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Do banks engage in earnings management? The role of dividends and institutional factors

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ABSTRACT

We investigate the impact of dividend policy on earnings quality and opportunistic earnings management for individual banks across 45 developed and developing countries between 1996 and 2019. Our estimates show that high dividend payments reduce earnings management, hence mitigate agency problems. This mitigation is especially prevalent among well-capitalised and non-listed banks. Greater investor protection and government regulation appear to strengthen the negative association between dividend policy and earnings management. Our results hold robustly across many different specifications.

1. Introduction

We investigate the influence of dividend policy on earnings management within the banking sector on a global scale. Our primary objective is to determine whether banks modify their earnings management practices when distributing dividends, and whether this varies depending on bank- and country-specific features. As a result, we put forward three primary research questions: Firstly, is there an association between bank dividend payouts and their earnings management? Secondly, do bank-specific characteristics such as capital and listing status have an impact on this association? Finally, do country-specific characteristics such as government regulation, level of investor protection, and/or religious orientation influence this association?

Dividend policy is a crucial aspect of a firm's, or a bank's, financial management and has a significant impact on capital raising, external investment, and the development of capital markets. Although the dividend payout ratio typically corresponds to a company's earnings, there are some observed anomalies. For instance, certain companies may exhibit a surplus on their balance sheets but choose to pay low dividends for consecutive years. Conversely, some firms with inadequate surpluses may adopt a high dividend payout policy. These atypical phenomena

may be attributed to the practice of "false" financial reporting, where managers employ accounting policies to align reported earnings with expectations regarding earnings management. Additionally, in situations where there are conflicts between majority and minority shareholders or between shareholders and creditors, companies may use cash dividend payout as a means of shifting risks (Acharya et al., 2013). Therefore, earnings management serves as a supportive mechanism to conceal significant cash outflows and smooth the reported earnings.

While numerous studies have examined the association between a firm's dividend payout and earnings management, it remains unclear whether dividend-paying firms are associated with higher or lower earnings managements (He et al., 2017; Tong and Miao, 2011; Liu and Espahbodi, 2015; Daniel et al., 2008). These inconclusive findings can be attributed to the literature's focus on different types of non-financial firms which makes it challenging to reconcile the results.

We therefore focus on financial firms only, but these are critical to social and economic growth in most economies. Their high-risk characteristics, regulatory requirements, and opaque nature render their dividend policy even more vital and effective. In this study, we conduct a comprehensive analysis on the association between dividend policy and earnings management for banks, in terms of both *earnings' quality and*

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opportunistic earnings management, and considering a long period that includes changes in the economic environment, banking and market crises, changes in regulation, and regulatory interventions.

The banking industry has experienced various regulatory interventions, including increased capital requirements in the aftermath of the 2007–2009 financial crisis. These new regulations have the potential to alter banks’ dividend policies and their discretionary loan loss

provisions (LLP) under normal circumstances. Therefore, it is crucial to investigate trends in dividend policy and earnings management and the significance of such fluctuations over time. Additionally, our data indicates that dividend policy plays a vital role in helping banks quickly recover from severe crises and return to normal levels. Interestingly, the dividend payout ratio was the highest in the five-year period ending in 2007 (see Fig. 1). This may be because banks tend to increase dividends

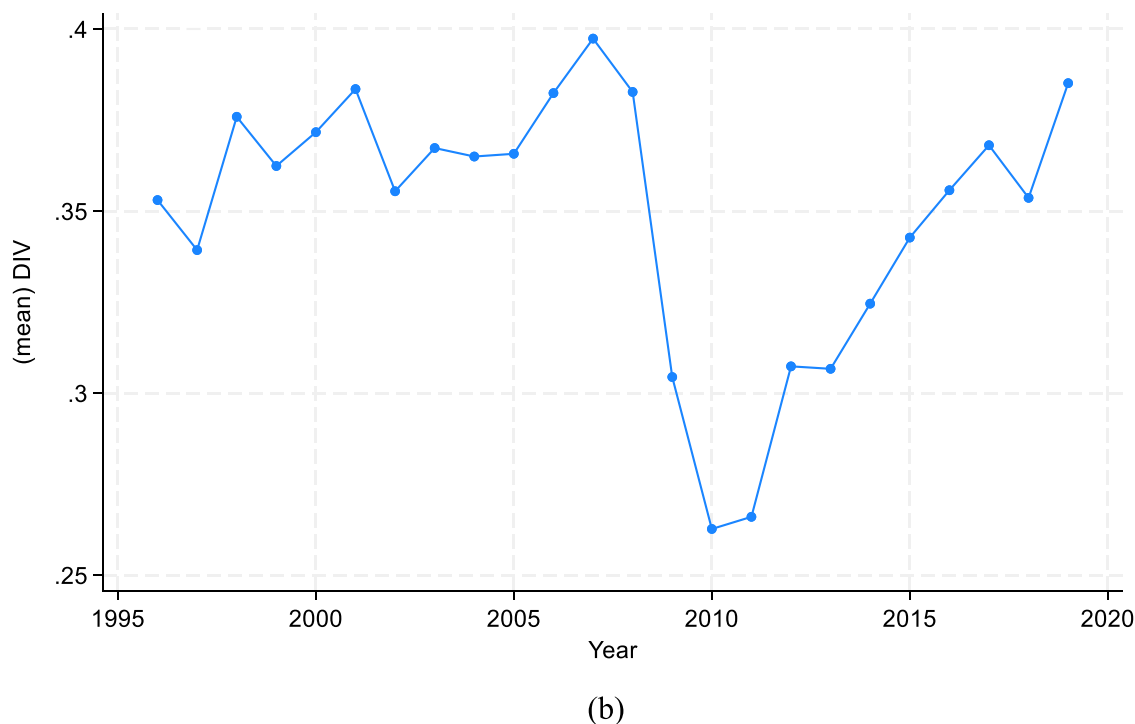
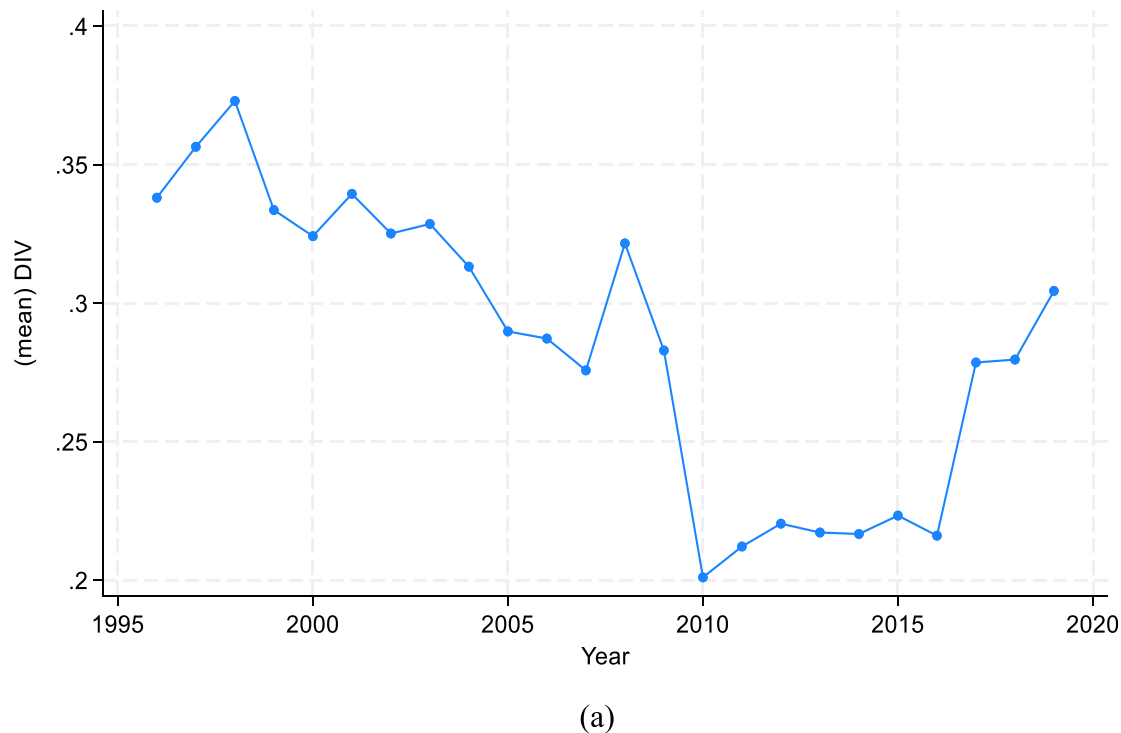


Fig. 1. Average annual dividend payout. Fig. 1A presents average annual dividend payout of non-USA sample while Fig. 1B represents the average annual payout for USA banks only. A) Average annual dividend payout-Non-USA. B) Average annual dividend payout ratio-USA.

to bolster investor confidence, or shareholders may use dividends as a means of transferring assets (Acharya et al., 2013). Moreover, we observe a sharp decline in 2010 with a gradual increase in dividend payouts however, it did not return to the pre-crisis levels.

Using a sample of 45 countries for the 1996–2019 period, our study examines the relationship between dividend payout, earnings persistence, and cashflow predictability in banks. Our results show that higher dividend payouts are associated with greater earnings persistence and more precise cash flow predictions, providing evidence for the importance of dividend signalling in improving earnings quality. A one standard deviation increase in the interaction between dividend payout and earnings management corresponds to a 5 % increase in future pre-tax earnings and a 3.3 % increase in future pre-tax and provision earnings.

Our study further emphasizes the significance of dividend policy in reducing earnings management and income smoothing activities, especially in the presence of conflicts of interest between shareholders and managers. For instance, a one standard deviation increase in dividend payout reduces banks' tendency to manipulate their earnings between 2.2 % to 3.8 %.

In addition, we document that in the presence of higher dividend payout, well-capitalised banks exhibit higher earnings quality, hence, a one standard deviation increase in current pre-tax earnings leads to a 4.1 % increase in future pre-tax, and 3.1 % increase in future pre-tax and provision earnings. Well-capitalised banks also show a 33.8 % decrease in meet or beat prior year's earnings benchmark and around 3 % decrease in income increasing abnormal LLP.

We also find non-listed banks that pay higher dividends engage in less earnings management and reduce income-increasing earnings management through dividend payouts. For instance, a one standard deviation increase in earnings in presence of dividend payout tend to increase (decrease) earnings quality (opportunistic earnings management) by approximately 6.5 % (2.3 %). However, there is little evidence of a relationship between dividend payout and earnings management/earning quality in listed banks. This suggests that dividend payments help to mitigate information asymmetry through signalling as non-listed banks are opaque when compared to their listed counterparts.

Further, we examine whether the relationship between dividend policy and earnings quality/opportunistic earnings management varies across countries with different institutional strengths. For example, in the presence of anti-director rights, a one standard deviation increase in dividend payout reduces the income increasing LLP by 7.9 %. Moreover, government regulation also reduces the likelihood of earnings management, with a one standard deviation increase in dividend payout decreasing it by 34.8 % in the meeting or beating the prior year's earnings and by 18.6 % in the abnormal loan loss provisions analyses.

Moreover, our study shows that religious orientation influences the relationship between dividend payout and earnings management in banks. For instance, banks in countries dominated by religions other than Catholic or Muslim tend to improve earnings quality and earnings management by increasing their dividend payout; hence, earnings management seems to be more constrained by religiously inspired moral structures.

Our study contributes to the literature, more specifically to the empirical banking literature, in several important ways. First, our study contributes to the prior literature on the relation between dividend policy and earnings management. On the one hand, Tong and Miao (2011) and He et al. (2017) find that dividend-paying firms are associated with better earnings quality and less earnings management. On the other hand, Daniel et al. (2008) document higher discretionary accruals for dividend-paying firms and not for non-dividend paying firms and this effect is more pronounced prior to the passing of Sarbanes-Oxley regulation. Liu and Espahbodi (2015) find similar findings whereby dividend-paying firms engage in more earnings smoothing than non-dividend paying firms through both accrual and real earnings management. So far, the existing evidence has been inconclusive. In this study, we attempt to shed some lights on the relation between dividend

policy and earnings management by focusing on a single and homogeneous industry (i.e., banking) given that the incentives of various stakeholders may differ across different industries. This allows us to draw better inferences and control over other potential cross-sectional determinants that may confound our results because errors in the measurement of managerial discretion tend to be mitigated (Dechow et al., 2010).

Second, our study contributes to the growing literature – since the seminal paper by Ball et al. (2000) – on the importance of international institutional factors in explaining cross-country differences in the properties of accounting information. For example, Leuz et al. (2003) find earnings management to be inversely related to the level of investor protection. This is consistent with the intuition that countries with stronger level of investor protection limit insider's ability to acquire private control benefits therefore reducing their incentives to manage earnings. In addition, Kanagaretnam et al. (2014) find that banks in countries with stronger institutions are associated with higher earnings quality and these institutions are less likely to report losses, have lower LLPs, and greater financial strength during the global financial crisis between 2007 and 2009. Our study adds to this literature by showing that institutional factors (such as investors protection and government regulations) have varying effects on the relation between dividend policy and earnings management.

Third, prior literature (e.g., Stulz and Williamson, 2003) emphasizes the need for research into how social norms can shape the actions and decisions of a bank. We fill the gap in the current banking literature by investigating external factors such as religiosity and its influence on the association between earnings quality/management and dividend payout. Hence, our research helps to shape policies that promote responsible and ethical conduct within the banking sector.

Finally, our study is timely and relevant given the recent banking crisis involving three mid-size U.S. banks (i.e., Silicon Valley Bank, Signature Bank, and First Republic) at the beginning of March 2023. This crisis serves as a wake-up call to regulators to bolster the financial strength of U.S. banks given its severity and potential global contagion that resemble the 2008 financial crisis. Moreover, the introduction of the dividend ban in European countries in March 2020 has contributed to the banks' stock price volatility and increased regulatory uncertainty (Matyunina and Ongena, 2022). As such, understanding the role of dividend payouts on earnings management prior to the onset of the pandemic offers some useful guidance to the regulatory bodies around the world. In particular, the implementation of additional disclosure regulations to target banks that are more likely to engage in earnings management as these institutions are more susceptible to financial distress during market downturn.

The rest of the paper is organised as follows. Section 2 provides a detailed discussion of relevant prior literature and develops several testable hypotheses. Section 3 describes the data, sampling procedure, and empirical methodology. Section 4 provides the empirical results while Section 5 describes several robustness tests. Finally, Section 6 concludes with some policy implications.

2. Prior research and hypotheses development

2.1. Theory and empirical evidence

According to Jensen and Meckling (1976), managers usually possess more internal information about the firm than shareholders since they control daily operations. This information asymmetry enables managers to engage in activities that benefit themselves at the expense of shareholders. Therefore, dividend payout can be a useful tool in reducing agency costs by limiting internal free cash flows and subjecting managers to capital market discipline (DeAngelo et al., 2009). This discipline can lead to better monitoring of managers and ultimately, a reduction in agency costs.

Bhattacharya's (1979) seminal work on dividend signalling effect

suggests that in an imperfect market, information available to investors may not be complete. As a result, dividend policy serves as an essential tool to convey company information, decrease information asymmetry, and bring the stock price closer to its intrinsic value. Firms tend to maintain a stable dividend payout ratio in the long term and adjust it according to their future earnings. This suggests that changes in a firm's dividend policy are closely related to its future profitability (Lintner, 1965). As such, investors view high dividend payouts as a signal of improved prospects for the firm and leading to higher stock prices. Additionally, Nissim and Ziv (2001) and Skinner and Soltes (2011), among others, shows that firms with high dividend payouts have more sustained future earnings and fewer losses when compared to those firms with lower payouts.

