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Trust matters: A global perspective on the influence of trust on bank market risk

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ABSTRACT

This paper examines the role of societal and organizational trust in mitigating market risk within the banking sector. Using a global sample of 10,616 bank-year observations across 45 countries, we find that higher trust significantly reduces bank total and idiosyncratic risk. The risk-mitigating effect of societal trust becomes more pronounced for banks headquartered in countries with weaker investor protection, diminished legal rights, dissatisfaction with government economic policies, and higher political unrest. Our results suggest that trust serves as an alternative governance mechanism, substituting for ineffective formal institutions in reducing bank risk. These findings have important implications for financial regulation worldwide.

1. Introduction

In the evolving landscape of financial institutions over the past two decades, a series of high-profile scandals, including the Barclays Libor rigging scandal, HSBC's anti-money laundering failings, and, more recently, the collapses of Silicon Valley Bank and Credit Suisse, have profoundly eroded public trust in banks and traditional governance mechanisms. Following these ethical failures, researchers have increasingly explored alternative monitoring mechanisms, with a focus on the role of trust within modern financial systems and societal structures, particularly its influence on decision-making behaviors (e.g., Minton et al., 2014; Shen et al., 2022; Trinh et al., 2023). This shift reflects a growing recognition that, while formal structures such as regulatory regimes remain important, trust within societal and corporate environments significantly influences stakeholder rights and decision-making. In this context, trust refers to a psychological state reflecting the belief or expectation that another party will act in one's best interest (Sitkin and Roth, 1993). Recent evidence suggests that high-trust environments promote ethical choices, as managers operating in such contexts display greater resilience against morally dubious decisions (e.g., Fonseka et al., 2021; Hasan et al., 2017b). Several studies establish a positive relationship between trust and pro-social behavior, benefiting individuals, communities, and society at large (e.g., Du et al., 2011).

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Moreover, trust exhibits a negative correlation with executive remuneration and compensation contracts (Kanagaretnam et al., 2018), and is associated with higher societal integrity (La Porta et al., 1997) and reduced criminal activity (Buonanno et al., 2009). This growing body of research underscores the significant role of trust in shaping societal norms and governing corporate conduct and dynamics. Our study builds upon this foundation, exploring how trust influences bank market risk in diverse institutional contexts.

Trust not only establishes and nurtures social norms but also fosters sound moral judgment and ethical conduct among managers and organizations, thereby influencing their interactions with stakeholders (La Porta et al., 1997; Long and Weibel, 2018).[1] The role of trust is deeply ingrained in societal and corporate structures, yet its significance varies across different socio-economic settings due to disparities in institutional environments and governance standards across nations (e.g., Meng and Yin, 2019; Qian et al., 2018; Shen et al., 2022). These variations provide the rationale for our study. Essentially, while trust fundamentally enables cooperative relationships, its impact diverges in various contexts. Our research aims to investigate the effect of societal trust on bank market risk within the diverse spectrum of global institutional frameworks.

In economic contexts, agency theory serves as the predominant framework for comprehending the behavior of contracting parties, particularly in situations characterized by moral hazard and information asymmetry (Jensen and Meckling, 1976). However, trust emerges as a significant force across diverse social, regulatory, and economic settings, exerting influence on interpersonal relations and decision-making outcomes (e.g., Das and Teng, 2004; Dudley and Zhang, 2016; Meng and Yin, 2019; Pevzner et al., 2015). For instance, the presence of trust can reduce the costs associated with contractual monitoring (Brockman et al., 2022), especially in well-regulated environments (Guiso et al., 2004; Lesmeister et al., 2022; Meng and Yin, 2019; Shen et al., 2022). Furthermore, trust enhances investment efficiency (Fonseka et al., 2021), stimulates innovation (El Ghoul et al., 2023), improves internal quality control, and lowers the likelihood of financial reporting misstatements (Garrett et al., 2014).

A growing body of research examines the influence of trust when contractual obligations are incomplete or unenforceable and when individuals do not have a comprehensive understanding of others' actions. In such contexts, trust plays a crucial role. Given the potential for opportunistic behavior, agency theory proposes the construction of implicit and explicit contracts that maximize the utility of contracting parties (Jensen and Meckling, 1976). In human relations and organizational research, trust is recognized as a fundamental element for effective interactions among individuals and organizations, serving as a predictor of organizational outcomes (De Jong et al., 2016). Formal corporate governance mechanisms have long been prescribed as a means of mitigating moral hazard and information asymmetry. Many firms and institutions adopt internal control mechanisms, reward systems, contracts, and feedback processes, to provide legitimacy and validation for their actions. However, these organizational procedures are often considered as weak substitutes for trust (Sitkin and Roth, 1993). Evidence suggests that contracts and relational norms act as complementary mechanisms to trust (Arranz and de Arroyabe, 2012). The importance of trust is heightened in developing countries, where governance systems are less effective at both country and organizational levels (Qian et al., 2018). Nevertheless, even developed countries are not immune to trust-related problems. For example, Ahmed et al. (2020) highlight initiatives by UK banks to enhance transparency in lending and other banking activities, aiming to rebuild customer trust. Hence, trust continues to be an essential perspective for understanding economic outcomes, even in the presence of contractual obligations. Our study explores these dynamics, focusing on the impact of trust on bank market risk.

While an emerging body of literature has begun to explore the role of trust in financial settings (e.g., Kanagaretnam et al., 2018; Kanagaretnam et al., 2017; Kanagaretnam et al., 2019; Shen et al., 2022), limited research has examined the impact of trust on perceived corporate market risk and the stock market response of investors when trust in executives is lacking. A focus on corporate market risk is essential because diminished trust dissuades investors from purchasing or retaining a firm's shares. Solomon et al. (2013, p. 208) vividly illustrate this from an institutional investor's perspective, highlighting the challenges encountered when trust in executive directors is in question: *"We've got two ways of dealing with this [concealment]. If we don't trust the management [executive directors] we could sell the company … or we can engage with them to say, 'we think that this changeable issue, if it is changeable, we aren't convinced by your argument'. We want to deal with that and then only sell them [their stocks] if they don't. So those are two [ways]. The third group is an EGM or an AGM special resolution suggesting other board directors … we've voted against the re-election of directors on questions of business ethics before" (emphasis added)*. Essentially, the level of trust directly impacts investors' decisions to buy, hold or sell stocks by influencing their perceptions of market risk. This study helps address gaps in understanding these mechanisms, given the scarcity of research on the association between trust and corporate risk, and its implications for shareholder behavior and company valuation.

In this paper, we adopt a global perspective to investigate the effect of trust on bank market risk across various legal and institutional settings. We focus on the banking sector due to its pivotal role in the functionality of financial systems, providing essential services, such as supplying liquidity and facilitating the transmission of monetary policies. Nevertheless, the banking sector is not without its challenges. Banks face significant moral hazard problems that can lead to excessive risk-taking. Notably, a lack of trust in the banking system has the potential to trigger bank runs, involving both depositors and lenders (Sapienza and Zingales, 2012).[2] This was starkly demonstrated during the 2008 Global Financial Crisis (e.g., Trinh et al., 2023). One crucial aspect of moral hazard is the perceived safety net for banks, where bank executives often assume that government bailouts are guaranteed during periods of distress. This perception is influenced by the constraints imposed by shareholder limited liability and the indispensable role of the banking

[1] Social norms are defined as attitudes of approval and disapproval (Sunstein, 1996). Trust has a substantial role in shaping and enforcing ethical behavior, including honesty and justice.

[2] A classic example of a bank run that occurred during the Global Financial Crisis is the case of Northern Rock, a UK bank that faced a liquidity crisis following the reluctance of lenders in financial markets to make funds available to Northern Rock and depositors' unwillingness to keep their funds in the bank (Marshall et al., 2012).

sector in financial intermediation and liquidity provision (Bebchuk and Spamann, 2010). Banks also represent a significant category of financial institutions for studying the relationship between market risk and trust levels. Due to their higher leverage and greater susceptibility to moral hazard conditions compared to non-financial firms, banks provide a compelling landscape for such investigation (Bebchuk and Spamann, 2010).

Utilizing a global sample of 10,616 bank-year observations for banks headquartered in 45 countries, we provide evidence that societal trust plays a crucial role in mitigating bank market risk. Given that formal institutions—represented by the legal and institutional environments—are considered antecedents of trust, we evaluate the degree to which these environments influence market risk levels. Our findings confirm that societal trust significantly reduces market risk, especially for banks located in countries characterized by weaker investor protection, diminished legal rights, dissatisfaction with government economic policies, and a higher likelihood of political unrest. These findings support the view that trust serves as an alternative control mechanism for risk-reduction, albeit with varying effectiveness depending on the specific legal and institutional environments in the different countries (e.g., Meng and Yin, 2019; Shen et al., 2022). Furthermore, our analysis highlights the substantial role of organizational (situational) trust in influencing bank market risk. This form of trust, reflected in investor perceptions shaped by bank traits, further contributes to risk reduction, highlighting the importance investors attribute to banks' perceived reliability, resilience against market volatilities, financial capability, and commitment to transparency. Collectively, societal and organizational trust emerge as important determinants in shaping the risk landscape of the banking sector, offering insights into the dynamic interplay between trust and market risk perceptions.

Our findings have significant implications for financial regulation and development, as well as for the role of banks as financial intermediaries. Trust exerts a profound impact on the stability and efficiency of the banking system, influencing credit allocation, capital distribution, and the transmission of monetary policies. It also shapes investor confidence, affecting their participation in financial markets. Additionally, trust carries weight in terms of how banks are perceived regarding social responsibility and reputation, which, in turn, influence their perceived market risk. Our study contributes to a broader understanding of how trust operates across various legal and institutional contexts, providing valuable insights into the interplay between trust and risk in diverse settings.

Our paper builds upon previous theoretical predictions (Arrow, 1972; Dudley and Zhang, 2016; El Ghoul et al., 2023; Fonseka et al., 2021; Gupta et al., 2018; Meng and Yin, 2019) and empirical findings for non-financial firms (Hasan et al., 2017a, b; Hasan and Habib, 2019) to explore the influence of societal and organizational trust on bank market risk. Our analysis specifically focuses on banks, distinct from non-financial firms, due to their critical role in facilitating liquidity. Importantly, our study adopts an international perspective aligning with a growing body of research that concentrates on societal trust in banks (see Kanagaretnam et al., 2017; Kanagaretnam et al., 2019; Trinh et al., 2023). However, we diverge from previous studies by employing market-based risk measures instead of the conventionally used accounting-based measures (Kanagaretnam et al., 2017; Kanagaretnam et al., 2019), which may be susceptible to income smoothing and other forms of manipulation (see John et al., 2008; Leuz et al., 2003). Despite potential influences stemming from varying levels of institutional and financial development across countries, these metrics largely circumvent some of the more severe issues associated with accounting manipulation, which are particularly prevalent in developing countries and those with weaker investor protection and lower auditing quality (Leuz et al., 2003; Persakis and Iatridis, 2016).

Second, our focus on the banking industry contributes to the ongoing debate surrounding the decline of trust in banks following the Global Financial Crisis (Sapienza and Zingales, 2012). By examining how trust affects bank market risk, we offer insights into its broader implications for shareholder value. Understanding the relationship between trust, risk, and firm value, is important for both academics and practitioners, as it can inform efforts to restore confidence in banks and enhance their operational efficiency, a crucial aspect for financial stability and investor confidence (e.g., Goyal and Santa-Clara, 2003).

