Assessing the Impact of Country Risk on Banks' Stability in Egypt: An Empirical Study Using Z-Score Analysis

Rania Abdelfattah Salem
(ORCID 0000-0002-7106-3848)
Assistant Professor of Finance, Business Department, BAEPS
The British University in Egypt

Abstract

This study investigates the impact of country risk—focusing on political and financial dimensions—on the stability of Egyptian banks over the period 2005 to 2023. Utilizing the Generalized Method of Moments (GMM) approach, I analyze how these risk dimensions influence bank stability, as measured by the Z-score. The findings reveal that political and financial risks have significant negative impacts on bank stability, highlighting the critical role of governance issues, external debt, and currency volatility in shaping banking resilience. Notably, while inflation shows a stabilizing effect, its long-term risks warrant careful policy management. The study underscores the interplay between macroeconomic and institutional factors in determining banking sector stability and provides actionable insights for policymakers and financial institutions. By addressing gaps in the literature, this research offers practical recommendations for enhancing bank resilience in high-risk environments such as Egypt.

Keywords: Country Risk, Bank Stability, Political Risk, Financial Risk, Emerging Markets, Z-Score, GMM

ملخص البحث

تبحث هذه الدراسة في تأثير مخاطر الدولة - مع التركيز على الأبعاد السياسية والمالية - على استقرار البنوك المصرية خلال الفترة من ٢٠٠٥ إلى ٢٠٢٣. وباستخدام منهج الطريقة المعممة للحظات(GMM) ، يقوم البحث بتحليل كيفية تأثير أبعاد هذه المخاطر على استقرار البنوك، كما تم قياسها بواسطة ال Z-Score وتكشف النتائج أن المخاطر السياسية والمالية لها آثار سلبية كبيرة على استقرار البنوك، مما يسلط الضوء على الدور الحاسم لقضايا الحوكمة، والديون الخارجية، وتقلبات العملة في تشكيل مرونة البنوك. ومن الجدير بالذكر أنه على الرغم من أن التضخم يُظهِر تأثيراً داعماً للاستقرار، إلا أن مخاطره الطويلة الأجل تتطلب إدارة حذرة للسياسات. وتؤكد الدراسة التفاعل بين عوامل الاقتصاد الكلي والعوامل المؤسسية في تحديد استقرار القطاع المصرفي وتقدم رؤى قابلة للتنفيذ لواضعي السياسات و متخذى القرار فى المؤسسات المالية و الكيانات الاقتصداية. ومن خلال معالجة الثغرات في الابحاث السابقة، يقدم هذا البحث توصيات عملية لتعزيز مرونة البنوك في البيئات التى تواجه تحديات و معوقات اقتصادية و سياسية مثل مصر.

الكلمات المفتاحية: خاطر الدولة، استقرار البنك، المخاطر السياسية، المخاطر المالية، الأسواق الناشئة، Z-Score، GMM

1. Introduction

For decades, Egypt has faced a range of country risks that have significantly influenced its financial and economic systems. The country’s political landscape has been marked by major events, such as the 2011 Egyptian uprising and subsequent periods of political transition, which created prolonged uncertainty and instability. Regional conflicts and the aftermath of the Arab

Spring have amplified political risk in Egypt, undermining investor confidence and threatening economic stability. On the economic front, Egypt has faced recurring challenges including currency devaluations, rising inflation, and significant external debt levels. These factors contribute to economic risk, with far-reaching implications for the banking sector. Furthermore, financial risks in Egypt stem from vulnerabilities within its financial system, such as liquidity shortages, fluctuating foreign direct investment inflows, and structural inefficiencies (Mahdy, 2023; Pasha, 2024).

As financial intermediaries for people, businesses, and governments, banks are vital to the economy and support socioeconomic development and economic progress (Caselli *et al.*, 2016). Nevertheless, they are prone to failures by nature, which intensify the detrimental impact on the economy of a nation (Montes *et al.*, 2021). Elevated country risk levels typically affect bank failures, as banking decisions are predicated on prevailing economic conditions and anticipated future economic performance (Montes *et al.*, 2021). Maria *et al.* (2014) assert that higher country risk leads to losses in a bank's sovereign debt holdings and may impact the institution depending on its exposure to such debts (Bruha and Kocenda, 2018).