Furthermore, Floyd et al. (2015) reveal that banks utilize dividend signalling more frequently than industrial firms. This is attributed to the opaque nature of banks, which makes it challenging for external investors to perceive their actual financial status and risks. The Basel Committee has implemented clear regulations on banks' capital adequacy ratios to ensure the safety of the financial system. As a result, banks have a strong incentive to convey a positive message to attract more investment to meet the minimum capital adequacy ratio requirements. Conversely, when a bank's ability to expand capital increases, its dividend tends to decrease. This way, dividend distribution becomes a natural channel for banks to convey internal information to external stakeholders. Similarly, Forti and Schiozer (2015) and Kauko (2016) demonstrate that a high dividend payout enables outsiders to comprehend the solvency and liquidity positions of banks, ensuring that banks can maintain normal financing.

In addition, *signalling theory* can be linked to the *risk-shifting theory*, as companies use dividend payments as a means of transferring risk. Eisendorfer (2008) argues that management's incentive to shift risk may increase as the expected volatility of a firm rises, particularly in poor financial conditions. During the 2008 financial crisis, Acharya et al. (2017) find that banks with higher leverage and lower franchise values were more likely to use dividend payments to transfer risks. Pugachev (2019) proposed a novel idea that the benefits of paying dividends to shift risk outweigh the benefits of reducing agency costs.

Acharya et al. (2013) find that some banks continued to pay high dividends during the financial crisis. They argue that this is consistent with the *risk-shifting hypothesis*, which suggests that banks use dividends as a means of transferring risk from shareholders to debtholders. Essentially, by paying dividends, banks provide returns to their shareholders at the cost of reducing their capital buffer. As a result, during times of crisis, there may not be enough capital to cover financial losses, which puts creditors at risk of losing their wealth and undermines their claim priority (Kanas, 2013). Additionally, since the bank's book capital ratio affects accounting inertia, outsiders may not immediately detect the bank's financial problems. This can prolong risk-shifting activities and exacerbate the situation.

Banks face stricter regulatory constraints and have a clearer proxy for earnings management due to the homogeneity of their loan loss provisions (LLP). As a major tool of earnings management, sufficient LLPs can absorb expected losses when banks are at risk (Ahmed et al., 1999; Beatty et al., 2002; Kanagaretnam et al., 2010; among others). Managers have discretion in determining the level of LLPs, including discretionary LLPs, which can lead to earnings manipulation. Cohen et al. (2014) indicate that firms with increasing amounts of discretionary LLPs are more likely to manipulate earnings.

Compliance with regulatory requirements is essential to ensure the security of the entire system, attract investment to maintain asset liquidity, and convey the bank's value to investors. However, bank managers are given incentives to raise profits by manipulating LLP (Beatty and Liao, 2014). These incentives can include meeting earnings targets, increasing bonuses and salaries, and preserving reputational capital.

LLPs have a significant impact on regulatory capital, and bank

managers adjust them to meet capital and income targets (Lobo and Yang, 2001). Ahmed et al. (1999) and Bikker and Metzmakers (2005) elude that bank managers tend to adjust discretionary accruals to reduce costs that deviate from these targets. However, Collins et al. (1995), Kim and Kross (1998), Lobo and Yang (2001), and Shrieves and Dahl (2003) find that banks tend to decrease their LLP under regulatory pressure.¹

Despite contradictory findings in the literature, there is a substantial body of evidence suggesting that bank managers use LLPs to manage capital. The inconsistency in results can be attributed to the regulatory change that occurred in 1989 when LLPs were moved from being a component of Tier 1 capital to Tier 2 capital requirement. This change meant that increasing LLPs is no longer at the expense of earnings thereby allowing managers to increase both earnings and the capital ratio simultaneously by reducing LLPs. However, the discretionary nature of LLPs makes it a subjective tool, and improper management can lead to managers satisfying their personal interests. This is particularly concerning given the information asymmetry and the inability to monitor managers, which may negatively influence capital and income levels.

2.2. Hypotheses development

Bank managers may engage in transferring the wealth of their firms to their own companies or among controlling insiders, as highlighted by Leuz et al. (2003) and Gopalan and Jayaraman (2012). This is particularly relevant for banks due to their opaque nature, which results from information asymmetry between bank insiders (i.e., managers) and outsiders (i.e., investors and creditors) (Flannery et al., 2013). However, dividends can help mitigate information asymmetry, agency conflicts, and lead to greater scrutiny from outside professionals. Thus, dividends may limit the opportunities for earnings management in banks.

The presence of dividend constraints provides firms with greater incentives to manage earnings to avoid negative market reactions (Floyd et al., 2015). For instance, to prevent firms from using dividends for risk-shifting purposes, creditors have implemented debt contracts that restrict the manager's dividend payments. Additionally, reported earnings serve as the threshold for determining the amount of dividend payout, motivating managers to increase and manage earnings to maintain high dividend payouts. Furthermore, dividend-paying firms generally exhibit higher quality of earnings (Tong and Mia, 2011), lower auditor fees (Lawson and Wang, 2016), and less earnings management (He et al., 2017; Kim et al., 2017). However, Liu and Espahbodi (2015) argue that dividend-paying firms may engage in both real activities and accruals-based earnings management. Moreover, when firms' pre-managed earnings fall short of expected dividend levels, they tend to manage earnings upward (Daniel et al., 2008). Finding a positive (negative) relationship between dividend payout and earnings quality (earnings management) support the dividend signalling effect, free cash-flow hypothesis, and shareholder-manager agency conflict.

Overall, banks, as financial intermediaries, are subject to strict regulation and deal with risky financial assets and debts. This is supported by Armstrong et al. (2010) who demonstrate the importance of information and financial reporting in mitigating various agency conflicts that may arise as identified by Jensen and Meckling (1976). As such, the agency conflicts between shareholders and debtholders are largely due to the opaque nature of banks (i.e., debtholders having limited information about banks' operational decision-making) which exacerbates information asymmetry between managers and external shareholders, or creditors. Consequently, dividend payment policy is crucial in reducing the high agency costs prevalent in the financial industry. Thus, we develop our first testable hypothesis as follows:

¹ For instance, at lower levels of Tier 1 capital ratio, banks tend to offer greater loan loss provisions.

H1: *There is a positive (negative) relationship between dividend payout ratio and earnings quality (earnings management) in banks.*

Regulatory capital management is the primary incentive for low-capitalized banks to engage in earnings management by manipulating loan loss provisions (Shrieves and Dahl, 2003; Ahmed et al., 1999), while well-capitalized banks tend to avoid decreasing LLPs (Kim and Kross, 1998). Bushman and Williams (2012) also suggest that low-capitalized banks postpone the recognition of expected loan losses in current provisions, indicating opportunistic behaviour in loan provisioning. Therefore, we expect that the level of bank capitalization may affect the relationship between dividend policy and earnings management. Hence, we develop the following testable hypothesis:

H2: *The relationship between dividends and earnings quality (management) is more pronounced in low-capitalized banks.*

Prior research (e.g., Beatty et al., 2002) suggests that publicly traded banks are more likely to engage in earnings management due to their dependence on external investors. Additionally, Beatty and Harris (1999) find that public banks engage in more aggressive earnings management due to greater agency costs and information asymmetry. However, Fonseca and González (2008) show that income-smoothing activities are less prevalent in public banks when compared to private banks. Private banks face higher risk transfer conflicts between shareholders and creditors due to their lack of diversification opportunities and high leverage. Consequently, private banks may engage in more income smoothing to conceal risk from creditors. Ke et al. (1999) argue that shareholders in private firms can directly supervise managers, reducing the need to base managers' compensation on earnings and lowering the motivation for earnings manipulation. Based on these findings, we propose the following hypothesis:

H3: *The relationship between dividend payout and earnings management is more pronounced in publicly listed banks than in private banks.*

The relationship between dividends and earnings management is likely to be more significant when examined across countries with large variations in country-level factors, such as religious orientation, investor protection, and government regulation (La Porta et al. (2000). For example, prior studies (e.g., Guiso et al., 2006, 2008; Barro and McCleary, 2003) suggest that religious customs and beliefs have a significant impact on economic development. Walker et al. (2012) imply that religious beliefs are related to moral judgments and that individuals who actively participate in religious activities are less likely to engage in behavior that violate moral standards. Thus, managers with strong religious beliefs can potentially reduce agency conflicts within a firm and may be less likely to engage in earnings management. Additionally, Kanagaretnam et al. (2015), Hilary and Hui (2009) and Shu et al. (2012) show that religious beliefs tend to be associated with fewer risks and conservative corporate policies, making them less likely to engage in earnings management. Although Quttainah et al. (2013) find that some unconventional (Islamic) banks are less likely to manage earnings, however, Zainuldin et al. (2018) argue that Islamic banks tend to engage more in earnings management than non-Islamic counterparts because Islamic banks must adhere to Shariah principles, which create new conflicts in addition to traditional agency issues. Thus, we propose the following testable hypothesis:

H4: *The relationship between dividend payout and earnings management is moderated by religious orientation.*

The legal system is responsible for safeguarding the interests of external investors, such as minority shareholders and creditors, by granting them the right to discipline managers and enforce contracts. This reduces the likelihood of managers concealing their earnings

management activities, as they cannot manipulate earnings without detection. In addition, regulatory efficiency, rule of law, government size, and open markets, as measured by the economic freedom index, can enhance the power of supervisors to discipline managers, thereby deterring banks from engaging in risky earnings management practices (Bushman and Williams, 2012; Shen and Chih, 2005; Fonseca and Gonzalez, 2008; Claessens and Laeven, 2004; Shrieves and Dahl, 2003). Government regulations can also impose stricter standards on banks, encouraging them to engage in conservative activities that maintain high charter value and mitigate moral hazard. Hence, we propose the following final hypothesis:

H5: *The relationship between dividend payout and earnings management is moderated by investor protection and government regulation.*

3. Data and methodology

3.1. Data

Our sample consists of publicly listed and unlisted banks across 45 countries (i.e., 23 developed and 22 developing economies), spanning 24 years from 1996 to 2019.² This period covers a series of banking and financial market crises and rapid regulatory changes including the introduction of Basel II and III, and the strengthening of capital requirements.

We construct a comprehensive dataset consisting of 47,505 bank-year observations for earnings quality measures including earnings persistence and cashflow predictability, respectively. Further, we construct earnings management measures including meeting or beating prior year's earnings and abnormal loan loss provision with 24,371 and 8901 bank-year observations, respectively. In particular, the sample includes commercial, cooperative, Islamic,³ savings banks, and bank holding companies that provide commercial banking services across developed and developing economies. Our sample composition is reported in Appendix A1.⁴

We extract bank-level information, including balance sheets and income statements, from the Fitch Solutions database. We exclude bank subsidiaries from the final dataset to reduce the impact of double counting. It also excludes banks with less than three consecutive years of observations and banks for which data on the main variables are not available (e.g., dividend payout, non-performing loan, loan charge-offs, government regulation, investor protection). We compile macroeconomic or country-specific control variables such as religion, institutional factors, bank competition, real gross domestic profit (GDP) growth rate, inflation rate from the World Bank Database, and the Economic Freedom Index (EFI) from Heritage Foundation.

We exclude U.S. banks from our main sample to mitigate potential biases resulting from their relatively high representation (i.e., greater than 45%) if they would be included. This sampling strategy is similar to

² Our sample period ends in year 2019 to avoid any confounding effects associated with COVID-19 and more importantly the unexpected suspension of dividends in March 2020 which contributed to the banks' prices volatility and increased regulatory uncertainty (Matyunina and Ongena, 2022).

³ We thank an anonymous referee for pointing this out to us. Given the nature of Islamic banks in terms of their non-interest banking, the composition and pattern of pre-managed earnings of those banks may differ from that of other conventional banks. Thus, we exclude Islamic banks from our sample and reassess our primary model. We document that our results are predominantly influenced by commercial, bank holding companies, and cooperative banks.

⁴ We also perform sensitivity checks by removing the largest sample country (i.e., Germany and Japan) in each of our tests. We do find consistent results regarding earnings persistence, cash-flow predictability, and meet or beat benchmark. However, in the abnormal loan loss provision analysis, dividend payout shows an insignificant result when excluding these countries, contrary to our main results.

the one employed in, e.g., [Fonseca and Gonzalez \(2008\)](#) and [Kanagaretnam et al. \(2014\)](#). Moreover, U.S. banks differ significantly from non-U.S. banks in terms of financial reporting, with U.S. banks adhering to GAAP standards and non-U.S. banks using IFRS, resulting in opaque reports and increased opportunities for managers to engage in earnings management ([Henry et al., 2009](#)). Further, [Kanagaretnam et al. \(2010\)](#) argue that U.S. banks operate in a high litigious environment where banks were exceptionally profitable before the 2007–2009 financial crisis period, and this may reflect an incentive of banks to maintain a high level of earnings quality/management. Nevertheless, it remains an open empirical question to examine whether our findings are sensitive to the inclusion of U.S. banks. So, we conduct a separate analysis incorporating U.S. sample banks and the results are discussed in [Section 5.2](#).

3.2. Variable measurement

3.2.1. Dependent variable – earnings management

The variables used to measure earnings management include *earnings quality* and *opportunistic earnings management*. *Earnings quality* is assessed based on the persistence and predictability of cash flow. *Opportunistic earnings management*, on the other hand, is measured by meeting or surpassing the previous year's earnings benchmark and abnormal loan loss provisions. We interpret that frequent changes in earnings and a higher value of income-increasing abnormal loan loss provisions reflect more aggressive earnings management. Our earnings quality and opportunistic earnings management proxies are based on prior banking research (e.g., [Kanagaretnam et al., 2014](#); [Altamuro and Beatty, 2010](#)). The details of variable constructions are provided in [Appendix A2](#).

We present preliminary evidence (see [Fig. 2](#)) that abnormal loan loss provisions and average change in return on average assets (ROAA) reached their highest point in 2008, implying that banks may have engaged in earnings management during the financial crisis. Nonetheless, these figures began to decline around 2011, indicating that stricter regulatory measures imposed by governments and regulators might have had a considerable impact.

3.2.2. Variable of interest – cash dividend payout

The dividend payout ratio is calculated by dividing the total cash dividends by net income. This metric helps investors determine the amount of profit being distributed to shareholders. Conservative investors often prioritize banks with a stable and high dividend payout ratio. However, it is important to note that a high dividend payout ratio may not always be beneficial in the long-term as it reduces the bank's growth opportunities.

Based on our data,⁵ we observe a significant increase in dividend payout between 1996 and 2008, with an even greater increase in 2008. Notably, the increase in payout growth is heavily concentrated towards dividends. However, dividend payments reached their lowest point in 2010, indicating that banks adjusted their dividend policies in response to regulatory changes. In the wake of the crisis, regulators and markets re-evaluated the appropriate level of capital for banks, causing most banks outside of the euro-zone to prioritize retaining earnings over raising new equity. According to our data, dividend payout ratios for U.S. remained below pre-crisis levels in 2011 (see [Fig. 1](#)) because regulatory limits on dividend payouts were imposed to prevent a permanent deterioration of financial conditions, particularly, for struggling banks ([Linde, 2014](#)).

