that, on average, non-Caucasian independent directors represent about 7% of our sample. The average reported LLP is 0.1% of total loans, whereas the maximum is 2.5%, similar to other studies (Black & Gallemore, 2013; Nicoletti, 2018). In

⁵ For the audit committee analysis, we excluded banks with no audit committee. Thus, our total observations for the audit committee analysis dropped to 4,803.

real terms, the average reported LLP in our sample is \$64 million. The largest LLP reported in our sample reaches \$13 billion. The average bank has a book value of assets of \$57 billion, while the smallest (largest) bank in our sample has a book value of assets of \$2.1 billion (\$2.3 trillion). As for regulatory capital, the average tier 1 capital ratio is 10.8%, and the maximum (minimum) is 19.5% (5.8%). Regarding board characteristics, our sample shows that, on average, independent directors made up 76% of bank boards and female directors 11%; also, on average, banks have 13 board members, and 8.6% of CEOs also serve as chairman.

-Insert Table 1 here-

The correlation matrix in Table 2 indicates that *LLP* is positively correlated with *Earnings before LLP*, which suggests that banks use LLP to manage earnings. This finding is consistent with the extensive literature promoting LLP as an important earnings management tool (Ahmed *et al.*, 1999; Beatty & Liao, 2014; Cheng *et al.*, 2011; Cohen *et al.*, 2014; Cornett *et al.*, 2009; Pérez *et al.*, 2008). In addition, the table suggests that LLP is positively correlated with bank size. Also, there is a negative (positive) correlation between the percentage of independent board members (*Board size*) and *LLP*.

As for independent non-Caucasian board members, the correlation matrix suggests that they are associated with higher levels of LLP, and tend to work in larger and well-capitalized banks, as observed by positive correlations with bank size (*ln Assets*) and *Tier 1 capital %*. Also, the independent non-Caucasian directors are positively correlated with the percentage of independent directors on the board.

-Insert Table 2 here-

4.2. Main results

The results of Model 2 are reported in Table 3. The coefficient for *Change in NPL_{t+1}* captures the extent to which the *expected (forward-looking)* change in NPL is incorporated in the reported LLP, while *Change in NPL_t* represents the extent to which the *current* change in

NPL is incorporated in the LLP. To support our hypotheses, we would expect the coefficients on the interaction terms $Change\ in\ NPL_{t+1} * Non-Caucasian\ NED\%$ and $Change\ in\ NPL_t * Non-Caucasian\ NED\%$, or at least one of them, to be positive and significant. We noted that to control for omitted variable bias related to banks' time-invariant characteristics such as risk culture, we added bank fixed effects to all our specifications.

We started with a fixed-effects estimation that includes only our main variables of interest. The results, reported in Column (1), show that the coefficient on $Change\ in\ NPL_{t+1}$ is negative but insignificant, indicating that nondiverse boards are not associated with forward-looking LLP reporting. Yet, the coefficients on the interaction term $Change\ in\ NPL_{t+1} * Non-Caucasian\ NED\%$ is positive and significant at the 5% level. Also, the coefficient on the variable $Change\ in\ NPL_t$ is positive and significant at the 1% level, indicating that nondiverse boards incorporate the current change in NPL in their LLP reporting. The interaction term $Change\ in\ NPL_t * Non-Caucasian\ NED\%$ is significant at the 10% level. This indicates that diverse boards seem to incorporate current changes in the NPL in their reported LLP.

In Column (2) we add the control variables as described in Equation 2. The interaction term $Change\ in\ NPL_{t+1} * Non-Caucasian\ NED\%$ remains positive and significant at the 5% level.⁶ $Change\ in\ NPL_{t-1}$ and $Change\ in\ NPL_{t-2}$ are positively associated with LLP, indicating that banks use prior-period information for LLP reporting. Also, $Change\ in\ loans$ has a positive association with LLP, suggesting that loan growth positively affects loan risks. Regarding bank size, we find a positive association between bank size and LLP, which is consistent with prior evidence showing that large banks are more diversified and take on higher risks (Beatty & Liao 2014). Also, our results indicate that banks use LLP to manage

⁶ In untabulated results, we controlled for the lagged dependent variable to correct for endogenous risk persistence (Bushman & Williams, 2015). We also controlled for the percentage of non-Caucasian executives on the board. Our results are virtually similar to those reported earlier.

earnings and regulatory capital. The results show a positive (negative) association between *Earnings before LLP (Tier 1 capital %)* and *LLP*. This is consistent with most prior studies on LLP and earnings and capital management (Ahmed *et al.*, 1999; Bushman & Williams, 2012; Cheng *et al.*, 2011; Cohen *et al.*, 2014; Cornett *et al.*, 2009; Pérez *et al.*, 2008).

Overall, our results suggest that board diversity in terms of ethnicity is associated with timelier LLP reporting and, thus, plays an important role in enhancing financial reporting transparency in the banking industry.⁷

-Insert Table 3 here-

4.3. Does audit committee diversity affect LLP timeliness?

The board of directors delegates its responsibilities to committees within the board, such as the audit committee, compensation committee, and nomination committee. The audit committee is responsible for overseeing the financial reporting process; its committee members frequently meet with managers and auditors to review financial reporting decisions (Badolato *et al.*, 2014; Klein, 2002). Hence, the audit committee has a direct impact on financial reporting outcomes. In addition, the decision dynamics in the audit committee are similar to those in the board of directors (Guest, 2019), with the audit committee members giving and discussing their opinions in order to reach a decision. We thus apply the same theories used in the board diversity context to the audit committee. Consequently, we

⁷ To ensure the robustness of our findings, we used the alternative model variants suggested by Beatty and Liao (2014), and our results remained the same. Specifically, we used the following models:

$$LLP_{it} = \alpha_0 + \alpha_1 \text{ Change in NPL}_{it+1} + \alpha_2 \text{ Change in NPL}_{it} + \alpha_3 \text{ Change in NPL}_{it-1} + \alpha_4 \text{ Change in NPL}_{it-2} + \alpha_5 \ln \text{Assets}_{it-1} + \alpha_6 \text{ Change in loan}_{it} + \alpha_7 \text{ Earnings before LLP}_{it} + \alpha_8 \text{ Tier 1 Capital \%}_{it-1} + \text{Fixed effects} + \varepsilon_{it}$$

$$LLP_{it} = \alpha_0 + \alpha_1 \text{ Change in NPL}_{it+1} + \alpha_2 \text{ Change in NPL}_{it} + \alpha_3 \text{ Change in NPL}_{it-1} + \alpha_4 \text{ Change in NPL}_{it-2} + \alpha_5 \ln \text{Assets}_{it-1} + \alpha_6 \text{ Change in loan}_{it} + \alpha_7 \text{ Earnings before LLP}_{it} + \alpha_8 \text{ Tier 1 Capital \%}_{it-1} + \alpha_9 \text{ Loan loss reserves}_{it-1} + \text{Fixed effects} + \varepsilon_{it}$$

$$LLP_{it} = \alpha_0 + \alpha_1 \text{ Change in NPL}_{it+1} + \alpha_2 \text{ Change in NPL}_{it} + \alpha_3 \text{ Change in NPL}_{it-1} + \alpha_4 \text{ Change in NPL}_{it-2} + \alpha_5 \ln \text{Assets}_{it-1} + \alpha_6 \text{ Change in loan}_{it} + \alpha_7 \text{ Earnings before LLP}_{it} + \alpha_8 \text{ Tier 1 Capital \%}_{it-1} + \alpha_9 \text{ Charge-off}_{it} + \text{Fixed effects} + \varepsilon_{it}$$

$$LLP_{it} = \alpha_0 + \alpha_1 \text{ Change in NPL}_{it+1} + \alpha_2 \text{ Change in NPL}_{it} + \alpha_3 \text{ Change in NPL}_{it-1} + \alpha_4 \text{ Change in NPL}_{it-2} + \alpha_5 \ln \text{Assets}_{it-1} + \alpha_6 \text{ Change in loan}_{it} + \alpha_7 \text{ Earnings before LLP}_{it} + \alpha_8 \text{ Tier 1 Capital \%}_{it-1} + \alpha_9 \text{ Loan loss reserves}_{it-1} + \alpha_{10} \text{ Charge-off}_{it} + \alpha_{11} \% \Delta \text{GDP}_t + \alpha_{12} \% \Delta \text{Unemployment}_t + \alpha_{13} \% \Delta \text{Case_Shiller house index}_t + \text{Fixed effects} + \varepsilon_{it}$$

expected diverse audit committees to be associated with timelier LLP recognition than nondiverse audit committees. We introduced *Non-Caucasian audit* to capture the effect of audit committee diversity on financial reporting quality. This variable is a dummy variable that takes the value of 1 if the audit committee has at least one non-Caucasian director and 0 otherwise. Table 4 reports the results of this analysis. Our observations dropped to 4,803 as we excluded banks with no information provided on audit committee. The results are consistent with our findings on the board of directors. The coefficient $Change\ in\ NPL_{t+1} * Non-Caucasian\ audit_t$ is positive and significant at the 1% level. In Column 2 of Table 4, we control for the *Non-Caucasian NED% t* to ensure that the effect we observe in our analysis is the effect of audit committee diversity on LLP reporting and our results remain the same.