The impact of country risk on the stability of Egyptian banks is a multifaceted issue that encompasses various economic, regulatory, and operational dimensions. Country risk, which

includes political, economic, and financial instability, significantly influences the operational environment for banks, particularly in developing economies like Egypt. Recent studies have demonstrated a negative correlation between country risk and bank stability, emphasizing that heightened risk discourages investment and reduces deposits, thereby weakening overall bank performance (Oyetade, 2023; Mahdy, 2023; Al-Gasaymeh, 2018). These findings highlight the broader implications of country risk on the resilience of banks, particularly during economic downturns.

Understanding the relationship between country risk and bank stability is essential for identifying pathways to mitigate systemic vulnerabilities and enhance financial resilience. This study represents a seminal contribution to the field by addressing this critical gap through the use of robust econometric techniques to evaluate the impact of country risk on the stability of banks in Egypt, thereby advancing the discourse on banking resilience in high-risk environments.

The paper is organized as follows: Section 2 presents the existing literature review and the formation of hypotheses, whilst Section 3 establishes the study approach. Section 4 presents the principal findings, while Section 5 provides a concise conclusion.

2. Literature Review and Hypothesis Development

2.1 Country risk conceptualization

Country risk is a complex notion that includes political, economic, and financial risks, all of which can profoundly affect investment decisions, economic performance, and bank stability. Political risk encompasses elements such as political instability, corruption, terrorism, and government inefficiency (Cavusgil *et al.*, 2020). Economic risk is frequently indicated by measurements such as GDP growth, inflation rates and the balance of payments, which jointly influence the overall economic health (Salem & Younis, 2021). Financial risk has a direct impact on investor confidence and is defined as a nation's capacity to control external debts and preserve currency stability (Hassan, 2022).

One of the critical dimensions of country risk is its political aspect, which can be influenced by factors such as governance, political stability, and regulatory environments. Glova *et al.* (2020) provide a comprehensive analysis of political and economic factors affecting country risk, identifying key variables such as GDP per capita, inflation, and political control indices that significantly impact risk assessments in European countries. Similarly, Horrall and Siddiqui (2014) emphasize the importance of macroeconomic data in evaluating country risk, noting that traditional assessments often overlook the micro-level implications for specific businesses. This highlights the

necessity for a nuanced understanding of how political dynamics can affect economic outcomes, investment climates, and financial stability. The economic dimension of country risk is equally significant, as it encompasses factors such as economic growth, inflation rates, and external debt levels. Whereas, the financial side of country risk pertains to a nation's capacity to handle foreign loans and uphold currency stability, which directly affects investor confidence (Hassan, 2022; Salem & Walid, 2025). Opreana *et al.* (2023) demonstrate the relevance of country risk in assessing the performance of banks and financial institutions, suggesting that economic indicators are crucial for understanding financial stability. Similarly, the relationship between institutional quality and financial performance, as highlighted in the analysis of non-financial firms in G8 and MENA countries, underscores the importance of factors such as voice and accountability, political stability, and government effectiveness in fostering financial stability. The findings further emphasize that improvements in institutional quality take 2–4 years to yield significant effects on firms' financial performance, providing valuable insights for corporate managers and policymakers (Eldomiaty et al., 2023).

In general, the literature on country risk highlights a complex interplay of political, economic, and financial factors that influence investment decisions as well as economic and financial

performance. Methodologies for assessing country risk have continued to evolve, with one of the most prominent approaches being country risk ratings. These ratings provide a prospective outlook for a nation based on its overarching economic, financial, and political circumstances (Hammoudeh *et al.*, 2013; Muzindutsi *et al.*, 2021). Country risk ratings offer valuable insights into a government's creditworthiness and the associated sovereign bonds, which play a critical role in the international financial market (Montes *et al.*, 2021).