Third, we contribute to an emerging stream of literature that investigates the effects of trust on corporate activities. Prior research demonstrates that higher levels of trust can boost economic growth and social efficiency, facilitate international trade and investment (Knack and Keefer, 1997; La Porta et al., 1997; Zak and Knack, 2001), and promote financial development (Guiso et al., 2004, 2008). Furthermore, higher levels of trust enhance corporate financing and investment efficiency (Bottazzi et al., 2016; Fonseka et al., 2021; Meng and Yin, 2019), improve loan volumes and conditions (Qian et al., 2018), and positively influence debt contracting (Brockman et al., 2022; Meng and Yin, 2019). Notably, higher levels of trust are linked to reduced firm-level risk (Abdelsalam et al., 2021; Kanagaretnam et al., 2017; Kanagaretnam et al., 2019; Shen et al., 2022). Our study extends these findings by offering novel insights into the role of societal and organizational trust in reducing market risk in the banking sector.

Finally, our paper contributes to the literature by showing how geographical location and societal trust levels significantly influence bank market risk, thereby extending the literature on the complementary role of informal institutions (e.g., Brockman et al., 2022; Meng and Yin, 2019; North, 1994; Pevzner et al., 2015; Qian et al., 2018; Shen et al., 2022). In particular, our results highlight the importance of societal trust as a key element for the effectiveness of informal institutions. We find that societal trust has significant effects in regions where formal institutions are less robust, suggesting that it may serve as a substitute in countries where formal institutions are weak or lacking. This paper is related to Shen et al.'s (2022) study, which explores the relationship between societal trust and corporate risk-taking across non-financial firms, and Kanagaretnam et al.'s (2019) study, which focuses on the banking industry and documents a negative relationship between societal trust and bank risk-taking. However, our study differs in several important ways. Unlike Shen et al. (2022) and Kanagaretnam et al. (2019), who rely primarily on accounting-based measures of risk-taking, our study employs market-based risk measures; as discussed before, this approach better captures investor risk perceptions and avoids concerns related to income smoothing and accounting manipulation prevalent among accounting-based measures. Second, while Shen et al. (2022) study non-financial firms, we focus specifically on banks, acknowledging their distinct role in liquidity provision and the heightened moral hazard inherent in the banking sector. Third, we incorporate both total market risk and idiosyncratic risk in our analysis and examine their interactions with societal trust across diverse legal and institutional settings globally. Fourth, our paper introduces a multi-dimensional trust framework linking country-level factors (representing antecedents and levels of

societal trust) and bank-level factors (representing organizational trust), offering a more comprehensive interpretation of the trust-risk relationship in the banking sector. This provides a theoretical contribution to the literature by extending the trust model to interpret investors' behavior in capital markets. Lastly, our study also diverges from Hasan and Habib (2019), who use an index of social capital for US counties to explain the level of idiosyncratic return volatility. In contrast, our study utilizes a trust measure derived from the World Values Survey (WVS), offering a broader, global perspective. This broader scope enables us to capture cross-country variations in societal trust and legal and institutional environments, providing a deeper understanding of the role of informal institutions in shaping bank market risk.

The remainder of our paper is organized as follows. In Section 2, we review the related literature and develop our hypotheses. Section 3 describes our research design and sample, while Section 4 describes our empirical results. Section 5 presents our robustness tests, and Section 6 concludes the paper.

2. Theory and hypotheses development

Trust has long been a focus of academic discourse due to its profound implications for commercial transactions and economic exchanges (Arrow, 1972; Williamson, 1993). Recognizing its intrinsic linkage with risk, trust has been found to be an integral component in a wide array of business contexts (e.g., Shen et al., 2022). Scholars are increasingly exploring the concept of trust from a risk perspective (Gambetta, 1988; Mayer et al., 1995). In Fig. 1, we present a conceptual framework of trust, drawing upon the theoretical underpinnings of the Das and Teng (2004) framework from psychology and the trust-risk model proposed by Ryan and Buchholtz (2001). Our framework contemplates trust at three distinct yet interconnected levels:

i) **Country level**: This level comprises the formal legal and institutional environments that form the antecedents of trust. It also includes the dimension of societal (generalized) trust and the society's inclination towards perceiving and responding to risk.
ii) **Bank level:** This organizational level explores organizational (situational) trust and perceived risk, reflecting the dynamic interplay of trust within banking institutions.
iii) **Investor level:** This level encompasses investors' trading behavior and the ensuing market risk, offering insights into how trust informs and shapes investor actions.

We discuss the above levels in greater depth in the following subsections, elucidating the complex interrelationships and influences they bear on each other. This multi-dimensional framework presents an opportunity for a more comprehensive understanding of the intricacies of trust, thereby providing a nuanced interpretation of its role in market risk.

2.1. Antecedents of trust

As illustrated in Fig. 1, we consider formal institutions, particularly the legal and institutional environments, as the "antecedents" of trust (Das and Teng, 2004; Ryan and Buchholtz, 2001), since they significantly influence societal trust and societal propensity towards risk perception.[3] The legal and institutional environments collectively encompass legal and political mechanisms, along with investor protection, serving as significant determinants of societal trust. The legal environment comprises aspects such as the quality of governance, legal procedures, a country's adherence to the rule of law, and the manner in which these laws are interpreted, enforced, and administered. On the other hand, the institutional environment encapsulates shareholder rights and ownership concentration, aspects known to exhibit considerable cross-country variation (La Porta et al., 1998). Strong legal protection mechanisms safeguard against potential expropriation by insiders, incentivize investors to hold shares, and contribute to the overall development of the financial sector (Shleifer and Vishny, 1997). The level of societal trust and the enforcement of investor rights are largely contingent on the rule of law and the quality of governance (La Porta et al., 1998). While robust legal and institutional environments can stimulate trust in business transactions, the importance of societal trust becomes more pronounced in enhancing business dealings when investor protection is weak. Supporting this idea, Franks et al. (2009) argue that the growth and prosperity of British equity markets during the early 20th century were propelled more by informal trust relationships rather than formal legal frameworks and investor protection measures. This serves as a testament to the profound role societal trust can play in driving business activities, particularly in settings where formal mechanisms may be less effective.

2.2. Societal trust and societal propensity towards risk perception

Trust refers to a psychological state experienced by a trustor (i.e., an investor or shareholder). It is defined as "*a belief, attitude, or expectation concerning the likelihood that the actions or outcomes of the trustee (another individual, group or organization:* i.e.*, bank) will serve the trustor's interests*" (Sitkin and Roth, 1993, p. 368). In Fig. 1, we propose that societal trust and societal propensity towards perceiving and responding to risk are influenced by the antecedents of trust, namely, the country's formal legal and institutional environments. Consequently, we suggest that these situational factors, along with institutional and environmental aspects, shape the

[3] While it is challenging to collect data on personality antecedents (e.g., Bottazzi et al., 2016), we use a set of country-specific antecedents (namely, investor protection, legal rights, satisfaction with the government's economic policies, and political stability) to test our predictions. These country-specific characteristics could be construed as an average representation of the personality antecedents.

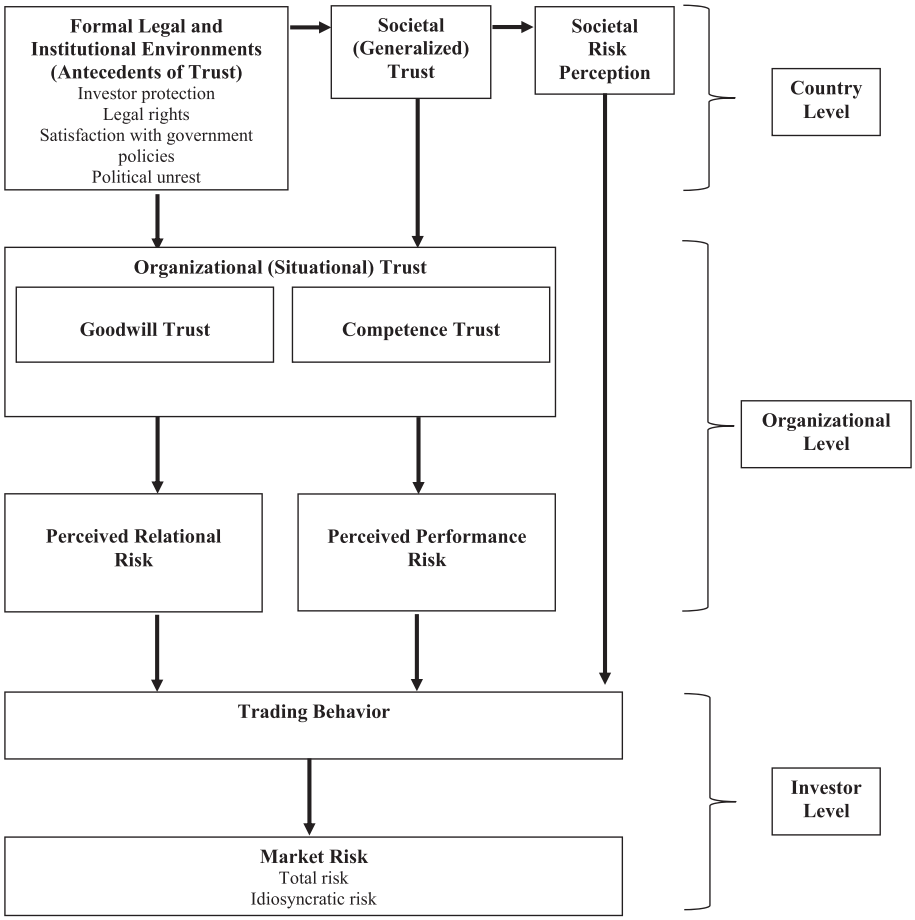

Fig. 1. Theoretical framework of trust and market risk.

propensity to believe in individual or organizational trustworthiness (Ryan and Buchholtz, 2001). Formal institutional rules and lower degrees of social polarization positively influence societal cooperation and trust (Knack and Keefer, 1997).

The theoretical trust-risk model by Ryan and Buchholtz (2001) illustrates that situational factors and presumptions about a firm shape investors' trust (in our context, situational, or organizational trust), thus influencing perceived risk. Empirical results from Guiso et al. (2008) indicate that a country's financial system's objective characteristics, in conjunction with the bank's (trustee's) characteristics, influence an investor's (trustor's) situational trust and perception of risk, ultimately impacting stock market participation. However, the presence of dominant owners often creates a situation where they cannot be trusted to protect minority shareholders (John et al., 2008). In such cases, firm-level governance structures, such as the presence of non-executive directors, may foster a perception of trustworthiness. This, in turn, provides assurance to external shareholders and increases goodwill trust (see Section 2.3). In general, trust becomes critical in cases where the trustor cannot exert sufficient control (Nooteboom, 1996) or when additional elements of risk are present, suggesting that trust can act as a substitute for control (Das and Teng, 2004). Theories of social systems predict that trust reduces agency and transaction costs (Zak and Knack, 2001) and facilitates coordination among stakeholders (Mayer et al., 1995). This underscores its significant role in driving economic activities and managing risks.

2.3. Organizational (situational) trust

Luhmann's (1979) theory of social systems posits that social trust serves as a mechanism that helps alleviate the internal complexity of social interaction. It impacts societal responses to perceived risks and interacts with organizational (situational) trust, enabling participants to establish mutual expectations of performance. In our framework, societal trust is seen as influencing investors' perception of market risk. This perception is shaped by organizational trust at the bank level, which, combined with societal trust, determines investors' overall perceived situational risk (Ryan and Buchholtz, 2001), subsequently influencing their trading behavior.