-Insert Table 4 here-

4.4. Bank risk and LLP timeliness

We also investigated how risk moderates the effect ethnically diverse boards have on monitoring. If ethnically diverse boards were more conservative, we would expect conservatism to be more evident in banks with higher levels of risk. A number of studies have suggested that conservatism reduces default risk. Specifically, they have suggested that accounting conservatism reduces overinvestment and promotes cautious investment (Ahmed & Duellman, 2011; Biddle *et al.*, 2022; Hsu *et al.*, 2017; Lara *et al.*, 2011, 2016). More pertinent to the banking context, Akins *et al.* (2017) showed that timelier LLP is associated with an improvement in loan quality, as timely LLP recognition enhances the possibility of bad loans being discovered earlier. Hence, it is likely that diverse boards make cautious decisions, such as reporting timelier LLP, during periods of financial distress to avoid bankruptcy.

In our analysis we use *Z-score* as a measure of risk. We calculated the *Z-score* as follows: We added banks' ROA to their capital and divided the total by the three-year

moving standard deviation of the ROA (Guo *et al.*, 2015). By definition, a higher *Z-score* indicates a greater distance from insolvency (i.e., lower risk), while a lower score indicates a shorter distance from insolvency.

In Table 5 Panel A, we split our full sample into banks with low and high default risk (above and below sample median of *Z-score*), and ran the analysis again for each subsample. Columns 1 (2) and 3 (4) report the results of the *Non-Caucasian NED%* (*Non-Caucasian audit*) analyses. Both *Change in NPL_{t+1} * Non-Caucasian NED%* (*Change in NPL_{t+1} * Non-Caucasian audit*) and *Change in NPL_t * Non-Caucasian NED%* (*Change in NPL_t * Non-Caucasian audit*) are insignificant in the low-risk bank subsample in Panel A. However, in the high-risk bank subsample, we find a positive and significant association between *Change in NPL_{t+1} * Non-Caucasian NED%* (*Change in NPL_{t+1} * Non-Caucasian audit*) and LLP.

These results indicate that, among banks with high default risk, diverse boards are associated with timelier LLP recognition. However, we did not find such an association for the group of low-risk banks. In sum, our analysis indicates that diverse boards follow risk-averse reporting policies in periods of high default risk. We also used an alternative measure of the *Z-score*. Specifically, in untabulated results, we followed Chiaramonte *et al.* (2015) and replaced ROA in the denominator of *Z-score* with ROAA, which stands for return on average assets, and our results hold.

To ensure robustness of our findings we also used a market-based measure of risk. Contrary to market-based measures, accounting-based ones such as the *Z-score* have been criticized for being “backward-looking” (Reisz & Perlich, 2007; Vassalou & Xing, 2004), and susceptible to managerial discretion and manipulation (Agarwal & Taffler, 2008). Thus, we use *idiosyncratic risk* as an alternative measure of risk. *Idiosyncratic risk* is based on the market assessment of bank risk; in its semi-strong form, the stock price in an efficient market reflects all the public information, whether it is reported in the financial statements or not

(Agarwal & Taffler, 2008; Hillegeist *et al.*, 2004)⁸. To construct our idiosyncratic risk variable, We estimated the following model:

$$\text{Stock return}_{it} = \theta_0 + \theta_1 \text{Market return}_{t+2} + \theta_2 \text{Market return}_{t+1} + \theta_3 \text{Market return}_t + \theta_4 \text{Market return}_{t-1} + \theta_5 \text{Market return}_{t-2} + \mu_{it} \quad (3)$$

where Stock return_{it} is the stock return on day t for bank i , and Market return_t is the return on the CRSP value-weighted market index on day t . We use lagged and lead variables for the market return to account for nonsynchronous trading (Dimson, 1979; Kim & Zhang, 2016). The residual in Model 3, denoted by μ , represents the daily bank-specific stock return. We constructed the *Idiosyncratic risk* variable as the standard deviation of the residuals for each quarter.

Panel B of Table 5 reports the findings of the analysis using *Idiosyncratic risk* as our risk measure. Due to missing data on stock returns, the sample size drops to 4,895 and 4,648 in the NED and audit committee analyses, respectively. Our results remain largely the same. The coefficients on the interaction terms $\text{Change in NPL}_{t+1} * \text{Non-Caucasian NED}\%_t$ ($\text{Change in NPL}_{t+1} * \text{Non-Caucasian audit}_t$) are positive and significant in the high-risk bank sample, while they are positive but insignificant in the low-risk bank sample. These findings corroborate our earlier results that ethnically diverse boards become more effective during periods of financial distress.

In addition, we used the 2008–09 financial crisis as a quasi-natural experimental setting for our third hypothesis. Our results showed that, during the financial crisis, ethnically diverse boards reported timelier LLP than nondiverse boards. A detailed discussion of these findings is provided in Appendix B.

⁸ Agarwal and Taffler (2008) provided a useful discussion on the differences between accounting and market-based measures of risks.

Finally, we report interaction plots in Figures 2 and 3. Figure 2 depicts the difference in LLP timeliness in boards with non-Caucasian NEDs in comparison to banks with Caucasian-only NEDs, that is, diversified boards and nondiversified boards, while Figure 3 plots the difference in LLP timeliness in boards with non-Caucasian audit committee members in comparison to banks with Caucasian-only audit committee members.

As *Non-Caucasian NED%* is a continuous variable, we followed Holmbeck (2002) and chose the mean, one standard deviation above the mean, and one standard deviation below the mean when drawing the interaction plot. Both figures suggest that ethnic diversity provides timelier LLP reporting. Figure 2 and Figure 3 clearly show that the slope of the relationship between *Change in NPL_{t+1}* and *LLP* increases as *Non-Caucasian NED%* increases and in banks with diversified audit committees. Lines corresponding to nondiversified boards and audit committees are flat, suggesting no association between *Change in NPL_{t+1}* and *LLP*. On the other hand, the non-Caucasian audit plot has a positive slope while the slope of the *Non-Caucasian NED%* plot increases with the increase in *Non-Caucasian NED%*.

-Insert Table 5 here-

- Insert Figure 2 here –

- Insert Figure 3 here –

5. Addressing Endogeneity and Further Robustness Tests

5.1. Matched sample

We used propensity score matching to address self-selection bias because board structure is endogenously determined. The propensity-score-matching framework matches a bank with a diverse audit committee (treated) to another bank with a nondiverse audit committee (control) that is similar in terms of other observable characteristics. Panel A of Table 6 indicates that there are differences between banks with ethnically diverse audit committees and banks with

nondiverse audit committees. Panel A shows that the control and treatment groups are significantly different in both firm-level and board-level characteristics. At the firm level, we notice that banks with diverse audit committees are significantly different in terms of LLP determinants (i.e., *Change in NPL*, *Loan loss reserves*, and *Charge-off*), being associated with lower increases in NPL, higher charge-offs, and higher loan loss reserves than banks with nondiverse audit committees. Further, the statistics show that diverse audit committees are associated with larger banks and those with lower tier 1 capital ratios. Although the difference in tier 1 capital ratios between the two groups is statistically significant (at the 1% level), we believe that the difference is economically insignificant (the difference is 0.3% only). Finally, our analysis suggests that banks with diverse audit committees outperform banks with nondiverse audit committees, which is consistent with the view that diversity enhances firm performance (Carter *et al.*, 2003; Miller & del Carmen Triana, 2009; Ntim, 2015). At the board level, Panel A of Table 6 shows that banks with diverse audit committees tend to have higher board independence, as measured by the percentage of independent board members, higher gender diversity, larger boards, and CEO and chairman positions held by the same person.