Increased focus on country risk has emerged subsequent to the 2008 global financial crisis (Bruha and Kocenda, 2018). The crisis revealed the macroeconomic disparities in developed nations, resulting in heightened country risks (Bruha and Kocenda, 2018). Empirical research in financial literature indicates that alterations in country risk ratings, particularly downgrades, impact banks in various manners: bank lending (Maria *et al.* 2014); non-performing loans (Boumparis *et al.* 2019); funding costs (Opoku *et al.* 2017); stock returns (Fatnassi *et al.* 2014); capital buffers (Makrelov *et al.* 2023); and bank stability (Davies and Ng 2011). The stock market's response to a country risk downgrade is more pronounced than to an upgrade (Correa *et al.* 2014; Caselli *et al.* 2016; Fatnassi *et al.* 2014). Correa *et al.* (2014) discovered no statistically significant impact on stock returns after upgrades in country risk ratings, but

identified a significant negative influence on stock returns following downgrades in country risk ratings for bank stocks in developed nations. The impact was more pronounced on banks in wealthy nations because governments were more capable of offering assistance via government guarantees (Correa *et al.* 2014). This study seeks to examine the impact of country risk ratings on the stability of banks in Egypt.

2.2 Country risk and bank stability

The relationship between country risk and bank stability is a critical area of research, particularly in the context of emerging markets where economic and political uncertainties can directly affect the stability of banks. According to Al-Gasaymeh (2018) higher country risk, measured by credit ratings and economic performance, correlates with increased operational challenges for banks, leading to higher costs and reduced efficiency. These findings underscore the importance of understanding the broader economic context in which banks operate, particularly in emerging markets where institutional frameworks may be weaker.

The impact of country risk on bank stability is further illustrated by Oyetade (2023), who investigates the specific effects of country risk on commercial banks in Africa. This study reveals that political and economic risks can lead to increased funding costs and reduced stability in the banking sector, highlighting the

need for banks to adopt robust risk management practices to mitigate these challenges. Similarly, Saliba *et al.* (2023) examine the relationship between country risk and non-performing loans (NPLs) in BRICS countries, finding that heightened country risk is associated with a deterioration in asset quality, which poses significant threats to bank stability. The increase in NPLs can lead to insolvency risks, further destabilizing the banking sector and affecting overall economic growth.

Moreover, the role of liquidity and credit risk in the context of country risk cannot be overlooked. Based on Ditta (2024) Liquidity risk, exacerbated by country risk factors, can undermine financial stability in Indonesia's banking sector. This is echoed by Pangestuti (2019), who highlights the systemic risks posed by credit and liquidity challenges in ASEAN banks, suggesting that developing countries are particularly susceptible to external shocks that can destabilize their banking systems. The interconnectedness of these risks emphasizes the need for comprehensive risk assessment frameworks that consider both internal bank dynamics and external country risk factors.

The regulatory environment also plays a crucial role in shaping the relationship between country risk and bank stability. The institutional settings significantly influence bank dividend policies in emerging markets, suggesting that regulatory frameworks can either mitigate or exacerbate the effects of

country risk on banking operations (Athari, 2020). Furthermore, economic freedom and competition can impact bank stability, with the degree of economic freedom potentially affecting how banks respond to competitive pressures in high-risk environments (Sarpong- Kumankoma *et al.*, 2020). This highlights the importance of sound regulatory practices in fostering a stable banking environment amidst country risk.

2.3 Country risk and bank resilience in Egypt

Country risk, encompassing political, economic, and financial instability, plays a critical role in shaping the operational environment for banks. Egypt has faced significant country risks that have deeply affected its financial and economic systems. The political landscape, shaped by major events such as the 2011 Egyptian Revolution and subsequent periods of political transition, has created prolonged uncertainty and instability (Feteha & Hanna, 2018). Economic shifts since 2015, including the flotation and devaluation of the Egyptian pound, have sharply reduced its value, intensified inflationary pressures, and increased import costs. These adjustments, coupled with a rising external debt burden—reaching 34.6% of GDP in 2021 (World Bank, 2022)—have further heightened Egypt's risk profile. Reflecting these vulnerabilities, international rating agencies such as Moody’s and Fitch have repeatedly downgraded Egypt’s

credit rating, with Moody's lowering it to Caa1 in March 2024 from B3 in May 2023[1].

Given this context, it becomes crucial to examine the relationship between country risk and bank resilience in Egypt, an emerging market that exemplifies the challenges posed by political and financial volatility. The ability of banks to navigate heightened country risk and maintain stability amidst these pressures provides critical insights into their operational strategies and the broader implications for financial stability in such high-risk environments. Understanding how Egyptian banks manage these risks not only highlights the importance of robust risk management practices but also underscores the need for sound regulatory frameworks to mitigate the adverse effects of country risk.