As illustrated in Fig. 1, goodwill trust pertains to the *perceived intentions and motivations* of banks (trustees) to act in the best interests of their stakeholders (trustors), such as investors or clients. This form of trust is strengthened by indicators of a bank's organizational soundness and longevity. Competence trust, on the other hand, relates to the *perceived ability* of banks to effectively manage financial operations and fulfil their obligations according to agreements (Nooteboom, 1996). This type of trust is often based on the bank's

demonstrated capabilities, expertise, and track record in managing financial risks and generating returns. These factors are critical in the context of perceived market risk (Gambetta, 1988).

These dimensions of trust collectively influence how stakeholders, particularly investors, perceive and respond to the risks associated with banking institutions. Goodwill trust affects the perceived integrity and commitment of banks, influencing stakeholder confidence in the institution's intentions. Meanwhile, competence trust, shapes perceptions of the banks' ability to effectively handle market dynamics, impacting stakeholder confidence in the institution's performance and risk management strategies. In this context, projecting and maintaining a high level of organizational trust becomes a valuable asset for firms, especially in mitigating the impact of negative events, such as corporate misconduct, on stakeholder perceptions (Brown et al., 2016). For instance, in response to negative media reports, firms may make changes to dispositional factors (e.g., replacing company representatives to improve competence trust) or situational factors (e.g., altering how company representatives interact with clients to enhance their goodwill trust) (Okhmatovskiy and Shin, 2019).

Fig. 1 also highlights the interplay between *perceived risk* and organizational trust in the banking sector. Perceived relational risk measures the likelihood of banks not performing as stakeholders expect, such as willfully reneging on agreements or behaving opportunistically. Perceived performance risk measures the probability of banks not being able to achieve agreed-upon goals (Das and Teng, 2004). Both relational and performance risks are inversely related to organizational trust. More specifically, as goodwill trust in a bank's intentions increases, perceived relational risk decreases, and as competence trust in a bank's capabilities grows, perceived performance risk diminishes (Das and Teng, 2004). This underscores the crucial role trust plays in managing perceptions of market risk and ensuring optimal performance in the banking sector.

2.4. Bank market risk

Building upon the theoretical framework presented in Fig. 1, we anticipate that higher levels of trust influence investors' perceptions of risk and behavior in the stock market, ultimately impacting market risk. In our analysis, we consider two main dimensions of bank market risk (see Section 3.4): stock return volatility (TRISK) and idiosyncratic risk (IRISK). Bank risk, whether measured by stock return volatility or idiosyncratic risk, holds significance for investors, as it can hinder their forecasting and planning activities (Brigham and Daves, 2007). Idiosyncratic risk primarily arises from a firm's actions (i.e., independent of broader market trends). It constitutes a factor that increases investors' perception of risk (Abdelsalam et al., 2021) and can impose a significant cost on investors, potentially adversely affecting their wealth (Pontiff, 2006). Although idiosyncratic risk can be diversified within investors' portfolios, not all investors hold perfectly diversified portfolios for various reasons, including differences in sophistication levels and risk aversion (Dorn and Huberman, 2005). For example, behavioral biases, lack of familiarity and confidence in foreign markets, and institutional biases can prevent investors from holding internationally diversified portfolios (e.g., Lewis, 1999). Given that under-diversification exposes investors to higher risk, understanding the determinants of bank market risk is critical for maximizing investors' wealth and further shedding light on the idiosyncratic volatility puzzle.[4]

2.5. Hypotheses

Based on the discussion above, we formulate three main hypotheses. Our first hypothesis suggests that higher societal trust will not only encourage investors to purchase shares, but also make them more willing to trust bank executives' decisions (Guiso et al., 2008). This line of reasoning leads us to propose that banks headquartered in countries with high societal trust and robust legal and institutional environments will demonstrate lower market risk. Therefore, we hypothesize that:

***H_1**: Banks headquartered in countries with higher societal trust are more likely to experience lower market risk.*

Holtgrave et al. (2020) argue that an individual's assessment of another actor's trustworthiness (in this context, the bank) depends not only on the actor's characteristics and behavior but also on external factors. Fig. 1 suggests that a country's legal and institutional environment contributes to the development of societal trust (Knack and Keefer, 1997). Prior research indicates that formal and informal institutions can act as substitutes, implying that informal institutions, such as societal trust, can compensate for less robust formal institutions, and vice versa (Meng and Yin, 2019; North, 1994; Shen et al., 2022). At the organizational level, evidence from the banking sector shows that informal institutions can significant influence bank loan conditions and levels (Qian et al., 2018), and impact investor valuations of banking stocks (Trinh et al., 2023). Additionally, Arranz and de Arroyabe (2012) argue that trust complements formal contracts, especially in enhancing the performance of exploration projects. Overall, the influence of informal institutions appears to be more pronounced in countries with weaker legal protection or ineffective law enforcement (e.g., Abdelsalam et al., 2021; Brockman et al., 2022; Meng and Yin, 2019; North, 1994; Pevzner et al., 2015; Qian et al., 2018; Shen et al., 2022). Based on these findings, we propose our second hypothesis:

***H_2**: Societal trust has a stronger influence in reducing bank market risk in countries with weaker legal and institutional environments.*

In addition to societal trust, investors' confidence in the banking sector is heavily influenced by organizational (situational) trust. Organizational trust involves trusting the bank's intentions and capabilities to manage risks effectively and fulfill its responsibilities (Brown et al., 2016; Ryan and Buchholtz, 2001). This form of trust includes a comprehensive assessment of the bank's commitment to

[4] If trend estimates in idiosyncratic volatility do not converge to zero, this implies that idiosyncratic volatility may be priced and cannot be entirely diversified in portfolios. Explanations for the presence of idiosyncratic volatility include the increase in institutional ownership (Bennett et al., 2003) and rise in the volatility of firm fundamentals (Wei and Zhang, 2006), among others.

stakeholders, its operational capacity, and historical track record (Okhmatovskiy and Shin, 2019). It goes beyond evaluating past performance and encompasses forward-looking judgments about the bank's proficiency in navigating market complexities. Expanding upon the concepts of goodwill trust and competence trust outlined in Section 2.3, we propose an integrated view of organizational trust as a key determinant of bank market risk. Specifically, goodwill trust, reflecting faith in a bank's intentions, and competence trust, indicating confidence in its capabilities, are interconnected components that collectively define the bank's trustworthiness. We hypothesize that higher levels of organizational trust contribute to lower market risk by influencing investor perceptions and trading behavior. Therefore, our final hypothesis is:

***H_3**: Banks with higher organizational (*situational*) trust are more likely to experience lower market risk.*

3. Research design

In this section, we provide an overview of the variables used in our empirical model, followed by a description of the model itself and the dataset used for our analysis. All variable definitions are included in Appendix A.

3.1. Legal and institutional environments (antecedents of trust)

Expanding upon the antecedents of trust discussed in Section 2.1, this study employs various measures to assess the strength of the legal and institutional environments in different countries. We use INVESTOR_PROT as a proxy for investor protection, as improved shareholder protection reduces the risk of expropriation by controlling managers and insider shareholders. Following previous research (Abdelsalam et al., 2021; Pevzner et al., 2015), we operationalize INVESTOR_PROT as a composite score, combining the anti-self-dealing index of Djankov et al. (2008) and the rule of law index of Kaufmann and Kraay (2022). Both indices are standardized to a range of zero to one for consistency. In our analysis, we assess the strength of investor protection via a binary indicator, denoted as LOW_INVESTOR_PROT. It takes the value of one if a country's investor protection index falls within the lowest third of all sample observations, and zero otherwise.

We obtain measures for legal rights from the *Doing Business Project*, which covers 189 economies (Qian et al., 2018). In this context, higher scores indicate stronger legal protection.[5] We represent legal rights as the LEGAL_RIGHTS variable, reflecting the effectiveness of legal enforcement within the financial system and the level of security provided by these legal rights (e.g., Guiso et al., 2008; Qian et al., 2018). We then quantify the strength of legal rights granted to investors using the LOW_LEGAL_RIGHTS indicator. It is assigned a value of one if a country's legal rights index falls within the lowest third of our sample observations, and zero otherwise.

Drawing from previous studies (e.g., Bekaert et al., 2014), we evaluate a country's political environment through two primary metrics: a) GOV_SATIS, which gauges the overall satisfaction of the general public with their national government's economic policies; and b) POLITICAL_UNREST, an index that measures the presence or likelihood of political turbulence.[6] These metrics serve as proxies, offering insights into the extent to which governments might prioritize political gains at the expense of their citizens, potentially engaging in expropriation, or contract repudiation without due regard for the well-being of their population or the rule of law (Keefer and Knack, 2007). Moreover, these measures act as indicators of governance quality (Jin and Myers, 2006; La Porta et al., 1998). In our analysis, we employ binary variables to represent instances of low public satisfaction with government economic policies and increased risk of political unrest. These binary variables assume a country's GOV_SATIS and POLITICAL_UNREST scores fall within the top third of observations within our sample, denoted as LOW_GOV_SATIS and HIGH_POLITICAL_UNREST. Conversely, they are set to zero if the scores do not meet this criterion.

Lastly, the Governance Index (GOVERNANCE_IDX) reflects the quality of governance across countries, and is constructed as the first principal component of controls for corruption, government effectiveness, political stability, regulatory quality, and voice and accountability, based on Kaufmann and Kraay (2022). Legal Origin (COMLAW) takes into account whether a country's legal system is based on common law, as this influences its financial and regulatory frameworks.

3.2. Measuring societal trust

In line with prior studies (Abdelsalam et al., 2021; Dudley and Zhang, 2016; El Ghoul et al., 2023; Guiso et al., 2008; Meng and Yin, 2019; Pevzner et al., 2015; Shen et al., 2022), we measure societal trust (SOCIETAL_TRUST) using responses to a specific question from the WVS: "*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 metric captures the average proportion of respondents in a country—determined by the corporate headquarters of each bank—who responded with "*Most people can be trusted.*" The data was gathered over four waves of the WVS: 2000–2004,

[5] The legal rights index we utilize, sourced from the Doing Business Project, ranges in value from zero to twelve. Detailed information about this index can be accessed at https://www.doingbusiness.org/ (as of January 10, 2024). This index serves as a robust measure of legal rights, enabling us to effectively measure the strength of legal protection within different economies.

[6] The measures we employ are sourced from the International Country Risk Guide (ICRG). The ICRG is a comprehensive rating system that evaluates a country across twelve political dimensions. These include government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, the involvement of military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. In our analysis, we interpret higher values of the POLITICAL_UNREST and GOV_SATIS indices to signify a greater risk of political unrest or a decreased level of satisfaction with government economic policies, respectively.

2005–2008, 2010–2014, and 2017–2020.

