Sustainable Banking: Unleashing the Potential of ESG Media Reputation for Stable Financial Systems

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Abstract

This paper investigates the impact of ESG reputation on the stability of banks, examining both cross-bank and cross-country variations as well as the economic channels at play. The results show a positive association between ESG reputation and bank stability, with risk reduction identified as a key channel driving this effect. The impact of ESG reputation is notably stronger in countries with higher levels of societal trust, lower media coverage, and reduced influence from state-owned media. This research contributes to the literature on the role of banks in ESG activities and their stability, complementing prior studies on bank reputation and performance. The findings have significant implications for policymakers, regulators, and investors, offering valuable insights for promoting responsible banking practices and enabling informed decision-making to support sustainable economic growth.

Keywords: Environmental, Social, and Governance (ESG), media reputation, banking stability, systemic risk

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1. Introduction

In recent years, a bank's reputation has become critically intertwined with its adherence to environmental, social, and governance (ESG) standards. Banks, often under pressure to align their business models with sustainability objectives, face reputational risks when their actions contradict ESG commitments. A report by the Rainforest Action Network (RAN) reveals that the world's 60 largest banks collectively provided $3.8 trillion in loans to fossil fuel projects, frequently contradicting their own climate commitments. As a result, banks' perceived commitment to sustainability has significant implications for their reputation, affecting both public trust and financial performance. For instance, in March 2020, Barclays faced demonstrations outside its headquarters, where shareholders called for more robust ESG policies and practices. This intensifying focus on bank ESG reputation has compelled banks to reassess and align their strategies with ESG practices to safeguard their reputational standing and operational legitimacy.

This study investigates the relationship between ESG-related media reputation and bank stability. In particular, we examine how this relationship varies across banks and countries, and identify the economic channels through which ESG media reputation may affect stability. Our focus on ESG media reputation is motivated by several considerations. First, media attention to ESG issues has increased substantially in recent years. The frequency of ESG-related topics in major newspapers and academic journals rose by 54% between 2020 and 2022 (The Communications of Climate Transition, 2022), indicating a heightened awareness of the importance of ESG considerations in the financial sector. Second, media coverage plays a critical role in shaping public perceptions and thus can influence a bank's ESG reputation (Fombrun & Shanley, 1990). According to attribution theory, external observers draw inferences based on available information (Kelley & Michela, 1980). Accordingly, extensive media reporting on ESG issues can produce spillover effects that alter public perceptions of a

bank's ESG practices.[1] Third, ESG-specific reputational risk has been identified as a distinct theoretical construct that can amplify business risk more than other types of reputational risk (Lange & Washburn, 2012; Goss & Roberts, 2011; Chava, 2014; Oikonomou et al., 2014). This type of reputational risk is especially salient in the banking sector, where services are intangible and trust-based relationships are critical for maintaining customer confidence and loyalty. Understanding how ESG media reputation influences bank stability is, therefore, vital, as it uncovers vulnerabilities and informs strategies for building a more resilient and ethically responsible banking sector.

The interplay between ESG media reputation on bank stability can be elucidated through a variety of theoretical perspectives. The stakeholder view of ESG, resource-based theory, and stewardship theory collectively posit a positive relationship between ESG reputation and bank stability. The *stakeholder view* emphasizes that banks are accountable to a wide range of stakeholders beyond shareholders, including customers, employees, regulators, and the community (Freeman, 1984). Adopting stakeholder management practices can lead to more efficient contracting, reduced costs, and increased resilience through improved stakeholder relations, lower risk exposure, and reduced potential for conflicts (Freeman and Medoff, 1985; Jones, 1995). *Resource-based theory* suggests that a bank's ESG reputation is a valuable, rare, and inimitable asset that provides a competitive edge (Barney, 1991). Effective ESG initiatives can distinguish banks in the market, attract top talent, and secure loyal customers, which are crucial for sustained performance and stability. Conversely, poor resource management, such as inefficient capital allocation or inadequate investment in

[1] Our paper is based on the merit that a bank's ESG reputation, as reflected in media coverage, serves as a reliable indicator of its actual ESG performance. This assumption is reasonable because media reports, ESG ratings, and third-party analyses are typically based on disclosed information, regulatory filings, and industry assessments. Banks with strong ESG practices tend to be more transparent, engaging in voluntary disclosures and sustainability reporting (i.e., see Clarkson et al. (2008) and Dhaliwal et al. (2011) for more detailed literature), which increases their visibility in the media. While media coverage may have biases, it generally highlights institutions that demonstrate genuine ESG commitments, making it a reliable proxy for measuring actual ESG performance.

technology and human resources, can undermine these advantages and negatively affect stability. *Stewardship theory* highlights that managers focused on long-term interests are more likely to adopt strong ESG practices (Davis et al., 1997). Such managers promote a culture of ethical governance and responsibility, enhancing operational efficiency and stability.

Conversely, trade-off and agency theories suggest a more nuanced or potentially negative relationship between ESG reputation and bank stability. *Trade-off theory* views ESG initiatives as a potentially inefficient use of resources (Friedman, 1970), arguing that such initiatives may not contribute to bank stability since resources could be better spent on other value-maximizing activities. *Agency theory* further posits that managers engage in ESG activities to pursue their own objectives, such as generating media attention and personal reputational benefits, rather than to benefit the firm (Jensen and Meckling, 1976). Consequently, the association between ESG reputation and bank stability might be indirect or negative.

Given the conflicting theoretical perspectives, this paper aims to empirically explore how ESG media reputation influences bank stability, offering valuable insights into the management of this critical aspect of modern banking. To assess the relationship between ESG reputation and banking system stability at both the bank and systemic levels, we employ contemporary measures of systematic risk, including SRISK (Brownlees and Engle, 2017) and marginal expected shortfall (Acharya et al., 2017). Our analysis uses a comprehensive sample of 3,573 commercial banks from 36 developed and developing countries over the period from 1990 to 2022. Our findings reveal a strong and significant positive effect of ESG reputation on bank stability. Specifically, a one standard deviation increase in ESG reputation leads to an increase of 1.67 in bank stability.

Our findings remain consistent across a variety of tests, including horse race analysis between ESG reputation and climate change risk, alternative measures of bank ESG reputation

and stability, as well as several macroeconomic and institutional factors. To address potential endogeneity issues, we use a fixed effects model to account for unobserved differences across countries and time. Additionally, we perform instrumental variable regression analysis, staggered difference-in-differences analysis, and stacked event-by-event regressions, following the approach recommended by Baker et al. (2022). Specifically, we employ mandatory ESG disclosure developed by Krueger et al. (2024) as an exogenous shock to bank ESG reputation. Mandatory ESG disclosure influences the extent and quality of ESG-related information that banks report, which in turn affects their media visibility and public perception, making it a strong predictor of ESG reputation. It is also largely exogenous to the firms because disclosure requirements merely provide information and do not directly alter a bank's financial position, risk profile, or operational resilience. Rather, their impact on stability occurs through changes in ESG reputation. Since the primary channel through which mandatory disclosure affects bank stability is its influence on ESG reputation, it serves as a valid instrument to address endogeneity concerns in our analysis. In line with our main results, our analysis confirms the positive impact of ESG media reputation on bank stability.

We further investigate whether bank risk reduction serves as the economic channel that underpins our main hypothesis. An enhanced ESG reputation incentivises financial institutions to curtail credit, liquidity, and capital risk exposure through the adoption of ethical and sustainable operations. Enhanced ESG reputation impels banks to institute rigorous credit assessments and lending standards, reducing the likelihood of loan defaults, and improving asset quality (Houston and Shan, 2022; Neitzert and Petras, 2022). It also attracts more stable funding sources, promotes the maintenance of adequate liquidity buffers, and reducing liquidity risk exposure (Choi et al., 2023). Furthermore, a positive ESG reputation motivates banks to maintain higher capital ratios, increasing their resilience to unexpected losses and lowering the risk of insolvency (Neitzert and Petras, 2022). Overall, these risk mitigation efforts contribute

to increased bank stability and resilience to financial stress. In line with our hypothesis, we find that bank risk reduction increases with ESG reputation, and that it serves as a significant economic channel through which ESG reputation enhances bank stability.

In cross-sectional analyses, we explore whether the effect of ESG reputation on bank stability varies across countries with differing levels of societal trust, media coverage, and state ownership of the press. High societal trust fosters stakeholder engagement with organizations that align with their values, enhancing resilience to market fluctuations (Luo and Wang, 2021; Lins et al., 2017). Lower media coverage amplifies the influence of available information, as stakeholders rely more heavily on limited news (Dyck et al., 2008). Additionally, less state-owned press ensures more balanced reporting on ESG performance, as independent media sources are less influenced by government agendas (Djankov et al., 2003; Petrova, 2011). Our findings indicate the positive impact of ESG reputation on bank stability is indeed more pronounced in countries with higher societal trust, lower media coverage, and less state-owned press.

This research makes several key contributions. First, it broadens the scope of empirical ESG research by investigating the link between a bank's ESG reputation and its financial stability, with a particular focus on media-driven reputation. Prior studies have typically examined isolated ESG dimensions such as employee satisfaction (Edmans, 2011, 2012; Edmans et al., 2017), climate change (Dowell et al., 2000; Konar & Cohen, 2001), corporate philanthropy (Masulis & Reza, 2015), and consumer satisfaction (Luo & Bhattacharya, 2006; Servaes & Tamayo, 2013). By contrast, the role of a bank's ESG media reputation in influencing its risk and stability has remained underexplored. Our study is the first to explicitly link media-based ESG reputation to bank stability and document that ESG reputation serves as a stabilizing asset for financial institutions across countries. In doing so, we enrich the theory

of stakeholder value in banking by illustrating that intangible reputational capital stemming from ESG practices can translate into tangible risk reduction and financial resilience for banks.

Second, we shed light on the economic mechanisms and institutional factors through which ESG reputation affects bank stability, thereby contributing to the literature on the interplay between bank reputation and financial performance (Fombrun & Shanley, 1990; Barney, 1991; Roberts & Dowling, 2002). In particular, our analysis identifies a reduction in risk-taking behavior as a key channel: banks with robust ESG conduct engage in more prudent lending and investment practices, thereby lowering their idiosyncratic risk. Moreover, we uncover that the stabilizing influence of ESG reputation is more pronounced in countries with higher levels of societal trusts, lower media coverage, and less state-controlled press. By highlighting these interactions, our study contributes a nuanced understanding that banks' ESG initiatives yield the greatest stability benefits when supported by trusting stakeholders and transparent information environments.

Thirdly, we contribute to research methodology by employing the RavenPack database, which offers several advantages over alternative CSR measures (e.g., MSCI KLD ratings, Asset4) as an indicator of bank ESG reputation. The RavenPack, constructed by external observers based on media coverage of ESG issues, systematically searches public information sources. In contrast, KLD evaluates CSR using a list of over a hundred criteria. Consequently, the KLD approach relies heavily on a firm's own documents (e.g., company website, annual report, or CSR report) to assess ESG risk, which may be susceptible to managerial manipulation. Furthermore, RavenPack updates its data upon ESG news release, whereas KLD ratings are updated annually. This timeliness and objectivity make RavenPack a more precise and dynamic indicator of banks' ESG reputation and its effect on stability.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature on bank reputation, media reputation, bank ESG media reputation and banking

system stability. Section 3 outlines the methodology, data, and variables used in our empirical analysis. Sections 4 to Section 6 present the main results, robustness checks, and potential mechanisms through which ESG media reputation affects banking system stability. Section j6 discusses the policy implications of our findings and concludes the paper.

2. Literature review and hypothesis development

2.1 The role of bank reputation

It has long been acknowledged that intangible assets constitute a substantial share of a company's overall value.While discussions on intangible assets often focus on intellectual property (such as patents and trademarks) or brand-related factors (such as brand extensions and customer loyalty), scholars such as Barney (1991), Dierickx and Cool (1989), and Hall (1993) argue that corporate reputation can also serve as an intangible asset. A strong and positive reputation can provide firms with a lasting competitive advantage.