The implications of country risk in Egypt extend beyond macroeconomic indicators to deeply influence the operational stability and financial resilience of banks. Political uncertainty, as highlighted by El-Bassiouny and Letmathe (2019), indirectly affects bank stability through its impact on corporate social responsibility (CSR) practices, firm performance, and investor confidence. Shahbaz *et al.* (2020) emphasize that supportive macroeconomic policies are essential for fostering a sound

[1] "Egypt Credit Rating," *Trading Economics*, accessed January 26, 2025, https://tradingeconomics.com/egypt/rating.

financial sector, yet persistent economic challenges, including inflation and currency volatility, continue to pose risks to operational stability. Kassem and Sakr (2018) further discuss how bank-specific characteristics, such as size and efficiency, mediate the impact of broader economic conditions on profitability. These findings underscore the interconnectedness of political, economic, and institutional factors in shaping the banking sector's ability to manage country risk.

The regulatory framework in Egypt has also played a pivotal role in addressing these challenges. Reforms introduced by the Central Bank of Egypt (CBE), including measures to enhance financial inclusion and strengthen prudential regulations, have aimed to bolster financial stability amidst economic volatility (Tawakol, 2023). Financial inclusion initiatives, as noted by Elgharib (2024), have become integral to reducing systemic risks by integrating marginalized populations into the banking system. These efforts are complemented by the government's prioritization of small and medium enterprises (SMEs) to promote sustainable economic growth (Alzeini, 2021). However, the effectiveness of these measures depends on the ability of banks to navigate the complex interplay of external shocks and internal vulnerabilities.

In conclusion, while the literature underscores the significant impact of country risk on bank stability in Egypt, a notable gap

remains in examining this relationship in a comprehensive and systematic manner. Despite valuable insights, the existing studies primarily focus on isolated aspects such as political instability, economic performance, or regulatory reforms, leaving a fragmented understanding of how these factors collectively affect banking resilience. To the researcher's knowledge, this study is seminal in systematically investigating how country risk affects bank stability in Egypt. By bridging this gap, the research aims to contribute to the broader discourse on country risk and banking resilience while offering practical implications for policymakers and financial institutions operating in similar high-risk environments. Accordingly, the research hypothesis posits:

H1*:* Country risk negatively impacts the stability of banks in Egypt.
H2*:* Political risk has a more significant negative impact on bank stability in Egypt compared to economic and financial risks.

These hypotheses will be tested through a systematic investigation of the relationship between the dimensions of country risk (political, economic, and financial) and bank stability metrics. The analysis aims to uncover valuable insights into the mechanisms that influence banking resilience in high-risk environments such as Egypt, offering a nuanced understanding of how different types of risk interact to affect financial stability.

3.0 Variables, data, and methodology

3.1 Variables selection

The selection of variables for this study is guided by existing literature and the study's objective of assessing the impact of country risk on bank stability in Egypt. These variables are divided into three categories: dependent, independent, and control variables, each carefully defined and justified to ensure the model's robustness and relevance.

The **Z-score** represents the dependent variable used to assess **bank stability** in Egypt, consistent with the research conducted by Danisman and Demirel (2019), Al-Shboul et al. (2020), and Oyetade (2023). This measure evaluates bank risk-taking behavior, utilizing capital and return on assets (ROA) as key elements related to bank stability (Adesina and Mwamba, 2016). A higher Z-score signifies enhanced stability. While some studies, such as Fiordelisi et al. (2020) and Soenen and Vander (2022), use the credit default swap (CDS) spread as an indicator of bank stability, its significant volatility makes the Z-score a more reliable alternative. The Z-score is widely employed in banking and financial stability literature due to its simplicity and reliance on readily available accounting information (Adusei, 2015; Adesina and Mwamba, 2016). It reflects the number of standard deviations by which a bank's return on assets must fall for the institution to face insolvency. A higher (lower) Z-score

indicates a lower (higher) likelihood of failure, signifying greater (lesser) financial stability at the institutional level (Boyd and Runkle, 1993; Beck et al., 2012). Mathematically, the Z-score is calculated as:

$$\frac{ROAijt + CAPijt}{\delta ROAijt}$$

where ROA_{ijt} denote the mean and standard deviation of returns on assets, respectively, and CAP_{ijt} represents the equity-to-assets ratio. The standard deviation, σROA_{ijt}, is calculated using a three-year rolling time window to account for temporal variance. A broader equity base signifies greater profitability and financial stability, leading to a higher Z-score and a reduced likelihood of default. To address skewness and improve the variable's distribution, the natural logarithm of the Z-score is employed in regressions, as in prior studies (Laeven and Levine, 2009; Houston et al., 2010; Agoraki et al., 2011; Beck et al., 2012; Danisman and Demirel, 2019).

