The Interaction between Social Capital and Banking Stability: Evidence from MENA Region

Jana Badran[1,*] and Chawki EL Moussawi[1]

[1]*Faculty of Economics and Business Administration, Lebanese University, Beirut – Lebanon*

Abstract: In this paper, we examine how social capital impacts banking stability in the Middle Eastern and North African (MENA) region using data of 188 commercial banks across 15 countries over the period 2007-2021. It considers several bank-level and macroeconomic determinants, while focusing on the effect of social capital, defined as networks, trust and social norms, which is an important complementary element for strengthening banking stability. System GMM regression and quantile regression (QR) were used in the study to show how these determinants affect bank stability. The results show that social capital is strongly associated with banking stability, indicating that it is a key factor in reducing systemic risks. Second, larger and better-capitalized banks show more stability compared to the other counterparties, also banks managing liquidity more efficiently; in parallel, banks with higher profitability appear to take on more risk. Policy recommendations include promoting social capital through local engagement, enforcing capital adequacy requirements, and adapting liquidity management practices to suit regional conditions. For the banking industry, incorporating social capital into risk management can reduce credit risk and enhance financial stability. These insights are particularly valuable for policymakers and banks seeking to strengthen the financial systems in the MENA region.

Keywords: Social capital, personal relationships, banking stability, GMM methodology, quantile regression, MENA region.

1. INTRODUCTION

After the emergence of the 2007–2008 international financial crisis, economists shift their focus towards analyzing the key determinants of banking system stability. Researchers investigate the complex dynamics of competition, performance, and financial instability, which help highlight the fragility of banks. Empirical studies show that mounting banking competition worsens asymmetric information and coordination failures among depositors, thereby increasing risk-taking behavior and the probability of failure (Vives, 2010). The crisis illustrates how international contagion can raise the likelihood of domestic banking crises by almost 37%, highlighting systemic vulnerability as a key consideration (Dungey et al., 2015). While cross-border capital flows are important for the continuity and stability of banks, they can also exacerbate their vulnerabilities in times of uncertainty. For example, when a crisis occurs, a rapid outflow of capital follows, leading to increased vulnerability in the banking system. Instability thus highlights banks' dependence on international financing and the need for greater resilience (Hoggarth *et al.*, 2010). Even minor changes can trigger major banking crises, with asset price bubbles and financial fragility identified as leading causes of instability (Allen *et al.*, 2005). Although these studies provide insight into banking instability, some argue that more fundamental issues underlie these events, suggesting that regulatory measures alone are insufficient. This perspective calls for a broader approach to financial stability.

With the evolution of research, studies started focusing more on bank-specific, macroeconomic and institutional quality factors, which impact stability at cross-country level. Studies like Saksonova & Solovjova (2011), point out that risk mitigation at macroeconomic downturns is driven by bank specific factors where asset quality and profitability are found to be important features. Third, the significant weight of institutional quality that banking crises are often driven by poor governance caused a demand for a sound regulatory environment (Essid et. al., 2014). Macroeconomic factors, such as GDP growth, interest rates, and inflation, also shape banking resilience. For instance, Karim et al. (2016) find that macroeconomic indicators to have long-term bilateral relationship with commercial banks stability. In addition, the GIPSI countries (Greece, Ireland, Portugal, Spain, and Italy) faced high levels of unemployment, fiscal tensions, increased pressure on their banking systems, and a significant rise in interest rates, largely due to distrust in financial markets. However, the impact of these problems varied between countries, depending on the characteristics of their economies and the measures taken to address them. The situation in these economies highlighted the vulnerability of banks to fluctuations in the global economy, such as interest rates and employment dynamics (Castro, 2013). Apart from sound institutional frameworks, macroeconomic stability is critical to banking system resilience. New studies provide additional evidence that institutional quality affects banking performance in a meaningful way. Fang *et al*. (2014) and Boubakri

*Address correspondence to this author at the Faculty of Economics and Business Administration, Lebanese University, Beirut – Lebanon;
E-mail: jana.badran@ul.edu.lb

et al. (2013) establish a positive link between strong legal and political institutions and earnings quality in banks, leading to sound balance sheets during crises. Banks in countries with strong institutions are more likely to use advanced technologies, which enhance operational efficiency (McKinsey, 2023). Moreover, high-quality institutions, particularly in governance and regulatory quality, attract both foreign and domestic investment, which helps stabilize the banking sector (Álvarez *et al*., 2016).

Another source of banking stability that has recently gained attention is social capital. Originally a concept from sociology, social capital, as defined by Coleman (1988), Putnam (2000), Woolcock (2001) and Zheng et al. (2019) encompasses the networks and norms that facilitate collective action within a society for mutual advantage. As for the "network" dimension, well-connected local social networks ensure that enforcement and monitoring of contracts are more consistent and thorough due to high frequency of interactions and large flows of information (Coleman, 1988; Spagnolo, 1999). These networks operate to raise the perceived cost of reputational loss for contract breachers, making illegal behavior less likely (Kandori, 1992). For example, the "norm" dimension of social capital focuses on the informal values or norms accepted within a community that encourage the trustful and/or cooperative behavior in financial transactions between individuals and discourage opportunistic and self-serving behaviors (Guiso et al., 2004). People who live with social capital zones are less likely to commit illegal acts, as they feel compelled not to upset the balance within social norms and avoid actions that could cause shame, guilt or sanctions (Elster, 1989). Even more, the interaction of social norms and networks boosts each other. While these norms are not necessarily based on written laws, they rather stem from tacit or explicit rules that shape desires and push individuals to meet group expectations, as Jha and Chen (2015) pointed out. Such informal norms guide behavior within a society, incentivizing individuals to conform to collective customs even without legal constraint (Jha & Chen, 2015). Any deviation from these norms can bring about serious repercussions, which could be reputational, or community-based sanctions. In contrast, social networks allow for information exchange and mutual assistance, two things that would seem impossible under the belief that ordered patterns lead to collective action and enforcement of norms. Norms and networks are two aspects of social capital that, when combined, enhance trust in, and cooperation between members of communities, both of which are necessary for the cohesion and operation of communities.

The range of impact has been documented on economic success from trust, cooperation and quality of governance. One of the greatest lessons from the global financial crisis is that social capital matters for financial systems: higher levels of social capital are associated with lower frequency of bank failures and less systemic instability. For instance, Hasan et al. (2017) and Jin et al. (2017) reveal that banks located in areas with high social trust engage less in risk-taking, show more strength and soundness of financial positions, and experience lower loan defaults. Studies in economic literature indicates that social capital, the networks of relationships, trust and norms which enable negotiation processes to take place, affects the operation of financial system. The greater the public's confidence in its financial institutions, the higher the national social capital and the lower the banking instability, thanks to a reduction in information asymmetries and better borrower conduct. Social capital plays an important role in reducing the risks associated with a crisis as it enhances well-integrated social networks, information sharing and cooperation. Regions with richer networks of social capital are defined as lower-default regions because managers in those regions are more conservative during boom periods (Jha & Chen, 2015). This dynamic is evidenced in small, unlisted banks where social capital can replace formal regulatory mechanisms. Similarly, Jin et *al*. (2019) document evidence of a negative effect of social capital on nonperforming loans, loan charge-offs and the quality of loans. Studies reveal that income inequality in developing and low-income countries is positively related to default loans, causing instability in banking sectors (Dinçer et al., 2019). We do not deny the role of institutional quality for banking stability, but we assert that some countries may be able to keep their banks stable despite lacking good institutions since they are backed by other elements like social capital and country specific mechanisms such as culture.

The objective of this paper is to investigate the role of social capital on banking stability within a holistic view of institutional environment that goes beyond formal models and traditional theoretical frameworks. This study extends the view for examining joint effects among social capital, institutional quality and banking stability by decomposing their interaction. This is important for the banking industry, and especially relevant to policy makers and regulators as they inform on the essential link between social capital and better-quality bank loans, which ensures stability of the banking sector. This paper provides valuable contributions by examining the interaction between social capital and institutional quality in the financial systems of the MENA region. Although previous research emphasizes that trust, mutual obligations, and well-functioning networks in regions with high social capital help mitigate moral hazards that threaten banking stability, this study expands these insights within the relatively underexplored MENA region. The region's sociopolitical factors, influenced by institutional capacity and cohesion, as well as citizen trust, shape a specific way of how things are perceived. In this context, informal controls – which refer to social regulation mechanisms not dictated by laws or official regulations but emerging from within society itself – are based on norms, values, social networks, and interpersonal ties. They can play a complementary or even substitute role for formal regulations. However, their effectiveness varies depending on the extent of the financial turmoil and the resilience of banks. This study adds to the literature on financial stability in emerging markets by presenting new evidence on the role of social capital in banking stability in the MENA region.

The remainder of this paper is organized as follows. In *Section 2*, we outline the literature and elaborate our hypotheses concerning bank-specific, macroeconomic, social capital and banking stability. *Section 3* presents the data research, variable definitions and methodology. *Section 4* includes our empirical results and discussions. And finally *Section 5*, summarizes our overall findings.

2. LITERTURE REVIEW AND HYPOTHESIS DEVELOPMENT

Several research questions in the existing literature have emerged considering the main determinant factors of banking sector stability. At the core of this literature are bank-specific factors such as capitalization, liquidity, profitability and size, which lay the foundation for effective risk management, thus making financial institutions more resilient. Apart from these internal determinants, macroeconomic factors are becoming more important in determining banking stability for developed as well as developing economies. In addition, it has been documented that the countries' formal institutions have a significant impact on banking sector stability. One of the new aspects of banking resilience is social capital, which is a form of trust and existing networks in communities that empowers confidence in facing financial crises. This section elaborates further into the related literature by a comparative analysis of these determinants in order to corroborate the efficiency of banking stability.