In addition, bank capital may affect a bank's survival, performance, and market share during both normal and turbulent times ([Berger and](#)

[Bouwman, 2013](#)). Hence, we categorize the sample into two groups based on the median of the regulatory capital ratio to explore the impact of dividend payout on earnings management. We define a bank as well-capitalized if its regulatory capital ratio is above the median for a specific year, and as under-capitalized if its regulatory capital ratio is below the median for a specific year.

Furthermore, although [Fonseca and Gonzales \(2008\)](#) suggest that non-listed banks tend to smooth income more than listed banks, however, [Beatty et al. \(2002\)](#) argue that listed banks are more likely to engage in earnings management. To investigate the relationship between earnings management and dividend policy, we categorize our sample into two groups based on bank listing status: listed versus non-listed banks.

To investigate the potential impact of religion in reducing earnings management, we construct a religiosity dummy variable, assigning a value of one to "major religion" such as Catholicism and Islam, and zero to all "other religion".

3.2.3. Bank-level and country-level control variables

[Altamuro and Beatty \(2010\)](#) and [Beatty et al. \(2002\)](#) present evidence that large banks are likely to engage in earnings management to avoid a decline in profit. However, according to [Cornett et al. \(2009\)](#) regulators tend to scrutinize large-sized banks more closely, as the failures of big banks can have a severe negative impact on the overall economy. Therefore, we include bank size as a control variable.

[Iyer et al. \(2016\)](#) suggest that bank deposits, including retail and wholesale deposits, are positively associated with earnings quality. However, [Jin et al. \(2018\)](#) argue that during the 2007–2009 period, banks with high deposits had less motivation to meet or exceed prior year's earnings. The impact of the deposit ratio on earnings management is therefore unclear. While retail depositors have no incentive to discipline managers, wholesale depositors, despite their expertise, are unable to overcome banks' opacity issues. Nevertheless, we control for the deposit ratio in our analysis to investigate its potential impact on earnings management.

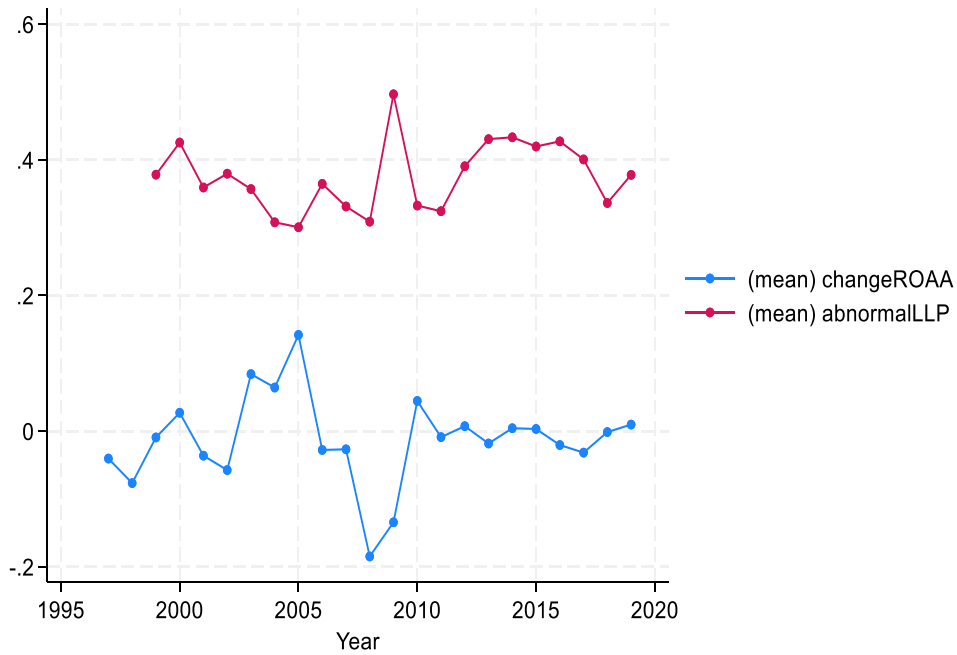
We include the growth of gross loans as a control variable in our analysis, as it is widely acknowledged that an increase in bank loans can lead to a higher probability of default and an increase in non-performing loans, which can ultimately reduce a bank's equity capital ([Beatty et al., 2002](#); [Beatty and Liao, 2014](#)). Hence, banks with higher loan growth may engage in earnings management to mitigate any capital losses. Moreover, it is often argued that banks manipulate earnings to boost their capital ratios by reducing loan loss provisions ([Cornett et al., 2009](#)). However, the association between capital and earnings management remains mixed.

Maintaining adequate levels of liquidity is crucial for banks to withstand unexpected shocks and sudden withdrawals of funds. If a bank has insufficient internal liquidity, it may not be able to maintain a sufficient capital ratio, which can ultimately result in bankruptcy. Banks with lower liquidity ratios often have less capacity to set aside provisions for loan losses to compensate for lower capital levels. As a result, we anticipate a negative correlation between liquidity ratios and earnings management.

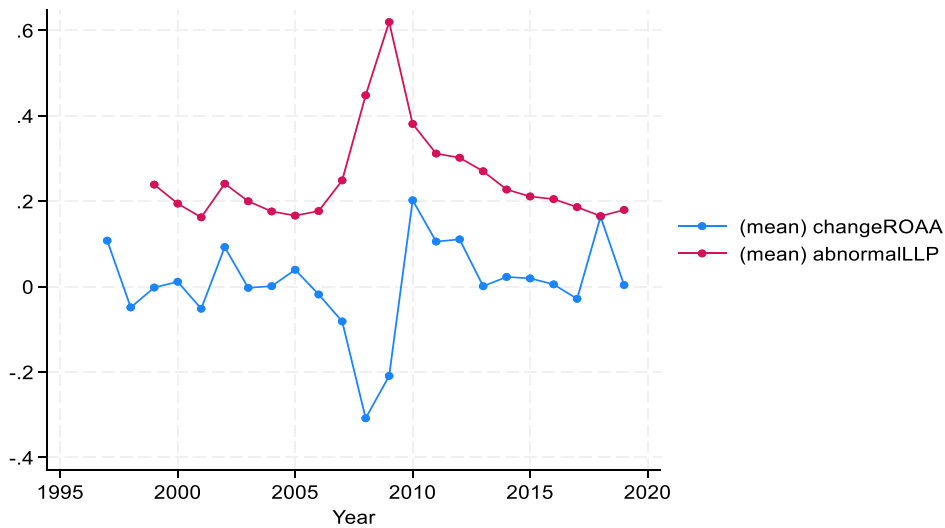
Bank's operational efficiency is measured by cost-to-income ratio. Prior research (e.g., [Fries and Taci, 2005](#)) suggest that non-performing loans have a negative relationship with bank efficiency. Hence, decreases in bank efficiency may deplete bank capital, potentially leading to increased earnings management. [Köhler \(2014\)](#) demonstrate that non-interest income can affect bank stability. Yet, we predict that higher levels of non-interest income are associated with diminishing risk-return trade-offs.

Prior studies (e.g., [Shen and Chih, 2005](#); [Leuz et al., 2003](#)) find that countries with weak law enforcement and inadequate protection of minority shareholders are susceptible to earnings management. Conversely, a strong legal system can prevent banks from utilizing deposit insurance to pursue risky activities. Consequently, lower

⁵ It should be noted that due to a lack of readily available data, it is not possible at this stage to investigate share repurchases by banks in a similar fashion. Further, share repurchases rarely represent more than one-third of bank payouts and never exceed dividends ([Floyd, Li and Skinner, 2015](#)).



(a)



(b)

Fig. 2. Average change in ROAA and average abnormal LLP. Fig. 2A and B present the change in ROAA and average abnormal LLP for non-USA and USA banks, respectively. A) Average change in ROAA and average Abnormal LLP- Non-USA. B) Average change in ROAA and average Abnormal LLP- USA.

risk-taking behaviour may decrease the incentives to engage in earnings manipulation.

Economic freedom index (EFI) is used to gauge regulatory restrictions, where higher scores indicate lower regulation. We anticipate a positive association between earnings management and EFI. Additionally, we introduce macroeconomic variables, such as real-GDP growth and inflation rates, to account for the impact of macroeconomic shocks that may negatively affect bank performance. For example, managers may manipulate loan loss provisions to maintain favourable profitability status in bank statements. Conversely, managers may reduce earnings through loan loss provisions to avoid higher taxes. Therefore, we predict a negative association between earnings management and macroeconomic variables. To eliminate the potential

confounding effect of outliers, we winsorize our variables at the 90th percentiles to enhance the accuracy and reliability of the analysis by mitigating the adverse effects of outliers and extreme values in our large dataset.

3.3. Empirical methodology

In this subsection, we develop our empirical models to test our first hypothesis. The regression we estimate can be represented as follows:

$$EQ_{i,j,t+1} = \alpha_0 + \beta_1 EQ_{i,j,t} + \beta_2 DIV_{i,j,t} + \beta_3 (EQ_{i,j,t} \times DIV_{i,j,t}) + \beta_4 \sum_{j=1}^{45} BANK\ CONTROL_{i,j,t} + \beta_5 \sum_{j=1}^{45} COUNTRY - LEVEL\ CONTROL_{i,j,t} + \gamma_1 \sum_{j=1}^{45} MACRO_{j,t} + \tau_t + \mu_i + \varepsilon_{i,j,t} \quad (1)$$

where subscript i denotes individual banks, j denotes country, and t time period ($t = 1996, 1999, \dots, 2019$). τ_t is the time fixed-effects, μ_i is the bank fixed-effects, and ε denotes the remaining disturbance term.

$EQ_{i,j,t+1}$ represents the alternate measures of earnings quality including earnings persistence and cashflow predictability. Earnings persistence is the future earnings (defined as pre-tax earnings in year $t + 1$) to current earnings (defined as pre-tax earnings in year t). Alternatively, for cashflow predictability, we measure earnings before taxes with loan loss provisions one year later to current earnings. Hence, β_1 , alternatively estimates banks' earnings persistence and future cash-flow predictability. We expect $\beta_3 > 0$ indicating that banks can enhance their earnings persistence and predictability for future cash flow with higher dividend payouts.

Finally, we estimate *opportunistic earnings management* by applying the following logit regression models. Eq. (2) represents meeting or beating prior year's earnings while Eqs. (3A) and 3B exhibit abnormal loan loss provision.

$$Meet - beat_{i,j,\Delta t} = \alpha_0 + \beta_1 DIV_{i,j,t} + \beta_2 \Delta CF_{i,j,t} + \beta_3 ALLOW_{i,j,t} + \beta_4 GROWTH_{i,j,t} + \beta_5 \sum_{j=1}^{45} BANK\ CONTROL_{i,j,t} + \beta_6 \sum_{j=1}^{45} COUNTRY\ CONTROL_{i,j,t} + \gamma_1 \sum_{j=1}^{45} MACRO_{j,t} + \tau_t + \mu_i + \varepsilon_{i,j,t} \quad (2)$$

where, the *Meet - beat* benchmark is an indicator variable that takes a value of one if a bank reflects a change in ROAA from year $t-1$ to year t in the interval between 0 and 0.001 or zero otherwise.⁶ ΔCF is change in earnings before taxes and loan loss provisions from the beginning to the end of year t scaled by total assets at the beginning of year t . $ALLOW$ represents allowance for loan losses at the end of year t , scaled by total assets at beginning of year t . $GROWTH$ represents the growth in total assets from beginning to the end of year t . We expect $\beta_1 < 0$, indicating that high dividends payout banks have less incentive to report changes in ROAA over a year.

In relation to abnormal loan loss provision, we conduct a two-stage analysis. In the first stage (see Eq. (3A) below), we calculate absolute negative residual values, which is the discretionary part of loan loss provision. This is of specific interest because it tends to increase banks reported return.

$$LLP_{i,j,t} = \alpha_0 + \beta_1 BEGLLA_{i,j,t-1} + \beta_2 LCO_{i,j,t-1} + \beta_3 CHLOANS_{i,j,t-1} + \beta_4 LOANS_{i,j,t-1} + \beta_5 NPL_{i,j,t-1} + \tau_t + \mu_i + \varepsilon_{i,j,t} \quad (3A)$$

where, LLP is the loan loss provision at year t , $BEGLLA$ is loan loss allowance at time period $t-1$, LCO is net loan charge-offs scaled by beginning assets, $CHLOANS$ is change in total loans outstanding scaled by beginning assets, $LOANS$ is loans outstanding scaled by beginning assets, and, NPL is non-performing loans deflated by beginning total assets.

In the second stage (see Eq. (3B) below), we test the association between dividend payout (DIV) and the abnormal loan loss provisions ($ALLP$).

$$ALLP_{i,j,t} = \alpha_0 + \beta_1 DIV_{i,j,t-1} + \beta_2 \sum_{j=1}^{45} BANK - LEVEL\ CONTROL_{i,j,t} + \beta_3 \sum_{j=1}^{45} COUNTRY - LEVEL\ CONTROL_{i,j,t} + \gamma_1 \sum_{j=1}^{45} MACRO_{j,t} + \tau_t + \mu_i + \varepsilon_{i,j,t} \quad (3B)$$

We expect $\beta_1 < 0$ suggesting that dividend payout can limit the income-increasing earnings management activities.

Further, to test *hypotheses H2 - H4*, we re-run Eqs. (1), (2), (3A), and (3B), by splitting our sample into low capitalised versus high capitalised banks, listed versus non-listed banks, and religiosity versus non-religiosity countries. We expect our findings to be more pronounced when focusing on low-capitalized and publicly listed banks and we conjecture that such relation to be moderated by religiosity.

In addition, to test *hypothesis H5*, we estimate the following specification to explore the association between dividend and earnings management, conditional on investor protection and government regulation. The functional forms of our models are stated below.

$$EQM_{i,j,t} = \alpha_0 + \beta_1 DIV_{i,j,t-1} + \beta_2 (DIV_{i,j,t-1} \times INREG_{j,t}) + \beta_3 \sum_{j=1}^{45} BANK - LEVEL\ CONTROL_{i,j,t} + \beta_4 \sum_{j=1}^{45} COUNTRY - LEVEL\ CONTROL_{i,j,t} + \gamma_1 \sum_{j=1}^{45} MACRO_{j,t} + \tau_t + \mu_i + \varepsilon_{i,j,t} \quad (4)$$

where, EQM represents the alternate proxies for earning quality and earning management. $INREG$ represents measures of investor protection and government regulation, which are introduced subsequently. We expect $\beta_2 > 0$ with earnings quality and $\beta_2 < 0$ in earnings management measures indicating that the investor protection and government regulation strengthens the role of dividend payout to mitigate earnings management.

We note that the residual from the regression models may be serially and/or cross-sectionally correlated. Therefore, we apply clustered robust errors to account for both serial and cross-sectional correlations (Petersen, 2009).

4. Empirical results

4.1. Descriptive statistics and correlation analysis

Table 1 displays the summary statistics related to our main variables. The average of pre-tax earnings_{t+1} is 0.8 %, while the average of the pre-tax and LLP_{t+1} is 1.2 %. These findings are consistent with Kanagaretnam et al. (2014) and Kanagaretnam et al. (2019). The average of dividend payout is 29 %. In relation to earnings persistence and cash flow predictability analysis, the mean of pre-tax earnings_{t+1}, and of pre-tax earnings and LLP_{t+1} are higher for listed banks compared to non-listed banks. On average, listed banks pay out fewer dividends when compared to their counterparts, and increasing dividend payouts may enhance earnings quality more in listed banks than in non-listed banks. Further, we document that under-capitalised banks pay more dividends and play a more significant role in improving earnings quality. The means of pre-tax earnings_{t+1} and pre-tax earnings and LLP_{t+1} variables, support this finding.