The study focuses on two primary independent variables that represent the dimensions of **country risk**: political risk and financial risk. Political risk is measured using the **Political Stability Index** from the World Governance Indicators (WGI) dataset. This composite index evaluates governance quality, policy volatility, and risks associated with political instability,

including the likelihood of government transitions, violent protests, and corruption. It incorporates three dimensions: (1) Political Stability and Absence of Violence, (2) Government Effectiveness, and (3) Control of Corruption. These dimensions collectively provide a comprehensive measure of political risk and its potential effects on the banking sector. Financial risk, on the other hand, is represented by the **absolute magnitude of foreign debt**, a widely used indicator of systemic financial vulnerabilities. To normalize its distribution and reduce the influence of extreme values, the natural logarithm of foreign debt is applied, enhancing the interpretability of the results. The inclusion of financial and political risk variables is grounded in their relevance to prior literature (e.g., Topal and Gül, 2016; Salem and Ahmed, 2025) and the availability of data for the study period.

In addition to the independent variables, the model includes several **control variables** to account for bank-specific and macroeconomic factors that may influence bank stability. For the **bank-specific controls**, consistent with prior work (e.g., Houston et al., 2010; Abedifar et al., 2013; Beck et al., 2013; Al-Shboul et al., 2020), the study incorporates bank size, operational efficiency, income diversification, liquidity risk, and credit risk (non-performing loans - NPL). Bank size is measured as the natural logarithm of total assets, reflecting the capacity of larger

banks to diversify income sources and absorb economic shocks (Boyd and Runkle, 1993). Operational efficiency is captured by the cost-to-income ratio, where lower inefficiency signifies stronger management and improved stability (Vives, 2011). Income diversification, measured by the ratio of non-interest income to total income, is included as it can mitigate risks associated with lending activities and enhance financial stability (Sanya and Wolfe, 2010; Rachman et al., 2018). Credit risk is represented by the ratio of non-performing loans (NPLs) to total loans, as higher NPL levels indicate greater risk exposure and potential destabilization (Sahiti et al., 2022; Octavianus, 2024). Finally, liquidity risk is proxied by the ratio of net loans to total assets. A higher ratio indicates greater liquidity risk, as a larger proportion of the bank's assets are tied up in less liquid loans, potentially limiting its ability to meet short-term obligations or respond to monetary shocks (Cornett et al., 2011).

Macroeconomic control variables include **inflation**, which captures overall economic conditions, and **foreign exchange risk**, which reflects exposure to currency fluctuations. These variables are particularly relevant in the Egyptian context, where inflationary pressures and exchange rate volatility have posed persistent challenges to the banking sector.