2.1. Impact of Bank-Specific Factors on Banking Stability

The association between capital adequacy, bank size, liquidity, diversification, profitability and risk-taking behavior with the stability of banking systems are essential in financial research (Demirguc-Kunt & Huizinga, 2004). Bank capital adequacy is crucial to bank stability, where well-capitalized banks can typically absorb the impact of an economic shock better than less capitalized or lacks sufficient reserves. For example, Bougatef and Mgadmi (2016) contend that prudential regulations, such as minimum capital requirements, fail to curb risk-taking in banks in the MENA region. Similarly, Anginer *et al*. (2018) argue that capital requirements are an effective substitute for weak institutional environments in curbing systemic risk, making them crucial in less developed regulatory settings, which is a characteristic of the MENA region. Lee and Hsieh (2013) emphasize that increasing capital, by reducing risk, enhances profitability, highlighting the important role of effective capital adequacy regulations in promoting banking stability. Furthermore, Margarint *et al.* (2021) underline the positive relationship between capital requirements and bank stability, noting that restricting bank activities in Moldova improved the stability of Moldovan banks, a finding with broader relevance for similar economies. Second, banks' size is another key determinant of financial stability. Large banks often benefit from scale through diversification, spreading risk across multiple segments, which makes them more resilient during economic turmoil. Wheelock and Wilson (2012) find that larger banks tend to experience lower earnings volatility and maintain more stable capital structures, making them generally less volatile. However, Demirguc-Kunt *et al.* (2013) argue that large banks may create moral hazard issues due to "too big to fail" situations in the U.S. banking system. The relationship between bank size and banking stability has also gained considerable attention in Europe, particularly in the context of the Eurozone crisis. Marques-Ibanez (2009) demonstrate that large banks are more exposed to systemic risks, especially when operating internationally. De Haan and Poghosyan (2012) reach a similar conclusion. Moreover, Allen et *al*. (2012) reveal that large banks in China enjoy strong government support, including cash injections, which help maintain their stability. However, the study also warns of potential moral hazard, as banks with higher placement costs are likely to have received government support. Regarding the MENA region, Bougatef and Mgadmi (2016) contend that larger banks are more efficient in diversifying risk, which contributes to their stability. Third, liquidity creation plays a critical role in banking stability, with supporting disclosures on ESG contributing to financial soundness (Gupta & Kashiramka, 2024). In Ukraine, Rudevska et *al*. (2024) highlight the availability of sufficient liquidity but note that external forces constrain its ability to promote economic stability, calling for regulatory intervention. Additionally, Lu & Wang (2023) shows that liquidity hoarding decreases systemic risk by improving operational stability. In contrast, Ayinuola & Gumel (2023) identifies a negative relationship between liquidity and credit risks, while Crockett (2008) emphasize the importance of both market and funding liquidity in maintaining financial stability. Another important indicator of bank stability is profitability. Return on Assets (ROA) is a key measure of a bank's financial strength and serves as a more reliable short-term predictor than overdue loans. In Kosovo, Statovci & Balaj (2024) found that ROA significantly impacts non-performing loans (NPLs), which are a crucial measure of banking stability. Similarly, Vohra et al. (2023) observed a positive relationship between operating income and ROA in Pakistani banks, indicating that effective asset management boosts profitability and reduces insolvency risks, thereby enhancing financial stability across the banking sector. Research also demonstrates that diversification mitigates risk and provides greater stability, particularly in emerging markets (Adem, 2022). Chandramohan et *al*. (2022) found that functional, geographical, and loan portfolio diversification significantly improved bank stability in Indian banks. However, overdiversification poses risks. While income diversification enhances stability, diversification in assets and funds may not (Shahriar et *al*., 2023). Additionally, the literature argues that market power is a key driver of banking stability. Turk-Ariss (2010) notes that a positive Lerner Index, reflecting greater market power, increases bank stability by allowing for higher profit margins, which provide a cushion against economic shocks. The relationship between banking concentration and stability is complex, shaped by various factors such as market power and competition. On the one hand, the concentration-stability hypothesis argues that higher concentration levels stemming from financial institutions market share would improve financial stability, through higher profitability and less non-performing loans at least under lower concentration levels (Calice & Leonida, 2018). For example, on financial stability in South-East Europe. increased concentration was associated with decreased insolvency probabilities (Guidi, 2021). Similarly, Beck et al. (2013) found that banks with higher loan portfolio losses benefit from stabilization, which has led to market share concentration, enabling unfair competition but also providing funds that enhance the consolidation process and stabilize the financial system. In contrast, competition-stability hypothesis claim that such high concentration is likely to increase systemic risks by raising the cost of services and incentivizing excessive risk-taking (Antony & Suresh, 2023), thus labelled as concentration-fragility hypothesis. Despite increasing the market discipline and curtail

bank risk-taking, Demirguc-Kunt et al. (2013) argue that stronger regulatory environments may actually worsen moral hazard as well systemic risks. Weak regulation of such regimes, particularly prevalent across the MENA region, means these regulations do not always serve to stabilize long-term bank funding by making banks rely on external financial markets rather than internal capital buffers. Based on the literature reviewed above, we develop the following hypothesis:

H1: Promoting banking stability in MENA can be achieved through high capital adequacy ratios, high liquidity, high profitability, large size, more diversified, and less monopolistic banks.

2.2. Impact of Macroeconomic and Institutional Quality on Banking Stability

The relationship between macroeconomic variables and the financial stability of banks has been the focus of recent research. Economists often use GDP, a key measure of economic activity, to assess the healthiness of the banking sector. Numerous studies have shown that non-performing loans (NPLs) tend to increase when GDP declines, production shrinks, and economic recessions occur (Castro, 2013; El Moussawi et *al*., 2024; Cortés & Soriano, 2024). In Australia and the USA, Ali & Daly (2010) found a statistically significant negative relationship between GDP and defaults, implying that stronger economic performance reduces default risk and enhances banking stability. Another important macroeconomic factor is inflation, which influences banking stability by affecting the real value of debt and the cost of borrowing. Rising consumer prices can erode the real value of loan repayments and contribute to higher default rates (Barra & Ruggiero, 2021). For example, Cortés & Soriano (2024) demonstrate how both inflation and GDP impact NPLs across different countries. In Mexico and Spain, inflation was positively linked to higher default rates, while stronger GDP levels led to improved credit quality, particularly in mortgage portfolios. Banking stability is complex and varies across countries due to the differing effects of GDP and inflation. Thus, in the context of the MENA region, we suggest the following hypothesis.

H2: Countries with high levels of GDP growth and low levels of inflation have greater banking stability.

Several studies examine the effect of institutional quality on banking stability. Some research identifies control of corruption as one of the most important factors supporting banking stability. Good quality of corruption control, implies a more efficient allocation of resources in the financial system: optimal lending decisions are determined by economic productivity rather than bribery (Khan et *al*., 2022). It makes the banking sector less resilient by encouraging riskier lending, resulting poor repayment of debt through improper lending as in Pakistan and India (Rehman et *al*. 2024). Elfeituri (2022), researching MENA countries, complements this by showing that control of corruption enhances banking stability and profitability through greater efficiency in resource allocation. Banking instability is also negatively associated with political instability (Dahal et *al*., 2024), particularly because uncertainty, lower investment and rise of non-performing loans are influenced by political instability. In contrast, political stability improves emerging market banking systems by strengthening government institutions and compliance with regulation. Moreover, Bermpei et *al*. (2018) suggest that favorable political conditions may be accompanied by more flexible loan repayment terms, allowing banks to exercise greater risk tolerance in their practices. However, it is worth noting that increased political stability may encourage banks to adopt bolder strategies, although this trend depends on various economic and institutional factors. Stability could also increase banks' confidence in borrowers and the economy in general. Nevertheless, in an uncertain environment, lending becomes riskier, and banks must be more cautious to ensure their own financial security. Another important determinant of banking stability is the regulatory quality. Better supervision and prudential lending enable better banking stability in emerging economies. But sometimes, a rigid policy may restrict banks from acting flexibly with environmental changes and increased risk (Uddin et *al*., 2020). Furthermore, using a panel data technique, Shabir et *al*. (2021) examine the impact of economic policy uncertainty on bank stability and find that well institutionalized, effectively governed, and legally robust countries are able to soften the negative effect of policy uncertainty and ensure banking stability. This leads us to develop the following hypothesis:

H3: High levels of institutional quality enhance banking stability in the MENA region.

2.3. Impact of Social Capital on Banking Stability

Various researchers have studied the benefits of social capital in maintaining stability as well as the subsequent performance and efficiency of the banking sector across different regions. Research findings suggest that social capital helps to minimize risk-taking behaviors in the society and allows for greater economic transparency, safeguarding the economy from shocks which promote stability during crises. For instance, Haddad et *al*. (2023) shows that social capital has a positive effect on the net income of banks in Jordan, which signifies that improved social and intellectual capitals lead to greater profitability and sustainability. Although based on the idea that social capital can replace cash reserves, data show that banks tend to reduce their excessive accumulation of liquidity in regions where social ties are strong. This dynamic appears to contribute, to some extent, to monetary stability and the smooth running of banking activities (Zheng et *al*., 2022). Such network structures help minimize risks of liquidity shortages. Besides Pasiouras & Samet (2022) argue that in socially rich areas, where social capital is high, lower bank cost of equity is common particularly among those regions with poor formal institutions. However, when banks build a dependence on communities through social capital, they may become isolated from wider macroeconomic pressures. Another relevant empirical investigation was introduced by Brei et *al*. (2020), which analyzed SME loan growth against measures of banking system stability across 32 economies and found that the relationship was positive in emerging markets. This effect is particularly strong in areas with low financial development, where increased SME lending improves banking stability by increasing the distance to default. Examining the Norwegian banking sector and savings banks in particular, Ostergaard et *al*. (2015) found that

regions with high social capital became more financially stable and resilient post deregulation of its banking sector in the 1980s. Similarly, Jin et *al*. (2019) show that social capital contributed to the survival of US banks in a time of deregulation, which suggested greater economic stability within communal banking models. They establish that due to less opportunism by firms in regions rich in social capital, they are charged lower interest rates and lower collaterals for debt. This mutual confidence between banks and borrowers preserves financial health while lowering the frequency of defaults.

In the United States, empirical studies analyzing data related to the 2007–2008global financial crisis found that banks located in areas with high social capital had lower risk-taking levels and failed less often (Jin et *al*., 2017). Yin et *al*. (2022) argue, in the same vein, that social capital helped to a reduced occurrence of moral hazard and stabilized banks through providing incentives for more conservative risk-taking and accounting behaviors prior to the crisis. According to Cornett et *al*. (2021) social capital ended up having the following effect on banks: banks in high social capital charged lower deposit fees, offered lower loan rates, held less capital but were more profitable. The banks were also more engaged with the communities they served and behaved as more responsible members of the society than strictly profit-maximizing firms.

In China, Chen et *al*. (2024) show that CEO's social capital reduces firms' debt costs, especially in regions with high social trust. Information asymmetry and discretionary accruals were identified as key mediators of this relationship. Ferrary (2003) highlights the importance of social capital in reducing information asymmetry in banking relationships in France, showing that financial advisors use social networks and trust to improve risk assessment and lending profitability. Although corporate social responsibility (CSR) did not protect against extreme risks before or during the 2007-2009 financial crisis, its impact was eventually felt, according to a study by Trinh et *al*. (2023). This study analyzed 244 banks across 52 stock markets and found that after the recession, investors became more tolerant of socially responsible financial institutions. This resulted in a reduced risk of significant stock depreciation. Furthermore, banks with high social capital and strong CSR performance experienced more moderate risks. This finding held even during the COVID-19 pandemic, suggesting that investor confidence in these institutions has strengthened thanks to their commitment to CSR. In a broader context, social network-based informal governance mechanisms contribute significantly to the fiscal soundness of community banks, particularly in high social capital regions. The literature clearly demonstrates the positive influence of social capital on the banking sector. Therefore, the evidence reviewed here suggests the following hypothesis:

H4: High social capital can cushion against economic stress and promote banking sector resilience, leading to improved stability in the MENA region.