The average meet or beat benchmark is 0.27, indicating that around 27 % of the banks in the sample adjust their ROAA to improve earnings over the prior year. The mean dividend payout is 24 %. For listed (un-listed) banks, the average of meet or beat benchmark is 0.22 (0.21). The mean of meet or beat benchmark is 0.21 (0.20) for well-capitalised (under-capitalised) banks. The mean of abnormal LLP is reported as 0.4 %, which is consistent with Kanagaretnam et al. (2014). The mean of abnormal LLP in listed and unlisted banks is 0.2 % and 0.3 %, respectively.

⁶ We can highlight that our results are qualitatively similar when using a much more stringent criterion by using the interval between 0 and 0.0008 to determine if banks managed earnings to avoid reporting losses.

Table 1
Summary statistics.

<i>Panel A: Earnings persistence and cashflow predictability</i>								
Variable	Obs	Mean	S.D.	Min	25th	Median	75th	Max
Earnings before tax _{t+1}	47,501	0.008	0.010	0.000	0.000	0.010	0.010	0.040
Earnings before tax & LLP _{t+1}	47,501	0.012	0.010	0.000	0.010	0.010	0.010	0.040
Earnings before tax _t	47,501	0.008	0.010	0.000	0.000	0.010	0.010	0.040
Dividend payout	47,501	0.290	0.240	0.000	0.080	0.230	0.450	0.890
Size	47,501	20.850	1.590	17.810	19.620	20.660	22.180	23.830
Deposit	47,501	0.700	0.190	0.120	0.630	0.750	0.850	0.910
Liquidity	47,501	0.230	0.180	0.050	0.100	0.180	0.290	0.820
Gross Loans	47,501	0.070	0.110	-0.100	0.000	0.040	0.100	0.540
Leverage	47,501	0.080	0.040	0.040	0.050	0.070	0.100	0.270
Cost to Income	47,501	0.670	0.130	0.400	0.580	0.680	0.760	0.970
Non-interest income	47,501	0.420	0.120	0.180	0.310	0.430	0.510	0.800
Eco. freedom index	47,501	68.850	5.870	49.800	65.600	70.600	72.800	79.400
Anti director rights index	47,501	3.840	1.270	1.000	3.000	4.000	5.000	5.000
Real GDP growth rate	47,501	0.020	0.020	-0.030	0.010	0.020	0.030	0.080
Inflation	47,501	0.020	0.020	-0.010	0.010	0.020	0.020	0.140
<i>Panel B: Meet or beat benchmark</i>								
Variable	Obs	Mean	S.D.	Min	25th	Median	75th	Max
Meet or beat benchmark	24,371	0.270	0.450	0.000	0.000	0.000	1.000	1.000
Dividend payout	24,371	0.240	0.230	0.000	0.060	0.180	0.380	0.890
Growth	24,371	0.060	0.360	-0.880	-0.030	0.040	0.130	38.050
Cashflow	24,371	-0.030	0.340	-3.640	-0.120	-0.020	0.080	3.680
Allowance	24,371	0.020	0.020	0.000	0.010	0.010	0.020	0.670
Size	24,371	21.440	1.550	17.810	20.290	21.440	22.790	24.280
Deposit	24,371	0.730	0.200	0.120	0.630	0.790	0.890	0.910
Gross Loans	24,371	0.060	0.100	-0.100	0.000	0.040	0.090	0.540
Liquidity	24,371	0.230	0.170	0.050	0.100	0.190	0.310	0.820
Leverage	24,371	0.080	0.040	0.040	0.050	0.070	0.100	0.270
Cost to Income	24,371	0.670	0.140	0.380	0.570	0.680	0.770	0.970
Non-interest income	24,371	0.390	0.120	0.180	0.280	0.370	0.480	0.800
Eco. freedom index	24,371	69.050	6.230	49.800	64.300	71.800	73.300	79.400
Anti director rights index	24,371	4.220	0.880	1.000	4.000	4.500	5.000	5.000
Real GDP growth rate	24,371	0.020	0.020	-0.030	0.010	0.020	0.030	0.080
Inflation	24,371	0.020	0.020	-0.010	0.000	0.010	0.020	0.140
<i>Panel C: Abnormal loan loss provision</i>								
Variable	Obs	Mean	S.D.	Min	25th	Median	75th	Max
Abnormal LLP	8901	0.004	0.002	0.000	0.000	0.000	0.010	0.025
Dividend payout	8901	0.280	0.220	0.000	0.100	0.230	0.420	0.880
Growth	8901	0.050	0.150	-0.860	-0.040	0.030	0.140	6.110
Past LLP	8901	0.000	0.000	-0.020	0.000	0.000	0.000	0.110
Earnings before tax & LLP _{t+1}	8901	0.012	0.010	0.000	0.010	0.010	0.020	0.040
Size	8901	21.610	1.730	17.810	20.150	21.870	23.380	23.830
Deposit	8901	0.690	0.180	0.120	0.580	0.740	0.830	0.910
Liquidity	8901	0.180	0.150	0.050	0.070	0.120	0.230	0.820
Gross Loans	8901	0.070	0.090	-0.100	0.010	0.050	0.100	0.540
Leverage	8901	0.090	0.040	0.040	0.060	0.080	0.100	0.270
Cost to Income	8901	0.640	0.130	0.400	0.540	0.640	0.720	0.970
Non-interest income	8901	0.420	0.120	0.210	0.310	0.430	0.490	0.800
Eco. freedom index	8901	69.180	6.330	49.800	63.400	72.700	73.800	79.400
Anti director rights index	8901	4.190	0.990	1.000	3.500	4.500	5.000	5.000
Real GDP growth rate	8901	0.020	0.020	-0.030	0.010	0.020	0.030	0.080
Inflation	8901	0.020	0.020	-0.010	0.010	0.020	0.030	0.140

This table presents summary statistics. Variable definitions are provided in Appendix A.2.

respectively, indicating that listed banks may engage in less income-increasing earnings management when compared to their counterparts.

Table 2 displays the correlation matrix for the variables used in our empirical analysis. Bank size, total deposit, and cost to income are negatively correlated with pre-tax earnings $t+1$ and pre-tax earnings and LLP $t+1$. Conversely, liquidity ratio, loan growth, and leverage ratio are positively correlated with pre-tax earnings $t+1$ and pre-tax earnings and LLP $t+1$. To avoid any issues with multicollinearity, we examine the variance inflation factors (VIF). The average VIF ranges between 2 and 3, indicating that multicollinearity is not a significant problem.

4.2. Main findings

4.2.1. Earnings quality: earnings persistence and cash-flow predictability

The results for earnings persistence and cashflow predictability tests are reported in Table 3. We find that the current pre-tax earnings is positive and statistically significant at the 1 % level with future pre-tax earnings, consistent with the results reported in Altamuro and Beatty (2010) (see column 1). Our primary variable of interest is β_3 and our findings suggest that banks demonstrate higher earnings persistence with higher dividend payouts. Economically, a one standard deviation increase in the interaction between dividend payout and current pre-tax

Table 2
Correlation matrix.

<i>Panel A: Earnings persistence and cashflow predictability</i>																
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
(1) Earnings before tax _{t+1}	1.000															
(2) Earnings before tax & LLP _{t+1}	0.84***	1.000														
(3) Earnings before tax _t	0.79***	0.72***	1.000													
(4) Dividend payout	0.11***	0.13***	0.10***	1.000												
(5) Size	-0.10***	-0.09***	-0.09***	0.13***	1.000											
(6) Deposit	-0.26***	-0.26***	-0.27***	-0.002	0.07***	1.000										
(7) Liquidity	0.27***	0.18***	0.26***	-0.02*	-0.21***	-0.37***	1.000									
(8) Gross loans	0.31***	0.32***	0.34***	0.02**	-0.03***	-0.17***	0.13***	1.000								
(9) Leverage	0.45***	0.41***	0.47***	-0.06***	-0.38***	-0.43***	0.41***	0.12***	1.000							
(10) Cost to income	-0.35***	-0.41***	-0.43***	-0.20***	-0.28***	0.03***	0.11***	-0.12***	-0.03***	1.000						
(11) Non-interest income	0.02***	-0.004**	0.01***	-0.03***	-0.21***	-0.28***	0.10***	-0.01	0.12***	0.18***	1.000					
(12) Eco. freedom index	-0.36***	-0.38***	-0.36***	0.12***	0.12***	0.35***	-0.27***	-0.29***	-0.23***	0.02***	-0.03***	1.000				
(13) Anti-director rights	-0.03***	-0.05***	-0.03***	-0.22*	0.21***	0.13***	-0.08**	-0.05***	0.04***	-0.05***	-0.07***	0.27***	1.000			
(14) Real-GDP	0.33***	0.31***	0.33***	0.07***	-0.02***	-0.11***	0.13***	0.33***	0.16***	-0.15***	0.007	-0.31***	0.15***	1.000		
(15) Inflation	0.37***	0.39***	0.38***	-0.07***	-0.16***	-0.37***	0.27***	0.31***	0.30***	-0.02***	0.13***	-0.59***	0.02***	0.36***	1.000	
<i>Panel B: Meet or beat benchmark</i>																
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Meet or beat benchmark	1.000															
(2) Dividend payout	0.004*	1.000														
(3) Growth	-0.011*	0.006	1.000													
(4) Cashflow	0.039*	0.002	0.012*	1.000												
(5) Allowance	-0.010*	-0.014*	0.368*	0.005	1.000											
(6) Size	0.082*	0.129*	0.028*	0.019*	-0.065*	1.000										
(7) Deposit	0.082*	-0.002	-0.010*	0.026*	-0.063*	0.070*	1.000									
(8) Gross loans	-0.084*	0.018*	0.130*	0.051*	0.005	-0.034*	-0.168*	1.000								
(9) Liquidity	-0.084*	-0.018*	0.016*	-0.024*	0.029*	-0.208*	-0.369*	0.129*	1.000							
(10) Leverage	-0.092*	-0.061*	-0.008*	-0.008*	0.056*	-0.383*	-0.434*	0.122*	0.407*	1.000						
(11) Cost to income	0.032*	-0.200*	-0.008*	-0.222*	0.009*	-0.280*	0.032*	-0.121*	0.110*	-0.029*	1.000					
(12) Non-interest income	0.043*	-0.033*	-0.006*	-0.029*	0.014*	-0.214*	-0.276*	-0.006*	0.096*	0.117*	0.176*	1.000				
(13) Eco. freedom index	0.122*	0.122*	-0.004	0.019*	-0.123*	0.116*	0.345*	-0.288*	-0.273*	-0.233*	0.019*	-0.030*	1.000			
(14) Anti-director rights	0.061*	-0.220*	0.002	0.010*	-0.066*	0.212*	0.131*	-0.054*	-0.083*	0.043*	-0.047*	-0.068*	0.270*	1.000		
(15) Real GDP growth rate	-0.056*	0.065*	0.016*	0.005	0.031*	-0.017*	-0.113*	0.331*	0.134*	0.155*	-0.154*	0.007*	-0.314*	0.152*	1.000	
(16) Inflation	-0.125*	-0.065*	0.007*	-0.043*	0.069*	-0.158*	-0.365*	0.309*	0.274*	0.301*	-0.020*	0.134*	-0.586*	0.019*	0.360*	1.000
<i>Panel C: Abnormal loan loss provision</i>																
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Abnormal LLP	1.000															
(2) Dividend payout	-0.111*	1.000														
(3) Size	-0.231*	0.129*	1.000													
(4) Growth	-0.023*	0.006	0.028*	1.000												
(5) Past LLP	-0.018	0.031*	-0.059*	0.010*	1.000											
(6) Earnings before tax & LLP _{t+1}	-0.157*	0.129*	-0.087*	0.003	0.164*	1.000										
(7) Deposit	0.026*	-0.002	0.070*	-0.010*	-0.082*	-0.259*	1.000									
(8) Gross loans	-0.129*	0.018*	-0.034*	0.130*	0.033*	0.320*	-0.168*	1.000								
(9) Liquidity	-0.147*	-0.018*	-0.208*	0.016*	0.026*	0.181*	-0.369*	0.129*	1.000							
(10) Leverage	0.096*	-0.061*	-0.383*	-0.008	0.096*	0.411*	-0.434*	0.122*	0.407*	1.000						
(11) Cost to income	0.162*	-0.200*	-0.280*	-0.008	-0.044*	-0.411*	0.032*	-0.121*	0.110*	-0.029*	1.000					
(12) Non-interest income	0.084*	-0.033*	-0.214*	-0.006	-0.015*	-0.004	-0.276*	-0.006	0.096*	0.117*	0.176*	1.000				
(13) Eco. freedom index	0.121*	0.122*	0.116*	-0.004	-0.138*	-0.384*	0.345*	-0.288*	-0.273*	-0.233*	0.019*	-0.030*	1.000			
(14) Anti-director rights	0.041*	-0.220*	0.212*	0.002	-0.060*	-0.048*	0.131*	-0.054*	-0.083*	0.043*	-0.047*	-0.068*	0.270*	1.000		
(15) Real GDP growth rate	-0.088*	0.065*	-0.017*	0.016*	0.050*	0.313*	-0.113*	0.331*	0.134*	0.155*	-0.154*	0.007	-0.314*	0.152*	1.000	
(16) Inflation	-0.104*	-0.065*	-0.158*	0.007	0.112*	0.389*	-0.365*	0.309*	0.274*	0.301*	-0.020*	0.134*	-0.586*	0.019*	0.360*	1.000

This table reports the correlation matrix of earning quality, earning management, dividend payout, bank-specific and country-specific control variables. Variable definitions are provided in Table 2. *** statistically significant at the 1 % significance level.

Table 3
Earnings quality, earnings management, and dividend policy.