3.3. Measuring organizational (situational) trust

In addition to societal trust, organizational (situational) trust plays a significant role in shaping investor perceptions and behavior within the banking sector. Organizational trust is grounded in specific bank-level characteristics that collectively define a bank's trustworthiness. Building upon the conceptual foundations of Ryan and Buchholtz (2001) and Gulati and Nickerson (2008), which emphasize the impact of organizational characteristics on trust and outcomes, we employ bank-specific metrics as proxies for organizational trust. Specifically, we employ bank age (LnAGE) and size (LnSIZE), as differentiators of risk profiles between younger, smaller banks, and their older, larger counterparts. These metrics reflect bank visibility and stability (e.g., Cao et al., 2008; Pastor and Veronesi, 2003). Attributes, associated with longevity and market presence, evoke a sense of reliability and enduring trust among investors due to the established presence of larger and older banks. We also include institutional ownership (INSTIT_OWN), which indicates the percentage of stocks held by institutional investors. This metric is included as an indicator of effective external monitoring and corporate transparency, factors that are crucial for enhancing investor trust and confidence in the bank's operations (e.g., Chen et al., 2007; Kim and Zhang, 2016). The market-to-book ratio (MARKET_TO_BOOK) is included to assess growth opportunities and market expectations, providing insights into how investors perceive a bank's future potential and associated risks (Cao et al., 2008; Zhang, 2006). In addition, we consider several key indicators to assess a bank's operational efficiency, financial structure, and accounting quality: 1) Profitability (ROA) signals a bank's ability to generate returns, thereby enhancing investor confidence in its financial health; 2) Leverage (LEVERAGE) reflects a bank's financial strategy and structure; 3) The presence of a BIG4 auditor (BIG4) is an indicator of accounting quality, assuring investors of the bank's commitment to high standards of financial reporting and auditing; 4) Revenue growth (REVENUE_GROWTH) indicates a bank's financial health and growth trajectory, providing investors with insights into its operational momentum and future prospects; 5) The too-big-to-fail indicator (TOOBIG) addresses the systemic importance of banks and the perceived assurance of stability due to their scale and interconnectedness within the financial system. This often results in a lower risk profile as investors anticipate potential government support during times of distress; and 6) State ownership status (STATE_OWNED) reflects the unique risk profiles and operational dynamics of state-owned banks compared to private ones (Kanagaretnam et al., 2019). While state ownership may provide a sense of security due to potential government backing, it also introduces considerations related to operational efficiency and political interference. By using these bank-specific characteristics as proxies, we aim to capture the essence of organizational trust and its impact on investor perceptions and market risk.[7]

3.4. Measuring bank market risk

In line with prior studies (e.g. Abdelsalam et al., 2021; Sila et al., 2016), we quantify bank market risk through two main measures: i) total risk of stock returns (TRISK), measured as the standard deviation of stock returns; and ii) idiosyncratic or bank-specific risk (IRISK), captured as the standard deviation of the residuals from the Fama and French (1993) three-factor model, expressed in Equation (1):

$$E(R_{i,t}) = \alpha + \beta_1[E(R_{m,t})] + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_{it} \quad (1)$$

where α is the constant term; $E(R_{i,t})$ and $E(R_{m,t})$ represent the expected returns of stock i and the overall market m, respectively, at time t; SMB_t indicates the difference between the return on a portfolio of small- versus big capitalisation stocks at time t; HML_t represents the difference between the return on a portfolio of high- versus low book-to-market stocks at time t; and $\varepsilon_{i,t}$ is the error term. Following Abdelsalam et al. (2021), each stock requires up to 40 available trading weeks of returns within a single calendar year. First, we calculate total risk (TRISK) as the standard deviation of weekly stock returns for each bank per year. Second, we run Equation (1) for each bank's stock i every year. We use the standard deviation of ε_{it} to capture idiosyncratic risk (IRISK). Finally, we follow similar studies (i.e., Abdelsalam et al., 2021; Sila et al., 2016) and annualize TRISK and IRISK by multiplying them with the square root of 52.

3.5. Empirical model

We employ two-stage least squares (2SLS) to address potential endogeneity concerns arising from the bidirectional causality between societal trust and institutional quality, as documented in prior studies (e.g., Knack, 2002; Paxton, 2002). These concerns arise because institutional quality can both impact and be influenced by societal trust, potentially affecting our coefficient estimates. To mitigate such concerns, we employ the Desmet et al. (2012) ethnolinguistic fractionalization (ELF) index as an instrumental variable. The ELF index quantifies the probability of two randomly selected individuals from a country belonging to different ethnolinguistic groups. We choose this instrument due to its relevance to societal trust and its exogeneity to the model. Racial and linguistic heterogeneity, as measured by ELF, has been associated with reduced levels of bilateral trust (e.g., Ang et al., 2015; Guiso et al., 2009; Gupta et al., 2018). Moreover, the stability of a country's ethnic and linguistic composition over time (e.g., Guiso et al., 2006) makes ELF less susceptible to short-term fluctuations or factors that affect bank market risk, rendering it a suitable instrument for our analysis.

[7] While this approach provides valuable insights, we acknowledge its potential limitations in capturing the entire spectrum of organizational trust in the banking sector. We thank two anonymous reviewers for highlighting this important aspect.

In this context, we anticipate a negative association between the ELF index and societal trust, based on the premise that more homogeneous communities foster higher levels of social interaction and, consequently, greater social capital (Alesina et al., 2003).

To test our hypotheses, we use the following empirical model:

$$\begin{aligned} RISK_{i,s,t} &= \beta_0 + \beta_1 SOCIETAL\_TRUST_{s,t} + \sum\nolimits_{s,t} \beta_{s,t} Country\_Env_{s,t} \\ &+ \sum\nolimits_{i,s,t} \beta_{i,s,t} Bank\_Level\ Variables_{i,s,t} \\ &+ \sum\nolimits_{s,t} \beta_{s,t} Country\_Level\ Variables_{s,t} + \sum\nolimits_{t} \beta_t Year_t + \varepsilon_{i,s,t} \end{aligned} \quad (2)$$

In Equation (2), $RISK_{i,s,t}$ denotes either $TRISK_{i,s,t}$ or $IRISK_{i,s,t}$, representing total risk and idiosyncratic risk, respectively, for bank i in country s, in year t (see Section 3.4). $SOCIETAL\_TRUST_{s,t}$ signifies the level of societal trust for country s in year t (see Section 3.2). $Country\_Env_{s,t}$ represents the legal and institutional measure (an antecedent of trust) for country s in year t (see Section 3.1). $Bank\_Level\ Variables_{i,s,t}$, capturing organizational (situational) trust, includes a vector of bank-specific variables for bank i in country s, in year t (see Section 3.3). $Country\_Level\ Variables_{s,t}$ includes a vector of control variables for country s in year t. In line with prior studies (e.g., Kanagaretnam et al., 2019), we incorporate controls for economic development and bank competition. Economic development is represented by the annual growth rate of GDP (GDP_GROWTH), which serves as an indicator of capital allocation within the context of financial development (Wurgler, 2000). Bank competition (BANK_COMPETITION) is measured by the Herfindahl index, which assesses the degree of competition in the banking sector. To implement the 2SLS regressions, $SOCIETAL\_TRUST_{s,t}$ is instrumented by the ethnolinguistic fractionalization ($ELF_{s,t}$) for country s in year t. $Year_t$ denotes indicator variables, taking a value of one for year t, and zero otherwise. We calculate heteroskedasticity-robust standard errors clustered at the bank level for all regression estimates.

3.6. Data

We test our hypotheses using a global sample of 1,572 publicly listed banks for the period spanning from 2002 to 2018. The accounting and ownership structure data was sourced from the Orbis Bank Focus database, while market price data was obtained from DataStream. We also collected the country-level data from the World Bank and ICRG databases.

Our initial sample included 2,364 listed banks drawn from Orbis Bank Focus and DataStream. We excluded 303 banks because their corporate headquarters' countries were not covered by the WVS. An additional 362 banks are omitted due to missing data for the variables included in our empirical model. Following Abdelsalam et al. (2021), we set sample selection criteria requiring a minimum of two bank-year observations for each bank within a country and at least four banks for each country. This filtering strategy led to the elimination of 127 banks. Consequently, our final sample comprises 1,572 banks, representing 10,616 bank-year observations (as detailed in Table 1), across 45 countries (see Table 2).

Table 2 presents the average value of our societal trust measure for each country. Notably, the Philippines, Colombia, Indonesia, Ghana, and Zimbabwe exhibit the lowest societal trust scores, with less than 6.8% of survey respondents in these countries agreeing that most people can be trusted. In contrast, China, the Netherlands, Finland, Norway, and Denmark rank highest in terms of societal trust, with more than 60% of the respondents indicating trust in people within their respective countries. This wide range in trust scores reflects the significant differences in socio-cultural and institutional contexts across the countries in our sample.

4. Empirical results

4.1. Descriptive analysis

Table 3 presents the descriptive statistics for the variables used in our analysis, with subscripts omitted from Equation (2) for simplicity. The mean of SOCIETAL_TRUST is 32.1%, with a standard deviation of 12.6%, highlighting considerable variation in trust levels across different countries, as further illustrated in Table 2. INSTIT_OWN has a mean value of 45.1%, indicating that institutional investors hold a significant proportion of shares in our sample banks. The average values of STATE_OWNED and TOOBIG are 0.6% and 0.1% respectively, revealing a relatively small presence of state-owned and 'too large to fail' banks in our sample. This finding aligns with prior studies (e.g., Kanagaretnam et al., 2019). The average (median) MARKET_TO_BOOK ratio is 1.177 (0.984). For ROA, REVENUE_GROWTH and LEVERAGE, mean (median) values stand at 120.7% (91.1%), 5.6% (3.1%), and 81.4% (89%), respectively. Regarding our market risk measures, TRISK exhibits a mean of 0.681 and a standard deviation of 0.411, while IRISK has a mean value of 0.576 with a standard deviation of 0.385. It is worth noting that most variables show significant skewness and kurtosis, indicating non-normal distributions. To address this issue and potential heteroskedasticity, we employ robust standard errors, clustered at the bank level, in our 2SLS regressions. Additionally, we winsorize all continuous variables at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 4 presents the Pearson correlation matrix for the variables detailed in Table 3. SOCIETAL_TRUST exhibits a significant negative correlation with the firm risk measures, TRISK and IRISK. This observation aligns with our hypothesis that higher levels of societal trust are associated with reduced risk within banking firms. Additionally, the correlation matrix suggests that multicollinearity is unlikely to exert a substantial influence on our results. To further address potential concerns about multicollinearity, we report the Variance Inflation Factors (VIFs) for each model in our analysis. The magnitude of the VIF values affirms that multicollinearity is not a significant concern in our study.

Table 1
Sample Selection Process.

Sample selection stages	No. banks	No. bank years
Listed banks with common support between Orbis Bank Focus and DataStream (2002–2018).	2,364	24,544
Exclude: Banks for which the country of corporate headquarters is not covered by the World Values Survey.	303	1,667
Exclude: Banks with missing stock price information data from DataStream.	68	1,655
Exclude: Banks with missing financial data for our empirical model.	239	8,638
Exclude: Banks with lack of ownership structure from ORBIS Bank Focus.	55	1,827
Exclude: Observations of banks that do not meet the four banks per country and two observations per bank criterion.	127	141
Final sample.	**1,572**	**10,616**

Table 2
Country Distribution of Observations.