3. MATERIALS AND METHODOLOGY

3.1. Data

The data used in our empirical analysis are collected from 2007 to 2021 and include a sample of 188 commercial banks operating in the MENA region. This sample includes 6 banks from Bahrain, 14 banks from Algeria, 23 banks from Egypt, 9 banks from Israel, 12 banks from Jordan, 5 banks from Kuwait, 24 banks from Lebanon, 11 banks from Morocco, 7 banks from Malta, 7 banks from Oman, 4 banks from Qatar, 6 banks from Saudi Arabia, 13 banks from Tunisia, 30 banks from Turkey, and 16 banks from the United Arab Emirates. We obtain bank-specific balance sheet and income statement data from Orbis Bank Focus, macroeconomic and institutional data from the World Bank, and social capital data from the Legatum Institute. Table **1** presents the main descriptive statistics for the variables under study, and Table **2** shows the correlation matrix. It is important to note that the strong correlations between institutional environment variables as well as social capital variables are expected due to their inherent characteristics. Therefore, to avoid multicollinearity, we will include each of these variables separately in our models.

Table 1. Descriptive statistics.

-	Mean	Maximum	Minimum	Std. Dev.	Observations
CAR	0.1277	0.9569	-0.0894	0.0936	2673
ROA	0.0136	0.2577	-0.1904	0.0139	2673
LIQ	0.2848	0.5792	0.0000	0.1919	2673
LER	0.2936	0.8821	-0.3587	0.1775	2673
DIVER	0.0207	0.8641	-0.0039	0.0271	2673
SIZE	15.5297	19.5203	8.4782	1.6587	2673
NPLG	0.0719	0.6516	0.0000	0.1250	2673
GDPC	0.0099	0.2734	-0.1975	0.0499	2673
INF	0.0676	1.5476	-0.0486	0.1160	2673
SCAP	49.4492	68.7451	31.3583	8.6832	2673

-	Mean	Maximum	Minimum	Std. Dev.	Observations
INPT	36.4413	72.4691	13.7724	11.6528	2673
PFR	63.3134	89.4372	35.5844	11.7634	2673
SNT	61.1473	81.8462	33.5385	10.2830	2673

Source: Orbis Bank and author's calculation.

Table 2. Correlation matrix.

-	CAR	ROA	LIQ	LER	DIVER	SIZE	NPLG	GDPC	INF	SCAP	PFR	SNT
CAR	1	-	-	-	-	-	-	-	-	-	-	-
ROA	0.394***	1	-	-	-	-	-	-	-	-	-	-
LIQ	0.279***	0.080**	1	-	-	-	-	-	-	-	-	-
LER	0.272***	0.485***	0.094**	1	-	-	-	-	-	-	-	-
DIVER	0.371***	0.56***	0.118**	0.156***	1	-	-	-	-	-	-	-
SIZE	-0.423***	-0.099**	-0.369***	0.104**	-0.133**	1	-	-	-	-	-	-
NPLG	0.303***	0.052**	0.167***	-0.074**	-0.042**	-0.235***	1	-	-	-	-	-
GDPC	-0.009	-0.018	0.07**	-0.165***	0.026	-0.036**	-0.036**	1	-	-	-	-
INF	-0.048**	-0.003	0.277***	-0.079**	0.002	-0.083**	0.088**	-0.130***	1	-	-	-
SCAP	0.012	-0.028	-0.143***	0.242***	-0.071**	0.137***	-0.100**	-0.073**	-0.272***	1	-	-
PFR	0.068**	-0.027	-0.094**	0.251***	-0.018	0.114**	-0.098**	-0.035**	-0.131***	**0.721*** **	1	-
SNT	-0.023	-0.022	-0.029	0.222***	-0.103***	0.053**	-0.057**	-0.143***	-0.196***	**0.692*** **	**0.315*** **	1
Correlation between the institutional variables												
COCR			1			-			-			
REQU			**0.803*** **			1			-			
POLS			**0.748*** **			**0.558*** **			1			

Source: Orbis Bank and author's calculation.

3.2. Variable Definitions

3.2.1. Dependent Variable

In our study, we use the Z-score indicator to measure bank stability. This indicator, generally attributed to Boyd and Graham (1986), it reflects the probability of a bank's insolvency. The Z-score indicator is constructed as follows (Shabir *et al*., 2021):

$$Z_{it} = \frac{ROA_{it} + E_{it} / TA_{it}}{\sigma(ROA_{it})}$$

Where ROA is the return on assets, E_{it} / TA_{it} is the capital ratio calculated by the ratio of equity to the bank's total assets, and $\sigma(ROA_{it})$ represents the standard deviation of ROA. Furthermore, to test the robustness of our results, we use the NPL ratio as a proxy for credit risk. Where NPL measured by the ratio of non-performing loans to the bank's total assets, is an alternative measure to the Z-score according to EL Moussawi & Mansour (2022).

3.2.2. Independent Variables

The main independent variables of our study are the measures of social capital. An appropriate definition of social capital for empirical research requires identifying observable and measurable indicators or proxies for this variable (Portes, 2000). However, social capital is difficult to quantify because it encompasses multiple dimensions, each capturing a different aspect of the concept of social capital. The most commonly used social capital measures are those developed by political scientists and sociologists, based on Putnam's (1995) associative density measures and trust indices obtained from general surveys like the World Values Survey. However, the main issue with these two approaches

is that they equate the concept of social capital with the variables used to measure it, voluntary membership in groups or associations in one case, and human cohesion in the other. Using a similar notion of social capital, García et *al*. (2006) model the creation and accumulation of social capital. This model provides a formal framework for specifying the empirical model used to estimate social capital. Unfortunately, it does not apply to the MENA countries due to missing data needed for constructing the model. To address this, we follow Doh (2014) and Budsaratragoon & Jitmaneeroj (2021) by using a novel dataset developed by the Legatum Institute, which offers one of the most accurate measures of social capital, along with its various components. Social capital, as defined by the Legatum Institute (Legatum Institute, 2023), encompasses personal and social relationships, trust in institutions, social norms, and civic participation within society. It is assessed as part of the Legatum Index, which includes elements such as personal and family relationships, social networks, interpersonal trust, institutional trust, and citizenship and social participation. These components are defined as follows:

- Personal and Family Relationships: Personal associations and close family ties are essential for maintaining emotional and financial well-being. Strong family and social relationships create a conducive environment for personal success.
- Social Networks: This metric measures the influence and breadth of social and community connections, highlighting the importance of social support systems. Social networks, spanning multiple levels, facilitate the transfer of social capital across social and economic domains.
- Interpersonal Trust: The degree to which individuals trust others, including strangers, within a society. This indicator reflects people's perceptions of trustworthiness, which significantly influences social cohesion.
- Institutional Trust: This measures the confidence people have in their institutions, which is critical for national stability and effective governance.
- Citizenship and Social Participation: This dimension reflects the extent to which individuals engage in community, social, or political activities. It encompasses both the sense of belonging to the nation and participation in various societal sectors.

Thus, in our empirical analysis, we will primarily use the Social Capital Index and separately, we will also explore the elements of personal and family relationships as well as social networks.

3.2.3. Control Variables

In this paper, we examine the impact of social capital on bank stability in the MENA region using a set of bank-specific variables as well as macroeconomic and institutional variables. The literature on banking stability highlights key factors such as return on assets (ROA), bank size (SIZE), capitalization (CAR), liquidity (LIQ), and diversification (DIVER) as important variables in explaining the differences in banking stability. Profitability, which is generally expressed as the ratio of net income to total assets, is used in most previous research as an indicator of bank behavior. However, other studies claim that the relationship is more complicated than expected. In other words, bank behavior also influences profitability (Uddin et *al*., 2020; Shabir et *al*., 2021). ROA is a measure of how efficiently a bank is able to use its assets to generate profit. It signals the profit comparison with total assets owned by a bank. Furthermore, capitalization is defined as the ratio of total equity to total assets (Lee and Hsieh, 2013). Unlike more complex indicators like the risk-adjusted capital ratio, this is available for all banks in our sample across the entire studied period. Finally, the benefit of including a liquidity ratio as an independent variable is that observations from the 2008 financial crisis highlighted how the link between liquidity and bank solvency is important for framing banking stability. Greater liquidity is often defined as a larger percentage of liquid assets to total bank assets (Jin et *al*., 2017). Bank size is defined as the natural log of total assets. Phan & Daly (2020) and Elfeituri (2022) find that the risk premium is dependent on bank size, at least in part because of "too-big-to-fail" distortion or the lower liquidity associated with securities issued by large banks.

The ratio of non-interest income to total assets is used to measure diversification (Baele et *al*., 2007). According to the empirical studies, the impact of diversification on banking stability is not agreed upon by many researchers. While some research indicates that diversification decreases asset volatility (Brewer et *al*., 1988) and reduces risk and enhances expected profits (Baele et *al*, 2007), other scholars claim that diversification makes banks enter into riskier markets often with a lower capital ratio, which can result in underestimating risk rather than lowering it (Stiroh & Rumble, 2006). To test for the relationship between market structure and banking stability, we include a variable proxy for market power (LERN). Partly, market power is connected to a bank's capacity of maintaining profit margins (Tabak et *al*., 2012). The Lerner index is an indicator of market power that measures a bank's ability to set a price above its marginal cost. It is defined as the relative difference between price and marginal cost, expressed as a percentage of price (Berger et *al*., 2017). However, this index should be interpreted with caution. In particular, a high Lerner index may reflect high concentration or product differentiation, but it is not necessarily an indicator of a lack of effective competition—it may, for example, result from high fixed costs or strategic innovations.

Furthermore, macroeconomic and institutional variables are included as controls to assess the association between social capital and banking stability in the presence of external factors. We adopt GDP growth and inflation (measured by consumer price indices) as proxies of macroeconomic factors. GDP growth reflects the stage of the economic cycle, while inflation represents macroeconomic imbalances (Ozili, 2019). Additionally, institutional variables are used to predict banking stability by associating fluctuations with the structural features of the institutional environment in which banking operations take place (Bermpei et *al*., 2018; Rehman et *al*., 2024). Furthermore, our empirical analysis includes institutional variables such as control of corruption, political stability, and regulatory quality, with evidence showing that

improvements in institutional quality generally reduce risk and enhance banking stability.