	Earnings before tax _{t+1} (1)	Earnings before tax & LLP _{t+1} (2)	Meet or beat benchmark (3)	Abnormal LLP (4)
Earnings before tax _t	0.405*** (0.013)	0.267*** (0.014)		
Dividend payout	-0.100*** (0.018)	-0.033* (0.020)	-0.286** (0.114)	-0.040** (0.020)
Dividend payout × Earnings before tax _t	0.100*** (0.021)	0.100*** (0.025)		
Growth			-0.161 (0.121)	0.003 (0.023)
Cashflow			0.432*** (0.054)	
Allowance			-1.214 (1.552)	
Past LLP				0.007*** (0.029)
Earnings before tax _t & LLP				-0.023*** (0.008)
Size	-0.148*** (0.015)	-0.121*** (0.017)	-0.140* (0.080)	-0.012*** (0.020)
Deposit	0.300*** (0.001)	0.250 (0.001)	0.264 (0.345)	0.001 (0.001)
Liquidity	0.100 (0.100)	-0.100*** (0.048)	-0.465** (0.218)	0.003 (0.043)
Gross loans	0.100*** (0.029)	0.100*** (0.032)	-0.112 (0.231)	-0.001*** (0.037)
Leverage	0.005** (0.002)	0.010*** (0.003)	-2.980** (1.290)	0.009*** (0.003)
Cost to income	-0.200*** (0.037)	-1.000*** (0.047)	-0.274 (0.254)	0.004*** (0.001)
Non-interest income	-0.004*** (0.001)	-0.003*** (0.001)	0.026 (0.298)	0.048 ** (0.039)
Eco. freedom index	-0.003* (0.001)	-0.006*** (0.002)	0.059*** (0.010)	0.001** (0.002)
Anti-director rights	0.024*** (0.003)	0.040*** (0.004)	-0.056 (0.062)	-0.027 ** (0.011)
Real GDP growth rate	0.013*** (0.002)	-0.002 (0.003)	4.783*** (1.744)	0.002 (0.002)
Inflation	0.012*** (0.003)	0.007** (0.003)	-1.702 (1.797)	-0.004* (0.003)
Intercept	3.539*** (0.322)	4.505*** (0.365)		0.004 (0.005)
Bank and Year fixed effect	Yes	Yes	Yes	Yes
No. of obs	47,505	47,501	24,371	8901
R ² /Pseudo R ²	0.27	0.26	0.04	0.15
Log likelihood			-9723.16	
Chi ²			860	

This table presents the results for earnings quality, earnings management, and dividend policy. The dependent variable is the earnings quality and earning management measure respectively. And the key variable of interest is dividend payout ratio. The bank level and country level control variables are also included. Standard errors are reported in parenthesis. Variable definitions are provided in Appendix A.2. ***, **, * statistically significant at the 1 %, 5 % and 10 % significance level, respectively.

earnings corresponds to a 5 % increase in future pre-tax earnings.⁷ Hence, paying higher dividends may signal the bank's positive prospects to outside investors, leading to increased investment and, thus, maintaining the bank's earnings level. This supports our hypothesis H1 and confirms the *dividend signalling effect*.

In addition, we document that future cash flow is positively and significantly associated with *EBT* consistent with prior studies (e.g., Altamuro and Beatty, 2010) (see column 2). More importantly, we report that the coefficient on the interaction term β_3 is positive and

⁷ The economic significance of an estimate is calculated as the changes in an explanatory variable measure compared to its respective mean value in response to one standard deviation increases in primary variable of interest. For instance, the economic significance corresponding to the estimate for (*DIV* × *EBT*) in column 1 of Table 3, is calculated as $(0.004 \times -0.10) / 0.008 = 5\%$, where 0.004 is the standard deviation of (*DIV* × *EBT*), 0.10 is the regression coefficient on (*DIV* × *EBT*), and 0.008 is the mean value of dependent variable (*EBTL*).

statistically significant at the 1 % level, suggesting that high dividend payouts decrease sub-optimal investments, leading to more precise future cash flow predictions based on current earnings (DeAngelo et al., 2009). Economically, a one standard deviation increase in the interaction between dividend payout and current pre-tax earnings is associated with a 3.3 % increase in future pre-tax and provision earnings. Our finding is consistent with hypothesis H1; thus, dividend payout improves the ability of earnings to predict future cashflows in banks supporting the *free cash-flow hypothesis* (Jensen, 1986).

4.2.2. Earnings management: meeting or beating prior year's earnings benchmark and income-increasing abnormal loan loss provision

Regarding earning benchmark test, the results for the logistic regression are reported in column 3 of Table 3. The coefficient on dividend payout is negative and statistically significant at the 5 % level, indicating that banks are unlikely to manipulate their earnings to maintain or exceed their previous year's earnings in the presence of high dividend payouts. This finding is consistent with hypothesis H1 and suggest that a one standard deviation increase in dividend payout

decreases banks' inclination to adjust their earnings by 3.8 %. Therefore, the incentive for earnings management may be related to *shareholder-manager agency conflict*, where managers prefer compensation based on unstable earnings performance. Our results document that managers must distribute dividends during high-earning years under an established dividend policy. As a result, they can no longer use excess funds to conceal poor earnings performance in the subsequent period, effectively reducing income-smoothing activities.

We report the results for abnormal LLP in column 4 of Table 3. The coefficient on dividend payout is negative and statistically significant at the 5 % level, indicating less income increasing earnings management in the presence of higher dividend payouts. This finding is consistent with hypothesis H1 and has significant economic implications. For instance, a one standard deviation increase in dividend payout reduces income increasing earnings management by 2.2 %. The result is also related *shareholder-manager agency conflict*, where managers can no longer reap significant private control benefits as they need to allocate enough cash towards dividends. To ensure completeness of our empirical analysis, we re-run the regression models with positive residual values (not tabulated for the sake of brevity). We confirm that banks with high dividend payouts are ineffective in reducing income-decreasing earnings management.

4.2.3. Bank-level and country-level control variables

The findings related to bank-level control characteristics are aligned with prior research.⁸ For instance, large banks and banks with high leverage, high loan growth rate, high efficiency, and high deposits exhibit lower earnings quality and earnings management. Conversely, banks with significant past loan loss provision are more susceptible to stronger earnings manipulation. Our analysis of country-level control variables yielded mixed results regarding the economic freedom index. However, we find evidence that stricter investor protection regulations are linked to improved earnings quality. Additionally, we find higher non-interest income may undermine bank stability and lead to increased earnings management.

4.3. Bank characteristics: bank capital and listing status

4.3.1. Bank capital and its influence on the dividend and earnings management

To test our hypothesis H2, we divide the sample into two categories: (i) well-capitalized, and (ii) undercapitalized banks, based on the median of the total regulatory capital ratio.⁹ Table 4 reports the results of this analysis. Consistent with H2, the coefficient on β_3 is positive and statistically significant at the 1 % level, suggesting that in the presence of higher dividend payout both under- and well-capitalised banks exhibit earning persistence (see columns 1 and 5). Economically, a one standard deviation increase in current pre-tax earnings leads to a 4.6 % and 4.1 % increase in future pre-tax earnings for under- and well-capitalised banks, respectively.

Although, we do not observe any meaningful association between dividend payouts and cash-flow predictability for under-capitalized banks (see column 2), however, we provide evidence of cashflow predictability for well-capitalized banks (see column 6) indicating that a one standard deviation increase on β_3 is associated with a 3.1 % increase in future pre-tax and provision earnings. Interestingly, this finding is contrary to our hypothesis H2 but is in line with Kim and Kross (1998).

Furthermore, our results reveal that for well-capitalized banks, a

⁸ See, for example, Jin, Kanagaratnam, and Liu (2018), Kanagaretnam, Lim, and Lobo (2014), Cornett, McNutt, and Tehrani (2009), Fries and Taci (2005), among others.

⁹ We also tested our analysis by dividing the sample into groups based on Tier 1 ratio and leverage ratio. However, the outcomes show no significant difference, with results remain largely consistent.

higher dividend payout reduces the likelihood of meeting or exceeding the prior year's earnings benchmark, as indicated by the negative and statistically significant coefficient on dividend payout (see column 7). Hence, economically, a one standard deviation increase in dividend payout leads to a 33.8 % reduction in earnings management.

Finally, we find that higher dividend payouts play a role in mitigating earnings management for both under- and well-capitalized banks, as indicated by the negative and statistically significant coefficients on dividend payout (see columns 4 and 8). A one standard deviation increase in dividend payout reduces income-increasing abnormal LLP by 2.41 % and 3.02 % for under- and well-capitalised banks, respectively.

4.3.2. Listing status and its influence on dividend and earnings management

The objective of this analysis is to investigate whether the relationship between dividend payout and earnings management is affected by the listing status of banks. To do so, the sample is divided into two groups: (i) listed banks, and (ii) non-listed banks. The results of this analysis are presented in Table 5.

Dividend payout exhibits impact on earnings quality of listed banks (see column 1). Although this result is consistent with Kanagaretnam et al. (2014), it contradicts with our hypothesis H3. Economically, a one standard deviation increase in β_3 corresponds to a 3.7 % increase in future pre-tax earnings. Further, contrary to hypothesis H3, we document that non-listed banks can enhance their earnings persistence and predictability of future cash flows by increasing their dividend payments. Economically, a one standard deviation increase in the interaction between dividend payout and earnings tends to increase earnings persistence and cash flow predictability by 6.5 % and 6.6 %, respectively.

Regarding opportunistic earnings management, although we do not find any appreciable evidence for listed banks, however, our results show some weaker evidence (marginally statistically significant) of listed banks that pay higher dividends engage in less earnings management (see column 6).

Further, the coefficient on dividend payout is negative and statistically significant for non-listed banks, indicating that non-listed banks can mitigate income-increasing earnings management by increasing dividend payouts (see column 8). The finding contradicts our hypothesis H3. Economically, a one standard deviation increase in dividend payout can reduce income-increasing abnormal loan loss provision by 2.3 %. Conversely, we find only marginally statistically significant result when we conduct our analysis on listed banks (see column 6).

4.4. Country characteristics: religious orientation, investor protection and government regulation influence on dividend and earnings management

4.4.1. Religious orientation and its influence on dividend and earnings management

Table 6 presents the results on the influence of religious orientation on dividend and earnings management. Our results indicate that dividend payout can enhance earnings persistence and future cash-flow predictability for banks classified under "other religion" (see columns 3 and 4), consistent with our hypothesis H4. Economically, a one standard deviation increase in β_3 leads to an increase in earnings persistence and cash flow predictability by 9 % and 8.23 %, respectively. While banks in countries with a Catholic and Muslim religious orientation may not benefit from paying more dividends to achieve better future cash-flow predictability (see column 2), which is in line with the findings of Chourou et al. (2020), yet, in contrast to our hypothesis H4, however, we reveal some evidence of earnings persistence in this sample of banks (see column 1).

In relation to meeting or beating of the previous year's earnings benchmark, there is some evidence of a negative association between earnings management and dividend payout (marginally significant at the 10 % level, see columns 5 and 6). These findings align with Zainuddin and Lui (2018) indicating that the banking systems in Islamic

Table 4
: Earnings quality, earnings management, and dividend policy: Under-capitalised versus well-capitalised banks.

	Under-capitalized < Median of regulatory capital ratio				Well-capitalized > Median of regulatory capital ratio			
	Earnings before tax _{t+1} (1)	Earnings before tax & LLP _{t+1} (2)	Meet or beat benchmark (3)	Abnormal LLP (4)	Earnings before tax _{t+1} (5)	Earnings before tax & LLP _{t+1} (6)	Meet or beat benchmark (7)	Abnormal LLP (8)
Earnings before tax _t	0.420*** (0.022)	0.268*** (0.025)			0.365*** (0.017)	0.256*** (0.018)		
Dividend payout	-0.0007*** (0.0002)	-0.0001 (0.0003)	-0.242 (0.175)	-0.0004** (0.0002)	-0.0005** (0.0003)	-0.0004 (0.0003)	-0.401** (0.172)	-0.0005** (0.0002)
Dividend payout × Earnings before tax _t	0.103*** (0.040)	0.043 (0.041)			0.077*** (0.026)	0.087*** (0.031)		
Intercept	0.038*** (0.006)	0.053*** (0.008)		-0.0006 (0.006)	0.033*** (0.004)	0.040*** (0.005)		0.009 (0.007)
Bank -level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank & Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,844	15,843	10,621	4898	31,661	31,658	11,803	4003
R ² /Pseudo R ²	0.31	0.26	0.05	0.17	0.24	0.24	0.05	0.20
Log-Likelihood		-4254.62		-4377.92				
Chi ²		429.40		467.84				

This table presents the results for earnings quality, earnings management, and dividend policy. The bank level and country level control variables are also included in the analysis. Columns 1–4 reports the results for under-capitalised banks while columns 5–8 represents the results for well-capitalized banks. Standard errors are reported in parenthesis. Variable definitions are provided in Appendix A.2. ***, **, * statistically significant at the 1 %, 5 % and 10 % significance level, respectively.

countries are distinct, which makes earnings management more noticeable in such banks than their peers. Yet, banks in “other religion” category exhibit that dividend payout plays a significant role in decreasing abnormal LLP.

Furthermore, our results suggest that banks under "other religion" group can reduce their income-increasing earnings management behaviour by increasing their dividend payouts. Economically, a one standard deviation increases in dividend payout results in a 2 % reduction in income-increasing earnings management, supporting our hypothesis H4. However, banks in countries with the "major religion" group show weaker association between dividend payout and earnings management, which is consistent with the findings of [Quttainah et al. \(2013\)](#).¹⁰

4.4.2. Investor protection and government regulation and its influence on dividend and earnings management

Table 7 presents the results of the moderating effect of shareholder protection and government regulation on dividend and earnings management. We document no appreciable evidence that dividend payouts are effective in improving earnings quality in the presence of anti-director rights, thus, rejecting our hypothesis H5 (see columns 1 and 2). Perhaps, there is a possibility that the enhanced earnings persistence and cash-flow predictability in banks may not be due to superior earnings quality, but rather attributed to income smoothing ([Altamuro and Beatty, 2010](#); [Beatty et al., 2002](#)). Yet, when banks are subject to stricter investor protection, the influence of income smoothing decreases which may lead to lack of earnings persistence and cash-flow predictability.

Our analysis of meeting or beating the prior year’s earning benchmark reveals that banks increase their dividend payouts to reduce earnings management in presence of anti-director rights (see columns 3 and 4). This result is consistent with the findings of [Fonseca and González \(2008\)](#) and [Claessens and Leaven \(2004\)](#). Specifically, we find

¹⁰ To better understand the extent to which the effects of major religions are homogeneous, we examine whether the moderating influence of Catholicism on the relationship between dividend payout and earnings management is similar to or different from that of Islam. To separate the confounding factors from the religious influences, we re-run our analysis specifically for banks in countries where Catholicism, Islam or other religion is predominant. Our results remain unchanged. We thank an anonymous referee for suggesting this to us.

that a one standard deviation increase in dividend payout decreases the chance for banks to intentionally meet or beat the prior year’s earnings by 12.4 % when anti-director rights are in place. This result supports our hypothesis H5. Moreover, our analysis of abnormal loan loss provision shows that a one standard deviation increase in dividend payout reduces the income increasing abnormal LLP by 7.9 % in the presence of shareholder protection-anti-director rights, further supporting our hypothesis H5.

Our study indicates that government regulation strengthens the negative association between dividend payouts and earnings management behaviour, supporting our hypothesis H5. Economically, in presence of government regulation, a one standard deviation increase in dividend payout reduces the likelihood of the meeting or beating the prior year’s earnings by 34.8 % (see column 7) and decreases income-increasing earnings management by 18.6 % (see column 8).

5. Additional analysis

5.1. Managerial incentives

It has been well documented in the prior literature on the influence of managerial incentives on earnings management. For example, [Cheng and Warfield \(2005\)](#) find managers with high equity incentives are more likely to report earnings that meet or just beat analysts’ forecasts and being less likely to report large positive earnings surprises. This is supported by [Bergstresser and Philippon \(2006\)](#) who find more incentivized CEOs (i.e., those whose overall compensation is more sensitive to company share prices) are associated with companies with higher levels of earnings management. As such, in our study, it is important to control for managerial incentives due to its confounding effects on our empirical analysis in determining the impact of dividend policy on earnings management.¹¹

While it would be ideal to control for the managerial compensation or incentives of bank’s CEOs, such data is however not widely available particularly for our cross-country analysis. To alleviate such concern, we consider country-level data such as: (i) the importance of stock market, (ii) governance indicators, and (iii) supervisory power, private monitoring, and bank competition to control for the country-level strengths of

¹¹ We would like to thank an anonymous referee for this suggestion.

Table 5
Earnings quality, earnings management, and dividend policy: Listed versus unlisted banks.