Reputation is studied across multiple disciplines, including sociology and game theory, each offering its own conceptual interpretation. Building on previous research, we define reputation as stakeholders' assessment of a firm based on their emotions, perceived level of esteem, and knowledge about the company (Dollinger et al., 1997; Fombrun, 2005; Hall, 1992). A firm's reputation develops through its interactions with stakeholders and the dissemination of information about its actions, including insights shared by specialized information intermediaries (Daellenbach et al., 1998; Fombrun, 1996; Logsdon & Wartick, 1995). Reputation is shaped not only by what a company says but, more importantly, by what it does (Caudron, 1997; Fombrun & Shanley, 1990). As Hall (1993) posits that a strong reputation is "usually the product of years of demonstrated superior competence." However, reputation does not always align with actual competence. For example, Argenti (1998) highlight how Dow Corning’s product reputation suffered during the silicone breast implant controversy, despite

scientific studies from sources such as the *New England Journal of Medicine* and *Harvard Medical School* failing to establish a clear link between the implants and health concerns.

Within the financial service sector, Hall (1992)'s survey of 847 UK-based chief executives identifies reputation as the most critical intangible resource among thirteen candidates. This sentiment is reinforced in the Allianz Risk Barometer, which places loss of reputation among the top ten business risks, and in the top five for financial service firms. These rankings highlight the importance of reputation in financial services which is crucial in mitigating the negative consequences of information asymmetries (Fiordelisi et al., 2013).

Reputation is especially vital for banks because their services are intangible and their principles are based on trust, loyalty, and confidence. Customers rely on banks to manage their money and transactions securely and responsibly, a trust that is fundamentally built on the institution's reputation. A robust reputation reassures customers, investors, and other stakeholders of the institution's stability and reliability. For instance, Carè et al. (2024) emphasize that a higher reputation is essential for a bank's success, as it significantly impacts trust, credibility, and stakeholders' perceptions. Furthermore, Bushman and Moerman (2012) reveal that borrowers associated with highly reputable banks demonstrate significantly greater earnings persistence compared to those connected with less reputable banks. This suggests that the profitability reported by borrowers at the initiation of a loan is more likely to be sustained when dealing with high-reputation banks.

Nevertheless, accurately measuring a bank's reputation remains a challenging endeavor, and a universally accepted approach has not been established. Existing literature suggests two primary methodologies for reputation assessment. The first is the Reputation Quotient (RQ), introduced by Fombrun et al. (2000), which is based on stakeholder theory. This method identifies and scores 20 reputation-influencing factors through surveys. Despite widespread acceptance, the RQ's inherent subjectivity may limit accurate quantification of reputation risk.

The second approach, the operational loss event, quantifies reputation risk by considering losses triggered by operational failures (Biell & Muller, 2013). However, this method may not fully encapsulate the public's perception of a firm's reputation. The 'reputation-reality gap', as proposed by Eccles et al. (2007), implies that an organization's reputation is inherently perceptual. Hence, the reputation as perceived by the public could diverge significantly from the firm's actual reputation.

2.2 Media Reputation

Media reputation plays a crucial role in shaping stakeholders' perceptions of firms, particularly for those who rely heavily on media for understanding organizations, their activities, and their involvement in public issues. This dynamic helps mitigate information asymmetries between firms and stakeholders, fostering greater transparency and understanding within the public sphere (Deephouse, 2000, Fombrun and Shanley, 1990, Weigelt and Camerer, 1988). Media reputation significantly influences stakeholders' perceptions of firms by framing their understanding through reported information. This information encompasses evaluations from diverse stakeholder groups and descriptions of organizational activities (Rindova et al., 2005; Deephouse, 2000; Carroll and McCombs, 2003; Murphy, 2010). Positive media coverage of a company's activities and evaluations enhances its media reputation, thereby fostering more favorable public perceptions of the company's attributes (Deephouse, 2000; Lee and Carroll, 2011).

Furthermore, Eccles et al. (2007) argue that firms need to exceed an awareness threshold, while simultaneously maintaining a positive media image. Failure to do so can intensify the adverse effects of unfavorable news, amplifying the impact on their existing negative reputation, thereby emphasizing the importance of media perception. In this context, Dyck et al. (2008) propose that the media serves as a potent external governance mechanism. Its potential for uncovering and publicizing corporate misbehavior may induce firms to pursue

less risky strategies. His notion aligns with Bednar (2012) media spotlight theory, suggesting that amplified media attention can escalate scrutiny and pressure for firms, steering them towards adopting more risk-averse behaviors to sidestep potential criticism. Deephouse (2000) further expounds that the media provides a platform for dialogue between firms and stakeholders. It aggregates and consolidates various stakeholders' evaluations, thus serving as a comprehensive source of reputation. This observation is underpinned by Du et al. (2010) assertion that external communications, such as media coverage, hold a significant level of credibility and objectivity, given they are not entirely within a firm's control.

2.3 ESG media reputation and bank stability

The significance of ESG media reputation has been widely acknowledged in numerous theories and supported by various empirical studies. For instance, stakeholder view theory on ESG suggests that banks have responsibilities extending beyond shareholders to encompass a broader spectrum of stakeholders, including customers, employees, regulators, and the community (Freeman, 1984). By prioritizing ESG practices, banks can foster trust and loyalty among these stakeholders, thereby enhancing their reputation and contributing to greater stability. Similarly, stewardship theory further emphasizes the importance of management prioritizing the long-term interests of the bank over short-term gains (Davis et al., 1997). Managers who adopt stewardship principles are likely to implement robust ESG practices, recognizing the long-term benefits of sustainable and ethical operations. This approach fosters a culture of responsibility and ethical governance, mitigating risks, improving operational efficiency, and ultimately leading to greater bank stability. From a resource-based theory perspective, a bank’s ESG reputation is a valuable and rare resource that provides a competitive advantage (Barney, 1991). This theory further suggests that ESG initiatives enables banks to stand out in the market, attract superior talent, and retain loyal customers, contributing to sustained operational performance and financial stability. In contrast, inefficient resource

utilization - such as poor financial capital allocation, underutilized human resources, and inadequate technological investment - can erode these benefits and reduce bank stability.

Empirical studies corroborate this claim, showing that companies with superior ESG practices tend to be associated with lower levels of firm risk (Albuquerque et al., 2019; Jia et al., 2020; Kim et al., 2014). Specifically, Minor and Morgan (2011) point out that engaging in ESG during normal times is generally seen as a mere expense. However, when an organisation faces adverse events, the moral reputation capital built up through past ESG activities changes public perception. Rather than laying the blame on inept management, the issue is more likely to be perceived as bad luck. This shift in perception serves as a safeguard, protecting the company from financial turmoil and softening the severity of regulatory oversight, thereby shielding the company from additional risks.

Conversely, trade-off and agency theories suggest a weaker or even negative relationship between ESG reputation and bank stability. Trade-off theory contends that ESG initiatives may represent an inefficient allocation of resources (Friedman, 1970), as these efforts might not directly enhance stability and could divert resources from activities that maximize firm value. Agency theory further suggests that managers may engage in ESG practices primarily to serve their own interests - such as gaining media attention or enhancing their personal reputation - rather than to improve the firm's overall well-being (Jensen & Meckling, 1976). As a result, the link between ESG reputation and bank stability may be indirect or even negative.

Given these contradictory perspectives, the central null hypothesis is:

H: Bank ESG reputation does not impact on banking system stability.

3. Data and variable descriptions

3.1 Data sources, sampling procedure and sample selection

We retrieve quarterly accounting data for global commercial banks from SNL Global Banking, a comprehensive international bank database provided by Standard and Poor (S&P) Global Marketplace. Real-time media news data at the bank level are sourced from RavenPack, while market-level data for calculating market-based bank stability measures are obtained from DataStream. Macroeconomic indicators and national governance index data are collected from the World Development Indicators by the World Bank.

To construct our final sample, we employ a two-step procedure. First, we exclude banks with fewer than three consecutive bank-quarter observations and those with negative asset, loan, and deposit values. Second, we treat target and acquiring banks separately if their data are reported individually and exclude target banks if their unconsolidated data are unavailable after a merger involving a non-bank acquirer. To prevent survivorship bias, we utilize unbalanced bank-specific panel data to encompass as many banks as possible, including those not in operation throughout the entire sample period.

Our sample spans 32 years (1990-2022) and includes 3,573 listed and non-listed commercial banks across 36 developed and developing countries. We then refine our sample by excluding non-listed commercial banks and manually merging it with DataStream using bank names to acquire the necessary data for computing systemic stability measures. The final selction results in a sample of 425 listed commercial banks across 36 countries.

3.2 Bank ESG media reputation

We employ RavenPack, a leading global news database, to generate real-time economic and business news at both country and firm levels (e.g., Kolasinski et al., 2013; Shroff et al., 2014; Dai et al., 2015; Dang et al., 2015; Bushman et al., 2017). RavenPack aggregates and analyses information from prominent global news providers, major real-time newswires, online

media, and credible sources, such as Dow Jones Newswires, all editions of the Wall Street Journal, Barron's, and numerous other publishers and web aggregators, regional and local newspapers, blog sites, press releases, regulatory disclosures, and government and regulatory updates. RavenPack provides news flows and informational content for over 34,000 companies across 200 countries, encompassing a diverse array of facts, opinions, and business disclosures, solidifying its position as a leading provider of news processing solutions.

To ascertain the informational content of a news article, RavenPack generates company relevance scores and event-novelty scores, ranging between zero and one hundred. Higher values represent greater relevance of a news article to a company or a more recent release of a specific news event. Company relevance scores enable the extraction and calculation of aggregate counts of news articles related to a specific firm, while event-novelty scores facilitate the isolation and focus on the initial news article in a series of similar articles concerning a particular news event for the firm.

To calculate bank ESG media reputation through media news, we consider all news items that cover a bank's ESG activities using the list of 14 groups based on RavenPack's classification of ESG events. In addition, we use only news items with relevance ratings of 100, signifying that the bank is the primary subject of the article. Furthermore, as media-disseminated news, including bank-disclosed news, has been shown to directly impact bank managerial decisions (Fang and Peress, 2009; Bushee et al., 2020; Dai et al., 2015), our media news sample incorporates both media-discovered news and bank-disclosed news disseminated via the media, including press releases.

We employ the Janis-Fadner coefficient of imbalance to aggregate recording units into annual measures suitable for statistical analysis (Janis & Fadner, 1943). Originally applied to analyse wartime propaganda, this measure evaluates the relative proportion of favourable to

unfavourable articles while accounting for the total number of articles published within a given timeframe. In line with prior research, each article is assigned equal weight within the measure. The resulting variable, known as the coefficient of media favourableness (*ESG_REPUTATION*), is formulated as follows:

$$Coefficient\ of\ media\ favorableness = \begin{cases} \frac{f^2 - fu}{(total)^2}\ if\ f > u \\ 0 \quad if\ f = u \\ \frac{(fu - u^2)}{(total)^2}\ if\ u > f \end{cases} \tag{1}$$

Where f = number of favourable recording units for a bank in a given quarter; u = number of unfavourable recording units for a bank in that quarter; and total = the total number of recording units for the bank in that quarter. The range of this variable is (-1, 1), where 1 indicates all positive coverage, -1 indicates all unfavourable coverage, and 0 indicates a balance between the two over the quarter.

3.3 Banking system stability measures

To examine bank stability, we utilize various measures Z-index, marginal expected shortfall, and SRISK.

3.3.1 Z-index

The Z-index (*Z_SCORE*), serves as an indicator of a bank's capacity to endure financial distress. It specifically quantifies the number of standard deviations beneath the mean that a bank's profits would need to plummet to deplete its equity capital (Khan et al., 2017). Computed as the sum of the return on assets and the capital-to-asset ratio, divided by the standard deviation of asset returns, the Z-index offers valuable insights into a bank's stability. The formula for the Z-index calculation is as follows:

$$Z - index_{i,t} = \frac{ROA_{i,t} + (\frac{Equity_{i,t}}{Assets_{i,t}})}{STDEV(ROA_{i,t})} \tag{2}$$

Where, the return on assets (ROA) is a financial metric that gauges a bank's profitability by expressing net income as a percentage of total assets. The standard deviation of asset returns is computed using a three-quarter rolling window. The Z-index, signifying the inverse of a bank's insolvency probability, is derived from the ROA and the capital-to-asset ratio divided by the standard deviation of asset returns. This unbiased measure can be applied universally, as all banks face the same insolvency risk when capital is exhausted. A higher Z-index denotes enhanced stability for a bank, as it implies a greater likelihood of the bank remaining solvent amid financial stress.