3.3. Methodology

3.3.1. System GMM Regression

The key econometric problem in estimating a dynamic panel data lagged simultaneous equations model is the endogeneity of the explanatory variables. This problem occurs when the regressor consists of a dependent variable in its past value (therefore being also an AR), which causes correlation between the error term and the lagged values of the dependent variable (Nickell, 1981). Moreover, this issue can be due to simultaneity bias if there is a bidirectional relationship between the two variables. This endogeneity means that the causal effect cannot be estimated with traditional econometric methods such as ordinary least squares, or within estimator Fixed Effect, which will produce biased and inconsistent estimators.

The issue is then partially dealt with the use of generalized method of moments (GMM) in dynamic panel data. The structural form, which is the default, is usually estimated via GMM and produces internal instruments from the lags of all endogenous variables. In those cases where GMM is not implemented, the traditional instrumental variable methods two-stage or three-stage least squares (SLS) are used. There are two kinds of GMM estimators that can be applied to dynamic panel data, the Difference GMM estimator according to Arellano and Bond (1991) and the System GMM estimator according to Blundell and Bond (1998). Monte Carlo evidence suggests that the System GMM estimator is more efficient than the Difference GMM estimator, which suffers from weak instrument bias. However, the consistency of the GMM estimator depends on the validity of the instruments used. First, the Hansen test for overidentifying restrictions is recommended to check the validity of lagged variables as instruments (Arellano and Bover, 1995; Blundell and Bond, 1998). The null hypothesis of this test is that the instrumental variables are exogenous, meaning they are uncorrelated with the error term. Additionally, Arellano and Bond (1991) suggest performing both first-order and second-order autocorrelation tests on the instruments. These tests check for the absence of first and second-order autocorrelations in the differenced equations. If the null hypotheses of these tests are not rejected, the instruments can be considered as valid.

3.3.2. Quantile Regression

To further test the robustness of our results, we will employ the quantile regression as an alternative methodology. The estimation of fixed or random effects in panel data models concentrate on estimating the average effects and are more vulnerable to the observation of outliers. These outliers can then introduce bias to estimates inferred from the mean. Estimation based on the quantile regressions are less sensitive to outlier's presence (Buchinsky, 1998). They model the association between an outcome and explanatory variables at the conditional quantile level of the dependent variable, compared to a conditional mean estimation of that variable. Therefore, they allow to analyze how the explanatory variables affect several points of the conditional distribution of the dependent variable. Quantile regressions capture the behavior of the explanatory variables for observations at different points in the conditional distribution of the dependent variable $\left(Q_\theta\left(y_i|x_i\right)\right)$. Which can be expressed by the following equation:

$$Q_\theta\left(y_i|x_i\right) = x_i\beta_\theta + \varepsilon_{\theta i}$$

Where y_i is the dependent variable, x_i is the vector of explanatory variables, and β_θ is the vector of parameters associated with the quantiles θ ($0< \theta <1$).

For a random variable y, with distribution: $F(F(y)=P(Y<y))$, th`e θ^e -th quantile is defined by:

$$Q_\theta\left(Y\right) = Inf\left\{y : F(y) \geq 0\right\}$$

The vector of estimated parameters β_θ associated with the θ^e-th quantile is obtained by solving the optimization problem proposed by Koenker and Bassett (1978). In quantile regressions, the coefficient β_θ replaces the coefficient β of the ordinary least-squares estimators, in order to distinguish marginal effects between the different quantiles. For the explanatory variable x_i, the marginal effect is the coefficient of the θ^e -th quantile, and there is a different coefficient vector for each value of θ:

$$\frac{\partial Q_\theta\left(y|x\right)}{\partial x_j} = \beta_{\theta j}$$

4. RESULTS AND DISCUSSION

4.1. The Impact of Social Capital on Banks Financial Stability

We estimate the effect of independent and control variables on MENA banks' stability, measured by the natural logarithm of Z-score (LNZ), using multiple regression models. Before evaluating the influence of each variable on banks financial stability, Sargan test confirmed the validity of instruments and AR (2) test indicated no evidence of residual autocorrelation. Moving on, the analysis provides evidence of the effects of social capital and other explanatory variables on banking stability. Table **3** reports three sets of independent variables which were regressed: social capital, bank-specific factors, and macroeconomic variables.

First, the findings suggest that social capital elements are strong predictors of the financial healthiness of banks. The social capital index (SCAP) in Models 1 and 4 exhibits significantly and consistently positive coefficients, indicating that banks soundness increases with social capital enhancement. This aligns with prior research showing that banks in regions with high social capital take fewer risks and maintain higher stability (Jin et al., 2019; Pasiouras & Samet, 2022). In particular, personal and family relationships (PER) in Models 2 and 5 and social networks (SNT) in Models 3 and 6 are additionally positively significant, confirming that interpersonal relationship strength and wider social network contribute to a stable banking environment as observed by Putnam (1995) and Jha and Chen (2015).

Second, bank-specific variables were regressed as control variables in all of the six models of Table **3**. (CAR) have a strong positive influence on banking stability indicating that well-capitalized banks are more resilient, a finding consistent with Demirguc-Kunt & Huizinga (2004). Liquidity (LIQ) also appears to have a positive and significant impact in some models supporting the hypothesis that banks with stronger liquidity management are more stable (Jin et al., 2017). Conversely, the fact that profitability (ROA) is negatively associated with banking stability implies that greater profits may be achieved only as a result of additional risk-taking perhaps damaging stability, which aligns with the findings of Anginer *et al*. (2018). Alongside entrepreneurial activity, market power significantly enhances stability, as revealed by the positive and highly significant coefficient of the Lerner Index (LER) (Tabak *et al.*, 2012). This means that banks which possess greater pricing power are considerably more stable, which supports the concentration-stability hypothesis presented in the literature review section. Conversely, (DIVER) shows an insignificant effect on stability thereby implying that diversification strategies do not consistently enhance stability of MENA banks (Brewer et al., 2001; Stiroh & Rumble, 2006). Non-performing loans (NPL) in Models 4, 5, and 6 display a negative and significant effect implying that banks with higher levels of non-performing loans have lower stability, which is consistent with the findings of Castro (2013). Furthermore, the one-year lagged dependent variable (LNZ (-1)) remains robust throughout all the models indicating that stability in bank behavior is persistent.

Furthermore, the macroeconomic variable GDP growth (GDPC) does not impact bank stability in all models. This suggests that the macroeconomic variables, GDP growth at least, do not have direct effects on banking stability, consistent with findings in the literature (El Moussawi *et al.*, 2024). Overall, the findings suggest that while macroeconomic conditions are generally less important, social capital and bank-specific characteristics play a major role in banking stability (Haddad *et al*., 2023).

4.2. Testing the Impact of Interactions Between Social Capital, Banks' Size, and Institutional Quality on Bank Financial Stability

We extend our analysis by exploring the interaction between social capital, bank size, and institutional quality on banking stability through the inclusion of interaction terms between these factors. The objective of this analysis is to determine whether bank-specific variables and institutional quality amplify the influence of social capital on bank financial stability. In other words, we aim to identify whether bank size and the prevailing institutional governance can enhance the positive impact of social capital on MENA banks. The results, presented in Table **4**, provide several important insights.

Table 3. The impact of social capital on banks' financial stability - dependent variable: LNZ.

-	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
C	0.2912*	0.1671***	0.1068	0.1620***	0.2715*	0.2171*
	(0.0647)	(0.0922)	(0.0913)	(0.0883)	(0.0834)	(0.0841)
LNZ (-1)	0.8312*	0.8040*	0.7776*	0.7985*	0.7914*	0.7724*
	(0.0276)	(0.0381)	(0.0416)	(0.0377)	(0.0373)	(0.0408)
CAR	0.0276*	0.4047*	0.5460*	0.4341*	0.3838*	0.4732*
	(0.3224)	(0.1395)	(0.1521)	(0.1348)	(0.1306)	(0.1416)
ROA	-3.9125*	-2.9191	-3.8798**	-3.2101***	-3.7929*	-4.4292*
	(0.8728)	(1.9974)	(1.8844)	(1.8581)	(1.2057)	(1.2277)
LIQ	0.0069	0.0767**	0.0692***	0.0757**	0.0436	0.0377
	(0.0178)	(0.0377)	(0.0379)	(0.0374)	(0.0345)	(0.0352)
LER	0.1772*	0.2085	0.2403***	0.2127	0.3697*	0.3962*
	(0.0520)	(0.1433)	(0.1355)	(0.1350)	(0.0855)	(0.0843)
DIVER	-0.1641	-0.1414	0.0157	-0.0889	-0.0517	0.0540
	(0.2417)	(0.4101)	(0.4059)	(0.3968)	(0.3127)	(0.3221)
SIZE	0.0051*	0.0127*	0.0169*	0.0120*	0.0097**	0.0122*
	(0.0021)	(0.0049)	(0.0057)	(0.0048)	(0.0047)	(0.0050)
NPL	-	-	-	-0.2176**	-0.1923***	-0.2209**
				(0.1077)	(0.1082)	(0.1125)

-	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
GDPC	0.1596 (0.1072)	-0.0174 (0.3002)	0.0314 (0.3185)	-0.0262 (0.3061)	0.1032 (0.2948)	0.1575 (0.3094)
SCAP	0.0016* (0.0004)	-	-	0.0026* (0.0008)	-	-
PFR	-	0.0015** (0.0007)	-	-	0.0008 (0.0005)	-
SNT	-	-	0.0024* (0.0008)	-	-	0.0018* (0.0008)
N° Obs.	2478	2478	2478	2478	2478	2478
AR1	0.004*	0.015*	0.008*	0.071***	0.021**	0.102
AR2	0.573 †	0.647 †	0.271 †	0.327 †	0.142 †	0.208 †
Prob. (Hansen)	0.771 †	0.374 †	0.176 †	0.218 †	0.381 †	0.224 †

Note (s): "*", "**", and "***" indicate that the variables are significant at the 1%, 5%, and 10% levels, respectively. (†) indicates that the instrument autocorrelation and overidentification tests are rejected.

Table 4. The impact of interactions between social capital, banks' size, and institutional quality on bank financial stability - dependent variable: LNZ.