No	Country	Banks	Obs	%	SOCIETAL_TRUST
1	Argentina	7	49	0.46	0.192
2	Australia	23	136	1.28	0.504
3	Austria	6	12	0.11	0.498
4	Brazil	21	149	1.40	0.069
5	Chile	9	65	0.61	0.125
6	China	56	284	2.68	0.615
7	Colombia	10	72	0.68	0.042
8	Croatia	6	12	0.11	0.136
9	Denmark	23	46	0.43	0.739
10	Egypt	32	255	2.40	0.179
11	Finland	4	8	0.08	0.684
12	France	17	34	0.32	0.263
13	Germany	33	215	2.03	0.437
14	Ghana	6	36	0.34	0.050
15	Greece	6	12	0.11	0.084
16	India	59	308	2.90	0.167
17	Indonesia	44	88	0.83	0.046
18	Italy	27	54	0.51	0.266
19	Japan	124	1,257	11.84	0.357
20	Jordan	22	193	1.82	0.165
21	Kazakhstan	6	32	0.30	0.330
22	Malaysia	13	96	0.90	0.110
23	Mexico	13	74	0.70	0.119
24	Morocco	6	12	0.11	0.128
25	Netherlands	7	42	0.40	0.637
26	Nigeria	19	105	0.99	0.144
27	Norway	24	48	0.45	0.721
28	Pakistan	39	220	2.07	0.226
29	Peru	10	55	0.52	0.074
30	Philippines	21	115	1.08	0.038
31	Poland	13	96	0.90	0.227
32	South Korea	33	192	1.81	0.287
33	Russia	18	107	1.01	0.266
34	Singapore	10	47	0.44	0.373
35	South Africa	14	75	0.71	0.233
36	Spain	8	61	0.57	0.248
37	Sweden	7	41	0.39	0.610
38	Switzerland	33	67	0.63	0.570
39	Thailand	32	183	1.72	0.311
40	Tunisia	19	132	1.24	0.150
41	Turkey	49	268	2.52	0.121
42	Ukraine	7	31	0.29	0.231
43	United Kingdom	29	58	0.55	0.402
44	United States of America	602	5,140	48.42	0.361
45	Zimbabwe	5	34	0.32	0.068
Total		**1,572**	**10,616**	**100**	–

Note: This table presents the sample distribution by country, while the last Column provides the mean value of the societal trust measure for each country. SOCIETAL_TRUST represents the level of trust in the country where the corporate headquarters are located. This trust level is measured by the percentage of respondents who agree with the view that most people can be trusted, based on data from the World Values Survey (WVS).

Table 3
Descriptive Statistics.

Variable	Min	25th	Mean	Median	75th	Max	StDev	Skewness	Kurtosis
IRISK	0.085	0.349	0.576	0.464	0.661	2.439	0.385	2.416	10.298
TRISK	0.090	0.427	0.681	0.571	0.817	2.554	0.411	2.034	8.514
SOCIETAL_TRUST	0.021	0.265	0.321	0.348	0.370	0.739	0.126	−0.038	4.121
LnAGE	0.693	2.773	3.255	3.258	3.850	4.970	0.864	−0.417	3.359
LnSIZE	8.863	13.649	15.190	15.128	16.881	21.353	2.492	−0.066	3.145
INSTIT_OWN	0.000	0.134	0.451	0.427	0.739	1.000	0.327	0.161	1.689
MARKET_TO_BOOK	0.001	0.595	1.177	0.984	1.473	6.115	0.955	2.376	11.335
ROA	−9.630	0.445	1.207	0.911	1.425	13.931	2.606	1.159	13.520
LEVERAGE	0.000	0.853	0.814	0.890	0.916	0.973	0.223	−2.565	8.555
BIG4	0.000	0.000	0.421	0.000	1.000	1.000	0.494	0.319	1.101
TOOBIG	0.000	0.000	0.001	0.000	0.000	1.000	0.032	31.018	963.092
REVENUE_GROWTH	−1.087	−0.018	0.056	0.031	0.121	1.424	0.275	0.809	13.036
STATE_OWNED	0.000	0.000	0.006	0.000	0.000	1.000	0.078	12.662	161.329
GDP_GROWTH	−0.098	0.016	0.025	0.022	0.029	0.167	0.023	0.218	6.567
GOVERNANCE_IDX	0.385	1.111	1.589	1.851	1.882	2.161	0.479	−1.154	2.853
COMLAW	0.000	0.000	0.606	1.000	1.000	1.000	0.489	−0.436	1.190
BANK_COMPETITION	0.000	0.058	0.219	0.081	0.191	3.660	0.454	5.660	40.185

Note: This table presents the descriptive statistics for the variables used in our analysis. The number of observations is 10,616. StDev denotes the standard deviation. The continuous variables are winsorized at the 1st and 99th percentiles. All variables are defined in Appendix A.

Table 4
Pearson Correlation Matrix.

Variable	1	2	3	4	5	6	7	8
1. IRISK	1.00							
2. TRISK	0.96***	1.00						
3. SOCIETAL_TRUST	−0.05***	−0.05***	1.00					
4. LnAGE	−0.11***	−0.05***	−0.14***	1.00				
5. LnSIZE	−0.27***	−0.13***	0.09***	0.31***	1.00			
6. INSTIT_OWN	−0.08***	−0.05***	−0.10***	0.04***	0.26***	1.00		
7. MARKET_TO_BOOK	−0.08***	−0.09***	0.00	−0.05***	−0.06***	0.15***	1.00	
8. ROA	−0.17***	−0.17***	−0.07***	−0.02	−0.10***	0.04***	0.23***	1.00
9. LEVERAGE	−0.11***	−0.07***	0.06***	0.17***	0.56***	0.04***	−0.06***	−0.38***
10. BIG4	−0.14***	−0.10***	−0.04***	0.18***	0.36***	0.36***	0.01	0.08***
11. TOOBIG	−0.02**	−0.01	−0.04***	0.04***	0.03***	−0.01	0.00	0.00
12. REVENUE_GROWTH	−0.03***	−0.04***	0.01	−0.06***	0.01	0.04***	0.08***	0.05***
13. STATE_OWNED	0.00	0.01	−0.02**	0.06***	0.13***	−0.01	−0.03***	−0.01
14. GDP_GROWTH	−0.11***	−0.12***	−0.22***	0.02**	0.04***	0.14***	0.08***	0.13***
15. GOVERNANCE_IDX	−0.12***	−0.12***	0.59***	−0.09***	0.04***	−0.15***	0.01	−0.10***
16. COMLAW	0.03***	−0.03***	0.16***	−0.28***	−0.23***	−0.09***	0.12***	0.01
17. BANK_COMPETITION	0.06***	0.06***	−0.13***	−0.05***	−0.07***	0.09***	0.04***	0.10***
Variable	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
9. LEVERAGE	1.00							
10. BIG4	0.08***	1.00						
11. TOOBIG	−0.01	0.02**	1.00					
12. REVENUE_GROWTH	0.03***	−0.04***	0.00	1.00				
13. STATE_OWNED	0.04***	0.03***	0.00	−0.01	1.00			
14. GDP_GROWTH	−0.08***	0.05***	0.01	0.07***	0.07***	1.00		
15. GOVERNANCE_IDX	0.10***	−0.19***	−0.04***	0.01	−0.09***	−0.47***	1.00	
16. COMLAW	0.01	−0.29***	−0.04***	0.08***	−0.05***	−0.04***	0.27***	1.00
17. BANK_COMPETITION	−0.20***	0.16***	0.00	−0.05***	0.00	0.10***	−0.19***	−0.19***

Note: This table presents the Pearson correlation matrix for the variables used in our analysis. The number of observations is 10,616. All variables are defined in Appendix A. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

4.2. Multivariate analysis

4.2.1. Societal trust and market risk using baseline regressions

Table 5 presents the results of the 2SLS regression analysis, focusing on market risk measures—specifically, IRISK (Column 1) and TRISK (Column 2)—as the dependent variables. We consistently observe that the coefficients for SOCIETAL_TRUST are negative and statistically significant at the 1% level (Columns 1 and 2; p-value ≤ 0.01), thereby supporting our first hypothesis ($\boldsymbol{H_1}$). This suggests that higher societal trust is associated with lower market risk for banking firms. Our regression results also indicate that the coefficients for SOCIETAL_TRUST bear economic significance. Specifically, a one standard deviation increase in societal trust (0.126) corresponds to a substantial 14.98% and 19.01% decrease in firm risk, as measured by IRISK and TRISK, respectively (calculated as -1.189×0.126 for IRISK and -1.509×0.126 for TRISK). We find no indication of multicollinearity issues, as the mean VIFs remain below the

Table 5
Trust and Bank Market Risk.

Dependent Variable:	(1)	(2)
	IRISK	TRISK
SOCIETAL_TRUST	−1.189***	−1.509***
	(−3.67)	(−3.77)
Bank-Level Variables (Organizational Trust):		
LnAGE	−0.042***	−0.041**
	(−2.69)	(−2.25)
LnSIZE	−0.034***	−0.007
	(−5.71)	(−1.05)
INSTIT_OWN	−0.036	−0.036
	(−1.25)	(−1.08)
MARKET_TO_BOOK	−0.011	−0.011
	(−1.31)	(−1.09)
ROA	−0.027***	−0.028***
	(−7.35)	(−7.01)
LEVERAGE	−0.070	−0.193***
	(−1.33)	(−3.38)
BIG4	0.044*	0.041
	(1.69)	(1.36)
TOOBIG	−0.396***	−0.392***
	(−7.51)	(−6.29)
REVENUE_GROWTH	−0.017	−0.028
	(−0.92)	(−1.33)
STATE_OWNED	0.165**	0.157**
	(2.34)	(2.16)
Country-Level Variables:		
GOVERNANCE_IDX	0.056	0.099
	(0.47)	(0.69)
COMLAW	0.007	−0.015
	(0.40)	(−0.76)
GDP_GROWTH	0.513	0.520
	(0.79)	(0.68)
BANK_COMPETITION	0.021	0.022
	(1.20)	(1.16)
Intercept	1.507***	1.365***
	(18.89)	(16.07)
Year dummies	Yes	Yes
Hausman test	15.616***	20.576***
Mean VIF	1.393	1.386
Observations	10,616	10,616
First stage	**(1)**	**(2)**
ELF	−0.068***	−0.068***
	(−2.98)	(−2.98)
F-statistic	48.88	48.88
Partial R^2	0.0332	0.0332
Control Variables	Yes	Yes
Year dummies	Yes	Yes

Note: This table reports Instrumental Variable (IV) estimates for the regressions of market risk measures, specifically a) IRISK (Column 1) and b) TRISK (Column 2), on societal trust, organizational trust, and other control variables. The *z*-statistics in parentheses are based on heteroskedasticity-robust standard errors, clustered at the bank level. All continuous variables are winsorized at the 1st and 99th percentiles. We omit for brevity all other control variables included in the first-stage regressions and only report the coefficients for the instrumental variable, namely the ethnolinguistic fractionalization index (ELF). We further present the *F*-statistic and Partial R^2 for the instrumental variables used for SOCIETAL_TRUST. All variables are defined in Appendix A. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

conventional cut-off value of 10 across all models. Additionally, the significant Hausman statistic (p-value ≤ 0.01) underscores the suitability of the 2SLS estimation method over OLS.[8] The first-stage regression results reveal that the instrumental variable, ethnolinguistic fractionalization (ELF), exhibits a significant negative correlation with the endogenous variable, SOCIETAL_TRUST, in both models (p-value ≤ 0.01). This aligns with previous research findings (e.g., Alesina et al., 2003). The *F*-statistic and partial *R*-squared values further highlight the instrument's robustness. In summary, our baseline regressions provide strong support for our first

[8] We replicate our analysis using OLS and show results (untabulated) qualitatively similar to our primary 2SLS findings, thus enhancing the credibility of our analysis.

hypothesis, demonstrating that societal trust is negatively associated with bank market risk.