We began by matching the treated and control groups by bank size (as observed by total assets). We used the one-to-one nearest neighbor procedure with replacement and imposed a caliper of 0.1% of the standard deviation⁹ of the logit transformation. The advantage of matching with replacement is that it allows for each observation from the control group to be paired with an observation from the treated group more than once, if no good match is available. This procedure improves the matching efficiency and reduces bias. We used all the control variables from Table 2 in the first-stage logit model. The final

⁹ In an untabulated robustness test, we changed the caliper level to 5%, 10%, 20%, and 25% and found that our results did not change.

sample, post matching, consists of 1,304 observations (652 of each group). Panel B of Table 6 reports the differences in means between the treated and control groups after the propensity-score-matching procedure has been applied. This analysis suggests that, after using propensity score matching, there is no statistically significant difference between them in any of the control variables.

Column (1) of Panel C reports the results of our regression estimation following the matching procedure. We also included bank fixed effects to control for bank time-invariant unobservable characteristics. The results are consistent with our main findings. We did not match our sample based on *Non-Caucasian NED%* because the independent variable must be a dummy in the first stage. Thus, we used the matched sample we obtained from the propensity score matching earlier but using *Non-Caucasian NED%* instead of *Non-Caucasian audit*. The results are reported in Column (2) and are consistent with our main findings.

-Insert Table 6 here-

5.2. Entropy balancing

As a next step, we implemented entropy balancing (Hainmueller, 2012), which reweights the treatment and control sample to balance the first, second, and third moments of the variable distribution between the treatment and control groups. This type of analysis has several advantages over propensity score matching. First, unlike propensity score matching that discards parts of the dataset, entropy balancing retains more information in the data. Second, entropy balancing can achieve a balance that is superior to propensity score matching. We repeated the entropy balancing analysis using *Non-Caucasian NED%*. To divide the sample into two groups (treated and control), we converted our *Non-Caucasian NED%* variable into a dummy. The variable *Non-Caucasian NED (dummy)* will take the value of 1 if at least one member of the NEDs is non-Caucasian and 0 otherwise. Then, we reweighted our original

sample using entropy balancing and ran OLS and fixed-effects regressions on the balanced sample.

The results in Column (1) of Table 7 suggest that a non-Caucasian director is associated with timelier LLP reporting. *Non-Caucasian NED (dummy) * Change in NPL_{t+1}* is positive and significant at the 5% level when using the OLS estimator. Thus, at this stage, with both propensity score matching and entropy balancing collaborating our main findings, we are confident that self-selection bias does not drive our results. In Column (2), we repeat our analysis using a fixed effects estimator to control for unobservable characteristics that determine both non-Caucasian directors' appointment and LLP reporting decisions. The interaction term *Non-Caucasian NED (dummy) * Change in NPL_{t+1}* remains positive and significant at the 1% level.

-Insert Table 7 here-

5.3. CEO characteristics

Our results so far provide strong evidence that ethnically diverse boards tend to report timelier LLP. However, we have not considered CEO characteristics that could also affect LLP reporting. Previous literature suggests that CEOs have a significant impact on firms' reporting decisions (Abdel-Khalik, 2007; Ali & Zhang, 2015; Hazarika *et al.*, 2012; Laux & Laux, 2009; Lin *et al.*, 2014). Hence, we controlled for CEO characteristics that previous literature suggests influence reporting decisions, such as CEO power and CEO risk appetite. CEOs with more power can significantly influence board decisions (Bebchuk & Spamann, 2009; Finkelstein & D'Aveni, 1994; Westphal & Zajac, 1995), while CEOs' appetite toward risk has a significant effect on their accounting choices (Abdel-Khalik, 2007; Ahmed & Duellman, 2013). Specifically, we use *CEO compensation*, *CEO age*, and *CEO gender*. All CEO-related variable definitions are provided in Appendix A. Higher CEO compensation can indicate higher CEO power (Bebchuk & Spamann, 2009; Grinstein & Hribar, 2004), and

lower tolerance of risk (Bolton *et al.*, 2015; Otto, 2014). Older CEOs are more risk averse, and more experienced (Andreou *et al.*, 2017; Serfling, 2014). Finally, previous studies suggested that female CEOs are more risk averse (Ho *et al.*, 2015; Zalata *et al.*, 2019).

We used ExecuComp to collect data related to CEO characteristics. Table 8 reports the results of the main regression after adding CEO controls. Due to missing data related to CEOs in ExecuComp, our sample size dropped to 4,685 observations. The results are consistent with our main findings. The coefficient on the interaction term *Change in NPL_{t+1} * Non-Caucasian NED%* is still positive and significant at the 1% level in the full sample. Hence, our inferences are consistent with our conclusions in the main analysis. In Column 2, we repeat our analysis using CEO fixed effects and CEO tenure to rule out omitted variable bias related to CEO time-invariant characteristics, and the results do not change substantially.

-Insert Table 8 here-

5.4. Loan portfolio

The level of discretion managers have on LLP is dependent on their loan portfolio. For example, managers have very little discretion on consumers' loans as they follow strict statistical methods to predict LLPs of these loans, while they have high discretion on commercial loans as they predict LLPs on a loan-by-loan basis (Liu & Ryan, 2006). Thus, we additionally control for loan portfolio characteristics in our main specifications.

We collected data on loan portfolios from the call report FR Y-9C. We follow Hegde and Kozlowski (2021), and Beatty and Liao (2021) in constructing our loan portfolio variables. Specifically, we controlled for loans secured by real estate, commercial loans, and consumer loans. We could not match all the data from the call report with our main dataset, thus, our observations dropped to 3,823. Overall, our main conclusions remain the same.

-Insert Table 9 here-

5.5. *Financial expertise of the board*

The financial expertise of the board members plays an important role in the board's monitoring of the financial reporting policies of the bank. Thus, if non-Caucasian directors are selected into banks with more financial experts on their board of directors, our results will be driven by omitted variable bias. Because data on financial expertise are unavailable for the period between 1996 and 2006, we restricted our analysis to the period of 2007 to 2017. The results are reported in Column (1) of Table 10. The findings do not differ from those reported earlier. In particular, the level of statistical significance of the coefficient on the interaction term $Change\ in\ NPL_{t+1} * Non-Caucasian\ NED\%$ increases from 5% to 1%, ruling out the likelihood that the effect of financial expertise on the board of directors drives our results. Moreover, we extended our analysis by using the percentage of financial experts on the audit committee. The results, reported in Column (2), are not affected by this change. In untabulated analysis, we controlled for the financial expertise of the non-Caucasian directors. Our results remain similar to those of our main analysis.

5.6. *The presence of a risk committee on the board*

An alternative explanation for our findings is that a board with non-Caucasian directors might be better informed about bank risks than other boards. Such awareness is likely to result in the reporting of timelier LLP. In other words, if non-Caucasian directors are self-selected into firms with better risk control, our results are likely to be biased. Since non-Caucasian members are risk averse, it is possible that they are recruited into firms with increased risk awareness. Thus, we controlled for board risk awareness by controlling for the presence of a separate risk committee in the board of directors, or an asset quality or similar committee.¹⁰

¹⁰ Other similar committees might include credit quality, loan quality, or assets and liabilities committees.

We obtained data about board committees from BoardEx. Given that BoardEx coverage between 1999 and 2002 is poor, we followed Ellul and Yerramilli (2013) and started our data collection from 2003. Then, we manually matched each observation in BoardEx with the observations in our dataset using the bank's legal name. Due to missing data, our sample size dropped to 3,382 observations. As shown in Column (3) of Table 10, the coefficient on the interaction term $Change\ in\ NPL_{t+1} * Non-Caucasian\ NED\%$ remains significant.