-	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
C	-0.0346 (0.1937)	-0.3703*** (0.1974)	0.0949 (0.2392)	0.3552* (0.0679)	0.4288* (0.0807)	0.4468* (0.0864)
LNZ (-1)	0.8091* (0.0309)	0.8048* (0.0325	0.7980* (0.0335)	0.8286* (0.0271)	0.8157* (0.0290)	0.8355* (0.0264)
CAR	0.3320* (0.0761)	0.3162* (0.0757)	0.3603* (0.0854)	0.2603* (0.0664)	0.3077* (0.0707)	0.2246* (0.0594)
ROA	-4.3411* (0.8471)	-4.2315* (0.8604)	-4.4326* (0.9102)	-4.0252* (0.7874)	-3.9968* (0.8130)	-4.0247* (0.7749)
LIQ	0.0521** (0.0260)	0.0502** (0.0258)	0.0511*** (0.0274)	0.0476** (0.0242)	0.0481** (0.0245)	0.0492** (0.0241)
LER	0.2391* (0.0479)	0.2432* (0.0491)	0.2569* (0.0511)	0.2293* (0.0449)	0.2256* (0.0464)	0.2175* (0.0445)
DIVER	-0.1915 (0.2675)	-0.2112 (0.2649)	-0.2330 (0.2824)	-0.1698 (0.2632)	-0.2626 (0.2608)	-0.0573 (0.2547)
SIZE	0.0314* (0.0134)	0.0544* (0.0144)	0.0256 (0.0165)	0.0034 (0.0021)	0.0044** (0.0023)	0.0011 (0.0020)
GDPC	0.2080*** (0.1180)	0.1992*** (0.1137)	0.2248*** (0.1266)	0.2504** (0.1146)	0.1969 (0.1345)	0.2462** (0.1088)
INF	-0.3574* (0.1114)	-0.3909* (0.1167)	-0.4092 (0.1193)	-0.2843* (0.1036)	-0.3343* (0.1053)	-0.2511* (0.0983)

-	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
SCAP	0.0092** (0.0040)	-	-	0.0011** (0.0005)	0.0023* (0.0006)	0.0005 (0.0006)
PFR	-	0.0123* (0.0033)	-	-	-	-
SNT	-	-	0.0056 (0.0041)	-	-	-
SIZE*SCAP	-0.0005** (0.0002)	-	-	-	-	-
SIZE*PFR	-	-0.0007* (0.0002)	-	-	-	-
SIZE*SNT	-	-	-0.0003 (0.0003)	-	-	-
COCR	-	-	-	0.0831** (0.0417)	-	-
REQU	-	-	-	-	0.0617 (0.0419)	-
POLS	-	-	-	-	-	0.1552* (0.0417)
COCR*SCAP	-	-	-	-0.0016** (0.0008)	-	-
REQU*SCAP	-	-	-	-	-0.0016*** (0.0008)	-
POLS*SCAP	-	-	-	-	-	-0.0030* (0.0008)
N° Obs.	2478	2478	2478	2478	2478	2478
AR1	0.098***	0.131	0.128	0.064***	0.026**	0.030**
AR2	0.123 †	0.228 †	0.269 †	0.227 †	0.312 †	0.481 †
Prob (Hansen)	0.528 †	0.315 †	0.331 †	0.547 †	0.317 †	0.525 †

Note (s): "*", "**", and "***" indicate that the variables are significant at the 1%, 5%, and 10% levels, respectively. (†) indicates that the instrument autocorrelation and overidentification tests are rejected.

The empirical results demonstrate that social capital (SCAP) has an overall positive effect on banking stability; however, its relationship with the size of banks accounts for decreasing influence, evident by the significantly negative coefficient of SIZE*SCAP in Model 7. This implies that the stabilizing effects of social capital are more robust for small banks, but decline as bank size increases. Likewise, the negative interaction of personal and family relationships with banks' size (SIZE*PER) indicates that an increase in bank size reduces the beneficial effects of strong personal networks too. But social networks (SNT) when interacted with bank size in Model 9 (SIZE*SNT), do not show to have a significant role; indicating the constant returns to scale also are very strong for social networks compared to other forms of social capital.

Moreover, we find key dynamics in the interaction terms between social capital and institutional quality. In particular, the COCR*SCAP, REQU*SCAP and POLS*SCAP terms in Models 10, 11, and 12 are all negative and significant implying that the marginal stabilizing effect of social capital becomes smaller in stronger institutional frameworks. Those results are in line with the contextual effect of social capital on banking stability, where its beneficial impact is more pronounced for smaller banks and in less developed institutional quality environment. In contrast, the role of social capital is less important in stronger institutional frameworks (as you

would expect with larger banks or those situated in stronger institutional frameworks).

4.3. Robustness Check

To test the validity of our findings, we conduct several robustness tests. First, in Table **5** we include the ratio of non-performing loans to total loans (NPL) instead of the Z-score (LNZ) as a dependent variable and estimate our models using the system GMM methodology. Many studies use NPL as a proxy for credit risk and a complementary measure of overall bank risk, in addition to the Z-score (Berger *et al.*, 2017; Tabak *et al*., 2012; Kabir & Worthington, 2017). Generally, a lower NPL ratio reflects better asset quality and contributes to overall banking stability. Second, in Table **6** we re-estimate the base model using the quantile regression approach (QR).

Table 5. The impact of social capital on bank credit risk – dependent variable: NPL.

-	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**
C	-0.0485	-0.0376	-0.0642	-0.0283*	0.0045	-0.0628	-0.0725***	-0.0809	-0.0979**
	(-1.0860)	(0.0525)	(0.0420)	(0.0074)	(0.0094)	(0.0716)	(0.0426)	(0.0496)	(0.0439)
NPL (-1)	0.6442*	0.6598	-0.6710*	0.8765*	0.8236*	0.7882*	0.6520*	0.6687*	0.6628*
	(0.1417)	(0.1440)	(0.1460)	(0.0699)	(0.0883)	(0.2449)	0.1370)	(0.1385)	(0.1397)
CAR	-0.0472	0.0319	0.0497	-0.0554**	-0.0422**	-0.0318	-0.0476	-0.0342	-0.0569***
	(0.0294)	(0.0313)	(0.0309)	(0.0259)	(0.0190)	(0.0612)	(0.0328)	(0.0336)	(0.0340)
ROA	-0.9299*	-0.8497	-0.9129*	-0.1786	-0.1150	-0.6696*	-0.9851*	-0.8930*	-0.9558*
	(0.2161)	(0.1985)	(0.2202)	(0.1159)	(0.0908)	(0.1931)	(0.2124)	(0.1989)	(0.2114)
LIQ	-0.0201**	-0.0237	-0.0178***	-0.0029	-0.0046	-0.0153	-0.0198**	-0.0264**	-0.0186***
	(0.0103)	(0.0120)	(0.0098)	(0.0030)	(0.0041)	(0.0148)	(0.0104)	(0.0115)	(0.0104)
LER	0.0072	0.0066	0.0102	-0.0064	-0.0003	0.0101	0.0090	0.0077	0.0103
	(0.0081)	(0.0077)	(0.0082)	(0.0061)	(0.0049)	(0.0070)	(0.0086)	(0.0081)	(0.0084)
DIVER	0.2865*	0.2874	0.2824*	0.0202	-0.0424	0.1636***	0.2852*	0.2819*	0.2770*
	(0.0917)	(0.0883)	(0.0908)	(0.0585)	(0.0384)	(0.0909)	(0.0998)	(0.0984)	(0.0998)
SIZE	-0.0057**	-0.0052	-0.0061**	-0.0008*	-0.0007*	0.0055	-0.0067*	-0.0071**	-0.0082*
	(0.0029)	(0.0032)	(0.0028)	(0.0003)	(0.0003)	(0.0054)	(0.0028)	(0.0031)	(0.0029)
GDPC	0.2690*	0.2572	0.2632*	0.2113*	0.1610*	0.2275*	0.2387*	0.2311*	0.2397*
	(0.0658)	(0.0586)	(0.0633)	(0.0402)	(0.0423)	(0.0613)	(0.0639)	(0.0591)	(0.0659)
INF	0.1294*	0.1402	0.1179**	0.0349	0.0204	0.0795	0.1481*	0.1565*	0.1447*
	(0.0512)	(0.0581)	(0.0513)	(0.0230)	(0.0253)	(0.0811)	(0.0497)	(0.0525)	(0.0496)
COCR	-0.0141**	-0.0138	-0.0132**	-	-	-	-	-	-
	(0.0067)	(0.0062)	(0.0061)						
REQU	-	-	-	-0.0003	-0.0035**	-0.0093	-	-	-
				(0.0017)	(0.0018)	(0.0073)			
POLS	-	-	-	-	-	-	-0.0019	-0.0004**	-0.0026
							(0.0025)	(0.0024)	(0.0026)
SCAP	-0.0004***	-	-	-0.0003*	-	-	-0.0004**	-	-
	(0.0002)			(0.0001)			(0.0002)		
PFR	-	-0.0004	-	-	-0.0002**	-	-	-0.0003	-
		(0.0002)			(0.0001)			(0.0002)	

-	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
SNT	-	-	-0.0002** (0.0001)	-	-	-0.0002 (0.0001)	-	-	-0.0003** (0.0001)
N° Obs	-	-		-	-	-	-	-	-
AR1	0.078***	0.093***	0.081***	0.221	0.268	0.207	0.004*	0.016*	0.008*
AR2	0.392 †	0.421 †	0.418 †	0.667 †	0.341 †	0.544 †	0.184 †	0.279 †	0.257 †
Prob (Hansen)	0.917 †	0.247 †	0.576 †	0.607 †	0.332 †	0.505 †	0.968 †	0.395 †	0.782 †

Note (s): "*", "**", and "***" indicate that the variables are significant at the 1%, 5%, and 10% levels, respectively. (†) indicates that the instrument autocorrelation and overidentification tests are rejected.

Table 6. The impact of social capital on banks financial stability - dependent variable: LNZ, methodology: Quantile regression.

-	Q30	Q60	Q90	Q30	Q60	Q90	Q30	Q60	Q90
C	0.1313 (0.2749)	2.3301* (0.2768)	3.5108* (0.5186)	0.1257 (0.2735)	2.4290* (0.2633)	4.0560* (0.4682)	-0.1996 (0.3373)	2.3372* (0.2590)	3.7288* (0.4548)
CAR	2.8670* (0.2147)	2.1214* (0.2509)	2.2236* (0.5052)	2.8526* (0.2267)	2.0503* 0.2420)	2.1026* (0.5211)	2.9936* (0.2520)	2.1139* (0.2381)	2.0735* (0.5162)
ROA	-11.3146* (4.1960)	-17.5356* (2.5505)	-22.5455* (6.6554)	-10.4732* (4.2206)	-16.9407* (2.7581)	-21.9207* (7.1267)	-11.1258* (3.9280)	-17.9087* (2.5455)	-23.0381* (6.1185)
LIQ	0.3057* (0.1177)	-0.1902*** (0.1075)	-0.1436 (0.1932)	0.3106* (0.1088)	-0.2118** (0.1076)	-0.1907 (0.2110)	0.2441** (0.1217)	-0.2407** (0.1046)	-0.1965 (0.1893)
LER	1.2189* (0.2917)	0.7518* (0.2517)	0.7164 (0.7557)	1.1501* (0.3030)	0.7364* (0.2706)	0.8029 (0.7374)	1.1201* (0.3090)	0.7535* (0.2391)	0.7878 (0.7156)
DIVER	-3.6314* (1.0433)	-0.0764 (3.0459)	2.8781*** (1.6669)	-3.5246* (1.1728)	-0.6285 (2.8733)	2.7068 (1.8555)	-1.8360 (3.3915)	0.1557 (2.9850)	3.0520** (1.5055)
SIZE	0.0879* (0.0159)	0.0218** (0.0121)	-0.0190 (0.0338)	0.0962* (0.0143)	0.0173 (0.0123)	-0.0328 (0.0321)	0.0908* (0.0146)	0.0242** (0.0119)	-0.0352 (0.0294)
NPL	-2.2035* (0.9283)	-0.8925* (0.2064)	-0.8170* (0.1273)	-1.8124** (0.8204)	-0.9603* (0.1985)	-0.8932* (0.1235)	-2.0810** (0.9203)	-0.8955* (0.1979)	-0.7563* (0.1287)
GDPC	-1.4615* (0.3017)	-0.1360 (0.3454)	0.5101 (0.6747)	-1.4555* (0.3259)	-0.3238 (0.3408)	0.4971 (0.6343)	-1.4021* (0.2927)	-0.0308 (0.3408)	0.6370 (0.5969)
INF	-0.8025*** (0.4423)	-0.3056 (0.2425)	0.0058 (0.1082)	-0.9680** (0.4482)	-0.3264 (0.2514)	-0.0697 (0.1156)	-0.6661 (0.4912)	-0.2522 (0.2618)	-0.0155 (0.1031)
SCAP	0.0110* (0.0029)	0.0059** 0.0026	0.0061** (0.0029)	-	-	-	-	-	-
PFR	-	-	-	0.0069* (0.0027)	0.0041** (0.0019)	-0.0004 (0.0015)	-	-	-
SNT	-	-	-	-	-	-	0.0131* (0.0027)	0.0038** (0.0019)	0.0057** (0.0027)