	Listed banks		Unlisted banks		Listed banks		Unlisted banks	
	Earnings before tax _{t+1} (1)	Earnings before tax & LLP _{t+1} (2)	Earnings before tax _{t+1} (3)	Earnings before tax & LLP _{t+1} (4)	Meet or beat benchmark (5)	Abnormal LLP (6)	Meet or beat benchmark (7)	Abnormal LLP (8)
Earnings before tax _t	0.494*** (0.028)	0.347*** (0.030)	0.404*** (0.016)	0.250*** (0.017)				
Dividend payout	-0.0013*** (0.00046)	0.015 (0.001)	-0.00054*** (0.0002)	-0.044* (0.023)	-0.3607 (0.255)	-0.0005* (0.0002727)	-0.2677* (0.142)	-0.042** (0.021)
Dividend payout × Earnings before tax _t	0.099** (0.048)	-0.001 (0.004)	0.1098*** (0.025)	0.148*** (0.031)				
Intercept	0.038*** (0.008)	0.048*** (0.008)	0.029*** (0.004)	0.036*** (0.004)		0.002 (0.007)		0.010 (0.006)
Bank -level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank & Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6095	6094	32,915	32,912	4560	2328	18,038	5812
R ² /Pseudo R ²	0.39	0.33	0.28	0.28	0.07	0.18	0.04	0.17
Log-Likelihood						-1625.30		-7432.57
Chi ²						246.89		661.75

This table presents the results for earnings quality, earnings management, and dividend policy. The bank level and country level control variables are also included in the analysis. Standard errors are reported in parenthesis. Variable definitions are provided in Appendix A.2. ***, **, * statistically significant at the 1 %, 5 % and 10 % significance level, respectively.

Table 6
Earnings quality, earnings management, and dividend policy: Major versus Other religion.

	Major religion		Other religion		Major religion		Other religion	
	Earnings before tax _{t+1} (1)	Earnings before tax & LLP _{t+1} (2)	Earnings before tax _{t+1} (3)	Earnings before tax & LLP _{t+1} (4)	Meet or beat benchmark (5)	Abnormal LLP (6)	Meet or beat benchmark (7)	Abnormal LLP (8)
Earnings before tax _t	0.422*** (0.021)	0.299*** (0.024)	0.362*** (0.015)	0.203*** (0.016)				
Dividend payout	-0.0012** (0.0005)	-0.001 (0.100)	-0.0009*** (0.00016)	-0.0006*** (0.0002)	-0.3713* (0.193)	-0.0003 (0.0002)	-0.243* (0.145)	-0.042** (0.021)
Dividend payout × Earnings before tax _t	0.065** (0.033)	0.045 (0.037)	0.180*** (0.034)	0.241*** (0.043)				
Intercept	0.040*** (0.648)	0.063*** (0.699)	0.030*** (0.323)	0.032*** (0.392)		0.002 (0.007)		0.010 (0.006)
Bank -level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank & Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,773	13,773	33,732	33,732	7143	3141	17,228	5760
R ² /Pseudo R ²	0.29	0.26	0.27	0.30	0.07	0.18	0.05	0.17
Log-Likelihood						-2393.87		-7230.48
Chi ²						376.40		681.63

This table presents the results for earnings quality, earnings management, and dividend policy. The bank level and country level control variables are also included in the analysis. Standard errors are reported in parenthesis. Variable definitions are provided in Appendix A.2. ***, **, * statistically significant at the 1 %, 5 % and 10 % significance level, respectively.

managerial incentives. As documented by Burgstahler et al. (2006), firms' reporting incentives created by public equity markets and institutional factors such as legal enforcement have influence on earnings management.

To do this, we follow Beck and Levine (2002) and Fonseca and Gonzales (2008) and control for stock market turnover ratio, stock market value added, and market capitalization. To incorporate the impact of governance indicators specific to each country, we utilize the worldwide governance indicators created by Kaufman and Kray (2021). These indicators include voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. In addition, we also consider bank supervisory power, private monitoring, and bank competition (e.g., Barth et al., 2001; Giroud and Mueller, 2011; Markarian and Santalo, 2014;). As reported in Appendix B1, we find our main results to be qualitatively similar when controlling for all the country-level strengths of managerial incentives as

discussed above.

5.2. Evidence on U.S. banks

As discussed earlier, we re-run all our regression models by including U.S. banks in our sample,¹² and we summarize our findings as follows. First, our results for two earnings quality measures remain unchanged and are consistent with our prediction. Economically, a one standard deviation increase in β_3 implies a 3.5 % increase in future pre-tax earnings (persistence) and a 3.1 % increase in future pre-tax and

¹² Considering only U.S. sample in our analysis cannot provide meaningful results due to the time invariant macro-level variables included in our analysis, which gives rise to multicollinearity problem when a single country is evaluated.

Table 7

Earnings quality, earnings management, and dividend policy: The role of investor protection and government regulation.

	Investor protection				Government regulation			
	Earnings before tax _{t+1} (1)	Earnings before tax & LLP _{t+1} (2)	Meet or beat benchmark (3)	Abnormal LLP (4)	Earnings before tax _{t+1} (5)	Earnings before tax & LLP _{t+1} (6)	Meet or beat benchmark (7)	Abnormal LLP (8)
Earnings before tax _t	0.406*** (0.013)	0.268*** (0.014)			0.406*** (0.013)	0.266*** (0.014)		
Dividend payout	-0.0007*** (0.0001)	-0.030 (0.020)	1.404*** (0.467)	0.001 (0.001)	-0.0007*** (0.0002)	-0.033 (0.020)	2.416** (1.108)	0.003* (0.002)
Dividend payout × Earnings before tax _t	0.124*** (0.042)	0.145*** (0.052)			0.158 (0.127)	0.019 (0.145)		
Anti-director rights	0.027*** (0.004)	0.041***+ (0.004)+	0.091 (0.073)	-0.0001 (0.0001)				
Dividend payout × Earnings before tax _t × Anti-director rights	-0.009 (0.010)	-0.015 (0.012)	-0.420*** (0.113)	-0.033** (0.015)				
Economic Freedom index					-0.002 (0.002)	-0.006***+ (0.002) +	0.069*** (0.010)	0.001 (0.002)
Dividend payout × Earnings before tax _t × Eco. Freedom index					-0.010 (0.002)	0.010 (0.002)	-0.039** (0.016)	-0.005***+ (0.002) +
Intercept	0.035*** (0.003)	0.045*** (0.004)		0.004 (0.004)	0.035*** (0.003)	0.045*** (0.004)		0.003 (0.005)
Bank -level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank & Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	47,505	47,501	24,371	8901	47,505	47,501	24,371	8901
R ² /Pseudo R ²	0.27	0.26	0.04	0.15	0.27	0.26	0.04	0.15
Log-Likelihood			-9716				-9720	
Chi ²			874				866	

This table presents the results for earnings quality, earnings management, and dividend policy. The bank level and country level control variables are also included in the analysis. Standard errors are reported in parenthesis. Variable definitions are provided in Appendix A.2. ***, **, * statistically significant at the 1 %, 5 % and 10 % significance level, respectively. +scaled by 100.

provisions earnings (cashflow predictability). In particular, this association is observed among unlisted and both under- and well-capitalized banks. Further, our results hold irrespective of the religious orientation. We also document that in presence of anti-director rights, the association remain positive and statistically significant at the 1 % level.

Second, we do not find any appreciable evidence in relation to opportunistic earnings management measures (i.e., meet or beat earnings benchmark and abnormal LLP).¹³ This finding is however, consistent with the work of [Shen and Chih \(2005\)](#) who argue that US banks may not have the tendency to manage earnings to avoid losses but rather to show evidence of stability in earnings. Our analysis for under- and well-capitalized banks further supports this finding. In addition, we report some mixed evidence among listed and unlisted banks. For instance, we observe a negative association between dividend payout and abnormal LLP in listed banks thus, dividend payout plays a mitigating role in earnings management. Nevertheless, we document that dividend payout fails to play a disciplinary role in managing earnings, in presence of anti-director rights. One possible explanation is that stricter regulations imposed on banks may cause fewer alternatives for banks to conduct earnings management. For example, banks can no longer exercise discretion on security gains or losses or loan charge-offs, therefore, US banks are more inclined to apply a discretionary part of LLPs as a means of earnings management ([Beatty and Harris, 1999](#)). Our results are reported in Appendix B2.

¹³ We further support this by showing that our finding holds for 'other religion' indicating that U.S banks do not engage in opportunistic earnings management.

5.3. Regulatory framework

Given the prevalence use of macro prudential policy to improve the resilience of the broader financial system since the global financial crisis, we attempt to examine the influence of different macro prudential policy (i.e., tightening or loosening) on the association between earnings quality/management and dividend policy. While there has been substantial evidence on the effectiveness of macro prudential tools in meeting domestic goals and reducing a country's exposure to domestic and international shocks, there are also evidence to suggest otherwise that these tools have unintended consequences through international capital flows and spillover effects (see [Forbes, 2021](#)). As such, it remains an open empirical question on the effect of macro prudential policy on the relation between dividend policy and earnings quality/managements.

To do this, we follow the methodology and database developed by [Alam et al. \(2019\)](#) to construct the tightening and loosening measures. We report our results in Appendix B3. We find that the tightening of macro prudential policy is the main contributor to the enhancement of earnings quality and earnings management in the presence of dividend policy. This is consistent with prior studies (e.g., [Kuttner and Shim, 2016](#)) that the tightening measures have statistically significant effects when compared to loosening measures. However, it is interesting to note that our results show a negative association between meet or beat benchmark and dividend payout even in presence of macro prudential loosening policy.

One possible explanation for the significant variation in bank dividend policies across different countries is the differences in tax systems, which may be influenced by the country's legal framework ([Floyd et al., 2015](#); [Brockman and Unlu, 2009](#); [La Porta et al., 2000](#)). We predict that higher taxes are associated with lower dividends because capital gains are typically less heavily taxed than dividend income, making dividends

less attractive from a tax perspective. Our study reveals that the relationship between dividend policy and earnings quality measures, such as earning persistence and cashflow predictability, remains consistent and unaffected by high or low tax environments. This outcome aligns with [Breuer et al. \(2014\)](#). Yet, we find a negative relationship between dividend policy and earnings management (i.e., meet or beat the prior year's earnings benchmark) in high-tax environments. However, we find no appreciable evidence between dividend policy and abnormal LLP in both low-tax and high-tax environments. These results are presented in Appendix B4.

5.4. Dividend dynamics

We examine whether increases, or decreases in dividend payments influence the association between dividend policy and earnings management ([Skinner and Soltes, 2011](#)). Thus, we create a subsample of banks where we observe a decrease in dividend payments from year $t-1$ to t and a separate subsample of banks where we observe an increase in dividend payments from year $t-1$ to t . The results are reported in Appendix B5. Our findings show that the effect of dividend policy on earnings quality is persistent and is sensitive to decreases in dividend payments. Similar result is observed for cashflow predictability model (see columns 1 and 2). We provide some mixed evidence in relation to earnings management. For instance, banks that decrease their dividend payments show a positive association between meet or beat prior year's earnings and dividends payouts suggesting that these banks are involved in earnings management. Further, banks that increase dividend payment show a negative association between income-increasing abnormal loan provision and dividends payouts.

Our examination of dividend concentration indicates that the largest dividend payers do not primarily drive the link between earnings quality and dividends. Specifically, our main findings on earnings persistence and cashflow predictability hold for banks in the 75th percentile, whereas the top 25 % of dividend payers do not strengthen the association between dividends and earnings management. While our results show that these top dividend payers aggravate earnings quality (see column 1), however, the top 25 % of dividend payers, indicate that higher dividend payouts lead to better earnings management (see column 3). The results are presented in Appendix B6.

Furthermore, we conduct a separate analysis where we compile a dataset comprising high and low dividend-paying banks,¹⁴ and the outcomes of this analysis are reported in Appendix B7. Our results confirm that low dividend payout banks tend to maintain higher earnings quality (persistence and cashflow predictability), while high dividend payout banks engage less in earnings management (meet or beat benchmark and abnormal LLP).

5.5. Bank characteristics

We investigate the impact of performance on the relationship between dividend policy and earnings management. We find that the effect of dividend policy on earnings quality persists for high and low performance banks. We also observe variations in the association between dividend payout and earnings management measures. For instance, low (high) ROAA banks exhibit a negative association between dividend payout and meeting or beating the benchmark (income-increasing loan loss provision) (see Panel A, columns 3 and 8). Similar results are

¹⁴ Unlike corporate firms, our data indicates that banks generally maintained their dividend payments, although a few banks may have abstained from paying dividends in certain subsequent years. As a result, we cannot conclusively categorize banks as either "dividend-paying" or "non-dividend-paying" entities according to the definitions provided by [Baker and Wurgler \(2004\)](#) and [Becker, Ivkovic, and Weisbender \(2011\)](#). Accordingly, we are unable to analyse the dividend initiation for non-dividend paying entities.

observed for high ROAE banks (see Panel B, column 8). Our results are reported in Appendix B8.

Next, we conduct an analysis to examine whether the association between dividend payout and earning quality and earnings management is influenced by bank size. We divide our sample into small and large banks using the median bank size as the threshold. The results are presented in Appendix B.9. While large banks exhibit earning persistence, cashflow predictability, and no evidence of earnings manipulation (see columns 5–8), small banks however, reflect cashflow predictability in the presence of dividend payout (see column 2).

5.6. Developed versus emerging economies

To check the presence of possible heterogeneity in the effect of earnings quality and earnings management, we estimate the model of those banks and countries that may share certain common factors. Hence, emerging economies incentive towards dividend payout and earnings management may differ from those in advanced economies. For instance, it is often argued that emerging market firms place more emphasis on dividend payout ratios than they do on the level of dividends paid ([Glen et al., 1995](#)). Consequently, dividend payments tend to be more volatile in emerging markets when compared to their developed counterparts.

As these markets develop and open to international capital, dividend policy increases in importance, even if it is not altered in character. [La Porta et al. \(2000\)](#) argue that firms in developed capital markets tend to pay out their earnings because they can raise more external funds, while, developing economies exhibit extreme sensitivity of payouts to growth opportunities and tend to hoard cash to contribute towards good investment opportunities. Further, pooling information from countries with similar experience could also reduce concerns about possible omitted variables ([Demirguc-Kunt et al., 2013](#)). Thus, we divide our sample into developed and emerging economies.

Our examination of earnings persistence is applicable to both developed and emerging economies, while the cashflow predictability analysis only pertains to developed economies. Although, we observe a negative coefficient on dividend payout for our meet or beat benchmark analysis for developed and developing economies, however, no such evidence is observed for abnormal loan loss provisions. The results are tabulated in Appendix B10.

6. Robustness tests

Next, we run through a suite of robustness tests which we describe below. To keep our comprehensive reporting manageable, we do not tabulate these estimates, but all regression outputs are available upon request.

6.1. Endogeneity: two-stage least square (2sls) - [Lewbel \(2012\)](#) approach

The banking literature suggests that bank dividend is unlikely to be exogenous to earnings (e.g., [Tripathy et al., 2021](#); [Laeven and Levine 2009](#)). There could also be unobservable time-varying factors that are omitted from the model. Although, focusing on homogenous firms, i.e., banks, reduces biases in our estimates from such confounding factors, however, we address these potential concerns using a standard two-stage least squares instrumental variables (2SLS-IV) technique.¹⁵

To address such concern, we rely on [Lewbel \(2012\)](#) heterogeneity-based instrument, which is increasingly used in economics and finance studies (e.g., [Hasan, Taylor, and Richardson, 2022](#); [Broadstock et al., 2018](#)). The technique exploits the heterogeneity in the

¹⁵ Although exogenous instruments are widely used in instrumental variable regression to account for endogeneity, the difficulty of finding suitable instruments has been well documented ([Jiang, 2017](#)).

error term of the first stage regression to generate instruments from within the existing model.