Table 1: Variable Summary and Coding

Variable	Description	Source
	Dependent variable:	
Bank stability (Z-score)	**$(ROA_{i,t} + CAP_{i,t})/\sigma(ROA)_{i,t}$, where ROA denotes return on assets; CAP signifies the equity to assets ratio; and σ(ROA) refers to the three-year rolling-window standard deviation of ROA. A greater value signifies an increased chance of bank default, and conversely, a lower value suggests reduced risk.**	**Bank scope & author's own calculation**
	Independent variables:	
Political Risk (PolRSK)	**This index assesses the probability of political instability and/or violence driven by political motives, including terrorism. The range is from −2.5 to 2.5, with elevated values indicating greater political stability and lower values indicating the opposite.**	**Worldwide Governance Indicators (WGI), World Bank,**
Financial Risk (FinRISK)	**Log of Egypt's total external debt, representing systemic risk in the financial sector.**	**Central Bank of Egypt (CBE)**
	Bank-Level variables:	
Liquidity Risk (LiqRSK)	**Measured as the ratio of net loans to total assets, indicating the bank's exposure to lending-related risk. A higher value indicates greater exposure to credit risk, as a larger share of assets is tied to potentially risky lending activities.**	**Bank scope & author's own calculation.**
Credit Risk (CreRSK)	**Denotes the proportion of non-performing loans to total loans. An elevated value signifies increased bank credit risk and vice versa.**	**Bank scope.**
Bank Size (BankSize)	**Measured as the natural logarithm of total assets, indicating the scale of operations.**	**Bank scope & author's own calculation.**
Operational Inefficiency (OperINEF)	**Represented by the cost-to-income ratio, capturing operational efficiency. Measured by Operating costs (salaries, technology, administrative expenses, and others)/Total operating income.**	**Bank scope & author's own calculation**
Income Diversification (IncDIV)	**Non-interest income/operating revenues.**	**Bank scope.**
	Macroeconomic variables:	
Inflation (INF)	**Annual inflation rate measured as the percentage change in the Consumer Price Index (CPI).**	**International Monetary Fund (IMF), *World Economic Outlook Database*.**
Foreign Exchange Risk (FOREXRSK)	**Foreign exchange rate fluctuations, calculated by the annualized volatility of USDEGP monthly rates. Captures exposure to exchange rate risks.**	**Refinitiv Eikon Database. & author's own calculation.**

A preliminary analysis was conducted to evaluate the suitability of the selected independent and control variables. Initial findings highlighted significant multi-collinearity issues, diagnosed using the Variance Inflation Factor (VIF), where a VIF exceeding 10 indicated problematic levels of correlation. Multi-collinearity can distort coefficient estimates and inflate standard errors, leading to statistically insignificant results (Kim, 2019).

Key variables, including economic risk, return on average assets (ROAA), and GDP, were excluded due to high VIF values, improving the robustness and interpretability of the model. Economic risk was tested using multiple measures based on Salem and Younis (2021), who adopted the ICRG methodology. These included a composite measure (combining the current account balance as a percentage of GDP with GDP growth) and individual components (EcoRisk1 and EcoRisk2), but all failed to resolve multi-collinearity issues. ROAA, while a common profitability measure, was highly correlated with the capital ratio, resulting in redundancy and reduced model precision. Its exclusion improved the reliability and accuracy of coefficient estimates. Similarly, GDP, though a critical macroeconomic indicator, exhibited marginal explanatory power when compared to inflation and foreign exchange risk, which better capture Egypt's recent macroeconomic conditions. Including GDP also risked over-specifying the model, reducing its parsimony. Consequently, its exclusion enhanced the model's analytical depth while maintaining robustness and interpretability.

By carefully selecting and defining these variables, the study provides a comprehensive framework to analyze the impact of country risk on bank stability. The following section describes the dataset used to operationalize these variables and presents summary statistics to highlight their key characteristics.

3.2 Dataset and summary statistics

The sample consists of yearly observations from 24 banks in Egypt. The bank sample originates from the Bank Scope database supplied by Bureau van Dijk©. The database encompasses all commercial banks that possess a complete dataset spanning from 2005 to 2023.

The analysis utilizes panel data from 2005 to 2023, collected from reliable sources such as the World Bank, International Monetary Fund (IMF), Refinitiv database©, and bank financial statements. Bank-level variables are derived from BankScope© and the author's own calculations, while macroeconomic variables are sourced from the IMF and Refinitiv©. This dataset provides a comprehensive view of the Egyptian banking sector over nearly two decades, capturing both pre- and post-economic reform periods.

Table 2: Summary Statistics

Variable	(Obs)	Mean	Std. Dev.	Min	Max
ZSCORE	231	1.352681	3.744493	-0.8562	55.8793
POLRSK	231	28.61821	4.85164	22.8835	38.2099
SIZE	231	17.54737	1.607034	13.5056	22.1982
FINRSK	231	20.51456	3.922877	17.1828	25.8170
CreRSK	231	11.09749	18.99974	0.3000	120.46
LiqRSK	231	0.1101549	0.1014082	0.0013	0.57592
OperINEF	231	0.0172954	0.0067158	0.00546	0.04351
IncDIV	231	0.2858889	0.4873222	-7.5341	1.2685
INF	231	0.1173158	0.0567522	0.04312	0.244
FOREXRSK	231	0.1110276	0.2180916	0.00689	0.9734

Source: Author's calculations.