3.3.2 Marginal expected shortfall

The marginal expected shortfall (*MES_1%VAR)* for a bank is defined as the anticipated equity loss the bank would sustain in the short term, provided a market loss surpassing its Value-at-Risk (VaR) at the α% confidence level (Acharya et al., 2017). In essence, the *MES_1%VAR* quantifies the supplementary losses a bank is projected to incur beyond its VaR during an extreme market downturn. The computation for *MES_1%VAR* can be derived using the following formula:

$$MES_{i,t} = E_t(R_{i,t+1} | R_{m,t+1} < q_{\alpha,t}(R_{t+1}) = C) \quad (3)$$

In our study, we employ the constant C to represent the market's "tail risk" definition, measured as the Value at Risk at the 1% thresholds. The daily (log) stock return for firm i on day t is designated as Ri,t, while Rm,t signifies the daily market index return. We compute the expected shortfall (ES) of the index as the anticipated loss, conditional upon the loss surpassing the level of C. The formula for ES can be expressed as follows:

$$ES_t = E_t(R_{m,t+1} | R_{m,t+1} < C) \quad (4)$$

When a bank constitutes a portion of the market, the marginal expected shortfall can be determined by differentiating the market's expected shortfall (ES) with respect to the bank's market share or capitalization. Consequently, the marginal expected shortfall serves as an

indicator of the bank's systemic risk contribution. In comparison to other metrics like value at risk, marginal expected shortfall offers several benefits, such as accommodating extreme events without exclusion, not relying on a normal distribution assumption, and accurately predicting the worst-performing banks during crises, as demonstrated in studies like Acharya et al. (2012). Additionally, marginal expected shortfall is simple to calculate and interpret. A higher marginal expected shortfall (*MES_1%VAR)* signifies decreased bank stability.

3.3.4 SRISK

We employ SRISK as a measure of banking system stability, which is defined as the anticipated capital shortfall of a financial entity contingent upon an extended market decline (Brownlees and Engle, 2017). This measure surpasses systemic expected shortfall, as proposed by Acharya et al. (2017), in terms of its predictive ability and does not depend on any structural assumptions. Mathematically, SRISK is expressed as:

$$SRISK_{i,t} = kD_{i,t} - (1-k)W_{i,t}(1 + LRMES_{i,t}) \quad (5)$$

We gather daily data for the book value of debt *(D*) and the market value of equity (*W*) of financial entities within each country, in addition to their prudential capital fraction (*k*). Utilizing the quarter-end values for each country, we compute the expected capital shortfall of the entire banking system employing the SRISK measure. To accommodate variations in the scale of economies, we normalize this systemic risk measure by the country's real Gross Domestic Product (GDP).

3.4 Correlation matrix and descriptive statistics

Table 1 presents the descriptive statistics (Panel A) and the correlation matrix (Panel B) for the variables used in our baseline regression model (introduced later in Equation (6)). These include bank ESG reputation, bank stability measures, and other control variables. The mean values of *Z_SCORE*, *MES_1%VAR* and *SRISK* are 7.727, 0.036 and 0.257, respectively. The *Z_SCORE* suggests that, on average, a bank's profits would need to decline by approximately

77 times their standard deviation to fully erode its equity. The mean value of bank ESG reputation is 0.155, with notable variation across countries**.** Customer deposits, on average, account for 66.9% of the total bank funding in the sample. The average book equity is 8.5% and bank size (logarithm of total assets in million dollars) has an average value of 16.928. Finally, non-interest income, on average, accounts for 30% of the total operating income (*REV_DIV*) for the sample with the 75th percentile at 38.4%.

Panel B of Table 1 presents the correlation matrix of the variables used in our baseline regression model. We find that *Z_SCORE* exhibits negative correlation with the other two bank stability measures, particularly with *MES_1%VAR* (-0.073) and *SRISK* (-0.007). Furthermore, we note that ESG reputation (*ESG_REPUTATION)* displays a positive correlation with *Z_SCORE* (0.017) and negative correlations with *MES_1%VAR* (-0.069) and *SRISK* (-0.068). These findings provide preliminary evidence of a positive association between bank ESG reputation and banking system stability.

<Insert Table 1 here>

Table 2 presents reports the mean values of all variables used in the baseline regression (Equation 6), categorised by country. The results illustrate that Egypt's banks have the highest ESG reputation with a mean value of 0.3502, whereas Portugal's banks have the least ESG reputation with a mean value of -0.2980. In terms of bank stability, Japan emerges as the most stable banking system country with a mean *Z_SCORE* value of 8.4535. In contrast, Israel has the least stable banking system, with a mean *Z_SCORE* of 6.7717 and *MES_1%VAR* of the highest of 0.1217. Consistent with prior research, the U.S. boasts the highest representation within our sample, comprising 10,663 bank-quarter observations, while Mexico has the fewest number of bank-quarter observations with a mere count of 8.

<Insert Table 2 here>

4. ESG reputation and bank stability

4.1 Baseline results

As a starting point, we estimate the impact of bank ESG reputation on bank stability by employing the following regression model:

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{i,c,t} + \beta_2 Bank\ Controls_{i,c,t} + \beta_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (6)$$

where the subscripts *i,c,t* denote bank, country and quarter, respectively. Measures of $Bank\ Stability$ include Z-index *(Z_SCORE),* marginal expected shortfall (*MES_1%VAR)* and systematic risk *(SRISK).* ESG reputation (*ESG_REPUTATION*) is the Janis–Fadner (J–F) index of media favourableness for a bank's ESG issues in a given quarter. *Bank Controls* include bank size, book equity ratio, customer deposits ratio, bank cost efficiency and bank revenue diversification. *Macro Controls* include explicit depositor insurance dummy and GDP growth, to control for differences in explicit depositor insurance scheme and macroeconomic conditions across countries. In the robustness tests discussed in Section 6, we present the results when controlling for further institutional and macro-economic controls including the voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and the control of corruption in a particular country.

The literature suggests that bank size is a key determinant of bank stability, although there is no consensus on the direction of this relationship (Berglund & Mäkinen, 2019; Micco et al., 2007; Pasiouras & Kosmidou, 2007). We also consider book equity ratio as a control variable, as it has been argued that banks with higher capital buffers are more stable (Goddard et al., 2004; Pasiouras & Kosmidou, 2007). Another factor that may impact bank stability is a bank's dependence on customer deposits, which we control for as a percentage of total funding. This reflects the financial structure of a bank and its potential impact on stability. As inefficient management can also lead to financial distress, we control for bank cost efficiency, as higher

funding costs may indicate inefficiencies (Berger & DeYoung, 1997; Moutsianas & Kosmidou, 2016). Finally, we consider bank revenue diversification as a proxy for a bank's business model, which can also affect its stability (Dietrich & Wanzenried, 2011). A detailed definition of these variables can be found in Appendix Table A1. To control for unobserved heterogeneity, we employ country and quarter fixed effects (v_c and μ_t, respectively) to mitigate concerns regarding omitted variable bias. The results (from the corresponding author) remain qualitatively unchanged when we use bank and quarter fixed effects. The random error is captured by $\varepsilon_{i,c,t}$. All continuous variables are winsorized at the 1st and 99th percentile to avoid extreme outliers.

The regression analysis for Equation 6 is presented in Table 3, which shows the impact of ESG reputation on different proxies for bank stability. Column 1 exhibits the findings associated with the banks' *Z_SCORE*. Columns 2 and 3 depict the outcomes for *MES_1%VAR* and *SRISK*, respectively. Across all specifications, the coefficients for *ESG_REPUTATION* are statistically significant and positive, supporting the notion that implementing *ESG_REPUTATION* enhances bank stability. In terms of economic significance, the results in Column 2 reveal that a one standard deviation increase in ESG reputation will lead to an increase of 1.67 in bank stability (measured by *Z_SCORE*). A similar effect is observed for the alternative measures of bank stability. These outcomes provide robust evidence of the affirmative impact that the ESG reputation has on bank stability.

Regarding the control variables, our results align with previous studies. Consistent with Laeven and Levine (2009), we find that greater bank size is associated with greater systemic risk, suggesting that large banks tend to engage more in risky activities and be financed more with short-term debt, which makes them more vulnerable to generalized liquidity shocks and market failures such as liquidity shortages and fire sales (Kashyap et al., 2002, Shleifer and Vishny, 2010, Gennaioli et al., 2013, Boot and Ratnovski, 2012). Higher bank dependence on customer deposits is associated with greater stability, as evidenced by the statistically

significant coefficient of *DEPOSIT_RATIO* in all specifications. Moreover, *COST_EFFICIENCY* has a negative correlation with both accounting and market stability measures, indicating that lower bank efficiency, as reflected in a higher cost-to-income ratio, leads to less stable banks (Moutsianas & Kosmidou, 2016).

[Insert Table 3 Here]

In sum, the results provide strong support for the notion that ESG reputation has a positive impact on bank stability. The findings also highlight the importance of factors such as bank dependence on customer deposits and cost efficiency in shaping bank stability.

4.2 Addressing endogeneity concerns

4.2.1 Instrumental variable analysis

It is likely that the relation between ESG reputation and bank stability is driven by reverse causality. In particular, more stable banks may receive greater media coverage and public attention, which could enhance their perceived ESG reputation regardless of their actual ESG efforts. This increased visibility may create a bias in our results, as the observed link between ESG reputation and bank stability could stem from stability driving reputation. Consequently, the effect of ESG reputation on bank stability may be overstated if the underlying cause is the bank's financial strength and resilience rather than its ESG initiatives.

To address this potential endogeneity concern, we conduct several tests. First, we include industry-level, macro-economic and bank-specific control variables in main regressions and robustness tests to mitigate the potential omitted variable bias. We also control for country and quarter fixed effects in the panel regressions to account for unobserved heterogeneity across countries. We further employ an instrumental variables regression approach using the World Value Index as an instrumental variable for bank ESG reputation. The World Value Index is extracted from the World Values Survey, which is an extensive research tool comprising 290 questions and measuring cultural values, attitudes, and beliefs

towards gender, family, and religion, as well as attitudes and experiences related to poverty, education, health, and security, social tolerance and trust, and perspectives on multilateral institutions. This index captures the prevailing cultural and social norms in a given country, which shape public expectations regarding corporate behavior and social responsibility. The index satisfies the relevance condition because banks operating in countries with stronger social values and higher public emphasis on social and environmental responsibility are more likely to develop and maintain a positive ESG reputation to align with stakeholder expectations. At the same time, the exclusion restriction is also plausible: while the cultural values embedded in the World Value Index influence how ESG reputation is formed or perceived, they do not directly affect a bank's financial stability unless through its impact on bank ESG reputation. Therefore, the World Value Index serves as a valid instrument that allows us to isolate the exogenous variation in ESG reputation on bank stability.

We present the results of the instrumental variable regression analysis in Table 4. The first-stage analysis results show that the World Value Index has a positive and significant relationship with bank ESG reputation, thus satisfying the relevance condition. The *F*-statistics for the excluded instruments in Table 4 further indicate that bank stability is directly influenced by the World Value Index through their effect on bank ESG reputation. Consequently, the issue of weak instruments is not a concern in our analysis. The outcomes of the second-stage instrumental regression reinforce our initial observation of the positive association between ESG reputation and bank stability. Economically, when addressing the possible endogeneity between ESG reputation and bank stability, the influence of ESG reputation on tax avoidance bank stability is amplified, evidenced by the increase in the magnitudes of the coefficients of *ESG_REPUTATION_fitted* in the respective columns. This reiterates that bank ESG reputation has a positive and statistically significant impact on bank stability.