4.2.2. Legal and institutional environment (antecedents of trust), societal trust and market risk

A critical aspect of our study involves exploring the interplay between societal trust and the strength of legal and institutional environments, which serve as antecedents of trust. While societal trust can independently incentivize investment, investors also seek reassurance in the effectiveness of the legal system, particularly concerning contract enforcement and protection of rights relevant to financial transactions. This reassurance is crucial in mitigating potential risks such as misappropriation of resources or financial malpractices. To investigate the combined influence of societal trust and legal and institutional conditions on market risk, we introduce in our regression model interaction terms between SOCIETAL_TRUST and indicators representing low levels of legal and institutional conditions. We focus on weak legal and institutional environments because evidence suggests that countries with such deficiencies are more susceptible to corruption, ineffective governance, and inadequate legal enforcement, factors that can erode investor confidence and disrupt market stability (La Porta et al., 1998). Therefore, it becomes imperative to explore how societal trust interacts with weak legal and institutional environments influencing market risk.

Tables 6 and 7 present the results pertaining to the interaction terms between societal trust and variables indicating weak legal and institutional environments. The dependent variables in these Tables are IRISK (Columns 1 and 3) and TRISK (Columns 2 and 4). Across both Tables, the results consistently show negative coefficients for the interaction terms, indicating risk-mitigating effects when societal trust is high amidst poor legal and institutional environments. Specifically, Columns 1 and 2 in Table 6 show that the impact of societal trust is amplified when it interacts with an indicator signalling that the country falls within the bottom third of our sample observations based on the investor protection index (LOW_INVESTOR_PROT). Notably, the interaction term SOCIETAL_TRUST × LOW_INVESTOR_PROT is negative and statistically significant (p-value ≤ 0.01), emphasizing the prominent role of societal trust in risk reduction in countries characterized by weak investor protection.

Columns 3 and 4 of Table 6 report the combined effect of weak legal rights (LOW_LEGAL_RIGHTS) and SOCIETAL_TRUST on market risk. The coefficients for the interaction terms SOCIETAL_TRUST × LOW_LEGAL_RIGHTS are negative and statistically significant (p-value ≤ 0.05), indicating that the influence of societal trust in reducing bank market risk is stronger in countries where the legal system is less effective in enforcing financial outcomes.[9] In such contexts, stakeholders, including borrowers and lenders, may place more reliance on *informal* relationships and networks for risk assessment and information sharing.[10] These informal mechanisms are often more prevalent in developing countries, where less developed legal systems and financial markets necessitate a higher degree of dependence on non-formalized relationships (Abdelsalam et al., 2021).

In Table 7, Columns 1 and 2 examine the interaction between societal trust (SOCIETAL_TRUST) and a variable representing low levels of satisfaction with government economic policies (LOW_GOV_SATIS). Consistent with previous findings, our analysis reveals that these interaction terms (SOCIETAL_TRUST × LOW_GOV_SATIS) consistently demonstrate risk-reducing effects (p-value ≤ 0.01). Our results indicate that the influence of societal trust in mitigating bank market risk is more pronounced in countries with lower satisfaction with government economic policies. This finding aligns with the literature on law, finance, and governance (La Porta et al., 1997, 1998), which suggests that poor investor protection and weak governance can hinder financial market development and exacerbate market risk. In contrast, developed financial markets, characterized by better governance and investor protection, can capitalize on high-performing investment opportunities, thereby reducing market risk (Wurgler, 2000).

Columns 3 and 4 of Table 7 include a variable representing high political unrest (HIGH_POLITICAL_UNREST), along with its interaction with societal trust (SOCIETAL_TRUST). The interaction terms (SOCIETAL_TRUST × HIGH_POLITICAL_UNREST) exhibit negative and significant coefficients (p-value ≤ 0.05). Our findings underscore the role of informal institutions, such as societal trust, in mitigating market risk. However, this effect is context-specific, contingent on distinct legal and institutional environments (e.g., Abdelsalam et al., 2021; North, 1994; Qian et al., 2018; Shen et al., 2022). We observe that societal trust effectively reduces market risk, particularly in countries characterized by weak investor protection, limited legal rights, low governmental policy satisfaction, and high political unrest. Consequently, our findings support hypothesis ***H₂***. More broadly, our results contribute to prior studies by demonstrating that the impact of informal institutions, such as societal trust, depends on the legal and institutional context. It becomes more influential in shaping bank market risk when formal governance mechanisms are less effective or inadequate (Hasan and Habib, 2019; Kanagaretnam et al., 2017). In essence, societal trust emerges as a vital substitute governance mechanism that significantly influences bank market risk across a spectrum of institutional environments.

4.2.3. Organizational (situational) trust and market risk

In this Section, we delve into the relationship between organizational (situational) trust and market risk. We posit that

[9] The evaluation of borrowers' and lenders' legal rights primarily hinges on two factors: (i) transactional security, determined by the existence of specific features that facilitate lending within applicable collateral and bankruptcy laws; and (ii) the extent of *formal* credit information reporting, considering the coverage, scope, and accessibility of credit information available through credit reporting entities such as credit bureaus or credit registries (*Doing Business 2019*, p. 94). Countries with poor investor protection often possess underdeveloped legal and financial systems, providing ample opportunities for insider investors to expropriate resources (La Porta et al., 1997; 1998).

[10] Houston et al. (2010) report that greater information sharing can lower bank risk, boost bank profitability, stimulate economic growth, and reduce the likelihood of financial crises. Djankov et al. (2007) further emphasize the importance of information sharing in enhancing lending in economically weaker countries, indicating that legal origins play a determinant role in both information sharing and the protection of creditor rights.

Table 6
Trust, Investor Protection, Legal Rights, and Bank Market Risk.

Dependent Variable:	**(1)**	**(2)**	**(3)**	**(4)**
	IRISK	**TRISK**	**IRISK**	**TRISK**
SOCIETAL_TRUST	−2.142***	−3.586***	−3.631**	−5.034**
	(−2.84)	(−3.29)	(−2.04)	(−2.12)
Country Legal and Institutional Environment Variables (Antecedents of Trust):				
SOCIETAL_TRUST × LOW_INVESTOR_PROT	−3.741***	−5.641***		
	(−3.71)	(−4.46)		
LOW_INVESTOR_PROT	1.090***	1.690***		
	(4.14)	(4.79)		
SOCIETAL_TRUST × LOW_LEGAL_RIGHTS			−3.694**	−5.014**
			(−2.30)	(−2.05)
LOW_LEGAL_RIGHTS			0.696**	0.946**
			(2.13)	(2.26)
GOVERNANCE_IDX	−0.160***	−0.207***	−0.170***	−0.208***
	(−3.06)	(−2.93)	(−2.70)	(−2.79)
COMLAW	0.069**	0.089**	−0.010	−0.039**
	(2.36)	(2.27)	(−0.61)	(−2.02)
GDP_GROWTH	−0.439	−1.019	−1.019*	−1.558**
	(−0.53)	(−0.88)	(−1.88)	(−2.42)
BANK_COMPETITION	0.018	0.019	0.047***	0.058***
	(0.92)	(0.81)	(2.73)	(2.91)
Bank-Level Variables (Organizational Trust):				
LnAGE	−0.016	−0.000	−0.017	−0.007
	(−1.00)	(−0.01)	(−1.61)	(−0.56)
LnSIZE	−0.033***	−0.006	−0.042***	−0.018***
	(−5.60)	(−0.78)	(−8.26)	(−3.18)
INSTIT_OWN	−0.005	0.010	0.004	0.019
	(−0.21)	(0.31)	(0.16)	(0.71)
MARKET_TO_BOOK	−0.009	−0.008	−0.013	−0.013
	(−1.11)	(−0.77)	(−1.55)	(−1.35)
ROA	−0.026***	−0.026***	−0.024***	−0.024***
	(−7.05)	(−6.31)	(−7.02)	(−6.51)
LEVERAGE	−0.075	−0.203***	−0.010	−0.113**
	(−1.41)	(−3.28)	(−0.20)	(−2.01)
BIG4	0.026	0.013	−0.020	−0.045*
	(0.94)	(0.36)	(−0.90)	(−1.74)
TOOBIG	−0.345***	−0.323***	−0.257***	−0.203***
	(−10.56)	(−7.73)	(−6.26)	(−3.97)
REVENUE_GROWTH	0.017	0.024	−0.004	−0.009
	(0.83)	(0.97)	(−0.20)	(−0.47)
STATE_OWNED	0.116*	0.078	0.136***	0.117*
	(1.85)	(1.17)	(2.62)	(1.72)
Intercept	0.604**	−0.074	0.861***	0.488
	(2.44)	(−0.21)	(2.84)	(1.26)
Year dummies	Yes	Yes	Yes	Yes
Hausman test	41.146***	86.745***	12.006***	19.153***
Mean VIF	2.296	2.291	3.810	3.807
Observations	10,616	10,616	10,616	10,616
First stage	**(1)**	**(2)**	**(3)**	**(4)**
ELF	−0.085***	−0.085***	−0.060**	−0.060**
	(−3.35)	(−3.35)	(−2.20)	(−2.20)
F-statistic	15.51	15.51	32.66	32.66
Partial R^2	0.0126	0.0126	0.0285	0.0285
ELF × LOW_INVESTOR_PROT	0.112***	0.112***		
	(4.96)	(4.96)		
ELF × LOW_LEGAL_RIGHTS			−0.054**	−0.054**
			(−2.42)	(−2.42)
F-statistic	15.30	15.30	23.53	23.53
Partial R^2	0.0161	0.0161	0.0292	0.0292
Control Variables	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes

Note: This table reports Instrumental Variable (IV) estimates for the regressions of market risk measures, specifically a) IRISK (Columns 1 and 3) and b) TRISK (Columns 2 and 4), on societal trust, organizational trust, and other control variables. Columns 1 and 2 include an interaction term between SOCIETAL_TRUST and an indicator variable that captures the strength of a country's investor protection, namely LOW_INVESTOR_PROT. Columns 3 and 4 include an interaction term between SOCIETAL_TRUST and an indicator variable that captures the strength of a country's legal protection, namely LOW_LEGAL_RIGHTS. The *z*-statistics in parentheses are based on heteroskedasticity-robust standard errors, clustered at the bank level. All continuous variables are winsorized at the 1st and 99th percentiles. We omit for brevity all other control variables included in the first-stage regressions and only report the coefficients for the instrumental variable, namely the ethnolinguistic fractionalization index (ELF). We further present

the *F*-statistic and Partial R^2 for ELF as well as its interactions with LOW_INVESTOR_PROT and LOW_LEGAL_RIGHTS (i.e., the first statistics correspond to ELF, while the *F*-statistic and Partial R^2 at the bottom of the table refer to the interacted variables). All variables are defined in Appendix A. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

organizational trust, encompassing both the goodwill and competence of banks, plays a pivotal role in shaping investor perceptions and trading behavior, ultimately exerting an influence on market risk. Given that certain bank-specific characteristics can act as proxies for organizational trust (as discussed in Section 3.3), our findings, presented in Tables 5 to 7, provide partial support for hypothesis ***H3***.[11] Specifically, we observe that bank age (LnAGE) and size (LnSIZE), signifying longevity and stability, generally exhibit a negative relationship with IRISK and TRISK. This alignment with existing literature suggests that larger and older firms tend to experience lower volatility in their returns (Pastor and Veronesi, 2003). This phenomenon can be attributed to the perception that established banks, with their proven track record and prominence, have cultivated a more robust trust relationship with their stakeholders, thereby enhancing their resilience against market fluctuations. Additionally, the return on assets (ROA) variable demonstrates a significant negative association with market risk. This implies that institutions demonstrating higher profitability are perceived as less risky. Investors tend to regard banks with strong financial performance as more adept at navigating market uncertainties, consequently lowering the perceived risk. Similarly, the coefficients for the too-big-to-fail indicator (TOOBIG) in Tables 5 to 7 are negative and statistically significant at the 1% level. This suggests that banks perceived as 'too big to fail' may carry an implicit assurance of stability and support, subsequently reducing perceived market risk. This perception is likely rooted in the belief in the systemic importance and the potential for government intervention in such institutions, which can significantly impact investor confidence and market risk assessments. Moreover, the coefficients for STATE_OWNED are positive and significant, aligning with the idea that investors may perceive potential risks associated with state ownership. One potential explanation for this observation is that extensive state ownership can raise concerns about inefficient lending policies and heightened political interference in bank operation. These concerns can erode investor trust and amplify perceived risk. Collectively, these results underscore the multifaceted role of organizational trust in shaping market risk perceptions. Our findings suggest that situational (organizational) trust, which encompasses investor perceptions of a bank's intentions, capabilities, stability and commitment to financial integrity, serves as a significant factor influencing bank market risk by impacting investor confidence and trading behavior.