5.7. Information environment

Banks with a high-quality information environment may be associated with better reporting quality. A more transparent information environment reduces the cost of acquiring information and hence allows external stakeholders and the board of directors to better monitor the executives (Duchin *et al.*, 2010). Consistent with this finding, Duchin *et al.* (2010) reported that outside directors are more effective in their monitoring duties for firms with low information costs. If banks that are transparent are also more likely to appoint directors from ethnic minorities, it becomes challenging to discern whether the observed results are attributable to the influence of ethnic minority directors or the inherent transparency of the banks. We, therefore, controlled for information environment characteristics at the bank level to alleviate the concern that they might bias our results. We followed Duchin *et al.* (2010) and created an information cost index, which consists of three measures.

Our first measure is the dispersion of analysts' forecasts. We expect the deviation in analysts' forecasts to be high under a high-information-costs environment. Therefore, the standard deviation of analysts' forecasts prior to a quarterly earnings announcement is used. Our second measure is the analyst forecast error. A large forecast error indicates a poor information environment, and hence a high information cost. We measured analyst forecast

error as the mean of the absolute value of analysts' forecast error. Our third measure is the number of analysts following. Analysts, as financial and industry experts, act as an important source of information for the capital markets, hence reducing information costs (Duchin *et al.*, 2010; Krishnaswami & Subramaniam, 1999). Therefore, we postulate that the information cost is negatively associated with the number of analysts. We constructed this measure by dividing 1 by the number of analyst forecasts. Therefore, this measure is positively associated with the information cost. Finally, we created our index by averaging the percentile ranks of the three measures. For simplicity, we multiplied the index by 100.

We obtained analyst data from the I/B/E/S database. After matching the data acquired from I/B/E/S with our dataset and deleting missing observations, our sample size dropped to 4,825. Table 10 reports the results of this analysis. Column (4) shows that the coefficients on the interaction terms *Change in NPL_{t+1} * Non-Caucasian NED%* is still positive and significant, consistent with our main analysis. We also changed the model specifications and included each information cost proxy as a control variable in the model. Overall, the results are consistent with our hypothesis and show that ethnically diverse boards are associated with timelier LLP reporting, especially during times of financial distress.

-Insert Table 10 here-

6. Additional analyses

6.1. *The impact of Hispanics*

Throughout our analysis in this paper, we have included Hispanics as part of the non-Caucasian group of directors. However, Hispanics can be further split into White and non-White Hispanics. For instance, in the 2010 U.S. census, more Hispanics declared themselves White than non-White (Cohn, 2014). This might suggest that not all Hispanic directors consider themselves different from Caucasians and vice versa. Thus, they are more likely to be familiar with each other and form friendships. This could suggest that this group of

Hispanic directors should be included with the Caucasian directors' group. However, because our data do not distinguish between White and non-White Hispanics, we repeated our main analysis by including Hispanic directors in the Caucasian group.

Table 11 reports the results of this analysis. The results did not change our initial findings. We note, however, that the results become even stronger. Both interaction terms, *Change in NPL_{t+1} * Non-Caucasian NED%* and *Change in NPL_t * Non-Caucasian NED%* are positive and significant at the 5% and 1% levels respectively. This might suggest that many of the directors we classify as Hispanics are closer to Caucasians than other ethnic minorities. Overall, the results reported in Table 11 are similar to those in our main analysis.

-Insert Table 11 here-

6.2. Number of ethnic groups

The main analysis suggested that the timeliness of LLP is improved with an increase in non-Caucasian independent directors and non-Caucasian audit committee members. However, it is unclear whether increasing the number of minority groups (i.e., African, Hispanic, or Asian) represented is also beneficial.

According to resource dependence theory, diverse boards benefit from the variety of viewpoints provided in the boardroom by directors from different ethnicities. This argument implies that increasing the number of ethnic groups in the board is likely to improve its effectiveness. On the other hand, increasing diversity might lead to increased conflict in the board, and hence deteriorate its performance (Berger & Bouwman, 2013). To illustrate, assume that there is a board with ten directors, of whom two are non-Caucasian. Resource dependence theory suggests that the board will be more effective if the two non-Caucasian members are from two different ethnic groups. On the other hand, conflict theory would suggest that the board will be less effective in this scenario because conflicts of opinions are likely to increase. We investigated this issue further in this section of the paper. Hence, we

introduced a variable counting the *Number of ethnic groups* among the independent board members.¹¹ Because the only ethnicity categories in our sample are Caucasian, African, Asian, and Hispanic, the *Number of ethnic groups* variable took values between 1 and 4. The results are reported in Table 12. The results indicate that the larger the number of ethnic groups are, the stronger the LLP timeliness is, supporting the view of resource dependence theory.

Next, we introduced three dummy variables indicating the number of ethnic groups in the board.¹² We reported the results in Columns (2)–(5) in both panels. The findings suggest that “too much” diversity might have adverse consequences for board (audit committee) effectiveness.

Generally, the results suggest that the optimal number of ethnic groups is between two and three groups. On the other hand, we found some evidence of delayed LLP recognition when four different groups are represented on the board of directors, which supports the view of conflict theory. Generally, our evidence suggests that the relationship between board ethnic diversity and monitoring effectiveness is nonlinear.

-Insert Table 12 here-

7. Conclusion

Although the effect of gender diversity on corporate decisions has been investigated extensively, evidence on how directors’ ethnicities influence corporate decision making is scarce. Our study investigates the effect of ethnic diversity on financial reporting quality in banks. Specifically, we argue that banks with ethnically diverse boards are associated with enhanced financial statement transparency, as manifested by the timeliness of LLP reporting.

¹¹ For instance, if a board of 10 independent members consists of 7 Caucasians, 2 Asians, and 1 African, the *Number of ethnic groups* variable will equal 3 (Caucasian + Asian + African).

¹² Specifically, we constructed the dummy variables *2 Ethnic groups*, *3 Ethnic groups*, and *4 Ethnic groups*. All variable definitions are provided in Appendix A.

We used a large sample of U.S. banks listed on the S&P1500 for the period between 1996 and 2017, and our initial findings support our arguments. We also found that diverse boards in risky banks tend to report more conservatively. Hence, our results suggest that the effect of ethnically diverse boards is more apparent during periods of higher risk. Our results hold after accounting for omitted variable bias related to time-invariant characteristics by controlling for bank fixed effects, CEO characteristics, CEO fixed effects, different types of board structure, quality of banks' information environment, banks' loan portfolio characteristics and after accounting for self-selection bias by creating a matched sample using propensity score matching and entropy balancing. In an extended analysis, we found that increasing the number of ethnic groups represented on the board of directors has a concave effect on reporting quality.

Our study also has practical implications, as it indicates that the recent call for more ethnic diversity on boards of directors is likely to have a positive effect on firms' financial reporting quality, especially during periods of financial distress. We encourage future studies to further investigate the effect of ethnic diversity on firm risk (especially in times of crisis, such as in the COVID-19 outbreak), as this area appears to be widely unexplored. Also, the recent shift to an expected-loss model for LLP reporting raises concerns about increased management discretion. This could potentially lead to earnings management and lower earnings quality, as argued by López-Espinosa *et al.* (2021) and Beatty and Liao (2021). Thus, future research should focus on evaluating these potential drawbacks.