[Insert Table 4 Here]

4.2.2 Mandatory ESG disclosure

In a further attempt to address endogeneity, we employ mandatory ESG disclosure data as a plausibly exogenous shock to bank ESG reputation to assess the causal impact of ESG reputation on banking system stability. Mandatory ESG disclosure influences the extent and quality of ESG-related information that banks report, which in turn affects their media visibility and public perception, making it a strong predictor of ESG reputation. It is also largely exogenous to the firms because disclosure requirements merely provide information and do not directly alter a bank's financial position, risk profile, or operational resilience. Rather, their impact on stability occurs through changes in ESG reputation. Since the primary channel through which mandatory disclosure affects bank stability is its influence on ESG reputation, it serves as a valid instrument to address endogeneity concerns in our analysis.

We collect data from Krueger et al. (2024). Over the sample period from 2000 to 2021, there were 34 countries who have introduced mandatory ESG disclosure. Given those national mandatory ESG disclosure are largely independent of individual bank stability, exploiting such events comes close to a natural experiment. We therefore conduct staggered difference-in-differences analysis. The first difference is the change in ESG media reputation before and after the introduction of mandatory ESG disclosure. The second difference is on how a bank's increased ESG media reputation (i.e., due to mandatory ESG disclosure requirements) influences their bank stability as opposed to those in countries without mandatory ESG disclosure rules in a given period. We estimate the effect of enhanced ESG reputation on bank stability as the difference in these two.

To ensure robustness, we also employ a stacked event-by-event regression as an alternative research design. Recent studies suggest that the treatment effects in standard staggered difference-in-differences regressions might be biased if already treated units are used as comparison units for later treated units (i.e., Baker et al., 2022; Cengiz, et al., 2019).

Following the approach of Cengiz, et al. (2019), we create a separate data set for each country mandatory ESG disclosure rule with each excluding already treated countries (i.e., those that already introduced mandatory ESG disclosure rule) from the remaining sample periods. In these data sets, we use a 10-quarter estimation window ($t-5$ to $t+5$) around the respective mandatory ESG disclosure and then stack these event-specific data sets in relative time to calculate an average treatment effect across these events. To perform the analysis using mandatory ESG disclosure, we use the following model.

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1(TREATMENT * POST)_{c,t} + \beta_2 TREATMENT_{c,t} + \beta_3 POST_{c,t} + \beta_4 Bank\ Controls_{i,c,t} + \beta_5 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (7)$$

Where the subscripts *i,c,t* denote bank, country and quarter respectively. $Bank\ Stability$ is substituted by *Z_SCORE, MES_1%VAR* and *SRISK*. *TREATMENT* is an indicator variable which equals to 1 for countries introducing mandatory ESG disclosure and zero otherwise during the sample periods. *POST* is a dummy variable equal to 1 if this is one to five quarters post mandatory ESG disclosure and zero otherwise. *Bank Controls* and *Macro Controls* are the same variable discussed in section 3.1. We control for both country and quarter fixed effects.

Table 5 reports the results of the staggered difference-in-differences (DID) designs. Panel A reports staggered DID results while Panel B reports the results using stacked event-by-event models suggested by Baker et al. (2022). The coefficient for *TREATMENT*POST* is positive and statistically significant with *Z_SCORE* and negative and statistically significant with *MES_1%VAR* and *SRISK*. This confirms that an exogeneous increase in news, and hence more ESG reputation, resulting from mandatory ESG disclosure is associated with an increase in bank stability.

[Insert Table 5 Here]

Our next tests aim to strengthen the causal interpretation of our baseline results. The staggered difference-in-differences and stacked event-by-event analysis require that treatment and control firms follow parallel trends in the outcome variable before the treatment. To validate the parallel trends assumption, we incorporate lead and lag terms in dynamic DiD regressions (Klasa et al., 2018, Li et al., 2018). Specifically, we generate a new set of indicator variables: $MandateESG_{-5}$, $MandateESG_{-4}$, $MandateESG_{-3}$, $MandateESG_{-2}$, $MandateESG_{-1}$, $MandateESG$, $MandateESG_{+1}$, $MandateESG_{+2}$, $MandateESG_{+3}$, $MandateESG_{+4}$, and $MandateESG_{+5}$. Variables with positive subscripts reflect whether a country will introduce mandatory ESG disclosure in the next one to five quarters, while the remaining variables capture whether the mandatory ESG disclosure occured in the current quarter or in the one to five quarters prior.

We have presented the results of parallel trend tests in Table IA2 and their plots in Figure IA1 of the Appendix. Table IA2 shows that the effect of *MandateESG* remains positive and statistically significant with *Z_SCORE* and negative and statistically significant with *MES_1%VAR* and *SRISK*. The coefficients for $MandateESG_{-5}$ through $MandateESG_{-1}$ are close to zero, suggesting no pre-trend bias. In contrast, the coefficient for $MandateESG_{+5}$ is negative and statistically significant with *MES_1%VAR* and *SRISK* and the magnitudes are similar to the main estimates from the baseline results. This indicates that bank stability improves only after the mandatory ESG disclosure, not before. These findings provide some evidence of a causal, positive effect of bank ESG reputation on bank stability.

4.3 Path analysis: risk reduction channel

Bank ESG news reputation plays a crucial role in promoting financial stability by reducing bank risk through various channels. A strong ESG news reputation fosters trust and loyalty among customers and attracts long-term, socially responsible investors, contributing to a stable funding and capital base for banks (Jin et al., 2017). Furthermore, adherence to ESG

regulations and effective management of ESG risks signal a bank's commitment to compliance and overall risk management capabilities, leading to enhanced stability (Bénabou & Tirole, 2010). To empirically investigate this conjecture, we employ a system of equations through path analysis. The path model is mathematically expressed as follows:

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{i,c,t} + \beta_2 Liquidity\ Risk_{i,c,t} + \beta_3 Capital\ Risk_{i,c,t} + \beta_4 Asset\ Risk_{i,c,t} + \beta_6 Bank\ Controls_{i,c,t} + \beta_7 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (8)$$

$$Liquidity\ Risk_{i,c,t} = \alpha + \gamma_1 ESG\ Reputation_{i,c,t} + \gamma_2 Bank\ Controls_{i,c,t} + \gamma_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (9)$$

$$Capital\ Risk_{i,c,t} = \alpha + \delta_1 ESG\ Reputation_{i,c,t} + \delta_2 Bank\ Controls_{i,c,t} + \delta_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (10)$$

$$Asset\ Risk_{i,c,t} = \alpha + \theta_1 ESG\ Reputation_{i,c,t} + \theta_2 Bank\ Controls_{i,c,t} + \theta_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (11)$$

In these equations, the variables are identical to those in Equation (6), with the exception of *Liquidity Risk* which is measured by the net stable funding ratio (*NSFR*), *Capital Risk* (the ratio of bank regulatory capital over total assets) and *Asset Risk* (the ratio of non-performing loan over total assets). The *NSFR* is calculated by dividing a bank's available stable funding (*ASF*) by its required stable funding (*RSF*), where *ASF* is a weighted sum of funding sources based on their stability, and *RSF* is a weighted sum of uses of funding sources based on their liquidity. We adopt the approach of Vazquez and Federico (2015) to assign specific weights to all bank's balance sheet and off-balance sheet items. A higher *NSFR* indicates lower bank liquidity risk. As higher *NSFR* and the ratio of bank regulatory capital over total assets indicate lower liquidity risk and capital risk, we interact these variables with minus one to reflect greater risk associated with higher ratios. The direct path from *ESG Reputation* to *Bank Stability* is denoted as β_1, while the path coefficients γ_1, δ_1 and θ_1 represent the magnitude of

the path from *ESG Reputation* to *Bank Stability*. The magnitude of the paths from *Liquidity Risk, Capital Risk and Asset Risk* to *Bank Stability* are denoted as β_2, β_3 and β_4, respectively while $\gamma_1 * \beta_2$, $\delta_1 * \beta_3$ and $\theta_1 * \beta_4$ quantify the total magnitude of the indirect path from *ESG reputation* to *Bank Stability* mediated through bank risk reduction channel. We depict this relationship in Figure 1 below.

<Insert Figure 1 here>

We present the estimation results of Equations (8) to (11) in Table 6, with Panel A showing the results obtained using *Z_SCORE* as the measure of bank stability, and Panels B and C demonstrating the outcomes obtained using *MES_1%VAR* and *SRISK* as the proxy for bank stability, respectively. Our results provide further confirmation of the findings from the baseline analysis, revealing a positive association between the ESG reputation and bank stability. Moreover, our analysis suggests that bank risk reduction has a positive correlation with ESG reputation, and it serves as a significant mediator for the effect of ESG reputation on bank stability. Specifically, we find that the mediating effect through bank risk reduction accounts for 21.12%, 5.88% and 2.22% (Panel A) of the total effect on bank stability, respectively. These outcomes provide robust evidence that ESG reputation influences bank stability primarily through the pathway of bank risk reduction.

<Insert Table 6 here>

4.4. Cross-sectional tests

4.4.1 Media coverage

The interplay between ESG reputation and bank stability is subject to the influence of various factors, including the extent of media coverage. We posit that for banks with heightened media coverage, the positive impact of ESG reputation on bank stability might be less pronounced. This phenomenon can be attributed to increased scrutiny, higher expectations, saturation and competition, sensitivity to negative news, and short-term focus (Dyck et al.,

2008). Greater media coverage exposes banks to more scrutiny, which may highlight discrepancies between ESG commitments and performance, leading to reputational damage and reduced stability (Flammer, 2013). Furthermore, extensive media coverage raises public and investor expectations, making it harder for banks to satisfy stakeholders even with a strong ESG reputation (Ioannou & Serafeim, 2015). Additionally, a saturated ESG information environment can intensify competition among banks, making it difficult for individual banks to reap the benefits of a strong ESG reputation (Hawn & Ioannou, 2016). Heightened sensitivity to negative news in countries with more media coverage can exacerbate the negative consequences of ESG-related incidents (Bromley & Powell, 2012). Lastly, media coverage often emphasizes short-term events and performance, leading to short-termism among banks and a reduced focus on long-term sustainable practices that contribute to stability (Bushee et al., 2018). To investigate this conjecture, we employ the following regression model:

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{i,c,t} + \beta_2 ESG\ Reputation_{i,c,t} * Media\ Coverage_{i,c,t} + \beta_3 Media\ Coverage_{i,c,t} + \beta_4 Bank\ Controls_{i,c,t} + \beta_5 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (12)$$

In Equation 12, we introduce a new variable *Media Coverage (MEDIA_COVERAGE)* which is defined as log of one plus the number of a bank's news each quarter. As can be seen from Panel A of Table 7, the coefficients of the interaction term between *ESG Reputation* and *Media Coverage* are statistically significant and negative with *Z_SCORE* and positive and statistically significant with *MES_1%VAR* and *SRISK*. This suggests a moderation of the positive impact of ESG reputation on bank stability for banks with more media coverage. The control variables mostly yield similar results to Table 3.

<Insert Table 7 here>

4.4.2 Media state ownership

Our next analysis investigates whether the impact of ESG reputation on bank stability is less pronounced in countries whose media is owned by the state. We argue that the positive impact of ESG reputation on bank stability may be less pronounced in countries where the press is predominantly owned by the government due to factors such as limited media freedom, and biased reporting. In such countries, government-controlled media may downplay or suppress negative information related to banks' ESG performance, leading to a lack of transparency and accountability (Djankov et al., 2003). Consequently, banks may face fewer consequences for poor ESG practices, which can reduce their motivation to enhance their ESG reputation and contribute to long-term stability.