5. Robustness tests

In this Section, we conduct a series of robustness tests to further validate and strengthen our primary results. First, we introduce additional explanatory variables in our regression models. Specifically, we incorporate additional measures related to corporate governance, which account for the reduced agency and monitoring costs associated with firms operating in high-trust environments (Knack and Keefer, 1997; Lesmeister et al., 2022; Zak and Knack, 2001). Our selected governance measures are: i) the proportion of independent directors on the board (INDEP_DIR); ii) the proportion of female directors on the board (FEMALE_DIR); and iii) the proportion of directors from different countries (COUNT_DIR). These governance indicators are proposed to influence firm-level risk (Huang et al., 2018; Minton et al., 2014).[12] Lastly, we incorporate a measure of earnings quality (EARNINGS_QUAL) into our regressions, given its informative role in capital markets (refer to Dechow et al. (2010) for a review on earnings quality). Specifically, the information encapsulated in earnings is known to correlate with the information investors use to evaluate stocks (Bhattacharya et al., 2003). In Table 8, we find that the coefficients for SOCIETAL_TRUST are negative and statistically significant, indicating that our main findings remain unchanged.

As an additional robustness test, we conduct subgroup analyses by categorizing our sample based on OECD membership and levels of economic development. This enables us to compare the effect of societal trust on bank market risk in OECD versus non-OECD countries, as well as between developed and developing nations. Our results consistently demonstrate that societal trust exerts a negative and significant impact on bank market risk across all groups. Notably, its risk-mitigating effect is more pronounced in non-OECD and developing countries. This finding aligns with prior research, suggesting that in environments where formal institutions are less established, informal governance mechanisms, such as societal trust, play a more substantial role (e.g., Abdelsalam et al., 2021; Guiso et al., 2004; Kanagaretnam et al., 2017; North, 1994; Qian et al., 2018). This trend is particularly evident in non-OECD and developing environments, highlighting the importance of societal trust in these settings.

To further validate our results, we conduct several sensitivity tests using alternative measures of bank market risk and societal trust. First, we apply the standard Capital Asset Pricing Model (CAPM) to calculate IRISK. Second, we follow prior studies (e.g., Sila et al., 2016) and use the five-year standard deviation of ROA and ROE as alternative proxies for IRISK. Third, as an alternative measure of trust, we adopt the trust index developed by Medrano (2011), following Kanagaretnam et al. (2019). Our main results remain unchanged when using these alternative measures.

Finally, in addition to the IV approach we employ in our main analysis, we follow prior literature (Busenbark et al., 2022) and

[11] We acknowledge the absence of direct measures of goodwill trust and competence trust as a limitation of this study.

[12] These governance indicators' influence on firm-level risk is emphasized by legislative measures such as the Dodd-Frank Act (2010), which mandates bank holding companies with total assets of US$10 billion or more, along with certain other non-bank financial companies, to institute a separate risk management committee. This committee must have at least one member with risk management expertise and experience managing risks in large companies. Similarly, the UK Financial Reporting Council (2014) holds directors of UK firms directly accountable for risk management, emphasizing the crucial role governance plays in managing risk.

Table 7
Trust, Satisfaction with the Government's Economic Policies, Political Unrest, and Bank Market Risk.

Dependent Variable:	**(1)**	**(2)**	**(3)**	**(4)**
	IRISK	**TRISK**	**IRISK**	**TRISK**
SOCIETAL_TRUST	−0.966**	−2.194***	−1.619**	−2.795***
	(−1.99)	(−2.66)	(−2.07)	(−2.64)
Country Legal and Institutional Environment Variables (Antecedents of Trust):				
SOCIETAL_TRUST × LOW_GOV_SATIS	−3.045***	−5.217***		
	(−2.75)	(−3.61)		
LOW_GOV_SATIS	0.621***	1.116***		
	(2.74)	(3.79)		
SOCIETAL_TRUST × HIGH_POLITICAL_UNREST			−0.175**	−0.593**
			(−2.06)	(−2.03)
HIGH_POLITICAL_UNREST			0.057	0.045
			(0.55)	(0.32)
GOVERNANCE_IDX	−0.254***	−0.399***	0.179	0.405*
	(−3.07)	(−3.31)	(1.10)	(1.83)
COMLAW	−0.003	−0.030	0.018	0.006
	(−0.18)	(−1.58)	(0.80)	(0.22)
GDP_GROWTH	0.638	0.794	0.444	0.554
	(1.00)	(0.95)	(0.82)	(0.77)
BANK_COMPETITION	0.012	0.005	0.017	0.013
	(0.63)	(0.21)	(0.94)	(0.59)
Bank-Level Variables (Organizational Trust):				
LnAGE	−0.033**	−0.026	−0.046***	−0.055***
	(−2.52)	(−1.53)	(−3.73)	(−3.33)
LnSIZE	−0.027***	0.005	−0.032***	−0.003
	(−3.99)	(0.60)	(−5.23)	(−0.45)
INSTIT_OWN	−0.023	−0.014	−0.046	−0.061*
	(−0.87)	(−0.44)	(−1.58)	(−1.66)
MARKET_TO_BOOK	−0.012	−0.010	−0.011	−0.009
	(−1.43)	(−1.09)	(−1.19)	(−0.85)
ROA	−0.027***	−0.029***	−0.028***	−0.030***
	(−7.66)	(−7.26)	(−7.44)	(−6.99)
LEVERAGE	−0.093*	−0.238***	−0.073	−0.206***
	(−1.69)	(−3.68)	(−1.45)	(−3.56)
BIG4	−0.011	−0.053*	0.050**	0.063**
	(−0.52)	(−1.84)	(2.29)	(2.24)
TOOBIG	−0.373***	−0.354***	−0.454***	−0.516***
	(−8.13)	(−5.72)	(−6.80)	(−5.80)
REVENUE_GROWTH	−0.027	−0.044*	−0.020	−0.035
	(−1.38)	(−1.88)	(−1.05)	(−1.55)
STATE_OWNED	0.175**	0.182**	0.181**	0.190*
	(2.55)	(2.30)	(2.30)	(1.94)
Intercept	1.235***	0.833***	1.407***	1.224***
	(11.38)	(6.02)	(14.08)	(9.84)
Year dummies	Yes	Yes	Yes	Yes
Hausman test	19.658***	47.432***	24.527***	48.694***
Mean VIF	1.980	1.974	2.308	2.303
Observations	10,616	10,616	10,616	10,616
First stage	**(1)**	**(2)**	**(3)**	**(4)**
ELF	−0.088***	−0.088***	−0.107***	−0.107***
	(−3.04)	(−3.04)	(−5.71)	(−5.71)
F-statistic	17.38	17.38	12.48	12.48
Partial R^2	0.0161	0.0161	0.0243	0.0243
ELF × LOW_GOV_SATIS	0.106***	0.106***		
	(4.89)	(4.89)		
ELF × HIGH_POLITICAL_UNREST			0.065***	0.065***
			(3.76)	(3.76)
F-statistic	11.01	11.01	29.71	29.71
Partial R^2	0.0147	0.0147	0.0665	0.0665
Control Variables	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes

Note: This table reports Instrumental Variable (IV) estimates for the regressions of market risk measures, specifically a) IRISK (Columns 1 and 3) and b) TRISK (Columns 2 and 4), on societal trust, organizational trust, and other control variables. Columns 1 and 2 include an interaction term between SOCIETAL_TRUST and an indicator variable that captures a country's public satisfaction level with their national government's economic policies, namely LOW_GOV_SATIS. Columns 3 and 4 include an interaction term between SOCIETAL_TRUST and an indicator variable that captures a country's presence or risk of political unrest, namely HIGH_POLITICAL_UNREST. The *z*-statistics in parentheses are based on heteroskedasticity-robust standard errors, clustered at the bank level. All continuous variables are winsorized at the 1st and 99th percentiles. We omit for brevity all other control variables included in the first-stage regressions and only report the coefficients for the instrumental variable, namely the ethnolinguistic

fractionalization index (ELF). We further present the *F*-statistic and Partial R^2 for ELF as well as its interactions with LOW_GOV_SATIS and HIGH_POLITICAL_UNREST (i.e., the first statistics correspond to ELF, while the *F*-statistic and Partial R^2 at the bottom of the table refer to the interacted variables). All variables are defined in Appendix A. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

implement an impact threshold for a confounding variable (ITCV) approach to further mitigate potential endogeneity concerns. This method assesses the robustness of our estimates to potential omitted variable bias (Busenbark et al., 2022). Our results indicate that the ITCV value exceeds the absolute value of the impact factor (Impact) of our control variables, suggesting that our findings are robust to the potential influence of correlated omitted variables.

6. Conclusion

In this paper, we examine the impact of trust on bank market risk utilizing a global sample of 10,616 bank-year observations across 45 countries between 2002 and 2018. Our findings highlight that elevated levels of societal trust are associated with reduced total and idiosyncratic risk of bank stock returns, signalling that investors tend to perceive banks in high-trust countries as less risky and more trustworthy. We also find that the risk-mitigating effect of societal trust is more pronounced for banks headquartered in countries with weaker formal institutions, characterized by lower investor protection, weaker legal rights, dissatisfaction with government policies, and a heightened risk of political unrest. These results underscore the role of societal trust as an alternative governance mechanism, substituting for ineffective formal institutions in mitigating bank market risk. Further, our study highlights the contribution of organizational (situational) trust, which is manifested through specific bank-level characteristics, in reducing bank market risk. This emphasizes the significance investors attach to banks' demonstrated stability, operational soundness, and commitment to financial integrity, all of which play pivotal roles in shaping investor trust and perceptions of market risk.