Note (s): (*), (**), and (***) indicate that the variables are significant at the 1%, 5%, and 10% levels, respectively.

Overall, the results in Table **5** emphasize that enhancing social capital, maintaining strong bank fundamentals, and ensuring macroeconomic stability are key to reducing banking sector vulnerabilities. Social capital seems to have a consistently negative significant impact on non-performing loans (NPL) across different specifications of GMM regression models suggesting that higher social capital could lead to lower credit risk. This underscores the importance of robust credit culture in reducing NPLs for banking stability, which is accommodated by strong social networks and high level of cohesion. Regarding bank-specific variables, the lagged NPL is still in high significance and has a positive coefficient, indicating persistence of credit risk over time. Capital adequacy ratio (CAR) shows the negative and significant influence, revealing that better-capitalized banks are less likely to have high NPLs. The return on assets (ROA) also records a negative effect meaning that more profitable banks tend to have lower credit risk. Also, liquidity (LIQ) persistently decreases the NPLs, emphasizing the role of good liquidity management, and larger bank size (SIZE) also results in lower credit risk. On the macroeconomic part, GDP growth (GDPG) lowers NPLs significantly suggesting that a healthier economy is favorable to support borrower repayment capacity, while inflation (INF) has a positive association with NPLs indicating that higher price level deteriorates credit risk through borrowers' real incomes landscape. In sum, these results emphasize that enhancing social capital, maintaining strong bank fundamentals, and ensuring macroeconomic stability are key to reducing banking sector vulnerabilities.

The quantile regression results in Table 6 largely align with those in Tables **3**, **4**, and **5**. Social capital (SCAP) has a positive and statistically significant impact across the entire distribution, supporting the view that higher social capital increases financial stability across all quantiles. In line with the literature, the capital adequacy ratio (CAR) significantly impacts stability, indicating the importance of well-capitalized banks in reducing risk and maintaining resilience, as observed by Jokipii & Milne (2011). We find that ROA is negatively related to stability, indicating that less profitable banks tend to be less stable, consistent with the findings of Athanasoglou *et al*. (2008). Liquidity (LIQ) has a significant impact in enhancing stability at lower quantiles, but it loses significance at higher quantiles and even reports an opposite impact, aligning with Vodová (2011) findings on the varying roles of liquidity management depending on a bank's position in the stability spectrum. Non-performing loans (NPL) consistently reduce stability, particularly for less stable banks, which aligns with Louzis & Vouldis (2012), who associate higher credit risk with greater financial fragility. The behavior of macroeconomic variables, such as GDP growth (GDPC) and inflation (INF), is mixed across quantiles, reflecting the complex nature of how these variables influence banking stability, as highlighted by Demirgüç-Kunt & Detragiache (1998).

CONCLUSION

Using different estimation techniques, namely system generalized method of moment (GMM) and quantile regression (QR) approach, this paper investigates the influence of social capital, bank specific and macroeconomic variables on banking stability for a large panel study in MENA region. The sample consists of 188 commercial banks across 15 MENA countries from the period of 2007–2021. What is novel of this approach is that it has incorporated the social capital as an important determinant of banking stability and it goes beyond the standard review which concentrates over macroeconomic and bank-specific variables. Using the Z-score as a proxy of bank healthiness, we analyze their influences on the likelihood of failure of banks and complement the analysis with robustness tests using NPL as an alternative measure for credit risk.

Our findings are consistent with the view that higher level of social networks and trust in society reduces systemic risks within the banking sector as the results obtained from both GMM and QR models suggest. Moreover, social capital is positively and significantly associated with financial stability, aligning with existing literature that emphasizes its role in promoting responsible lending and reducing credit risk. The addition of bank-specific factors including capital adequacy ratio (CAR), liquidity ratio (LIQ), and profitability ratio (ROA) also provides evidence for the fact that better capitalized and profitable banks are more stable. This relationship may depend on profitability, with ROA in specific showing a negative relation which indicates that more profitable firms might be willing to take on greater risk. Second, our analysis suggests that macroeconomic fundamentals are also crucial but have lesser impact. GDP growth seems to have some mixed effects, especially in the case of QR results where its role become less clearly defined. Inflation (INF) increases credit risk, which means that higher price level reduces real incomes of borrowers and lead to higher likelihood that they will default on their obligations. The influence of social capital on the stability of banking is enhanced by the quality of institutions and it can also be observed that this is more distinctive in banks with smaller sizes and operating in poorer institutional frameworks.

This paper provides an important addition to financial stability literature on the MENA region by exploring the impact of social capital on banking systems, which is a relatively under-researched field. Indeed, while most previous studies have centered on perceived institutional quality and macroeconomic factors (which at best seem to indirectly influence financial instability), little attention has been dedicated to informal social networks and trust, which are now seen as a safeguard against such a problem. These results provide indications that in the absence of strong formal institutions, regions characterized with higher levels of social capital have lower risk of bank failures. These lessons can form a new agenda for policy-makers and financial regulators aiming at containing the fragility of banking systems in emerging markets. Moreover, our employment of a QR approach ensures that we have differentiated the impacts of social capital and other variables on bank stability across distribution which offers not just an alternative, but a more detailed view as compared to conventional mean-based methods.

This offers policymakers valuable lessons regarding the importance of social capital in any strategy designed to improve banking stability. This could be done with community development projects, building confidence in financial institutions, and fostering more trust into communal values. It also requires reinforcement of the legal and institutional framework because more secure regions benefit from reduced risk-taking, as well as increased financial stability. But our findings show that social capital may have a compensatory effect in those regions where associations are weaker. For these reasons, regulators should also encourage banks to more frequently get in touch with local communities and use social capital as a tool for risk mitigation. In addition, compliance with capital adequacy regulations should always be rigorously enforced to ensure that banks remain well capitalized. Holding enough liquidity levels at banks, especially when the financial environment is less secured, is important to preserve bank stability. The diverging liquidity results imply that liquidity management rules need to be sensitive to the idiosyncratic bank settings, with smaller banks especially those with relatively more credit risk should hold higher liquidity buffers. Both profitability and its possible encouragement of excessive risk-taking should be subject to regulators screening especially in emerging markets like the MENA. The banking sector has to start incorporating social capital in risk management strategies. Moreover, banks should focus on enhancing relationship with their community by improving the image of their transactions through trust and transparency. It will not only decrease the credit risk but also enhance loan repayments, which is a supportive association between social capital and financial stability. Furthermore, regions with high levels of social capital tend to generate a lower non-performing loan ratios. With this in mind, banks operating in these regions should consider this information in their credit risk assessment processes to reduce their risk-taking. Banks may wish to turn their attentions particularly to a strong capital position and liquidity management. In less regulated environments, where the benefits of capital adequacy on stability have been larger, banks should focus more on increasing capital levels to absorb all the risks emanating from the economy. Second, while achieving a positive ROA can be a sign of good performance, it is also associated with greater instability. Banking institutions operating in fragile markets or with less capital may not be able to achieve optimal performance without resorting to riskier practices. Therefore, it is essential to adopt a prudent approach tailored to the specificities of each market in order to fully understand the true relationship between profitability and banking stability. Banks meanwhile could gain from participating actively in public-private partnerships that help develop financial literacy and social cohesion as well. These measures can strengthen social capital at the level of a region, thus reducing systemic risks in the banking sector. Furthermore, given our findings suggesting that bank liquidity and stability operate differently as control factors based on the spectrum of stability, regional banks in the MENA region may need to adjust their liquidity management strategies accordingly.

This research demonstrates the importance of social capital in averting such crises by ensuring banking stability, and provides policy as well as implications for the industry to lower banking risks within the MENA region. Through earning trust, bolstering institutional frameworks and following sound fiduciary duties will empower both policymakers and banks in sustaining the resiliency of the banking sector against macroeconomic and credit risks.

LIST OF ABBREVIATIONS

MENA	=	Middle East and North Africa
GDP	=	Gross Domestic Product
ROA	=	Return On Assets
NPL	=	Non-performing Loans
SME	=	Small and Medium-Sized Enterprises
CEO	=	Chief Executive Officer
CSR	=	Corporate Social Responsibility
GMM	=	Generalized Method of Moments
SLS	=	Semiparametric Least Squares
QR	=	Quantile Regression

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest associated with the research titled *"The interaction between social capital and banking stability: Evidence from MENA region"* which may have influenced the findings, interpretation, or conclusions of this work.

ACKNOWLEDGEMENT

The authors acknowledge the financial support of the Lebanese University for this research.