Moreover, government-controlled media often prioritizes the interests of the ruling regime and may not provide a balanced or accurate representation of banks' ESG performance (Gehlbach & Sonin, 2014). This lack of impartial reporting can impede stakeholders, such as investors, customers, and regulators, from making informed decisions, which in turn may weaken the relationship between ESG reputation and bank stability (Petrova, 2008). Finally, in countries where the government owns the press, there may be limited opportunities for independent or critical voices to scrutinize banks' ESG performance. This can result in a lack of public pressure and demand for banks to improve their ESG reputation (Besley & Prat, 2006), ultimately diminishing the positive impact of ESG reputation on bank stability To investigate this conjecture, we employ the following regression equation:

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{i,c,t} + \beta_2 ESG\ Reputation_{i,c,t} * Gov\_Owned\_Media_{c,t} + \beta_3 Gov\_Owned\_Media_{c,t} + \beta_4 Bank\ Controls_{i,c,t} + \beta_5 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (13)$$

We employ media ownership and concentration data from Djankov et al. (2003) and Houston et al. (2011). Media state ownership (*STATE_OWNERSHIP*) is a dummy equal to one,

if the top radio station is state owned for given quarter, and zero otherwise. The results, presented in Panel B of Table 7, show that the coefficient of the interaction term is negative and significant for *Z_SCORE* measure and positive and significant for *MES_1% VAR* measures (thus implying less bank stability). This suggests that state ownership of media can impede the positive relation between ESG reputation and bank stability, confirming our conjecture.

4.4.3 Country-level of trust

In the last cross-sectional analysis, we investigate whether the impact of ESG reputation on bank stability is varied across countries with varying level of societal trust. We hypothesize that the positive impact of a bank's ESG reputation on bank stability is more pronounced in a country with high societal trust due to several reasons. Firstly, societal trust plays a crucial role in shaping customer behaviour and decision-making processes. In countries with high societal trust, individuals tend to have more faith and confidence in institutions, including banks (La Porta et al., 2000; Abdelasalam et al., 2024). Therefore, when a bank is perceived as having a strong ESG reputation, it enhances societal trust and fosters customer loyalty. This, in turn, reduces the likelihood of customer withdrawals during financial crises, which can significantly contribute to bank stability (Baele et al., 2020).

Moreover, in countries with high societal trust, stakeholders, including investors and regulators, are more likely to value ESG performance and consider it as an indicator of long-term sustainability and resilience (Amiraslani et al., 2023; Lins et al., 2017). This increased emphasis on ESG factors leads to improved access to capital and funding opportunities for banks with strong ESG reputations. Investors are more willing to invest in socially responsible banks, and regulators may provide favourable treatment or incentives for banks that demonstrate strong ESG performance. These factors contribute to the stability of banks by enhancing their financial position, reducing liquidity risks, and ensuring their long-term viability.

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{i,c,t} + \beta_2 ESG\ Reputation_{i,c,t} * Trust_{c,t} + \beta_3 Trust_{c,t} + \beta_4 Bank\ Controls_{i,c,t} + \beta_5 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t} \quad (14)$$

Equation 10 in our analysis quantifies trust using a composite index derived from the World Value Surveys and the European Values Survey (Inglehart, et al., 2014). This index is constructed based on survey responses from individuals in different countries. Respondents are asked the following question: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The societal trust index (*TRUST*) is defined as the percentage of individuals who indicate that most people can be trusted. To account for the years between two adjacent surveys, we follow the approach of Dudley and Zhang (2016) and employ linear interpolation to estimate trust levels. A higher value of the trust index implies a greater likelihood of trust among individuals within a country. The results presented in Table 6 demonstrate that the coefficients of the interaction term between ESG Reputation and Trust are statistically significant and show expected signs for *Z_SCORE* and *MES_1%VAR*. This indicates that the positive impact of ESG reputation on bank stability is more pronounced in countries characterized by higher levels of societal trust.

4.5 Additional analysis and robustness tests

4.5.1 Horse race analysis

Prior research has identified climate change as a source of financial fragility and systemic risk for banks (Choi, Gam and Shin, 2022; Heo, 2024). At the same time, a bank's ESG reputation reflects its broader reputation across environmental, social, and governance dimensions, including its climate-related risks. This raises the question of which factor is more influential for bank stability: the bank's overall ESG reputation or its specific exposure to climate change risk. To answer this question, we follow Brogaard et al. (2017) and employ a horse race regression approach, including both the ESG reputation score (*ESG_REPUTATION*)

and the climate risk measure in the same model to directly compare their effects on bank stability.

As these measures have divergent magnitudes, we implement a standardized regression. We subtract the dependent variable and all independent variables by their mean value and divide the difference by their standard deviation. We regress bank ESG reputation (*ESG_REPUTATION*) and bank climate risk on three measures of bank stability - Z-index, Marginal Expected Shortfall (*MES*), and SRISK - while controlling for bank-level characteristics, business cycle conditions, and macroeconomic variables. We use carbon emissions level (*CARBON_EMISSIONS*) as a proxy for climate change-related risks (Krueger et al., 2020; Bolton and Kacperczyk, 2021, 2023). Data on a firm's carbon emissions are obtained from Trucost, which is the part of S&P Global. Trucost reports annual information on firm-level carbon and other greenhouse gas emissions data for scope 1, 2, and 3 emissions beginning 2005. Scope 1 emissions are from directly emitting sources that are owned or controlled by a company; scope 2 emissions are from the consumption of purchased electricity, steam, or other sources of energy generated from a company's direct operations; and scope 3 encompasses all other emissions associated with a company's operations that are not directly owned or controlled by the company. Given that the data on scope 1 emissions are widely reported and accurately estimated for a boarder set of listed firms (Bolton and Kacperczyk, 2021), we focus only on scope 1 emissions in our study. The results, reported in Table 8, Panel A, reveal that overall ESG reputation generally exhibits greater explanatory power for bank stability than climate risk. This suggests that a bank's broader ESG positioning, beyond just climate exposure, plays a more influential role in promoting financial stability.

We further categorise bank ESG reputation risk into three sub-components including: environmental ("E) reputation risk, social ("S") reputation risk and governance ("G") reputation risk. We collect bank ESG reputation risk *(CRRI)* from Reprisk data which is the

average of a bank's Current RepRisk Index monthly scores in a given quarter. The *CRRI* score indicates the current level of media and stakeholder coverage of a bank related to ESG issues, with values ranging from 0 (lowest) to 100 (highest). A value between 0 and 25 indicates low level of risk exposure, between 26 and 49 medium risk exposure level, 50 and 59 high risk exposure level, 60 and 74 very high risk exposure level, and over 75 indicates extremely high risk exposure. We then employ a horse race regression approach, including both the bank "E" reputation risk (*E_REPUTATION_RISK*) and the actual climate risk measure (*CARBON_EMISSIONS*) in the same model to directly compare their effects on bank stability. We find in Table 8, Panel B, that bank "E" reputation risk exhibits slightly greater explanatory power for bank stability than climate risk. These results aligns well with emerging academic literature highlighting the growing financial materiality of reputational risks. Studies such as Choi et al. (2023) show that banks with worse environmental reputations experience deposit outflows and lending reductions, particularly in climate-sensitive regions, suggesting that stakeholder reactions to perceived environmental misconduct can have swift and tangible effects on financial stability. Collectively, these results suggest that reputation risk acts as a more dominant channel than actual climate risks, reinforcing the need for banks to integrate ESG reputation into their risk management frameworks and for regulators to consider reputational channels when assessing banks' climate risk exposures.

[Insert Table 8 Here]

4.5.2 Alternative measures of ESG reputation

To test the robustness of our main findings, we utilise several alternative measures of ESG reputation and repeat our main estimations from Table 2, with each of the following ESG-related reputation risk variables: *CRRI*, *PEAK_RRI* and *RRR_SCORE*. *CRRI* is defined earlier. *PEAK_RRI* is the maximum value of a bank's Peak RepRisk Index (PRRI) monthly scores in a given quarter. The *PEAK_RRI* is equal to the highest level of the monthly CRRI over the last

two quarters (see above for *CRRI* calibration). *RRR_SCORE* is the average of a bank's RepRisk Ratings monthly scores in a given quarter. For the purpose of our study, the highest RRR rating of "AAA" is assigned with a RRR score of 1, RRR rating of "AA" is assigned with a RRR score of 2, RRR rating of "A" is assigned with a RRR score of 3, etc. and the lowest RRR score of 10 is given to RRR rating of "D".

These variables are collected from RepRisk. These results are consistent with the main results presented in Table 9 Panel A. Specifically, we find that the coefficients of these alternative measures of bank ESG Reputation Risk are negative and statistically significant for *Z_SCORE* measure and positive and significant for *MES_1% VAR* and *SRISK* measures (thus implying less bank stability). The signs of the coefficients with both accounting and market measures of bank stability are mostly consistent with our main results. Thus, the significant positive relationship between bank ESG reputation and bank stability remains robust even with alternative ESG reputation measures.

To further unpack the role of ESG dimensions, we disaggregate bank ESG reputation risk into its three key components: environmental ("E"), social ("S"), and governance ("G") reputation risks. Regressions of bank stability in Table 9 Panel B on each subcomponent reveal that all three dimensions exert a statistically significant and negative influence on bank stability, underscoring that reputational concerns across the ESG spectrum contribute meaningfully to heightened bank risk.

[Insert Table 9 Here]

4.5.3 Excluding USA

As an additional test to ensure robustness, we exclude USA to ensure that its observations did not unduly affect the results. As evidenced in columns (1) to (3) of Table 9, Panel C, the ESG reputation measure remains statistically significant across both accounting-based and market-based bank stability measures, even after excluding U.S. observations.

4.5.4 Institutional controls

Our next robustness test modifies the baseline regression model by incorporating additional country-level factors to mitigate potential omitted variable bias. A common approach to address omitted variable bias is to saturate the regression with many relevant controls (Bitler et al., 2005; Laeven and Levine, 2009). Following prior literature (Ho et al., 2016; Houston et al., 2011; Laeven and Levine, 2009), we include a range of controls that reflect the quality of the regulatory and institutional environment of the sample countries. Specifically, we control for multiple institutional and regulatory factors, including the voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and the control of corruption in a particular country. These data are sourced from the World Bank's Worldwide Governance Indicators**.** As shown in Table 9, Panel D, our findings indicate that, even after conditioning on these governance characteristics, *ESG_REPUTATION* remains positively associated with bank stability**.** This suggests that, even after controlling for a broad set of national governance indicators representing institutional quality, the positive relationship between bank ESG media reputation and bank stability persists.

5. Conclusions

This study demonstrates the significant positive impact of ESG media reputation on bank stability, underscoring the importance of responsible banking practices for financial stability and resilience. Our findings reveal that banks with enhanced ESG reputations are motivated to reduce credit, liquidity, and capital risk exposure, leading to increased stability and resilience to financial stress. This research also highlights that the positive relationship between ESG reputation and bank stability is more pronounced in countries with higher societal trust, lower media coverage, and less state-owned press, emphasizing the importance of stakeholder trust and media independence in shaping banks' ESG performance.

The implications of our findings are far-reaching, as they provide valuable insights for policymakers, regulators, and investors looking to foster sustainable economic growth. By understanding the role of ESG reputation in enhancing bank stability, these stakeholders can better tailor their efforts to promote responsible and risk-averse banking practices, ultimately reducing the likelihood of financial crises and fostering overall economic well-being. Moreover, our research methodology advances the use of more timely and precise measures of ESG reputation, enabling more accurate assessments of banks' commitment to sustainability, which may encourage increased transparency and accountability in the banking industry.