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Appendix A. Variable definitions

Variable	Definition
Board size	The total number of directors on the board of directors.
CEO age	The age of the CEO as provided by ExecuComp.
CEO gender	A dummy variable, which takes the value 1 if the CEO is female and 0 otherwise.
CEO tenure	Number of years the executive served as the bank CEO.
CEO total compensation	Total CEO compensation for the year scaled by total assets. Total compensation consists of salary, bonus, total value of restricted stock granted, total value of stock options granted (calculated using Black-Scholes), long-term incentive payouts, and all other incentives.
Change in loan	The change in loans over the quarter scaled by lagged total loans.
Change in NPA	Change in nonperforming assets (NPA) over the quarter scaled by lagged total loans.
Charge-off	Net charge-off as a percentage of total loans.
Commercial and Industrial	Commercial and Industrial loan scaled by lagged total loans.
Consumer Loan	Total consumer loans scaled by lagged total loans.
Duality	A dummy variable, which takes the value 1 if the same person holds the CEO and the chairman roles, and 0 otherwise.
Earnings before LLP	Earnings before extraordinary item minus loan loss provision scaled by total assets.
Financial expertise of the AC	Total number of financial experts on the audit committee divided by the total number of directors on the audit committee
Financial expertise of the board	The total number of financial experts on the board divided by board size.
Gender diversity %	The total number of independent female directors on the board of directors divided by the total number of directors on the board.
LLP	Loan loss provision as a percentage of total loans.
Idiosyncratic risk	The standard deviation of the residuals of the market model over a quarter.
In_AnalystNO	The natural log of the number of analysts issuing at least one forecast for a firm over the previous 12 months.
In Assets	The natural log of the book value of the bank's total assets.
In CEO compensation	The natural log of CEO total compensation, comprising the following: salary, bonus, other annual, total value of restricted stock granted, total value of stock options (using Black-Scholes), long-term incentive payouts, and all other total compensation.
Loan loss reserves	Allowance for loan loss provision as a parentage of total loans.
Market return	The return on the CRSP value-weighted market index on day t. Return is calculated as follows: $(\text{CRSP value-weighted market index}_t / \text{CRSP value-weighted market index}_{t-1}) - 1$.
NED %	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 director membership.

Non-Caucasian audit	A dummy variable that takes the value 1 if <i>at least one</i> of the audit committee members is non-Caucasian.
Non-Caucasian NED%	Percentage of <i>independent</i> non-Caucasian directors on the board of directors.
Number of ethnic groups	The total number of ethnic groups (i.e., Caucasian, African, Hispanic, and Asian) among the independent board members (audit committee).
Real estate	Loans secured by real estate scaled by lagged total loans.
ROA	Earnings before extraordinary items scaled by total assets.
Stock return	$Stock\ return_{it}$ is the stock return on day t for bank i . Stock return is calculated as follows: $(stock\ price_t / stock\ price_{t-1}) - 1$.
Tier 1	Tier one risk-based capital divided by 100.
Z-score	$(ROA + Capital) / \text{standard deviation of ROA}$. ROA is calculated by dividing earnings before extraordinary items by total assets. Capital is calculated by dividing total equity by total assets. Standard deviation of ROA is calculated as the three-year moving standard deviation.
2 Ethnic groups	A dummy variable, which takes the value 1 if the total number of ethnic groups (i.e., Caucasian, African, Hispanic, and Asian) among the independent board members (or in the audit committee) is <i>two</i> , and 0 otherwise.
3 Ethnic groups	A dummy variable, which takes the value 1 if the total number of ethnic groups (i.e., Caucasian, African, Hispanic, and Asian) among the independent board members (or in the audit committee) is <i>three</i> , and 0 otherwise.
4 Ethnic groups	A dummy variable, which takes the value 1 if the total number of ethnic groups (i.e., Caucasian, African, Hispanic, and Asian) among the independent board members (or in the audit committee) is <i>four</i> , and 0 otherwise.

Appendix B. Effect of financial crisis on LLP timeliness

The 2007–09 financial crisis provides a quasi-natural experimental setting for our third hypothesis. During the crisis, there was a spiraling collapse of many financial institutions, and many borrowers defaulted on their loans, which increased banks' loan risks.

Consequently, a risk-averse bank would be expected to have taken cautious decisions regarding loan losses, and hence to have reported timelier LLP during that period. If our findings that banks with diverse boards report timelier LLP during periods of financial distress are robust, then we would expect to observe similar behavior during the financial crisis period of 2007–09. We reported the results in Table 1A. Our results indicated, as expected, that, during the financial crisis period, diverse boards reported more conservatively, but outside of that period they acted no differently than non-diverse boards. To ensure the robustness of these findings, we redefined the crisis period as 2007–10 and obtain results similar to those for 2007–09.

Furthermore, we extended our analysis and examined the effect of capital constraints on the relationship between ethnic diversity and LLP timeliness. Banks with below-minimum regulatory capital face disciplinary action from regulators, which may even cause the cessation of operations. Bank regulatory capital provides an essential safeguard against a financial crisis. Banks with higher regulatory capital (strong banks) are more able to absorb sudden losses. Regulatory capital also limits banks' incentives for excessive risk-taking by imposing minimum *risk-based* capital (Kim & Santomero, 1988). Consistent with this argument, Demirguc-Kunt *et al.* (2013) showed that banks with low regulatory capital (weak banks, hereafter) were more likely to exhibit poor market performance during the financial crisis. As a result, weak banks are more likely to use aggressive accounting to prevent their regulatory capital from falling below the minimum threshold. However, this is compensated by an increase in regulatory monitoring of these banks' financial reporting (Beck &

Narayanamoorthy, 2013). Hence, we argue that ethnically diverse boards tend to respond to the increased monitoring by being more risk averse. Thus, we expect weak banks with diverse boards to be more conservative than strong banks during a financial crisis period. We considered banks with below-median tier 1 capital ratios during the financial crisis period to be weak banks (Beck & Narayanamoorthy, 2013).¹³ We thus limited our analysis to weak (banks with low tier 1 capital ratios) and strong (banks with high tier 1 capital ratios) banks during the financial crisis. Table 2A reports the results. Our results are consistent with our predictions. Only weak banks with ethnically diverse boards were associated with improved LLP timeliness during the financial crisis.

¹³ Our descriptive statistics shows that our median tier 1 regulatory capital ratio is almost 10%. Hence, for simplicity, we used 10% as our threshold to differentiate between weak and strong banks.

Table 1A. Financial crisis and nonfinancial crisis comparison

VARIABLES	(1)	(2)	(3)	(4)
	<u>Non-Caucasian NED%</u>	<u>Non-Caucasian NED%</u>	<u>Non-Caucasian audit</u>	<u>Non-Caucasian audit</u>
	Financial-crisis period	Non-financial-crisis period	Financial-crisis period	Non-financial-crisis period
Change in NPA _{t+1}	-0.0360 (0.0252)	0.00362 (0.0117)	-0.0307 (0.0197)	-0.000486 (0.0118)
Change in NPA_{t+1} * Non-Caucasian NED%	0.567** (0.240)	0.0434 (0.0765)		
Change in NPA _t	0.0901* (0.0504)	0.0564*** (0.0164)	0.106** (0.0461)	0.0513*** (0.0165)
Change in NPA _t * Non-Caucasian NED%	0.374 (0.303)	0.0530 (0.148)		
Change in NPA_{t+1} * Non-Caucasian audit			0.143*** (0.0435)	0.0186 (0.0170)
Change in NPA _t * Non-Caucasian audit			0.0562 (0.0571)	0.0229 (0.0264)
Observations	610	4,499	610	4,499
R-squared	0.840	0.625	0.840	0.625
Other controls	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes

Notes: This table shows the results of our analysis when dividing our full sample into a financial-crisis period and non-financial-crisis period. The financial-crisis period is the period between 2007 and 2009. Those results are reported in Columns (1) and (3), while the results for the non-financial-crisis period are reported in Columns (2) and (4). Columns (1) and (2) show the results when using *Non-Caucasian NED* as the diversity measure, while we use *Non-Caucasian audit* as the diversity measure in Columns (3) and (4). In an untabulated robustness check, we redefined the financial-crisis period as 2007 to 2010, and our results hold. All other variables are explained in Appendix A. The main variables of interests are written in bold. For brevity, we report the variables of interest only. Quarter fixed effects, bank fixed effects, and all control variables are included in all the models. Robust standard errors are presented in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively

Table 2A. Comparison between weak and strong banks during the financial-crisis period