This study contributes to the growing body of research exploring the influence of trust on corporate activities (e.g., Bottazzi et al., 2016; Dudley and Zhang, 2016; El Ghoul et al., 2023; Fonseka et al., 2021; Meng and Yin, 2019; Pevzner et al., 2015; Qian et al., 2018; Shen et al., 2022). We extend this literature by focusing on the banking sector, a critical player in the stability and efficiency of financial systems and one particularly susceptible to moral hazard problems. Our findings advance the understanding of the legal and institutional contexts in which trust operates effectively as a mechanism for reducing risk. Moreover, we introduce an integrated theoretical framework that establishes connections between country-level factors, representing the antecedents and levels of societal trust, and bank-level factors, embodying organizational trust. This framework provides a multifaceted perspective on the determinants influencing investor behavior in capital markets, thereby expanding the theoretical landscape in this area of study.

Overall, our study underscores the significance of societal trust as an informal governance mechanism that influences bank market risk. The significant reduction in market risk associated with increased societal trust carries significant implications for financial stability, particularly in regions where formal institutional structures are less robust. By increasing market confidence in the banking sector, societal trust promotes financial stability, enabling more reliable access to credit and liquidity provision. This stability, in turn, fosters broader economic growth and resilience to financial crises.

In light of these findings, we advocate for the integration of trust-related considerations within bank regulatory frameworks by financial regulators and policymakers. Recognizing the substantial impact of trust on market risk perception, regulatory approaches could involve the incorporation of trust-related metrics into risk assessment models and the enhancement of transparency and ethical standards in regulatory guidelines. Furthermore, our study encourages countries with less effective legal and regulatory frameworks, especially those facing challenges in enforcement, to strengthen their institutional mechanisms. Such enhancements are crucial for fostering societal and investor trust in the financial system. Our results also highlight the importance of developing trust-enhancing policies, particularly in countries with less robust formal institutions. Such policies indirectly contribute to financial stability and bolster the overall resilience of the financial sector. Given the evolving nature of trust, continuous monitoring of its impact is crucial to ensure that policies align with the prevailing institutional dynamics.

Our study also opens up several avenues for future research. Future studies could explore the mechanisms through which trust influences bank risk-taking behavior, such as lending decisions and capital structure choices. Furthermore, future research could examine the role of trust in other dimensions of bank performance, such as efficiency or innovation. Lastly, researchers might explore the effects of trust on different types of financial institutions, such as insurance companies, asset management firms, or fintech companies.

CRediT authorship contribution statement

Omneya Abdelsalam: Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing, Resources. **Antonios Chantziaras:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Writing – original draft, Writing – review & editing. **Nathan Lael Joseph:** Conceptualization, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing, Resources. **Nikolaos Tsileponis:** Conceptualization, Formal analysis, Methodology, Project administration, Resources, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to

Table 8
Trust and additional measures of organizational trust on bank market risk.

Dependent Variable:	**(1)**	**(2)**
	IRISK	**TRISK**
SOCIETAL_TRUST	−0.258***	−0.692**
	(−3.57)	(−2.54)
Bank-Level Variables (Organizational Trust):		
INDEP	−0.034	−0.052
	(−0.74)	(−0.89)
FEMALE_DIR	−0.010	−0.012
	(−0.15)	(−0.15)
COUNT_DIR	0.023	−0.035
	(0.60)	(−0.75)
EARNINGS_QUAL	−0.001**	−0.001*
	(−2.55)	(−1.92)
LnAGE	−0.023**	−0.026*
	(−2.01)	(−1.79)
LnSIZE	−0.023***	0.009**
	(−6.03)	(2.00)
INSTIT_OWN	−0.062**	−0.042
	(−2.37)	(−1.36)
MARKET_TO_BOOK	−0.020*	−0.025*
	(−1.79)	(−1.87)
ROA	−0.041***	−0.042***
	(−5.85)	(−5.48)
LEVERAGE	−0.392***	−0.545***
	(−3.47)	(−4.04)
BIG4	−0.007	−0.013
	(−0.30)	(−0.40)
TOOBIG	−0.396***	−0.392***
	(−7.51)	(−6.29)
REVENUE_GROWTH	−0.019	−0.017
	(−0.76)	(−0.60)
STATE_OWNED	0.052	0.059
	(1.08)	(1.42)
Country-Level Variables:		
GOVERNANCE_IDX	−0.118	−0.071
	(−1.51)	(−0.65)
COMLAW	0.017	−0.024
	(0.65)	(−0.72)
GDP_GROWTH	−1.295**	−1.171*
	(−2.17)	(−1.66)
BANK_COMPETITION	0.030	0.027
	(1.26)	(1.03)
Intercept	1.675***	1.610***
	(13.06)	(10.74)
Year dummies	Yes	Yes
Hausman test	24.442***	19.278***
Mean VIF	1.615	1.613
Observations	3,291	3,291
First stage	**(1)**	**(2)**
ELF	−0.189***	−0.189***
	(−2.67)	(−2.67)
F-statistic	17.13	17.13
Partial R^2	0.0327	0.0327
Control Variables	Yes	Yes
Year dummies	Yes	Yes

Note: This table reports Instrumental Variable (IV) estimates for the regressions of market risk measures, specifically a) IRISK (Column 1) and b) TRISK (Column 2), on societal trust, additional organizational trust measures, and other control variables. The *z*-statistics in parentheses are based on heteroskedasticity-robust standard errors, clustered at the bank level. All continuous variables are winsorized at the 1st and 99th percentiles. We omit for brevity all other control variables included in the first-stage regressions and only report the coefficients for the instrumental variable, namely the ethnolinguistic fractionalization index (ELF). All variables are defined in Appendix A. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A. Variable definitions

Variable	Definition
Panel A – Country Legal and Institutional Environment (Antecedents of Trust):	
LOW_INVESTOR_PROT	Binary indicator that equals one if a country's investor protection index (INVESTOR_PROT) belongs to the bottom third of the observations of our sample, and zero otherwise. INVESTOR_PROT is the sum of the anti-self-dealing index from Djankov et al. (2008) and the rule of law index from Kaufmann and Kraay (2022). First, we standardize both indices to have values between zero and one. We then take their sum to create the investor protection index. The anti-self-dealing index is obtained from the website of F. La Porta: http://faculty.tuck.dartmouth.edu/rafael-laporta/. The rule of law measure from Kaufmann and Kraay (2022) is available at www.govindicators.org.
LOW_LEGAL_RIGHTS	Binary indicator that equals one if a country's legal rights index (LEGAL_RIGHTS) belongs to the bottom third of the observations of our sample, and zero otherwise. LEGAL_RIGHTS is the strength of the legal rights index from the Doing Business Project for 189 economies. The index ranges from zero to twelve, and larger values indicate stronger legal protection (Data source: World Bank - Doing Business Project).
LOW_GOV_SATIS	Binary indicator that equals one if a country's satisfaction with government economic policies (GOV_SATIS) belongs to the top third of the observations of our sample, and zero otherwise. GOV_SATIS captures the general public's satisfaction, or dissatisfaction, with the government's economic policies, and its values range from zero to 36, with higher values indicating lower levels of satisfaction. In our analysis, we rescale GOV_SATIS to be between zero and one (Data source: International Country Risk Guide).
HIGH_POLITICAL_UNREST	Binary indicator that equals one if a country's presence or risk of political unrest score (POLITICAL_UNREST) belongs to the top third of the observations of our sample, and zero otherwise. POLITICAL_UNREST is a measurement of the presence or risk of political unrest, and its values range from zero to 36, with higher values indicating higher risk of political unrest. In our analysis, we rescale POLITICAL_UNREST to take values between zero and one (Data source: International Country Risk Guide).
GOVERNANCE_IDX	First principal component of the control for corruption (CORRUP), government effectiveness (GOVEFF), political stability (POLSTAB), regulatory quality (REGQ), and voice and accountability (VOICACC). More specifically, CORRUP refers to the corruption perceptions, including both petty and grand forms of corruptions. GOVEFF refers to perceptions of the quality of public services, the quality of the civil service, the degree of its independence from political pressures, the quality of policy formulation, and the credibility of government's commitment to such policies. POLSTAB refers to the perceptions of the likelihood of political instability and motivated violence. REGQ refers to the perceptions of the ability of government to formulate and implement sound policies and regulations that promote private sector development. VOICACC refers to perceptions of the extent to which a country's citizens are able to participate in selecting their government, freedom of expression, freedom of association, and a free media. (Data source: Kaufmann and Kraay (2022)).
COMLAW	Binary indicator that equals one if a country is a common law country, and zero otherwise (Data source: La Porta et al. (1999)).
Panel B – Societal (Generalized) Trust:	
SOCIETAL_TRUST	Societal trust is measured as the level of trust within the country where the corporate headquarters are located; the level of trust is determined by the percentage of respondents who believe that most people can be trusted (Data source: World Values Survey (WVS)).
Panel C – Bank-Level Variables (Organizational Trust):	
LnAGE	Firm age, measured as the natural logarithm of one plus the number of years since incorporation. This metric serves as an indicator of bank visibility in our model (Data source: ORBIS Bank Focus).
LnSIZE	Natural logarithm of total assets (Data source: ORBIS Bank Focus).
INSTIT_OWN	Percentage of stocks held by institutional investors (Data source: ORBIS Bank Focus).
MARKET_TO_BOOK	Market-to-book ratio (Data source: ORBIS Bank Focus).
ROA	Return on assets, measured as the ratio of income before extraordinary items over total assets. This metric serves as an indicator of bank performance in our model (Data source: ORBIS Bank Focus).
LEVERAGE	Leverage ratio, measured as total debt over total assets (Data source: ORBIS Bank Focus).
BIG4	Binary indicator that equals one if the company is audited by a reputable auditor, and zero otherwise. Reputable auditors are defined as the Big Four: PwC, Deloitte and Touché, Ernst and Young and KPMG (Data source: ORBIS Bank Focus).
TOOBIG	Binary indicator that equals one if the bank's deposits comprise more than 10% of the country's total deposits, and zero otherwise (Data source: ORBIS Bank Focus and World Bank).
REVENUE_GROWTH	Net interest revenue growth rate for the bank (Data source: ORBIS Bank Focus).

(*continued on next page*)

(*continued*)

Variable	Definition
STATE_OWNED	Binary indicator that equals one if the bank is state-owned, and zero otherwise (Data source: Refinitiv).
INDEP_DIR	The proportion of independent board members (Data source: BoardEx).
FEMALE_DIR	The proportion of female directors (Data source: BoardEx).
COUNT_DIR	The proportion of directors originating from countries other than the country where the corporate headquarters are located (Data source: BoardEx).
EARNINGS_QUAL	Earnings quality of the firm compared to all other securities trading in the same region. Higher values indicate higher-rated firms, and thus higher earnings quality (Data source: StarMine).
Panel D – Market Risk (Dependent Variables):	
IRISK	Idiosyncratic risk, measured as the standard deviation of the residuals from the Fama-French three-factor model using weekly returns and multiplied by the square root of 52.
TRISK	Total risk, measured as the standard deviation of weekly returns and multiplied by the square root of 52 (Data source: DataStream).
Panel E – Other Control Variables:	
GDP_GROWTH	Annual growth rate of GDP (source World Bank).
BANK_COMPETITION	Herfindahl index, calculated by summing the squares of the market share of each bank in each country (Data source: ORBIS Bank Focus).
Panel F – Instrumental Variable:	
ELF	The ethnolinguistic fractionalization index from Desmet et al. (2012). It captures the probability of two randomly selected individuals from a country belonging to different ethnolinguistic groups.

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