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Table 1 Summary Statistics and Correlation Matrix

Panel A summary statistics

Variables	Observations	Mean	Std.	Min.	p25	p50	p75	Max
Z_SCORE	17,638	7.727	0.779	4.535	7.331	7.707	8.145	10.058
MES_1%VAR	5,976	0.036	0.048	-0.103	0.003	0.028	0.056	0.231
SRISK	5,976	0.257	0.857	0.000	0.000	0.000	0.036	5.509
ESG_REPUTATION	17,638	0.155	0.381	-0.620	-0.110	0.260	0.511	0.530
SIZE	17,638	16.928	3.062	10.685	14.091	16.710	19.718	21.525
BOOK_EQUITY	17,638	0.085	0.030	0.026	0.065	0.083	0.100	0.435
DEPOSIT_RATIO	17,638	0.669	0.164	0.000	0.589	0.703	0.789	0.926
COST_EFFICIENCY	17,638	0.592	0.197	0.232	0.489	0.580	0.666	2.442
REV_DIV	17,638	0.300	0.149	-0.053	0.194	0.282	0.384	1.131
EXPLICIT_DEPINSURE	17,638	0.925	0.264	0.000	1.000	1.000	1.000	1.000
GDP_GROWTH	17,638	2.225	1.962	-3.387	0.802	2.516	2.975	6.665

Panel B Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11
1	*Z_SCORE*	1.000										
2	*MES_1%VAR*	-0.074	1.000									
3	*SRISK*	-0.007	0.180	1.000								
4	*ESG_REPUTATION*	0.017	-0.069	-0.068	1.000							
5	*SIZE*	-0.092	0.288	0.294	-0.129	1.000						
6	*BOOK_EQUITY*	0.032	-0.121	-0.439	0.043	-0.069	1.000					
7	*DEPOSIT_RATIO*	0.022	-0.238	-0.532	0.083	-0.293	0.236	1.000				
8	*COST_EFFICIENCY*	0.099	0.035	0.179	-0.019	-0.292	-0.301	-0.032	1.000			
9	*REV_DIV*	-0.021	0.051	0.283	-0.024	0.289	-0.100	-0.330	0.053	1.000		
10	*EXPLICIT_DEPINSURE*	0.020	-0.121	0.060	0.066	-0.182	0.055	0.029	0.079	-0.026	1.000	
11	*GDP_GROWTH*	-0.028	-0.149	-0.090	0.042	0.183	0.219	0.187	-0.192	-0.034	0.144	1.000

Table 2: Mean Values of Bank Stability and ESG Reputation by Countries

Country	Observations	*Z_SCORE*	*MES_1%VAR*	*SRISK*	*ESG_REPUTATION*
Australia	285	7.8774	0.0274	0.3328	0.0146
Austria	184	7.7944	0.0851	0.212	-0.0189
Belgium	143	7.511	0.0999	.	0.1499
Canada	180	7.6011	0.0303	1.0002	0.1675
Chile	63	7.489	0.034	0.0009	-0.1306
China	528	7.6298	0.0542	0.5307	-0.0737
Columbia	13	7.7868	0.0527	.	0.1264
Czech Republic	67	7.687	0.0868	.	-0.1175
Denmark	220	7.8034	0.0678	3.1591	-0.062
Egypt	22	7.2342	0.0603	0	0.3502
Germany	375	7.8034	0.0678	3.1591	-0.062
Hong Kong	255	7.8974	0.0373	0.0218	0.056
Hungary	43	7.4554	0.0896	0	-0.0163
Indonesia	74	7.4957	0.0547	0	0.2995
Israel	39	6.7717	0.1217	.	-0.0641
Italy	261	7.8148	0.0831	0.1464	-0.0434
Japan	1,062	8.4535	0.0614	0.0665	0.1905
Korea	38	8.0573	0.059	0.1083	0.1655
Malaysia	133	7.8583	0.0301	0.0066	0.127
Mexico	8	7.9484	0.0479	.	-0.1732
Netherlands	58	7.9389	0.0641	.	0.0261
Norway	158	7.6735	-0.0055	0.019	0.1633
Pakistan	157	7.766	0.0448	0.0035	0.2254
Peru	47	8.0256	0.0357	.	0.0492
Philippines	56	7.95	0.0218	0.0087	-0.0191
Poland	115	7.6984	0.0645	0.0091	0.2477
Portugal	46	7.4342	0.0963	0.0909	-0.298
Russia	97	7.5173	0.0812	0.0071	0.0212
Singapore	118	8.131	0.0398	0.0001	0.1648
Spain	75	7.6566	0.0638	0.8031	0.0617
Sweden	148	7.5596	0.0627	0.821	0.2575
Switzerland	163	8.3905	0.0183	0.0051	0.2506
Thailand	127	7.8041	0.0531	0.0029	0.1718
Turkey	116	7.7424	0.0721	0	0.2609
UK	1501	7.5183	0.058	0.0489	0.1044
USA	10,663	7.6728	0.0168	0.0885	0.2304
Sum	**17,638**				

Table 3 Baseline results

	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
ESG_REPUTATION	0.044***	-0.002**	-0.001***
	[0.01]	[0.00]	[0.03]
SIZE	0.004	0.011***	0.083*
	[0.01]	[0.00]	[0.04]
BOOK_EQUITY	8.920***	0.024	-3.607**
	[0.62]	[0.02]	[1.43]
DEPOSIT_RATIO	0.272*	-0.003**	-1.466**
	[0.15]	[0.01]	[0.58]
COST_EFFICIENCY	-0.323***	0.024***	0.14**
	[0.03]	[0.00]	[0.12]
REV_DIV	-0.051	-0.019***	-0.258*
	[0.11]	[0.00]	[0.13]
EXPLICIT_DEPINSURE	0.086	-0.009*	-0.049
	[0.19]	[0.00]	[0.12]
GDP_GROWTH	-0.006**	-0.001***	-0.006
	[0.00]	[0.00]	[0.00]
Observations	17,638	5,976	5,976
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes
Adjusted R-squared	0.167	0.179	0.738

This table reports the results of the impact of ESG media reputation on bank stability. We regress three measures of bank risk: Z-index (*Z_SCORE*), systemic risk (*SRISK*), marginal expected shortfall using 1%VAR (*MES_1%VAR*) on bank ESG media reputation (*ESG_REPUTATION*) in columns (1)-(3), respectively. ESG media reputation (*ESG_REPUTATION*) the Janis–Fadner (J–F) index of media favourableness for a bank's ESG issues in a given year. See Table A.1 for detailed variable definitions of all other variables. We control for country and quarter fixed effects across all models. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Table 4 IV Regressions

	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
ESG_REPUTATION_fitted	0.134***	-0.021***	-0.031***
	[0.65]	[0.37]	[0.99]
SIZE	0.06	0.007**	0.142**
	[0.05]	[0.00]	[0.06]
BOOK_EQUITY	9.447***	0.04	-3.476***
	[0.89]	[0.05]	[0.85]
DEPOSIT_RATIO	-1.762	0.134	-1.681***
	[1.45]	[0.09]	[0.41]
COST_EFFICIENCY	0.667	-0.034	0.308
	[0.67]	[0.04]	[0.22]
REV_DIV	0.285	-0.034**	-0.406
	[0.26]	[0.02]	[0.26]
EXPLICIT_DEPOSIT	0.28	-0.018	-0.137
	[0.38]	[0.02]	[0.12]
GDP_GROWTH	0.001	-0.001**	0.004
	[0.01]	[0.00]	[0.01]
Observations	17,638	5,976	5,976
Adjusted R-squared	0.131	0.118	0.226
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes
Partial F-statistics for IV	15.53	16.38	18.96
Under-identification test - Chi-sq(1)/(P-val)	2.456 (0.1171)	1.641 (0.2002)	2.059 (0.1513)

This table provides instrumented regressions using the World Value Index as an instrumental for bank ESG reputation. The three dependent variables are Z-index (*Z_SCORE*), systemic risk (*SRISK*), marginal expected shortfall using 1%VAR (*MES_1%VAR*) on bank ESG media reputation (*ESG_REPUTATION*) in columns (1)-(3), respectively. ESG media reputation (*ESG_REPUTATION*) the Janis–Fadner (J–F) index of media favourableness for a bank's ESG issues in a given year. See Table A.1 for detailed variable definitions of all other variables. We control for country and quarter fixed effects across all models. The table also reports Partial F-statistics for IV and under-identification test.Standard errors are clustered by both country and year and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Table 5 Staggered difference-in-differences analysis

Panel A: Standard Staggered Difference-in-Differences Analysis

	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
POST	0.036***	-0.002***	-0.026*
	[0.01]	[0.00]	[0.01]
TREATMENT	0.064	-0.008**	-0.069**
	[0.06]	[0.00]	[0.02]
*POST*TREATMENT*	0.045***	-0.012**	-0.088**
	[0.08]	[0.00]	[0.03]
SIZE	0.034***	0.008***	0.069*
	[0.00]	[0.00]	[0.04]
BOOK_EQUITY	2.375***	0.019***	-1.999**
	[0.04]	[0.00]	[0.76]
DEPOSIT_RATIO	1.095***	-0.002	-0.998**
	[0.02]	[0.00]	[0.38]
COST_EFFICIENCY	-0.338***	0.018***	0.291*
	[0.01]	[0.00]	[0.14]
REV_DIV	-0.412***	-0.006***	-0.164
	[0.02]	[0.00]	[0.12]
EXPLICIT_DEPOSIT	0.113***	0.002**	-0.043
	[0.02]	[0.00]	[0.04]
GDP_GROWTH	0.007***	0.001	0.001
	[0.00]	[0.00]	[0.00]
Observations	103,061	76,415	15,982
Adjusted R-squared	0.14	0.194	0.575
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

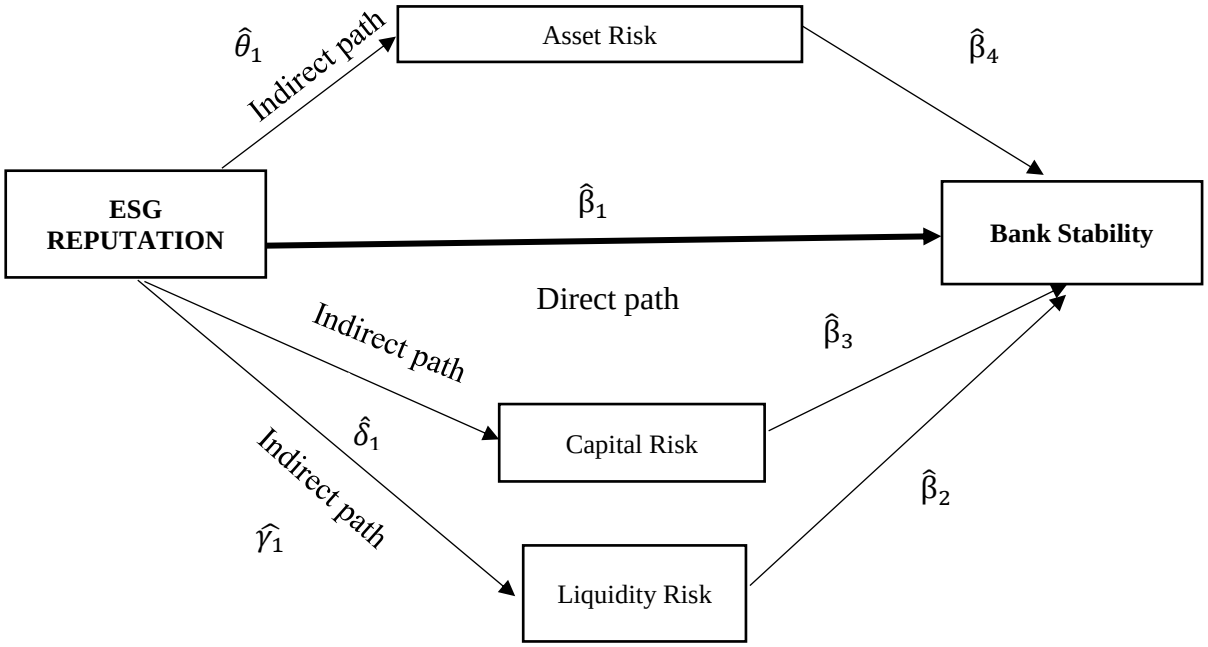
Panel B: Stacked Event-by-Event Analysis

	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
POST	0.073*	-0.008***	-0.304***
	[0.04]	[0.00]	[0.03]
TREATMENT	0.028**	-0.009***	-0.017**
	[0.01]	[0.00]	[0.01]
*POST*TREATMENT*	0.084**	-0.016***	-0.245***
	[0.03]	[0.00]	[0.03]
SIZE	0.004	0.009***	0.064***
	[0.00]	[0.00]	[0.00]
BOOK_EQUITY	2.517***	0.026***	-2.727***
	[0.04]	[0.00]	[0.11]
DEPOSIT_RATIO	1.120***	0.005***	-0.946***