We find that our estimates are not subject to under-identification (Anderson canon. corr. LM statistic) and over-identification (Sargan-test) biases. Also, the Cragg-Donald Wald F-statistics is larger than the Stock and Yogo (2005) critical values (at 10 % maximal IV size) indicating that our estimated results are not susceptible to weak instruments. Overall, our main results qualitatively remain unchanged.

6.2. Alternate religion proxy

We use World Values Survey (WVS), specifically responses to question about religious importance, religion affiliation and religious services attendance. Thus, we collectively determine adherence to religious norms. Applying principal component analysis (PCA) we construct a 'Religion Index'. This index is based on the proportion of respondent who indicate that: (a) religion is importance important to them, (b) religion is not important to them, (c) they are affiliated to a religious member, (d) they are not affiliated to a religious member, (e) they regularly/sometimes attend religious services, and (f) they do not attend religion services at all. To eliminate the issue of missing data because of the discontinued participation of certain countries in the surveys, we use linear interpolation/extrapolation to fill any missing observations.¹⁶ We then create a dummy variable based on the median of the religion index that is any values above the median index is termed as high religion group, and any values below the median is termed as low religion group.

Our results document that although earnings persistence in the presence of dividend payout is only observed for low religion index, we do find cashflow predictability in the presence of dividend payout to be observed for both low and high religion index. Further, under meet or beat benchmark, our main finding holds for low religion index, however, we do not find any appreciable evidence in relation to abnormal LLP analysis. Overall, these results are consistent with our main findings.

6.3. Hierarchical linear model (HLM)

To separate the within-country and cross-country effects of bank-level dividend payout on earnings outcome, we employ the following HLM specification (see Greene, 2011). Given that our data structure is multi-level, we estimate the HLM using the iterative maximum likelihood fitting procedure. The decomposition allows us to explore the potentially different associations between dividend payout and earnings quality/management both within a country and across countries. (Griffin et al., 2021; Li et al., 2013). This framework adjusts for the biases introduced by varying sample sizes across countries and for the distortion in standard errors due to within-country clustering.

At the country level, we have banks from 45 countries. And, at the bank-level, we have 5104, 4024 and 2383 banks for earning quality, meet or beat benchmark, and abnormal LLP, respectively, over 24 years. Comparing banks within a country and across country, we confirm that banks with higher dividend payouts demonstrate greater earnings persistence and cashflow predictability. Comparing across country, we show that banks pay more dividends to reduce their income-increasing earnings management. These findings are consistent with our main findings.¹⁷

6.4. Regression with two-way clustering

We follow the work of Faccio and Xu (2015) and conduct a two-way clustering of standard errors at the bank-level and at the country-level.

The results are largely consistent with those reported in our main analysis.

6.5. Crisis period analysis

We examine whether the relationship between dividend payout and earnings management is influenced by the 2007–2008 financial crisis. We split our sample into three narrow periods (pre-crisis, crisis, and post-crisis).¹⁸ We find that the association between dividend payout and earnings quality/management are primarily driven by the pre- and post-crisis periods. For instance, our findings indicate that the overall positive association between dividend payouts and future cash-flow predictability is primarily driven by the post-crisis period. We observe that banks are more inclined to limit or even halt dividend payouts during a crisis, rendering dividend payout ineffective in improving earnings quality at that time. We note that during crisis period, the coefficient on our variable of interest ($DIV \times EBT$) is negative and statistically significant at the 5 % level, exhibiting that high dividend payout can deteriorate banks' financial status and further dampen their earnings quality.

Although meet or beat the earnings benchmark show that the coefficient on dividend payout is negative and significant at the 1 % level in pre-crisis period, however, dividend payouts do not appear to mitigate earnings management for benchmark-beating purposes in the crisis and post-crisis periods. Further, we provide evidence that the relationship between dividend payout and abnormal LLP is negative and statistically significant at the 1 % level exhibiting the disciplinary role of dividend payout in post-crisis period.

7. Conclusion

This study examines the relation between dividend payout and earnings quality/management for banks across 45 countries over 1996 to 2019.

Our main results indicate a consistent negative association between dividend payouts and earnings management. Specifically, banks with higher dividend payout are linked with greater earnings persistence and cash flow predictability, reduced likelihood of meeting or beating prior year earnings, and fewer abnormal loan loss provisions for increased income. Furthermore, our findings suggest that increased dividend payouts can reduce earnings management for banks with high capital levels, particularly in our non-U.S. banks sample. Additionally, non-listed banks show a mitigating effect of dividend payouts on earnings management.

Additionally, the study finds that religious orientation has a moderating effect in all analyses, but the results regarding the dominant religion are mixed. Most of the analyses indicate that only banks in countries dominated by Catholicism or Islam can reduce earnings management by increasing their dividend payouts. Concerning investor protection and government regulation, the results suggest that greater investor protection and strict government regulation enhance the effectiveness of dividend payouts in mitigating earnings management. However, the results exhibit some exceptions when US banks are included.

Overall, our study highlights the potential benefits of dividend payouts in curbing earnings management in banks. Bank boards and policymakers can use dividend payout targets to mitigate excessive free cash flows within the firm and reduce the likelihood of earnings management. Our results also suggest that the effectiveness of dividend payouts in mitigating earnings management varies depending on factors such as bank type, religious orientation, and the level of investor

¹⁶ Linear interpolation/extrapolation is a common practice in the prior literature (see for example Dyreng, Mayew, and Williams, 2012; Kumar, Page and Spalt, 2011).

¹⁷ Incorporating the U.S. banks leaves our results unchanged.

¹⁸ We choose our financial crisis cut-off point as 2007–2008. See for example, Puri, Rocholl, and Steffen (2011), Ivashina and Scharfstein (2010), and Ongena and Popov (2009) among others, for global evidence on the reduction of business lending during the 2007–2008 financial crisis.

protection, and government regulation. Therefore, policymakers should consider these factors when implementing dividend payout policies.

In addition, we recommend that policymakers require banks to increase information disclosure, particularly for those with low dividend payouts but positive pre-distributed profits, to restrict the opportunity for managers to manage earnings. In times of crisis, it is advisable for policymakers in non-U.S. countries to decrease dividend payouts to maintain capital and absorb potential losses. Subsequently, policymakers should increase dividend payouts after the crisis to diminish earnings management and promote bank stability. Conversely, policymakers in the U.S. should increase dividend payouts during a crisis because dividend policies become less effective after the crisis due to heightened scrutiny. Finally, our findings may be useful for external investors in making more informed investment decisions by identifying banks that offer safe investment opportunities and timely protection against risk.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jbankfin.2024.107287](https://doi.org/10.1016/j.jbankfin.2024.107287).

Appendix A1. Sample composition by bank-year observations

This table shows the number of bank-year observations, by country.

	Earnings persistence	Cash-flow predictability	Just-meet-or-beat	Abnormal LLP
Argentina	50	50	42	3
Australia	284	284	254	141
Austria	351	351	158	24
Brazil	1413	1413	1342	275
Canada	433	433	406	200
Chile	125	125	113	56
Colombia	61	61	57	18
Denmark	635	635	388	80
Ecuador	30	30	25	3
Egypt	307	307	257	31
Finland	81	81	57	3
France	2372	2372	1608	387
Germany	17,946	17,945	5901	2634
Greece	47	47	42	32
Hong Kong	504	504	469	158
India	910	910	571	120
Indonesia	464	464	426	145
Ireland	206	206	132	40
Israel	113	113	107	67
Italy	1628	1628	1568	809
Japan	10,232	10,232	9592	1490
Jordan	166	166	150	49
Kenya	389	389	354	85
Korea	287	287	292	109
Malaysia	490	490	460	263
Mexico	189	189	181	45
Netherlands	199	199	169	76
New Zealand	107	107	89	68
Nigeria	332	332	265	25
Norway	500	500	474	248
Pakistan	180	180	146	71
Peru	62	62	59	15
Philippines	211	211	169	51
Portugal	239	239	192	72
Singapore	136	136	115	37
South Africa	344	343	334	159
Spain	770	770	602	290
Sri Lanka	128	128	117	40
Sweden	217	217	194	85
Switzerland	2769	2769	663	4
Thailand	122	122	114	81
Turkey	226	226	203	91
United Kingdom	1070	1068	795	203

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CRedit authorship contribution statement

Mamiza Haq: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Steven Ongena:** Conceptualization, Writing – original draft, Writing – review & editing. **Juying Pu:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Eric K.M. Tan:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing.

Data availability

The authors do not have permission to share data.

(continued)

	Earnings persistence	Cash-flow predictability	Just-meet-or-beat	Abnormal LLP
USA	98,219	98,219	90,975	62,766
Venezuela	111	111	99	13
Zimbabwe	69	69	59	4
Total	145,724	145,720	120,785	71,666
Excluding USA	47,505	47,501	29,810	8900

Appendix A2. Variable Definition

This table presents the definition of variables used in the analysis. The variable column presents the variable of interest, four measurements of dependent variables- earnings management, bank and country-level controls, and macroeconomic variables used in the models.

Variable	Definition	Source
Variable of interests		
Dividend payout	Dividend (cash dividend) payout ratio	Fitch Solutions
Dependent variables (Earnings management measurements)		
<i>1. Earnings persistence analysis</i>		
Earnings before tax _t	Earnings before taxes during year t scaled by total assets at the beginning of the year.	Fitch Solutions
Earnings before tax _{t+1}	Earnings before taxes during year t + 1 scaled by total assets at the beginning of the year.	Fitch Solutions
<i>2. Cash-flows predictability analysis</i>		
Earnings before tax & LLP _t	Earnings before taxes and loan loss provisions during year t scaled by total assets at the beginning of the year.	Fitch Solutions
Earnings before tax & LLP _{t+1}	Earnings before taxes and loan loss provisions during year t + 1 scaled by total assets at the beginning of the year.	Fitch Solutions
<i>3. Meeting or beating prior year's earnings benchmark analysis</i>		
Meet or beat benchmark	An indicator variable taking the value one if the bank has a change in ROAA (income before taxes scaled by total assets) from year t-1 to year t in the interval between 0 and 0.001, zero otherwise.	Fitch Solutions
<i>4. Abnormal loan loss provisions two stage analyses</i>		
LLP	Loan loss provisions during year t scaled by total assets at the beginning of year.	Fitch Solutions
ALLP	Absolute value of negative residual of loan loss provisions	Fitch Solutions
Bank-level variables		
Size	Natural logarithm of total assets at the beginning of year t	Fitch Solutions
Deposit	Bank deposits scaled by total assets at the beginning of the year	Fitch Solutions
Asset growth	The growth in total assets from the beginning to the end of year t	Fitch Solutions
Gross loans	The ratio of (Gross Loans _t - Gross Loans _{t-1}) to Gross Loans _{t-1}	Fitch Solutions
Leverage	The ratio of total equity to total assets	Fitch Solutions
Liquidity	The ratio of liquid assets to liquid assets and marketable debt securities	Fitch Solutions
Cost-to-income	Cost to income ratio (Total Non-Interest Expenses / Total Non-Interest Operating Income + Net Interest Income + Equity-accounted Profit/ Loss - Operating).	Fitch Solutions
Non-interest income	Bank noninterest income to total income (%)	World Bank
Listed	Indicator variable taking the value one if the bank is publicly listed banks, 0 otherwise.	Fitch Solutions
Δ cashflow	The change in cash flows (earnings before taxes and loan loss provisions) from the beginning to the end of year t scaled by total assets at the beginning of year t.	Fitch Solutions
PAST LLP	Prior year's LLP divided by total assets at the beginning of the year.	Fitch Solutions
Loan loss allowance _t	The allowance for loan losses at the end of year t, scaled by total assets at beginning of year t.	Fitch Solutions
Loan loss allowance _{t-1}	The beginning loan loss allowance scaled by beginning assets.	Fitch Solutions
Net Charge offs	The net loan charge-offs scaled by beginning assets.	Fitch Solutions
Δ Total Loans	The change in total loans outstanding scaled by beginning assets	Fitch Solutions
Loan outstanding	Total loans outstanding scaled by beginning assets	Fitch Solutions
Non-performing loans	Non-performing loans deflated by beginning total assets	Fitch Solutions
Country-level variables		
Religiosity	An indicator variable taking the value one for 'Major Religion' here is Catholicism and Islam. They are the two main religions globally; 0 for 'Other Religion' here include Atheism, Buddhism, Hinduism, Indigenous religions, Judaism, Orthodox Christianity, and Protestant Christianity.	World Bank
Economic freedom index	The score includes property rights, judicial effectiveness, government integrity, tax burden, government spending, fiscal health, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom, financial freedom.	Heritage Foundation
Anti-directors' rights	Aggregate index of shareholder rights ranges from 0 to 5. The index is formed by summing: (1) vote by mail; (2) shares not deposited; (3) cumulative voting; (4) oppressed minority; (5) pre-emptive rights; and (6) capital to call a meeting.	La Porta, Lopez-de-Silanes and Shleifer, (1999)
Managerial incentive variables		
Importance of stock market	Stock market turnover ratio measures the trading activity of a stock relative to its total number of outstanding shares. It indicates how frequently shares are traded over a certain period. A higher turnover ratio suggests that a stock is more liquid, indicating it is easier to buy or sell without causing major price changes. Stock market value added is the value of shares traded is the total number of shares traded, both domestic and foreign, multiplied by their respective matching prices. It is measured by stock market value traded to GDP (%) Market capitalization is the share price times the number of shares outstanding. It is measured as stock market capitalisation to GDP (%).	World Bank
Governance or legal regime	These indicators include voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption.	KKZ index
Supervisory power	Official supervisory power encompasses the authorities to implement prompt corrective actions, restructure and reorganize distressed banks, and declare troubled bank as insolvent.	Barth, Caprio and Levine (2001).