REFERENCES

Adem, M. (2022). Research Article Impact of Diversification on Bank Stability: Evidence from Emerging and Developing Countries. https://doi.org/10.1155/2022/7200725

Ali, A., & Daly, K. (2010). Macroeconomic determinants of credit risk: Recent evidence from a cross country study. International review of financial analysis, 19(3), 165-171. https://doi.org/10.1016/j.irfa.2010.03.001

Allen, F., Zhang, C., & Zhao, M. (2012). China's financial system: Opportunities and challenges. https://doi.org/10.3386/w17828

Allen, M. H., Currier, G. W., Carpenter, D., Ross, R. W., & Docherty, J. P. (2005). The expert consensus guideline series. Treatment of behavioral emergencies 2005. Journal of psychiatric practice, 11, 5-108. https://doi.org/10.1097/00131746-200511001-00002

Álvarez, J. M., García, J. P., & Gouveia, O. (2016). The globalization of banking: How is regulation affecting global banks. BBVA Research Global Economic Watch. https://www.bbvaresearch.com/wp-content/uploads/2016/08/The-globalisation-of-banking.pdf

Anginer, D., Demirgüç-Kunt, A., & Mare, D. S. (2018). Bank capital, institutional environment and systemic stability. Journal of Financial Stability, 37, 97-106. https://doi.org/10.1016/j.jfs.2018.06.001

Antony, T. M., & Suresh, G. (2023). Determinants of credit risk: Empirical evidence from Indian commercial banks. Banks and Bank Systems, 18(2), 88-100. http://dx.doi.org/10.21511/bbs.18(2).2023.08

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297. https://doi.org/10.2307/2297968

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. Journal of econometrics, 68(1), 29-51. https://doi.org/10.1016/0304-4076(94)01642-D

Ariss, R. T. (2010). On the implications of market power in banking: Evidence from developing countries. Journal of banking & Finance, 34(4), 765-775. https://doi.org/10.1016/j.jbankfin.2009.09.004

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. Journal of international financial Markets, Institutions and Money, 18(2), 121-136. https://doi.org/10.1016/j.intfin.2006.07.001

Ayinuola, T. F., & Gumel, B. I. (2023). The nexus between liquidity and credit risks and their impact on bank stability. Asian Journal of Economics, Business and Accounting, 23(11), 15-27. https://ssrn.com/abstract=4427996

Baele, L., De Jonghe, O., & Vander Vennet, R. (2007). Does the stock market value bank diversification? Journal of banking & finance, 31(7), 1999-2023. https://doi.org/10.1016/j.jbankfin.2006.08.003

Barra, C., & Ruggiero, N. (2021). The role of nonlinearity on the financial development–economic performance nexus: an econometric application to Italian banks. Empirical Economics, 60(5), 2293-2322. https://doi.org/10.1007/s00181-020-01836-0

Beck, T., De Jonghe, O., & Schepens, G. (2013). Bank competition and stability: Cross-country heterogeneity. Journal of financial Intermediation, 22(2), 218-244. https://doi.org/10.1016/j.jfi.2012.07.001

Berger, A. N., Klapper, L. F., & Turk-Ariss, R. (2017). Bank competition and financial stability. In Handbook of competition in banking and finance (pp. 185-204). Edward Elgar Publishing. https://doi.org/10.4337/9781785363306.00018

Bermpei, T., Kalyvas, A., & Nguyen, T. C. (2018). Does institutional quality condition the effect of bank regulations and supervision on bank stability? Evidence from emerging and developing economies. International Review of Financial Analysis, 59, 255-275. https://doi.org/10.1016/j.irfa.2018.06.002

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of econometrics, 87(1), 115-143. https://doi.org/10.1016/S0304-4076(98)00009-8

Boubakri, N., Mansi, S. A., & Saffar, W. (2013). Political institutions, connectedness, and corporate risk-taking. Journal of international business studies, 44, 195-215. https://doi.org/10.1057/jibs.2013.2

Bougatef, K., & Mgadmi, N. (2016). The impact of prudential regulation on bank capital and risk-taking: The case of MENA countries. The Spanish Review of Financial Economics, 14(2), 51-56. https://doi.org/10.1016/j.srfe.2015.11.001

Boyd, J. H., & Graham, S. L. (1986). Risk, regulation, and bank holding company expansion into nonbanking. Quarterly Review, 10 (Spring), 2-17. https://ideas.repec.org/a/fip/fedmqr/y1986isprp2-17nv.10no.2.html

Boyd, J. H., Graham, S. L., & Hewitt, R. S. (1993). Bank holding company mergers with nonbank financial firms: Effects on the risk of failure. Journal of banking & finance, 17(1), 43-63. https://doi.org/10.1016/0378-4266(93)90079-S

Brei, M., Gadanecz, B., & Mehrotra, A. (2020). SME lending and banking system stability: Some mechanisms at work. Emerging Markets Review, 43, 100676. https://doi.org/10.1016/j.ememar.2020.100676

Brewer, E., Jackson, W. E., & Moser, J. T. (2001). The value of using interest rate derivatives to manage risk at US banking organizations. Economic Perspectives-Federal Reserve Bank of Chicago, 25(3), 49-65. https://www.moneysmartweek.org/-/media/publications/economic-perspectives/2001/3qepart4-pdf.pdf

Buchinsky, M. (1998). Recent advances in quantile regression models: a practical guideline for empirical research. Journal of human resources, 88-126. https://doi.org/10.2307/146316

Budsaratragoon, P., & Jitmaneeroj, B. (2021). Reform priorities for prosperity of nations: The Legatum Index. Journal of Policy Modeling, 43(3), 657-672. https://doi.org/10.1016/j.jpolmod.2020.09.004

Calice, P., & Leonida, L. (2018). Concentration in the banking sector and financial stability: New evidence. World Bank Policy Research Working Paper, (8615). https://ssrn.com/abstract=3267682

Castro, V. (2013). Macroeconomic determinants of the credit risk in the banking system: The case of the GIPSI. Economic modelling, 31, 672-683. https://doi.org/10.1016/j.econmod.2013.01.027

Chandramohan, K., Lunawat, C. D., & Lunawat, C. A. (2022). The impact of diversification on bank stability in India. Cogent Business & Management, 9(1), 2094590. https://doi.org/10.1080/23311975.2022.2094590

Chen, Y., Shan, Y. G., Wang, J., Yang, X., & Zhang, J. (2024). Social capital and cost of debt: Evidence from Chinese CEO network centrality. Emerging Markets Review, 60, 101131. https://doi.org/10.1016/j.ememar.2024.101131

Coleman, J. S. (1988). Social capital in the creation of human capital. American journal of sociology, 94, S95-S120. https://www.journals.uchicago.edu/doi/abs/10.1086/228943

Cornett, M. M., Minnick, K., Schorno, P. J., & Tehranian, H. (2021). Bank consumer relations and social capital. Journal of Banking & Finance, 133, 106272. https://doi.org/10.1016/j.jbankfin.2021.106272

Cortés, D., & Soriano, P. (2024). Analysis of macroeconomic determinants of non-performance in consumer and mortgage loans. Finance Research Letters, 61, 104939. https://doi.org/10.1016/j.frl.2023.104939

Crockett, A. (2008). Market liquidity and financial stability. Financial Stability Review, 11, 13-17.

Dahal, A. K., Bhattarai, G., & Budhathoki, P. B. (2024). Does Political Stability Matter to the Profitability of Banks? Financial Markets, Institutions and Risks, 8(2), 1-14. https://doi.org/10.61093/fmir.8(2).1-14.2024

De Haan, J., & Poghosyan, T. (2012). Bank size, market concentration, and bank earnings volatility in the US. Journal of International Financial Markets, Institutions and Money, 22(1), 35-54. https://doi.org/10.1016/j.intfin.2011.07.002

Demirgüç-Kunt, A., & Detragiache, E. (1998). The determinants of banking crises in developing and developed countries. IMF Staff Papers, 45(1), 81-109. https://doi.org/10.2307/3867330

Demirgüç-Kunt, A., & Huizinga, H. (2004). Market discipline and deposit insurance. Journal of monetary economics, 51(2), 375-399. https://doi.org/10.1016/j.jmoneco.2003.04.001

Demirguc-Kunt, A., Detragiache, E., & Merrouche, O. (2013). Bank capital: Lessons from the financial crisis. Journal of money, credit and Banking, 45(6), 1147-1164. https://doi.org/10.1111/jmcb.12047

Dinçer, H., Yüksel, S., Pınarbaşı, F., & Çetiner, İ. T. (2019). Measurement of economic and banking stability in emerging markets by considering income inequality and nonperforming loans. In Maintaining financial stability in times of risk and uncertainty (pp. 49-68). IGI Global. https://doi.org/10.4018/978-1-5225-7208-4.ch003

Doh, S. (2014). Social capital, economic development, and the quality of government: How interaction between social capital and economic development affects the quality of government. Public Administration, 92(1), 104-124. https://doi.org/10.1111/padm.12041

Dungey, M., & Gajurel, D. (2015). Contagion and banking crisis–International evidence for 2007–2009. Journal of Banking & Finance, 60, 271-283. https://doi.org/10.1016/j.jbankfin.2015.08.007

El Moussawi, C., & Mansour, R. (2022). Competition, cost efficiency and stability of banks in the MENA region. The Quarterly Review of Economics and Finance, 84, 143-170. https://doi.org/10.1016/j.qref.2021.12.005

El Moussawi, C., Goutte, S., Kouki, I., & Obeid, H. (2024). Assessing the impact of the expansion of pan-African banks and the institution's quality on African banking stability. *Research in International Business and Finance*, *70*, 102283. https://doi.org/10.1016/j.ribaf.2024.102283

Elfeituri, H. (2022). Banking stability, institutional quality, market concentration, competition and political conflict in MENA. Journal of International Financial Markets, Institutions and Money, 76, 101476. https://doi.org/10.1016/j.intfin.2021.101476

Elster, J. (1989). The cement of society: A study of social order. Cambridge University Press.