	[0.05]	[0.00]	[0.03]
COST_EFFICIENCY	-0.374***	0.017***	0.415***
	[0.01]	[0.00]	[0.02]
REV_DIV	-0.476***	-0.001	-0.017
	[0.03]	[0.00]	[0.03]
EXPLICIT_DEPOSIT	0.032	0.006***	0.113***
	[0.06]	[0.00]	[0.01]
GDP_GROWTH	0.005*	0.001	0.005***
	[0.00]	[0.00]	[0.00]
Observations	100,403	74,051	14,613
Adjusted R-squared	0.137	0.143	0.256
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

This table reports the results of the staggered difference-in-differences (DID) designs. Panel A reports standard DID results while Panel B reports the results using stacked event-by-event models suggested by Baker et al. (2022). *TREATMENT* is an indicator variable which equals to 1 for countries introducing mandatory ESG disclosure and zero otherwise during the sample periods. *POST* is a dummy variable equal to 1 if this is one to five years mandatory ESG disclosure and zero otherwise. Columns (1) to (3) reports the results associated with the five measures of bank risk: Z-index (*Z_SCORE*), marginal expected shortfall using 1%VAR (*MES_1%VAR*) and systemic risk (*SRISK*), respectively. In all regressions, we include country and quarter fixed effects. Standard errors are clustered by both country and quarter and are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Figure 1
Path analysis



The figure depicts the direct and indirect path through which ESG media reputation can affect bank stability. We estimate the following models in the path analysis:

$$Bank\ Stability_{i,c,t} = \alpha + \beta_1 ESG\ Reputation_{ict} + \beta_2 Liquidity\ Risk_{ict} + \beta_3 Capital\ Risk_{ict} + \beta_4 Asset\ Risk_{i,c,t} + \beta_6 Bank\ Controls_{i,c,t} + \beta_7 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t}$$

$$Liquidity\ Risk_{ict} = \alpha + \gamma_1 ESG\ Reputation_{i,c,t} + \gamma_2 Bank\ Controls_{i,c,t} + \gamma_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t}$$

$$Capital\ Risk_{i,c,t} = \alpha + \delta_1 ESG\ Reputation_{i,c,t} + \delta_2 Bank\ Controls_{i,c,t} + \delta_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t}$$

$$Asset\ Risk_{i,c,t} = \alpha + \theta_1 ESG\ Reputation_{i,c,t} + \theta_2 Bank\ Controls_{i,c,t} + \theta_3 Macro\ Controls_{c,t} + \nu_c + \mu_t + \varepsilon_{i,c,t}$$

The independent variable of interest is ESG media reputation (which is proxied by *ESG_REPUTATION*). *Controls* are relevant control variables from the baseline regression in Table 2. The direct path from *ESG Reputation* to *Bank Stability* is denoted as β_1, while the path coefficients γ_1, δ_1 and θ_1 represent the magnitude of the path from *ESG Reputation* to *Bank Stability*. The magnitude of the paths from *Liquidity Risk, Capital Risk and Asset Risk* to *Bank Stability* are denoted as β_2, β_3 and β_4, respectively while $\gamma_1 * \beta_2$, $\delta_1 * \beta_3$ and $\theta_1 * \beta_4$ quantify the total magnitude of the indirect path from *ESG reputation* to *Bank Stability* mediated through bank risk reduction channel.

Table 6 Path Analysis: Risk Reduction Channel

Panel A: Bank stability is measured by *Z_SCORE*						
	Path=Asset Risk		**Path = Capital Risk**		**Path = Liquidity Risk**	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Direct Path						
P (ESG_REPUTATION, Z_SCORE)	0.056	0.001	0.064	0.000	0.044	0.005
Indirect Path						
P (ESG_REPUTATION, Path)	-0.5006	0.000	-0.0028	0.000	-0.0167	0.045
P (Path, Z_SCORE)	-0.0306	0.000	-1.374	0.000	-0.0297	0.004
P (ESG_REPUTATION, Path) × P (Path, Z_SCORE)	0.015	0.000	0.004	0.001	0.001	0.094
Total effect	0.071	0.001	0.068	0.000	0.045	0.005
Mediated % in Total	21.12%		5.88%		2.22%	
Observations	17,638		17,638		17,638	
Panel B: Bank stability is measured by *MES_1%VAR*						
	Path=Asset Risk		**Path = Capital Risk**		**Path = Liquidity Risk**	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Direct Path						
P (ESG_REPUTATION, MES_1%VAR)	-0.022	0.08	-0.012	0.041	-0.011	0.07
Indirect Path						
P (ESG_REPUTATION, Path)	-0.507	0.000	-0.0021	0.003	-0.015	0.067
P (Path, MES_1%VAR)	0.0016	0.000	0.0998	0.000	0.001	0.018
P (ESG_REPUTATION, Path) × P (Path, MES_1%VAR)	-0.001	0.000	-0.001	0.004	-0.001	0.003
Total effect	-0.023	0.080	-0.013	0.041	-0.012	0.070
Mediated % in Total	4.34%		7.69%		8.33%	
Observations	5,976		5,976		5,976	
Panel C: Bank stability is measured by *SRISK*						
	Path=Asset Risk		**Path = Capital Risk**		**Path = Liquidity Risk**	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Direct Path						

P (ESG_REPUTATION, SRISK)	-0.012	0.090	-0.013	0.002	-0.017	0.004
Indirect Path						
P (ESG_REPUTATION, Path)	-0.399	0.000	-0.002	0.007	-0.0191	0.046
P (Path, SRISK)	0.0016	0.000	1.9867	0.000	0.3108	0.000
P (ESG_REPUTATION, Path) × P (Path, SRISK)	-0.001	0.000	-0.001	0.000	-0.006	0.049
Total effect	-0.013	0.002	-0.014	0.002	-0.025	0.022
Mediated % in Total	7.69%		7.14%		24.00%	
Observations	5,976		5,976		5,976	

This table reports the direct and indirect path through which bank ESG reputation can affect bank stability. Bank stability is measured by *Z_SCORE* (Panel A), marginal expected shortfall using 1%VAR *(MES_1%VAR*) (Panel B) and SRISK (Panel C). ESG media reputation (*ESG_REPUTATION*) the Janis–Fadner (J–F) index of media favourableness for a bank's ESG issues in a given year. Please see Table A.1 for detailed variable definitions of all other variables. We control for country and quarter fixed effects across all models. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Table 7: Cross-sectional Analysis

Panel A: Media Coverage			
	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
*MEDIA_COVERAGE*ESG_REPUTATION*	-0.065***	0.002**	0.096*
	[0.02]	[0.00]	[0.05]
ESG_REPUTATION	0.165***	-0.005**	-0.019***
	[0.03]	[0.00]	[0.00]
MEDIA_COVERAGE	0.01	0.002	-0.097
	[0.01]	[0.00]	[0.05]
Control variables	Yes	Yes	Yes
Observations	17,638	5,976	5,976
Adjusted R-squared	0.168	0.18	0.749
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes
Panel B: State Ownership			
	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
*STATE_OWNERSHIP*ESG_REPUTATION*	-0.019***	0.010**	0.256
	[0.12]	[0.00]	[0.14]
ESG_REPUTATION	0.050**	-0.002*	-0.005**
	[0.02]	[0.00]	[0.03]
Control variables	Yes	Yes	Yes
Observations	17,481	18,083	5,807
Adjusted R-squared	0.171	0.179	0.738
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes
Panel C: Trust			
	(1)	*(2)*	*(3)*
VARIABLES	***Z_SCORE***	***MES_1%VAR***	***SRISK***
*ESG_REPUTATION * TRUST*	0.002***	-0.001***	-0.006
	[0.00]	[0.00]	[0.00]
ESG_REPUTATION	0.102	-0.006**	-0.07
	[0.07]	[0.00]	[0.09]
TRUST	0.005	0.001	-0.007
	[0.00]	[0.00]	[0.01]
Control variables	Yes	Yes	Yes
Observations	17,084	5,705	5,705
Adjusted R-squared	0.15	0.16	0.739
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

This table reports the cross-sectional analysis on the association between ESG media reputation and bank stability. ESG media reputation (*ESG_REPUTATION*) the Janis–Fadner (J–F) index of media favourableness for a bank's

ESG issues in a given year. *MEDIA_COVERAGE* is the nnatural logarithm of one plus the number of a bank's ESG-related news events in a given year. *STATE_OWNERSHIP* is a dummy equal to one, if the top radio station is state owned, and zero otherwise *TRUST* is an index compiled from World Value Surveys and the European Values Survey. It comes from survey responses by individuals in various countries. See Table A.1 for detailed variable definitions of all other variables. We control for country and quarter fixed effects across all models. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Table 8: Horse Race Analysis ESG Reputation and Climate Risk

Panel A: Bank ESG Reputation and Climate Risk

	(1)	*(2)*	*(3)*
VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*
D_ESG_REPUTATION	0.019*	-0.037***	-0.070***
	[0.01]	[0.01]	[0.02]
D_CARBON_EMISSIONS	-0.012***	0.021***	0.052***
	[0.01]	[0.01]	[0.02]
D_SIZE	0.078**	0.281***	0.427*
	[0.03]	[0.06]	[0.21]
D_BOOK_EQUITY	1.271***	-0.182	-1.016**
	[0.11]	[0.18]	[0.44]
D_DEPOSIT_RATIO	0.166***	-0.119	-0.624*
	[0.05]	[0.13]	[0.31]
D_COST_EFFICIENCY	0.001	0.180***	0.023
	[0.01]	[0.03]	[0.09]
D_REV_DIV	-0.050**	-0.177***	-0.068
	[0.02]	[0.02]	[0.06]
D_EXPLICIT_DEPINSURE	0.016	-0.040*	-0.024
	[0.04]	[0.02]	[0.04]
D_GDP_GROWTH	0.035	-0.077	-0.076
	[0.03]	[0.09]	[0.07]
Observations	16,517	5,570	5,570
Adjusted R-squared	0.164	0.171	0.773
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

Panel B: Bank "E" Reputation Risk and Climate Risk

	(1)	*(2)*	*(3)*
VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*
D_E_REPUTATION_RISK	-0.015***	0.034***	0.055***
	[0.00]	[0.00]	[0.01]
D_CARBON_EMISSIONS	-0.013**	0.026***	0.053***
	[0.01]	[0.01]	[0.02]
D_SIZE	-0.065	0.011**	0.492**
	[0.08]	[0.00]	[0.18]
D_BOOK_EQUITY	0.514**	-0.019***	0.001
	[0.22]	[0.00]	[0.29]
D_DEPOSIT_RATIO	0.219**	-0.004**	-0.52
	[0.09]	[0.00]	[0.32]
D_COST_EFFICIENCY	-0.046	0.003	0.003
	[0.03]	[0.00]	[0.05]
D_REV_DIV	-0.078	-0.003**	-0.108
	[0.04]	[0.00]	[0.10]
D_EXPLICIT_DEPINSURE	0.076***	-0.002**	-0.028**
	[0.02]	[0.00]	[0.01]

D_GDP_GROWTH	0.067	-0.010**	-0.057
	[0.05]	[0.00]	[0.04]
Observations	6,240	6,559	3,960
Adjusted R-squared	0.0827	0.029	0.478
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

In this table, we include both the ESG reputation score (*D_ESG_REPUTATION*) and the climate risk measure (*D_CARBON_EMISSIONS*) in the same model in Panel A to directly compare their effects on bank stability, in the presence of the bank and macro control variables. In Panel B, we include bank "E" reputation risk score and the climate risk measure (*D_CARBON_EMISSIONS*) in the same model. All variables are standardised by subtracting its mean value and dividing the difference by its standard deviation. We control for country and quarter fixed effects across all models. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Table 9 Additional Analysis and Robustness Tests