VARIABLES	(1)	(2)	(3)	(4)
	<u>Non-Caucasian</u> <u>NED%</u>	<u>Non-Caucasian</u> <u>NED%</u>	<u>Non-Caucasian</u> <u>audit</u>	<u>Non-Caucasian</u> <u>audit</u>
	Weak banks	Strong banks	Weak banks	Strong banks
Change in NPA _{t+1}	-0.0472 (0.0338)	-0.0411 (0.0378)	-0.0449 (0.0280)	-0.0252 (0.0313)
Change in NPA_{t+1} * Non-Caucasian NED%	0.653* (0.342)	0.392 (0.372)		
Change in NPA _t	0.152*** (0.0386)	0.0366 (0.103)	0.170*** (0.0359)	0.0282 (0.0847)
Change in NPA _t * Non-Caucasian NED%	0.243 (0.234)	0.310 (0.809)		
Change in NPA_{t+1} * Non-Caucasian audit			0.174*** 0.00940 (0.0535) (0.0794)	0.0665 0.140 (0.159) (0.0653)
Change in NPA _t * Non-Caucasian audit				
Constant	0.00844 (0.0140)	0.0106 (0.0124)	0.00798 (0.0124)	0.0101 (0.0116)
Observations	410	200	410	200
R-squared	0.865	0.782	0.868	0.786
Other controls	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes

This table shows the results of our analysis when we divide sample during the financial-crisis period further into weak and strong banks. Weak banks are banks with regulatory capital below 10%, while strong banks are banks with regulatory capital above 10%. Our conclusion does not change when we use 11% or 9% as the threshold to differentiate between the two groups. For brevity, we do not tabulate these results. Columns (1) and (2) show the results when using *Non-Caucasian NED* as the diversity measure, while we use *Non-Caucasian audit* as the diversity measure in Columns (3) and (4). Columns (1) and (3) report the results of the weak bank subsample, while Columns (2) and (4) report the results of the strong bank subsample. The financial-crisis period is the period between 2007 and 2009. In an untabulated robustness check, we redefined the financial-crisis period as 2007 to 2010, and our results hold. All other variables are explained in Appendix A. The main variables of interest are written in bold. For brevity, we report the variables of interest only. Quarter fixed effects, bank fixed effects, and all control variables are included in all the models. Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

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Figure 1. Percentage of non-Caucasian directors of U.S. banks in the period between 1996 and 2017

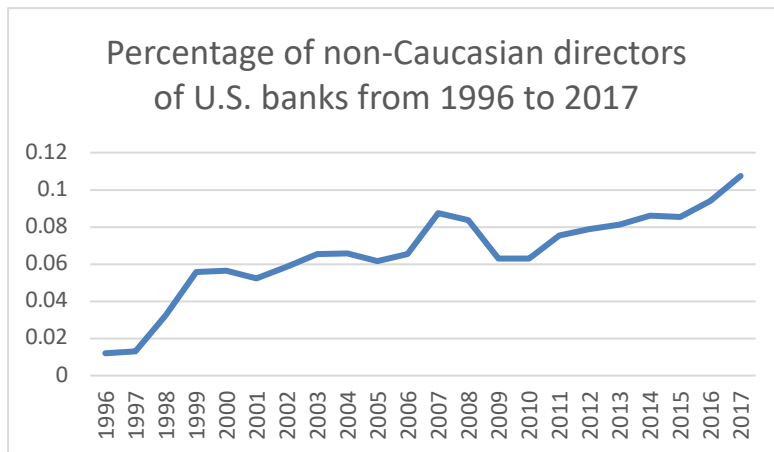


Figure 2. Graphical post-hoc probing — non-Caucasian NED%

This figure plots the interaction Change in NPLt+1 * Non-Caucasian NED%. The x axis shows the Change in NPLt+1, while the y axis shows the LLP.

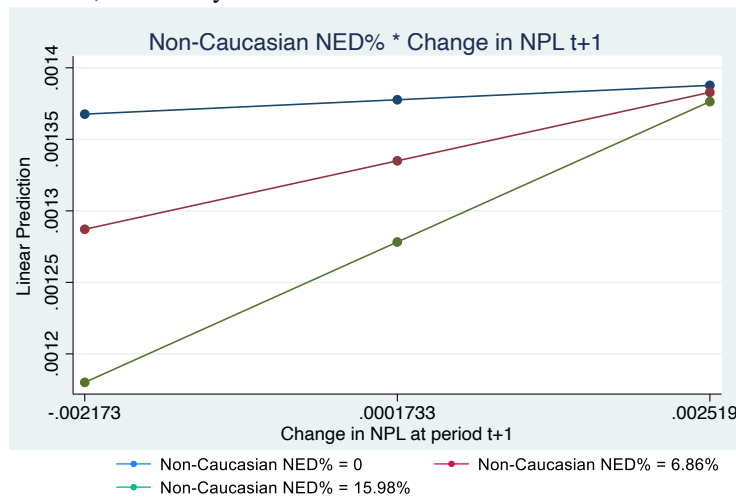


Figure 3. Graphical post-hoc probing — non-Caucasian audit

This figure plots the interaction Change in NPLt+1 * Non-Caucasian audit. The x axis shows the Change in NPLt+1, while the y axis shows the LLP.

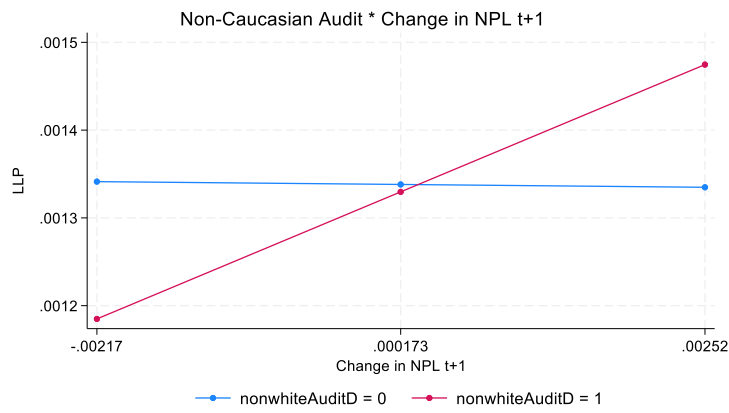


Table 1. Summary statistics

Variable	Observations	Mean	Standard deviation	Min	Max
LLP	5,109	0.001	0.002	-0.006	0.025
LLP (\$ million)	5,109	64.36	346.16	-61	13,380
Loan loss reserves	5,109	0.015	0.007	0.003	0.05
Charge-off	5,109	0.001	0.002	0	0.015
Non-Caucasian NED%	5,109	0.069	0.091	0	0.333
Change in NPL	5,109	0.000	0.002	-0.009	0.015
Change in loan	5,109	0.021	0.046	-0.096	0.422
Earnings before LLP	5,109	0.006	0.003	-0.002	0.038
Assets (\$ million)	5,109	57,675	160,502	2,117	2,321,963
Tier 1 capital %	5,109	0.108	0.026	0.058	0.195
Independent directors on BOD %	5,109	0.755	0.122	0.308	0.933
Gender diversity %	5,109	0.109	0.080	0	0.364
Board size	5,109	13.036	3.379	6	25
CEO/chairman duality	5,109	0.086	0.280	0	1

This table reports summary statistics for the sample of U.S. commercial banks. The LLP row shows the descriptive statistics of our LLP variable, while the LLP (\$ million) row shows the descriptive statistics of the nominal value of LLP as it appears in banks' financial statements. *Assets* is the book value of the bank's total assets in millions of dollars. All other variable definitions are provided in Appendix A.