Essid, H., Ouellette, P., & Vigeant, S. (2014). Productivity, efficiency, and technical change of Tunisian schools: A bootstrapped Malmquist approach with quasi-fixed inputs. Omega, 42(1), 88-97. https://doi.org/10.1016/j.omega.2013.04.001

Fang, V. W., Tian, X., & Tice, S. (2014). Does stock liquidity enhance or impede firm innovation? *The Journal of Finance*, *69*(5), 2085-2125. https://onlinelibrary.wiley.com/doi/abs/10.1111/jofi.12187

Ferrary, M. (2003). Trust and social capital in the regulation of lending activities. The Journal of Socio-Economics, 31(6), 673-699. https://doi.org/10.1016/S1053-5357(02)00145-2

García, F. P., Martínez, L. S., Santalucía, V. M., & Fernandez, J. (2006). Measurement of Social Capital and Growth: An Economic Methodology. Bilbao: Fundacion BBVA.

https://www.researchgate.net/profile/Juan-Fernandez-De-Guevara-2/publication/46444731_Measurement_of_Social_Capital_and_Growth_an_Economic_Methodology/links/0deec51f0fb42e7873000000/Measurement-of-Social-Capital-and-Growth-an-Economic-Methodology.pdf

Guidi, F. (2021). Concentration, competition and financial stability in the South-East Europe banking context. International Review of Economics & Finance, 76, 639-670. https://doi.org/10.1016/j.iref.2021.07.005

Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. *American Economic Review*, *94*(3), 526-556. https://doi.org/10.1257/0002828041464498

Gupta, J., & Kashiramka, S. (2024). Examining the impact of liquidity creation on bank stability in the Asia Pacific region: Do ESG disclosures play a moderating role?. Journal of International Financial Markets, Institutions and Money, 91, 101955. https://doi.org/10.1016/j.intfin.2024.101955

Haddad, H., Albawab, A., & Al-Qudah, L. (2023). THE EFFECT OF INTELLECTUAL AND SOCIAL CAPITAL ON BANKS PROFITABILITY. Journal of Governance and Regulation, 12(1). https://doi.org/10.22495/jgrv12i1siart14

Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2017). Social capital and debt contracting: Evidence from bank loans and public bonds. Journal of Financial and Quantitative Analysis, 52(3), 1017-1047. https://doi.org/10.1017/S0022109017000205

Hoggarth, G., Mahadeva, L., & Martin, J. H. (2010). Understanding international bank capital flows during the recent financial crisis. Bank of England Financial Stability Paper, (8). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1786691

Jha, A., & Chen, Y. (2015). Audit fees and social capital. The Accounting Review, 90(2), 611-639. https://doi.org/10.2308/accr-50878

Jin, J. Y., Kanagaretnam, K., Liu, Y., & Liu, N. (2019). Banks' loan growth, loan quality, and social capital. Journal of Behavioral and Experimental Finance, 21, 83-102. https://doi.org/10.1016/j.jbef.2018.11.004

Jin, J. Y., Kanagaretnam, K., Lobo, G. J., & Mathieu, R. (2017). Social capital and bank stability. Journal of Financial Stability, 32, 99-114. https://doi.org/10.1016/j.jfs.2017.08.001

Jokipii, T., & Milne, A. (2011). Bank capital buffer and risk adjustment decisions. Journal of Financial Stability, 7(3), 165-178. https://doi.org/10.1016/j.jfs.2010.02.002

Kabir, M. N., & Worthington, A. C. (2017). The 'competition–stability/fragility'nexus: A comparative analysis of Islamic and conventional banks. International Review of Financial Analysis, 50, 111-128. https://doi.org/10.1016/j.irfa.2017.02.006

Kandori, M. (1992). Social norms and community enforcement. The Review of Economic Studies, 59(1), 63-80. https://doi.org/10.2307/2297925

Karim, N. A., Al-Habshi, S. M. S. J., & Abduh, M. (2016). Macroeconomics indicators and bank stability: A case of banking in Indonesia. Bulletin of Monetary Economics and Banking, 18(4), 431-448. https://bulletin.bmeb-bi.org/bmeb/vol18/iss4/1/

Khan, H., Khan, S., & Zuojun, F. (2022). Institutional quality and financial development: Evidence from developing and emerging economies. Global Business Review, 23(4), 971-983. https://doi.org/10.1177/0972150919892366

Koenker, R., & Bassett Jr, G. (1978). Regression quantiles. Econometrica: journal of the Econometric Society, 33-50. https://doi.org/10.2307/1913643

Lee, C. C., & Hsieh, M. F. (2013). The impact of bank capital on profitability and risk in Asian banking. Journal of international money and finance, 32, 251-281. https://doi.org/10.1016/j.jimonfin.2012.04.013

Legatum Institute. (2023). *Social capital*. The Legatum Prosperity Index. Retrieved from https://www.prosperity.com/glossary/social-capital

Louzis, D. P., & Vouldis, A. T. (2012). A methodology for constructing a financial systemic stress index: An application to Greece. Economic Modelling, 29(4), 1228-1241. https://doi.org/10.1016/j.econmod.2012.03.017

Lu, Y., & Wang, Y. (2023). Bank liquidity hoarding and bank systemic risk: The moderating effect of economic policy uncertainty. Pacific-Basin Finance Journal, 82, 102189. https://doi.org/10.1016/j.pacfin.2023.102189

Margarint, E., Ben Bouheni, F., & Obeid, H. (2021). L'impact de la supervision bancaire sur la stabilité des banques : Cas de la Moldavie [The impact of banking supervision on bank stability: The case of Moldova]. *Management & Prospective*, (381), 71-84. https://doi.org/10.3917/g2000.381.0071

Marques-Ibanez, D. (2009). Bank Risk and Monetary Policy. Available at SSRN 1349110. https://ssrn.com/abstract=1349110

McKinsey & Company. (2023). Banking 2030: How technology will reshape banking's future. McKinsey Global Institute. Retrieved from https://www.mckinsey.com

Nickell, S. (1981). Biases in dynamic models with fixed effects. Econometrica: Journal of the econometric society, 1417-1426. https://doi.org/10.2307/1911408

Ostergaard, C., Schindele, I., & Vale, B. (2016). Social capital and the viability of stakeholder-oriented firms: Evidence from savings banks. Review of Finance, 20(5), 1673-1718. https://doi.org/10.1093/rof/rfv047

Ozili, P. K. (2019). Non-performing loans and financial development: new evidence. The Journal of Risk Finance, 20(1), 59-81. https://doi.org/10.1108/JRF-07-2017-0112

Pasiouras, F., & Samet, A. (2022). Social capital and the cost of bank equity: Cross-country evidence. Journal of Banking & Finance, 141, 106535. https://doi.org/10.1016/j.jbankfin.2022.106535

Phan, H. T. M., & Daly, K. (2020). Market concentration and bank competition in emerging asian countries over pre and post the 2008 global financial crisis. Research in International Business and Finance, 51, 101039. https://doi.org/10.1016/j.ribaf.2019.05.003

Portes, A. (2000, March). The two meanings of social capital. In Sociological forum (Vol. 15, pp. 1-12). Kluwer Academic Publishers-Plenum Publishers. https://doi.org/10.1023/A:1007537902813

Putnam, R. D. (1995). Bowling alone: America's declining social capital: Originally published in Journal of Democracy 6 (1), 1995. Culture and Politics: A Reader, 223-234. https://doi.org/10.1007/978-1-349-62965-7_12

Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. Simon Schuster. http://dx.doi.org/10.15365/joce.0602122013

Rehman, A., Mehmood, W., Alsmady, A. A., & Sharif, A. (2024). Corruption's impact on non-performing loans of banks in emerging markets: Empirical insights. Research in Globalization, 9, 100241. https://doi.org/10.1016/j.resglo.2024.100241

Rudevska, V., Riznyk, D., Tanase, V., Yatsenko, O., & Rak, R. (2024). Financial Stability and Innovation: Interconnection and Development Prospects. Futurity Economics&Law, 4(2), 214-228. https://doi.org/10.57125/FEL.2024.06.25.12

Saksonova, S., & Solovjova, I. (2011). Analysis of the quality and profitability of assets in the banking system and the impact of macroeconomic factors on its stability-Case of Latvia. In International Conference on Applied Economics (pp. 537-548).

Shabir, M., Jiang, P., Bakhsh, S., & Zhao, Z. (2021). Economic policy uncertainty and bank stability: Threshold effect of institutional quality and competition. Pacific-Basin Finance Journal, 68, 101610. https://doi.org/10.1016/j.pacfin.2021.101610

Shahriar, A., Mehzabin, S., & Azad, M. A. K. (2023). Diversification and bank stability in the MENA region. Social Sciences & Humanities Open, 8(1), 100520. https://doi.org/10.1016/j.ssaho.2023.100520

Spagnolo, G. (1999). Social relations and cooperation in organizations. Journal of Economic Behavior & Organization, 38(1), 1-25. https://doi.org/10.1016/S0167-2681(98)00119-X

Statovci, B., & Balaj, D. (2024). The impact of macroeconomic and bank internal factors on banking stability: Evidence from Kosovo banking sector. International Journal of Applied Economics, Finance and Accounting, 19(2), 242-249. https://ideas.repec.org/a/oap/ijaefa/v19y2024i2p242-249id1697.html

Stiroh, K. J., & Rumble, A. (2006). The dark side of diversification: The case of US financial holding companies. Journal of banking & finance, 30(8), 2131-2161. https://doi.org/10.1016/j.jbankfin.2005.04.030

Tabak, B. M., Fazio, D. M., & Cajueiro, D. O. (2012). The relationship between banking market competition and risk-taking: Do size and capitalization matter? Journal of Banking & Finance, 36(12), 3366-3381. https://doi.org/10.1016/j.jbankfin.2012.07.022

Trinh, V. Q., Cao, N. D., Li, T., & Elnahass, M. (2023). Social capital, trust, and bank tail risk: The value of ESG rating and the effects of crisis shocks. Journal of International Financial Markets, Institutions and Money, 83, 101740. https://doi.org/10.1016/j.intfin.2023.101740

Uddin, A., Chowdhury, M. A. F., Sajib, S. D., & Masih, M. (2020). Revisiting the impact of institutional quality on post-GFC bank risk-taking: Evidence from emerging countries. Emerging Markets Review, 42, 100659. https://doi.org/10.1016/j.ememar.2019.100659

Vives, X. (2010). Competition and stability in banking.

Vodová, P. (2011, October). Determinants of commercial bank's liquidity in Slovakia. In Lessons Learned from the Financial Crisis. Proceedings of 13th International Conference on Finance and Banking (pp. 740-747). https://bhlss.wordpress.com/wp-content/uploads/2017/02/2-determinants-of-liquidity.pdf

Vohra, M. S., Mubeen, M., Arif, K., & Perwez, K. (2023). Stability, Funding Risk and Bank Performance: Evidence from Pakistan. Pakistan Business Review, 25(1), 67-88. https://doi.org/10.22555/pbr.v25i1.786

Wheelock, D. C., & Wilson, P. W. (2012). Do large banks have lower costs? New estimates of returns to scale for US banks. Journal of Money, Credit and Banking, 44(1), 171-199. https://doi.org/10.1111/j.1538-4616.2011.00472.x

Woolcock, M. (2001). The place of social capital in understanding social and economic outcomes. Canadian journal of policy research, 2(1), 11-17. https://faculty.washington.edu/matsueda/courses/590/Readings/Woolcock%20Soc%20Cap%20Development.pdf

Yin, H., Jin, X., Quan, X., & Yu, J. (2022). Does social network improve corporate financing efficiency? Evidence from China. Pacific-Basin Finance Journal, 74, 101802. https://doi.org/10.1016/j.pacfin.2022.101802

Zheng, C., Cheung, A. W. K., & Cronje, T. (2022). Social capital and bank liquidity hoarding. Journal of International Financial Markets, Institutions and Money, 80, 101653. https://doi.org/10.1016/j.intfin.2022.101653

Zheng, G., Zhu, L., Liu, C., & Chen, Y. (2019). TMT social capital, network position and innovation: the nature of micro-macro links. Frontiers of Business Research in China, 13, 1-23. https://link.springer.com/article/10.1186/s11782-019-0047-0

Received: March 03, 2025 Revised: March 05, 2025 Accepted: March 07, 2025