Panel A: Alternative Measures of ESG Reputation

VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*	*Z_SCORE*	*MES_1%VAR*	*SRISK*	*Z_SCORE*	*MES_1%VAR*	*SRISK*
CRRI	-0.027***	0.001**	0.001**						
	[0.01]	[0.00]	[0.01]						
PEAK_RRI				-0.005**	0.001*	0.015**			
				[0.00]	[0.00]	[0.01]			
RRR_SCORE							-0.002*	0.001***	0.007
							[0.00]	[0.00]	[0.00]
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,638	5,976	5,976	11,232	6,311	6,311	11,232	6,311	6,311
Adjusted R-squared	0.168	0.179	0.738	0.211	0.179	0.778	0.211	0.179	0.77
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: E, S and G Components of ESG Reputation Risk

VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*	*Z_SCORE*	*MES_1%VAR*	*SRISK*	*Z_SCORE*	*MES_1%VAR*	*SRISK*
E_CRRI	-0.025**	0.001***	0.065**						
	[0.01]	[0.00]	[0.02]						
S_CRRI				-0.013**	0.001**	0.023**			
				[0.00]	[0.00]	[0.01]			
G_CRRI							-0.001	0.001**	0.009*
							[0.00]	[0.00]	[0.00]
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,232	6,312	6,312	11,232	6,312	6,312	11,232	6,312	6,312
Adjusted R-squared	0.213	0.176	0.78	0.212	0.176	0.768	0.21	0.18	0.764
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Quarter Cluster	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C Without USA			
VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*
ESG_REPUTATION	0.050**	-0.001***	-0.036**
	[0.04]	[0.00]	[0.05]
Control variables	Yes	Yes	Yes
Observations	3,912	2,500	2,500
Adjusted R-squared	0.234	0.225	0.798
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes
Panel D Control for institutional quality			
VARIABLES	*Z_SCORE*	*MES_1%VAR*	*SRISK*
ESG_REPUTATION	0.043***	-0.002**	-0.002*
	[0.01]	[0.00]	[0.00]
PVE	0.023	0.004	-0.013
	[0.03]	[0.01]	[0.07]
GEE	-0.196	0.030**	-0.093
	[0.13]	[0.01]	[0.27]
RQE	-0.109	0.002	-0.216
	[0.06]	[0.01]	[0.16]
RLE	0.13	0.005	0.268
	[0.17]	[0.03]	[0.26]
CCE	0.118	-0.036***	0.061
	[0.08]	[0.01]	[0.10]
VAE	-0.277	0.001	-0.12
	[0.20]	[0.01]	[0.17]
Control variables	Yes	Yes	Yes
Observations	17,201	5,862	5,862
Adjusted R-squared	0.168	0.187	0.743
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

This table reports robustness tests results of the association between ESG media reputation and bank stability. We employ alternative ESG reputation measures, E, S and G components, samples without USA and control for country institutional variables in Panels A, B, C and D, respectively. The three dependent variables are Z-index (*Z_SCORE*), systemic risk (*SRISK*), marginal expected shortfall using 1%VAR (*MES_1%VAR*) on bank ESG media reputation (*ESG_REPUTATION*) in columns (1)-(3), respectively. *CRRI* is the average of a bank's current RepRisk index (CRRI) monthly scores in a given year. *PEAK_RRI* is the maximum value of a bank's Peak RepRisk Index (PRRI) monthly scores in a given year. The PRRI score is equal to the highest level of the monthly CRRI over the last two years. *RRR_SCORE* is the average of a bank's RepRisk Ratings (RRR) monthly scores in a given year. *E_CRRI* is environmental reputation risk. *S_CRRI* is social reputation risk. *G_CRRI* is governance reputation risk. Panel C controls for different institutional factors including the voice and accountability (*VAE*), political stability (*PVE*), government effectiveness (*GEE*), regulatory quality (*RQE*), rule of law (*RLE*) and the control of corruption (*CCE*) in a particular country See Table A.1 for detailed variable definitions of all other variables. We control for country and quarter fixed effects across all models. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Appendix A1: Variable definitions			
Variables	**Acronym**	**Description**	**Data sources**
Panel A – Bank Stability Measures			
Z-index	*Z_SCORE*	The number of standard deviations returns has to fall in order to deplete equity.	Fitch Connect
Marginal expected shortfall	*MES_1%VAR*	A bank's expected equity loss when market falls below a certain threshold over a given horizon.	Datastream
Systemic risk measure	*SRISK*	Expected capital shortfall of a bank conditional on a prolonged market decline	Datastream
Panel B - ESG media reputation			
ESG media reputation	*ESG_REPUTATION*	The Janis–Fadner (J–F) index of media favourableness for a bank's ESG issues = $(e^2-ec)/t^2$ if e>c, $(ec-c^2)/t^2$ if e<c, 0 if e=c, where e is the number of favourable news events about a bank's ESG issues, c is the number of unfavourable news events related to a bank's ESG issues, and t is their sum in a given year.	Ravenpack
ESG reputation risk	*CRRI*	The average of a bank's Current RepRisk Index (CRRI) monthly scores in a given year. The CRRI score indicates the current level of media and stakeholder coverage of a bank related to ESG issues, with values ranging from 0 (lowest) to 100 (highest). A value between 0 and 25 indicates low level of risk exposure, between 26 and 49 medium risk exposure level, 50 and 59 high risk exposure level, 60 and 74 very high risk exposure level, and over 75 indicates extremely high risk exposure.	RepRisk
ESG reputation risk	*E_CRRI*	Environmental ESG reputation risk	RepRisk
ESG reputation risk	*S_CRRI*	Social ESG reputation risk	RepRisk
ESG reputation risk	*G_CRRI*	Governance ESG reputation risk	RepRisk
ESG reputation risk	*PEAK_RRI*	The maximum value of a bank's Peak RepRisk Index (PRRI) monthly scores in a given year. The PRRI score is equal to the highest level of the monthly CRRI over the last two years (see above for CRRI calibration).	RepRisk
ESG reputation risk	*RRR_SCORE*	The average of a bank's RepRisk Ratings (RRR) monthly scores in a given year. For the purpose of our study, the highest RRR rating of "AAA" is assigned with a RRR score of 1, RRR rating of "AA" is assigned with a RRR score of 2, RRR rating of "A" is	RepRisk

		assigned with a RRR score of 3, etc... and the lowest RRR score of 10 is given to RRR rating of "D".	
Panel D – Other variables			
ESG media news coverage	*MEDIA_COVERAGE*	Natural logarithm of one plus the number of a bank's ESG-related news events in a given year	Ravenpack
Bank size	*SIZE*	Natural logarithm of total assets	Fitch Connect
Total book equity ratio	*BOOK_EQUITY*	The ratio of book common equity to total book assets	Fitch Connect
Total deposit ratio	*DEPOSIT_RATIO*	The ratio of total deposits to total book assets	Fitch Connect
Cost efficiency ratio	*COST_EFFICIENCY*	The ratio of total cost to total income	Fitch Connect
Revenue diversification	*REV_DIV*	The ratio of total non-interest income to operating revenue	Fitch Connect
Explicit deposit ratios	*EXPLICIT_DEPINSURE*	A dummy variable equals to one if a country has explicit deposit insurance and zero otherwise, each year.	International Association of Deposit Insurers
GDP Growth	*GDP_GROWTH*	Change in GDP per capital	World Development Indicator
Trust	*TRUST*	The index is compiled from World Value Surveys and the European Values Survey. It comes from survey responses by individuals in various countries. Surveyed respondents answer the following question, "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". We define the societal trust index (TRUST) as the percentage of individuals who reply that most individuals may be trusted. Following Dudley and Zhang (2016), we interpolate linearly to fill in the trust measure for the years between two adjacent surveys. Trust index's higher value indicates that the probability of being trusted is high within a country.	World Value Survey and European Values Survey
Climate risk	*CARBON_EMISSIONS*	Scope 1 emissions are from directly emitting sources that are owned or controlled by a company	Trucost
Mandatory ESG disclosure	*ESG_DISCLOSURE*	A dummy variable equals to one if the country has a mandatory ESG disclosure and zero otherwise.	Krueger (2023)
Government owned media	*STATE_OWNERSHIP*	A dummy variable equals to one if the press/media is owned by the country government and zero otherwise	Djankov, et al. (2003)
Asset risk	*Asset risk*	The ratio of non-performing loans to total assets	Fitch Connect
Capital risk	*Capital risk*	-1* the ratio of tier 1 capital to total assets	Fitch Connect
Liquidity risk	*Liquidity risk*	-1 * the net stable funding ratio which is calculated as the amount of Available Stable Funding (ASF) divided by the amount of Required Stable Funding (RSF) over a one-year horizon.	Fitch Connect
Institutional quality	*VAE*	Voice and Accountability	World Bank's World Governance Index
Institutional quality	*PVE*	Political stability and absence of violence	World Bank's World Governance Index

Institutional quality	*GEE*	Government Effectiveness	World Bank's World Governance Index
Institutional quality	*RQE*	Regulatory quality	World Bank's World Governance Index
Institutional quality	*RLE*	Rule of law	World Bank's World Governance Index
Institutional quality	*CCE*	Control of corruption	World Bank's World Governance Index

Source: Compiled by the authors

Appendix A2: Validation of parallel trend assumption

VARIABLES	(1) *Z_SCORE*	(2) *MES_1%VAR*	(3) *SRISK*
MandateESG$_{-5}$	0.002	0.001	-0.003
	[0.00]	[0.00]	[0.00]
MandateESG$_{-4}$	0.001	-0.001	-0.001
	[0.00]	[0.00]	[0.00]
MandateESG$_{-3}$	-0.001	0.001	-0.002
	[0.00]	[0.00]	[0.00]
MandateESG$_{-2}$	-0.006	-0.001	0.002
	[0.00]	[0.00]	[0.00]
MandateESG$_{-1}$	0.002	0.001	0.001
	[0.00]	[0.00]	[0.00]
MandateESG	0.182***	-0.012*	-0.037***
	[0.03]	[0.01]	[0.05]
MandateESG$_{+1}$	0.002	0.001	0.001
	[0.00]	[0.00]	[0.00]
MandateESG$_{+2}$	0.001	0.001	0.002
	[0.00]	[0.00]	[0.00]
MandateESG$_{+3}$	0.001	-0.001	-0.003
	[0.00]	[0.00]	[0.00]
MandateESG$_{+4}$	-0.001	-0.001	0.001
	[0.00]	[0.00]	[0.00]
MandateESG$_{+5}$	-0.001	-0.001***	-0.003*
	[0.00]	[0.00]	[0.00]
Control variables	Yes	Yes	Yes
Observations	17,638	5,976	5,976
Adjusted R-squared	0.170	0.258	0.648
Country FE	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Country Cluster	Yes	Yes	Yes
Quarter Cluster	Yes	Yes	Yes

This table reports the results of parallel trend tests related to the difference-in-difference regressions presented in Table 3. To validate the parallel trends assumption, we include lead and lag terms in dynamic difference-in-differences (DiD) regressions, following the methodology of Klasa et al. (2018) and Li et al. (2018). The variables *MandateESG*$_{-5}$, *MandateESG*$_{-4}$, *MandateESG*$_{-3}$, *MandateESG*$_{-2}$, and *MandateESG*$_{-1}$, indicate whether the mandatory ESG disclosure rule was introduced in the five to one year prior. The variables *MandateESG*$_{+1}$, *MandateESG*$_{+2}$, *MandateESG*$_{+3}$, *MandateESG*$_{+4}$, and *MandateESG*$_{+5}$ represent whether a country will introduce mandatory ESG disclosure rule in one, two, three, four, or five years. Columns (1) to (3) reports the results associated with the three measures of banking system stability including Z-index (*Z_SCORE*), marginal expected shortfall calculated at the 1st percentile of value at risk (*MES_1%VAR*) and systemic risk (*SRISK*). All continuous variables are winsorized at the 1st and 99th percentiles and defined in Table A1. Standard errors are clustered by both country and quarter and are reported in parentheses. ***, **, and * indicate significance levels of 1%, 5%, and 10%, respectively.

Figure A1 - Parallel Trend Tests