Table 2. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1. LLP _t	1											
2. Non-Caucasian NED% _t	0.073***	1										
3. Change in NPL _t	0.287***	0.014	1									
4. Loan loss reserves _{t-1}	0.502***	0.108***	-0.028	1								
5. Charge-off _t	0.860***	0.087***	0.086***	0.597***	1							
6. Change in loan _t	-0.100***	-0.014	0.066***	-0.179***	-0.157***	1						
7. ln Assets _{t-1}	0.135***	0.253***	-0.022	0.131***	0.192***	-0.050***	1					
8. Earnings before LLP _t	0.327***	0.029*	0.027	0.345***	0.318***	-0.060***	0.249***	1				
9. Tier 1 capital % _{t-1}	0.020	0.132***	-0.115***	0.258***	0.077***	-0.040**	-0.291***	0.068***	1			
10. Independent directors on BOD % _{t-1}	-0.031*	0.119***	-0.053***	0.039**	-0.0003	-0.074***	0.149***	-0.025	0.178***	1		
11. Board size _t	0.071***	-0.070***	0.025	0.073***	0.074***	0.001	0.295***	0.161***	-0.227***	-0.092***	1	
12. CEO/chairman duality _t	0.009	0.036*	0.011	0.011	-0.004	0.0419**	0.154***	0.078***	-0.135***	-0.012	0.076***	1

This table reports the correlation matrix between the variables, all the definitions for which are available in Appendix A. The sample size in the correlation matrix for all variables is 5,109. ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 3. Main results

VARIABLES	(1) <u>LLP</u>	(2) <u>LLP</u>
Change in NPL _{t+1}	-0.0252 (0.0177)	0.00428 (0.0126)
Non-Caucasian NED% _t	-0.00153 (0.00109)	-0.000686 (0.000464)
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.441**	0.235**
	(0.186)	(0.106)
Change in NPL _t	0.0664*** (0.0223)	0.0792*** (0.0181)
Change in NPL_t * Non-Caucasian NED%_t	0.367*	0.164
	(0.212)	(0.129)
Change in NPL _{t-1}		0.0589*** (0.0128)
Change in NPL _{t-2}		0.0359*** (0.00918)
Change in Loans _t		0.000760** (0.000360)
Earnings before LLP _t		0.0862*** (0.0199)
ln Assets _{t-1}		0.000204*** (0.00008)
Tier 1 capital % _{t-1}		-0.00434*** (0.00155)

Table 3 (continued)

Independent directors on BOD % _t		0.000102 (0.000215)
Gender diversity % _t		-0.00008 (0.000437)
Board size _t		0.00001 0.00001
CEO/chairman duality _t		0.00004 0.00005
Loan loss reserves _{t-1}		-0.0135 (0.00862)
Charge-off _t		0.852*** (0.0508)
Constant	0.000747*** (0.000136)	-0.00164** (0.000676)
Observations	5,109	5,109
R-squared	0.436	0.768
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	Yes

This table reports the results of the main regressions. All variable definitions are provided in Appendix A. The main variables of interest are written in bold. Robust standard errors are given in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 4. Ethnic diversity in the audit committee and LLP timeliness

VARIABLES	(1) <u>LLP</u>	(2) <u>LLP</u>
Change in NPL _{t+1}	-0.00148 (0.0121)	-0.00123 (0.0120)
Non-Caucasian audit _t	-0.00003 (7.06e-05)	-2.45e-06 (7.94e-05)
Change in NPL_{t+1} * Non-Caucasian audit_t	0.0631***	0.0628***
	(0.0195)	(0.0191)
Change in NPL _t	0.0796***	0.0797***
	0.0796***	(0.0195)
Change in NPL_t * Non-Caucasian audit_t	0.0434	0.0433
	(0.0266)	(0.0266)
Non-Caucasian NED%		-0.000406 (0.000541)
Observations	4,803	4,803
R-squared	0.777	0.777
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	Yes

This table reports the results of the main regressions. All variable definitions are provided in Appendix A. The main variables of interest are written in bold. Robust standard errors are given in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 5. A comparison between banks with high and low risk

Panel A. Z-score as measure of risk (accounting-based measure)

VARIABLES	(1) Low-risk banks	(2) High-risk banks
Change in NPL _{t+1}	0.0230*	-0.0111
	(0.0135)	(0.0156)
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.0847	0.284*
	(0.102)	(0.167)
Change in NPL _t	0.0775***	0.0792***
	(0.0152)	(0.0234)
Change in NPL_t * Non-Caucasian NED%_t	-0.0655	0.225
	(0.0932)	(0.155)
Observations	2,554	2,555
R-squared	0.652	0.768
Other controls	Yes	Yes
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	Yes

Table 5 (Continued)

Panel B. Idiosyncratic risk as measure of risk (market-based measure).

VARIABLES	(1) Low-risk banks	(2) High-risk banks
Change in NPL _{t+1}	0.00795 (0.0150)	-0.0142 (0.0168)
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.101 (0.108)	0.284** (0.130)
Change in NPL _t	0.0238** (0.0104)	0.102*** (0.0260)
Change in NPL_t * Non-Caucasian NED%_t	0.102 (0.129)	0.0690 (0.156)
Observations	2,447	2,448
R-squared	0.642	0.761
Other controls	Yes	Yes
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	Yes

This table shows the results of our analysis when we divide the full sample into banks with low and high risk. Panel A reports the results with the use of our accounting-based measure (Z-score), while panel B shows the results with the use of our market-based measure of risk (idiosyncratic risk). In Panel A, high-risk banks are those with Z-scores below the sample median, while low-risk banks are those with Z-scores above the sample median. The Z-score is calculated as $\frac{ROA+Capital}{\sigma ROA}$. In Panel B, high-risk banks are those with idiosyncratic risk above the sample median, while low-risk banks are those with idiosyncratic risk below the sample median. Idiosyncratic risk is the standard deviation of the residuals of model (3) over a quarter. All other variables are explained in Appendix A. For brevity, we only report the variables of interest, with the main ones written in bold. Quarter-year fixed effects, bank fixed effects, and all control variables are included in all the models. Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 6. Matched sample

Panel A. Difference between means of the two groups before matching

VARIABLES	1 Control Diversity = 0	2 Treated Diversity = 1	3 Difference [1-2]
Change in NPL _{t+1}	0.00023	0.00012	0.00011*
Change in NPL _t	0.00018	0.00011	0.00007
Change in NPL _{t-1}	0.00019	0.00013	0.00006
Change in NPL _{t-2}	0.00016	0.00014	0.00002
Change in loan _t	0.022	0.0192	0.001**
Earnings before LLP _t	0.0059	0.0063	0.0004***
ln Assets _{t-1}	9.43	10.53	-1.10***
Tier 1 capital % _{t-1}	10.92	10.84	0.8
Independent directors % _t	74.39	78.89	-4.45***
Gender diversity % _t	10.06	13.82	-3.76***
Board size _t	12.64	13.34	-0.70***
CEO/chairman duality _t	0.080	0.111	-0.031***
Loan loss reserves _{t-1}	0.014	0.016	-0.002***
Charge-off _t	0.0010	0.0016	0.0006***

Panel B. Difference between means after matching

VARIABLES	1 Control Diversity = 0	2 Treated Diversity = 1	3 Difference [1-2]
Change in NPL _{t+1}	0.0014	0.00028	0.00112
Change in NPL _t	0.00009	0.00011	-0.00002
Change in NPL _{t-1}	0.00013	0.00011	0.00002
Change in NPL _{t-2}	0.00009	-0.00005	0.00014
Change in loan _t	0.0205	0.01877	0.00173
Earnings before LLP _t	0.00608	0.00607	0.00001
ln Assets _t	10.243	10.230	0.01300
Tier 1 capital % _{t-1}	10.89%	10.93%	-0.00040
Independent directors % _t	78.03%	78.08%	-0.00050
Gender diversity % _t	13.00%	13.16%	-0.00160
Board size _t	13.52	13.54	-0.02000
CEO/chairman duality _t	0.111	0.114	-0.00300
Loan loss reserves _{t-1}	0.0155	0.0156	-0.00010
Charge-off _t	0.00143	0.00143	0.00000

Panel C. Regression results after matching

VARIABLES	(1) Non-Caucasian audit	(2) Non-Caucasian NED
Change in NPL _{t+1}	-0.0154 (0.0233)	-0.00377 (0.0251)
Change in NPL _t	0.0696 (0.0451)	0.0492 (0.0411)
Change in NPL_{t+1} * Non-Caucasian audit_t	0.0965*** (0.0276)	
Change in NPL_t * Non-Caucasian audit_t	0.0867 (0.0531)	
Change in NPL_{t+1} * Non-Caucasian NED%_t		0.347** (0.140)
Change in NPL_t * Non-Caucasian NED%_t		0.510** (0.223)
Observations	1,304	1,304
R-squared	0.779	0.781
Other controls	Yes	Yes
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	Yes