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Variable	Definition	Source
Private monitoring	Private monitoring and oversight involve assessing the rigor of audit requirements and determine the eligibility of subordinated debt as a component of regulatory capital.	Barth, Caprio and Levine (2001).
Bank competition	Assets of three largest banks as a share of total banking assets. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax assets, discontinued operations and other assets.	World Bank
Macroeconomic variables		
GDP	Real-GDP growth (annual%)	World Bank
Inflation	Inflation, consumer prices (annual%)	World Bank

References

- Acharya, V.V., Le, H.T., Shin, H.S., 2013. Bank capital and dividend externalities. *Rev. Financ. Stud.* 30 (3), 988–1018.
- Acharya, V.V., Pedersen, L.H., Philippon, T., Richardson, M., 2017. Measuring systemic risk. *Rev. Financ. Stud.* 30 (1), 2–47.
- Ahmed, A.S., Takeda, C., Thomas, S., 1999. Bank loan loss provisions: a re-examination of capital management, earnings management and signalling effects. *J. Account. Econ.* 28 (1), 1–25.
- Alam, Z., Alter, A., Eisman, J., Gelos, R.G., Kang, H., Narita, M., Nier, E. & Wang, N. (2019) Digging deeper—evidence on the effects of macroprudential policies from a new database.
- Altamuro, J., Beatty, A., 2010. How does internal control regulation affect financial reporting? *J. Account. Econ.* 49 (1), 58–74.
- Armstrong, C.S., Guay, W., Weber, J.P., 2010. The role of information and financial reporting in corporate governance and debt contracting. *J. Account. Econ.* 50, 179–234.
- Baker, M., Wurgler, J., 2004. A catering theory of dividends. *J. Finance* 59 (3), 1125–1165.
- Ball, R., Kothari, S.P., Robin, A., 2000. The effect of international institutional factors on properties of accounting earnings. *J. Account. Econ.* 29 (1), 1–51.
- Barro, R.J., McCleary, R.M., 2003. Religion and economic growth. *J. Monet. Econ.* 50 (1), 225–246.
- Barth, J.R., Caprio, G., Levine, R., 2001. *The Regulation and Supervision of Banks Around the World: A new Database*. World Bank Working PaperNo.2588. Updated version: <http://econ.worldbank.org>.
- Beatty, A., Harris, D.G., 1999. The effects of taxes, agency costs and information asymmetry on earnings management: a comparison of public and private firms. *Rev. Account. Stud.* 4 (3), 299–326.
- Beatty, A., Liao, S., 2014. Financial accounting in the banking industry: a review of the empirical literature. *J. Account. Econ.* 58 (2–3), 339–383.
- Beatty, A.L., Ke, B., Petroni, K.R., 2002. Earnings management to avoid earnings declines across publicly and privately held banks. *Account. Rev.* 77 (3), 547–570.
- Beck, T., Levine, R., 2002. Industry growth and capital allocation: does having a market- or bank-based system matter? *J. Financ. Econ.* 64 (2), 147–180.
- Becker, B., Ivkovic, Z., Weisbenner, S., 2011. Local dividend clienteles. *J. Finance* 66 (2), 655–683.
- Berger, A.N., Bouwman, C.H.S., 2013. How does capital affect bank performance during financial crises? *J. Financ. Econ.* 109, 146–176.
- Bhattacharya, S., 1979. Imperfect information, dividend policy, and the bird in the hand fallacy. *Bell J. Econ.* 259–270.
- Bikker, J.A., Metzmakers, P.A.J., 2005. Bank provisioning behaviour and procyclicality. *J. Int. Financ. Mark., Inst. Money* 15 (2), 141–157.
- Breuer, W., Rieger, M.O., Soyupak, K.C., 2014. The behavioral foundations of corporate dividend policy a cross-country analysis. *J. Bank. Financ.* 42, 247–265.
- Broadstock, D.C., Collins, A., Hunt, L.C., Vergos, K., 2018. Voluntary disclosure, greenhouse gas emissions and business performance: assessing the first decade of reporting. *Br. Account. Rev.* 50 (1), 48–59.
- Brockman, P., Unlu, E., 2009. Dividend policy, creditor rights and the agency cost of debt. *J. Financ. Econ.* 92 (2), 276–299.
- Burgstahler, D.C., Hail, L., Leuz, C., 2006. The importance of reporting incentives: earnings management in European private and public firms. *Account. Rev.* 81 (5), 983–1016.
- Bushman, R.M., Williams, C.D., 2012. Accounting discretion, loan loss provisioning, and discipline of banks' risk-taking. *J. Account. Econ.* 54 (1), 1–18.
- Chourou, L., He, L., Zhong, L., 2020. Does religiosity enhance the quality of management earnings forecasts? *J. Bus. Finance Account.* 47 (7–8), 910–948.
- Claessens, S., Laeven, L., 2004. What drives bank competition? Some international evidence. *J. Money, Credit Bank.* 36 (3), 563–583.
- Cohen, L.J., Cornett, M.M., Marcus, A.J., Tehranian, H., 2014. Bank earnings management and tail risk during the financial crisis. *J. Money, Credit Bank.* 46 (1), 171–197.
- Collins, J.H., Shackelford, D.A., Wahlen, J.M., 1995. Bank differences in the coordination of regulatory capital, earnings, and taxes. *J. Account. Res.* 33 (2), 263–291.
- Cornett, M.M., McNutt, J.J., Tehranian, H., 2009. Corporate governance and earnings management at large U.S. bank holding companies. *J. Corp. Finance* 15 (4), 412–430.
- Daniel, N.D., Denis, D.J., Naveen, L., 2008. Do firms manage earnings to meet dividend thresholds? *J. Account. Econ.* 45 (1), 2–26.
- DeAngelo, H., DeAngelo, L., Skinner, D.J., 2009. Corporate payout policy. *Found. Trends Finance* 3 (2–3), 95–287.
- Dechow, P., Ge, W., Schrand, C., 2010. Understanding earnings quality: a review of the proxies, their determinants and their consequences. *J. Account. Econ.* 50 (2), 344–401.
- Demircug-Kunt, A., Detragiache, E., Merrouche, O., 2013. Bank capital: lessons from the financial crisis. *J. Money, Credit Bank.* 45, 1147–1164.
- Dyregren, S., Mayew, W., Williams, C., 2012. Religious social norms and corporate financial reporting. *J. Bus., Finance Account.* 39 (7), 845–875.
- Eisdorfer, A., 2008. Empirical evidence of risk shifting in financially distressed firms. *J. Finance* 63 (2), 609–637.
- Faccio, M., Xu, J., 2015. Taxes and capital structure. *J. Financ. Quant. Anal.* 50 (3), 277–300.
- Flannery, M.J., Kwan, S.H., Nimalendran, M., 2013. U.S. bank lending in the global financial crisis. *J. Financ. Econ.* 109 (3), 592–606.
- Floyd, E., Li, N., Skinner, D.J., 2015. Payout policy through the financial crisis: the growth of repurchases and the resilience of dividends. *J. Financ. Econ.* 118 (2), 299–316.
- Fonseca, A.R., González, F., 2008. Cross-country determinants of bank income smoothing by managing loan-loss provisions. *J. Bank. Financ.* 32 (2), 217–228.
- Forbes, K.J., 2021. The international aspects of macroprudential policy. *Annu. Rev. Econom.* 13, 203–228.
- Forti, C., Schiozer, R.F., 2015. Bank dividends and signaling to information-sensitive depositors. *J. Bank. Financ.* 56, 1–11.
- Fries, S., Taci, A., 2005. Cost efficiency of banks in transition: evidence from 289 banks in 15 post-communist countries. *J. Bank. Financ.* 29 (1), 55–81.
- Giroud, X., Mueller, H.M., 2011. Corporate governance, product market competition, and equity prices. *J. Finance* 66 (2), 563–600.
- Glen, J.D., Karmokolias, Y., Miller, R., 1995. Dividend policy and behavior in emerging markets: to pay or not to pay. *Int. Finance Corp. Discuss. Pap.* 26.
- Gopalan, R., Jayaraman, S., 2012. Dividend policy and earnings management: evidence from Indian firms. *J. Account., Auditing Finance* 27 (4), 559–582.
- Greene, W.H., 2011. *Econometric Analysis*, 7th ed. Prentice Hall, Upper Saddle River, NJ.
- Griffin, D., Li, K., Xu, T., 2021. Board gender diversity and corporate innovation: international evidence. *J. Financ. Quant. Anal.* 56 (1), 123–154.
- Guiso, L., Sapienza, P., Zingales, L., 2006. Does culture affect economic outcomes? *J. Econ. Perspect.* 20 (2), 23–24.
- Guiso, L., Sapienza, P., Zingales, L., 2008. Trusting the stock market. *J. Finance* 63 (6), 2557–2600.
- He, W., Ng, L., Zaiats, N., Zhang, B., 2017. Dividend policy and earnings management across countries. *J. Corp. Finance* 42, 267–286.
- Henry, E., Lin, S., Yang, Y., 2009. The European-U.S. "GAAP GAP": IFRS to U.S. GAAP form 20-F reconciliations. *Account. Horiz.* 23 (2), 121–150.
- Hilary, G., Hui, K.W., 2009. Does religion matter in corporate decision making in America? *J. Financ. Econ.* 93 (3), 455–473.
- Ivashina, V., & Scharfstein, D., (2010). *Bank lending during the financial crisis of 2008*, 97(3), 319–338.
- Iyer, R., Puri, M., Ryan, N., 2016. A tale of two runs: depositor responses to bank solvency risk. *J. Finance* 71 (6), 2687–2726.
- Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *Am. Econ. Rev.* 76 (2), 323–329.
- Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* 3, 305–360.
- Jiang, W., 2017. Have instrumental variables brought us closer to the truth. *Rev. Corp. Finance Stud.* 6 (2), 127–140.
- Jin, J.Y., Kanagaratnam, K., Liu, Y., 2018. Banks' funding structure and earnings quality. *Int. Rev. Financ. Anal.* 59, 163–178.
- Kanagaretnam, K., Lim, C.Y., Lobo, G.J., 2010. Auditor reputation and earnings management: international evidence from the banking industry. *J. Bank. Financ.* 34 (10), 2318–2327.
- Kanagaretnam, K., Lim, C.Y., Lobo, G.J., 2014. Effects of international institutional factors on earnings quality of banks. *J. Bank. Financ.* 39 (1), 87–106.
- Kanagaretnam, K., Lobo, G.J., Wang, C., 2015. Religiosity and earnings management: international evidence from the banking industry. *J. Bus. Ethics* 132 (2), 277–296.
- Kanagaretnam, K., Lobo, G.J., Wang, C., Whalen, D.J., 2019. Cross-country evidence on the relationship between societal trust and risk-taking by banks. *J. Financ. Quant. Anal.* 54, 275–301.

- Kanas, A., 2013. Bank dividends, risk, and regulatory regimes. *J. Bank. Financ.* 37 (1), 1–10.
- Kaufman, D., Kray, A., 2021. *Worldwide Governance Indicators*. World Bank. <https://info.worldbank.org/governance/wgi/>.
- Kauko, K., 2016. Does opaqueness make equity capital expensive for banks? *Revista de Economía del Rosario, Universidad del Rosario* 17 (2), 203–227.
- Ke, B., Petroni, K., Safieddine, A., 1999. Ownership concentration and sensitivity of executive pay to accounting performance measures: evidence from publicly and privately-held insurance companies. *J. Account. Econ.* 28 (2), 185–209.
- Kim, J., Lee, K.H., Lie, E., 2017. Dividend stickiness, debt covenants, and earnings management. *Contemp. Account. Res.* 34 (4), 2022–2050.
- Kim, M., Kross, W., 1998. The impact of the 1989 change in bank capital standards on loan loss provisions and loan write-offs. *J. Account. Econ.* 25 (1), 69–99.
- Köhler, M., 2014. Does non-interest income make banks more risky? Retail- versus investment-oriented banks. *Rev. Financ. Econ.* 23 (4), 182–193.
- Kumar, A., Page, J.K., Spalt, O.G., 2011. Religious beliefs, gambling attitudes, and financial market outcomes. *J. Financ. Econ.* 102 (3), 671–708.
- Kuttner, K.N., Shim, I., 2016. Can non-interest rate policies stabilise housing markets? Evidence from a panel of 57 economies. *J. Financ. Stability* 26, 31–44.
- Laeven, L., Levine, R., 2009. Bank governance, regulation and risk taking. *J. Financ. Econ.* 93 (2), 259–278.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000. Agency problems and dividend policies around the world. *J. Finance* 55 (1), 1–33.
- Lawson, B.P., Wang, D., 2016. The earnings quality information content of dividend policies and audit pricing. *Contemp. Account. Res.* 33, 1685–1719.
- Leuz, C., Nanda, D., Wysocki, P.D., 2003. Earnings management and investor protection: an international comparison. *J. Financ. Econ.* 69 (3), 505–527.
- Lewbel, A., 2012. Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models. *J. Bus. Econom. Statist.* 30 (1), 67–80.
- Li, K., Griffin, D., Yue, H., Zhao, L., 2013. How does culture affect corporate risk-taking? *J. Corp. Finance* 23, 1–22.
- Linde, M.L. (2014). *The regulatory responses to the crisis*. Retrieved from <https://www.bis.org/review/r140526b.htm>.
- Lintner, J., 1965. Distribution of income of corporation among dividends retained earning and taxes. *Am. Econ. Rev.* 97–133.
- Liu, N., Espahbodi, R., 2015. Does dividend policy drive earnings smoothing? *Account. Horiz.* 28 (3), 501–528.
- Lobo, G.J., Yang, D., 2001. Bank managers' heterogeneous decisions on discretionary loan loss provisions. *Rev. Quant. Finance Account.* 16 (3), 223–250.
- Markarian, G., Santalo, J., 2014. Does product market competition lead firms to decentralize their innovation process? *Strateg. Manage J.* 35 (2), 233–253.
- Matyunina, A., Ongena, S., 2022. Bank capital buffer releases, public guarantee programs, and dividend bans in COVID-19 Europe: an appraisal. *Eur. J. Law Econ.* 54, 127–152.
- Nissim, D., Ziv, A., 2001. Dividend changes and future profitability. *J. Finance* 56 (6), 2111–2133.
- Ongena, S., & Popov, A., (2009). *Interbank market integration, loan rates and firm leverage*. <https://ssrn.com/abstract=1442465> or <https://doi.org/10.2139/ssrn.1442465>.
- Petersen, M.A., 2009. Estimating standard errors in finance panel data sets: comparing approaches. *Rev. Financ. Stud.* 22 (1), 435–480.
- Pugachev, L., 2019. The risk-shifting value of payout: evidence from bank enforcement actions. *J. Bank Financ.* 105–595.
- Puri, M., Rocholl, J., Steffen, S., 2011. Global retail lending in the aftermath of the US financial crisis: distinguishing between supply and demand effects. *J. Financ. Econ.* 100 (3), 556–578.
- Quttainah, M.A., Song, L., Wu, Q., 2013. Do Islamic banks employ less earnings management? *J. Int. Financ. Manag. Account.* 24 (3), 203–233.
- Shen, C., Chih, H., 2005. Investor protection, prospect theory, and earnings management: an international comparison of the banking industry. *J. Bank. Financ.* 29 (10), 2675–2697.
- Shrieves, R.E., Dahl, D., 2003. The relationship between risk and capital in commercial banks. *J. Bank. Financ.* 27 (2), 217–327.
- Shu, T., Sulaeman, J., Yeung, P.E., 2012. Local religious beliefs and mutual fund risk-taking behaviors. *Manage. Sci.* 58 (10), 1779–1796.
- Skinner, D.J., Soltes, E., 2011. What do dividends tell us about earnings quality? *Rev. Account. Stud.* 16 (1), 1–28.
- Stulz, R.M., Williamson, 2003. Culture, openness, and finance. *J. Financ. Econ.* 70 (3), 313–349.
- Tong, Y.H., Miao, B., 2011. Are dividends associated with the quality of earnings? *Account. Horiz.* 25 (1), 183–205.
- Tripathy, N., Wu, D., Zheng, Y., 2021. Dividends and financial health: evidence from us bank holding companies. *J. Corp. Finance* 66, 101808.
- Walker, A.G., Smither, J.W., DeBode, J., 2012. The effects of religiosity on ethical judgments. *J. Bus. Ethics* 106, 437–452.
- Zainuldin, M.H., Lui, T.K., Yii, K.J., 2018. Principal-agent relationship issues in Islamic banks: a view of Islamic ethical system. *Int. J. Islamic Middle Eastern Finance Manag.* 11 (2), 297–311.