This table shows the results after matching our sample using the propensity-score-matching procedure. We match each bank with a diverse audit committee to a bank with a non-diverse audit committee based on firm size. We perform one-to-one matching with replacement. We impose a caliper of 0.1% of the standard deviation. Panel A reports the difference between the means of the control and treated groups before matching. Panel B reports the difference between the means after the propensity-score-matching procedure has been applied. Panel C shows the results after we have re-estimated the model using the matched sample. Column (1) reports the regression results after matching. In Column (2), we use the matched sample used in Column (1) but replacing Non-Caucasian audit with Non-Caucasian NED%. All variable definitions are available in Appendix A. For brevity, we report the variables of interest only, with the main ones written in bold. Quarter-year fixed effects and all control variables are included in all the models, while bank fixed effects are only used when stated. Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 7. Entropy balancing analysis

VARIABLES	(1) OLS	(2) Fixed effects
Change in NPL _{t+1}	-0.0118 (0.0237)	-0.0284 (0.0198)
Change in NPL_{t+1} * Non-Caucasian NED(dummy)_t	0.0483** (0.0189)	0.0629*** (0.0170)
Change in NPL _t	0.0530 (0.0422)	0.0222 (0.0481)
Change in NPL_t * Non-Caucasian NED(dummy)_t	0.0344 (0.0339)	0.0689* (0.0409)
Observations	5,109	5,109
R-squared	0.849	0.872
Other controls	Yes	Yes
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	No	Yes

This table shows the results of the main regression after we have reweighted the sample using the entropy balancing technique. Column (1) reports the results when using the OLS estimator, while Column (2) shows the results when using the fixed-effects estimator. For brevity, we report the variables of interest only. All variable definitions are available in Appendix A. The main variables are written in bold. All control variables and quarter-year fixed effects are included in all the models, while bank fixed effects are only used in Column (2). Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 8. CEO characteristics

VARIABLES	(1)	(2)
		LLP
Change in NPL _{t+1}	0.00242 (0.0113)	0.000293 (0.0112)
Change in NPL _t	0.0856*** (0.0175)	0.0858*** (0.0179)
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.214*** (0.0802)	0.189*** (0.0723)
Change in NPL_t * Non-Caucasian NED%_t	0.168 (0.131)	0.139 (0.128)
ln CEO compensation _t	-0.00005 (0.00005)	0.00004 0.00005
CEO age _t	0.0000 (0.0000)	0.000117 (0.000129)
CEO gender _t	0.000276 (0.00087)	Omitted
CEO tenure _t		-0.000133 (0.000130)
Observations	4,685	4,506
R-squared	0.765	0.735
Other controls	Yes	Yes
Quarter-year fixed effects	Yes	Yes
Bank fixed effects	Yes	No
CEO fixed effects	No	Yes

This table reports the results obtained after adding CEO controls to the main model. Specifically, we add ln CEO compensation, CEO age, CEO gender, and CEO tenure. All variable definitions are given in Appendix A. For brevity, we report the variables of interest only, with the main ones written in bold. Quarter-year fixed effects and all control variables are included in all the models. Bank fixed effects are used in Column (1), while CEO fixed effects are used in Column (2). Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 9. Loan portfolio

VARIABLES	(1) LLP
Change in NPL _{t+1}	-0.0157 (0.0136)
Change in NPL _t	0.0829*** (0.0236)
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.300** (0.125)
Change in NPL_t * Non-Caucasian NED%_t	0.132 (0.145)
Real Estate _{t-1}	-0.000230 (0.000213)
Commercial and Industrial _{t-1}	0.000148 (0.000507)
Consumer Loan _{t-1}	-0.000315 (0.000625)
Observations	3,823
R-squared	0.774
Other controls	Yes
Quarter-year fixed effects	Yes
Bank fixed effects	Yes

This table reports the results obtained after adding loan portfolios controls to the main model. Specifically, we add Real Estate, Commercial and Industrial, and Consumer Loan. All variable definitions are given in Appendix A. For brevity, we report the variables of interest only, with the main ones written in bold. Quarter-year fixed effects and all control variables are included in all the models. Bank fixed effects are used in Column (1), while CEO fixed effects are used in Columns (2). Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 10. Robustness tests

VARIABLES	(1) Financial expertise of the board	(2) Financial expertise of the AC	(3) Risk committee analysis	(4) Information environment
Change in NPL_{t+1} * Non-Caucasian NED%_t	0.331***	0.330***	0.242*	0.1730**
	(0.126)	(0.126)	(0.128)	(0.0859)
Change in NPL_t * Non-Caucasian NED%_t	0.0717	0.0719	0.126	0.0687
	(0.134)	(0.134)	(0.126)	(0.1279)
Financial expertise of the board _t	0.000809** (0.000394)			
Financial expertise of the AC _t		0.000270* (0.000153)		
Risk committee _t			0.00004 (0.00006)	
Information environment index _t				0.000 0.000
Observations	2,786	2,786	3,382	4,825
R-squared	0.835	0.835	0.829	0.773
Other controls	Yes	Yes	Yes	Yes
Quarter-year fixed effects	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes

This table reports the results of various robustness tests. The results from controlling for the percentage of financial experts on the board of directors are reported in Column (1), while Column (2) reports the results of using the percentage of financial experts on the audit committee as a control variable. Column (3) reports the results after controlling for the presence of a risk committee. Finally, Column (4) reports the results of controlling for the information environment of the bank. All variable definitions are provided in Appendix A. For brevity, we report the variables of interest only, with the main ones written in bold. Quarter-year fixed effects, bank fixed effects, and all control variables are included in all the models. Robust standard errors are shown in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 11. Including Hispanics with the Caucasian group

VARIABLES	LLP
Change in NPL _{t+1} * Non-Caucasian NED%	0.225** (0.0946)
Change in NPL _t * Non-Caucasian NED%	0.231*** (0.0699)
Other controls	Yes
Quarter fixed effects	Yes
Bank fixed effects	Yes
Observations	5,109
R-squared	0.770

This table reports the results after redefining the Non-Caucasian NED% and Non-Caucasian audit variables. In this table non-Caucasian directors include directors from African and Asian ethnicities only. Hispanics are excluded from the definition of minority ethnicities and included with the Caucasians. All variable definitions are available in Appendix A. For brevity, we report the main variables only. Quarter-year fixed effects, bank fixed effects, and all control variables are included. Robust standard errors are presented in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.

Table 12. Analysis of total number of ethnic groups among independent directors on the board and audit committee

VARIABLES	(1) Number of ethnic groups	(2) 2 Ethnic groups	(3) 3 Ethnic groups	(4) 4 Ethnic groups	(5) Number of ethnic groups (dummy)
Change in NPA _{t+1} * Number of ethnic groups	0.0312**				
	-0.0131				
Change in NPA _t * Number of ethnic groups	0.0198				
	-0.0211				
Change in NPL _{t+1} * 2 Ethnic groups _t		0.0345* (0.0189)			0.0465** (0.0198)
Change in NPL _{t+1} * 3 Ethnic groups _t			0.0529 (0.0368)		0.0758** (0.0383)
Change in NPL _{t+1} * 4 Ethnic groups _t				0.0168 (0.0381)	0.0489 (0.0377)
Change in NPL _t * 2 Ethnic groups _t		0.0568** (0.0282)			0.0624** (0.029)
Change in NPL _t * 3 Ethnic groups _t			0.00926 (0.0478)		0.0352 (0.0508)
Change in NPL _t * 4 Ethnic groups _t				-0.0971*** (0.0271)	-0.0651** (0.0295)
Observations	5,109	5,109	5,109	5,109	5,109
R-squared	0.768	0.768	0.766	0.767	0.77
Other controls	Yes	Yes	Yes	Yes	Yes
Quarter-year fixed effects	Yes	Yes	Yes	Yes	Yes
Bank fixed effects	Yes	Yes	Yes	Yes	Yes

This table reports the results of the analysis of the total number of ethnic groups represented among independent directors on the board. Column (1) shows the results when using the number of ethnic groups (continuous variable) as the measure of ethnic diversity. The dummy variable—2 Ethnic groups, 3 Ethnic groups, and 4 Ethnic groups—are used in Columns (2), (3), and (4), respectively. Column (5) includes all the dummy variables used in Columns (2)–(4) in the model. All variable definitions are available in Appendix A. For brevity, we report the main variables only. Quarter-year fixed effects, bank fixed effects, and all control variables are included in all the models. Robust standard errors are presented in parentheses (clustered at the bank level). ***, **, * denote significance at the 1%, 5%, 10% levels, respectively.