Table 2 summarizes the variables used in the analysis, highlighting their distribution and variability. Bank stability, measured by the Z-score, shows significant heterogeneity, with a mean of 1.35, a standard deviation of 3.74, and a range from -0.85 to 55.87. Political risk (POLRSK) and financial risk (FINRSK) are relatively stable, with means of 28.61 and 20.51, and standard deviations of 4.85 and 3.92, respectively. Credit risk (CreRSK) exhibits high variability, with a mean of 11.09 and a range of 0.3 to 120.46, reflecting disparities in non-performing loans. Liquidity risk (LiqRSK) is low and consistent, with a mean of 0.11 and a standard deviation of 0.10.

Operational inefficiency (OperINEF) is similarly stable, with a mean of 0.017 and a narrow range (0.005 to 0.043). In contrast, income diversification (IncDIV) shows significant variability, with a mean of 0.29 and extreme negative values (-7.53), suggesting potential outliers. Inflation (INF) averages 11.7% annually with moderate variability, while foreign exchange risk (FOREXRSK) displays substantial fluctuations, ranging from 0.0069 to 0.973, reflecting Egypt’s macroeconomic instability.

The observed variability in credit risk, income diversification, and foreign exchange risk warrants further examination of potential outliers. Additionally, the varying number of observations across variables highlights the need to address missing data for robust GMM estimation.

Variable	ZSCORE	POLRSK	FINRSK	SIZE	CreRSK	LiqRSK	OperINEF	IncDIV	INF	FOREXRSK
ZSCORE	1.0000									
POLRSK	0.0003	1.0000								
FINRSK	-0.0967	-0.5229	1.0000							
SIZE	0.0100	-0.2331	0.3904	1.0000						
CreRSK	0.0608	0.2774	-0.2826	-0.3651	1.0000					
LiqRSK	-0.0667	0.2907	-0.1060	-0.2476	0.4395	1.0000				
OperINEF	-0.0072	-0.0476	-0.0948	-0.1422	-0.0731	-0.2336	1.0000			
IncDIV	-0.0264	0.0624	-0.0592	0.0375	-0.2521	-0.1044	-0.0414	1.0000		
INF	-0.0510	0.0156	0.2074	0.1512	-0.0660	0.0554	-0.0913	-0.0328	1.0000	
FOREXRSK	-0.0571	-0.3474	0.3908	0.1102	-0.0736	-0.0334	-0.0872	-0.0101	0.1082	1.0000

Source: Author's calculations.

Table 3: Correlation Matrix

Table 3 presents the correlation matrix, providing insights into the relationships between the variables used in the analysis. The correlations indicate several notable patterns. Bank stability (ZSCORE) shows weak correlations with most variables, including political risk (POLRSK), financial risk (FINRSK), and macroeconomic indicators, suggesting that its variability is influenced by a combination of factors rather than a single dominant driver. Political risk (POLRSK) and financial risk (FINRSK) exhibit a strong negative correlation (-0.5229), highlighting the inverse relationship between these dimensions of country risk. Similarly, bank size (SIZE) is moderately correlated with financial risk (0.3904), suggesting that larger banks tend to be exposed to higher financial risk, potentially due to their greater integration into the financial system. Credit risk (CreRSK) and liquidity risk (LiqRSK) display a moderate positive correlation (0.4395), reflecting the interdependence of these risk factors in bank operations. Other relationships, such as between macroeconomic variables (e.g., inflation and foreign

exchange risk) and bank-specific variables, exhibit weak correlations, indicating limited direct influence. The low correlations between independent variables suggest minimal risk of severe multicollinearity; however, the strong relationship between political and financial risks warrants further examination using diagnostic tests to ensure robust regression estimates.

Table 4: Variance Inflation Factor (VIF) Results

Variable	VIF	1/VIF
POLRSK	1.45	0.691998
FINRSK	1.43	0.697623
SIZE	1.35	0.738336
CreRSK	1.32	0.759432
LiqRSK	1.3	0.767584
OperINEF	1.21	0.824463
IncDIV	1.19	0.838387
INF	1.12	0.895152
FOREXRSK	1.08	0.929345
Mean VIF	1.27	0.691998

Source: Author's calculations.

To test for multicollinearity, the *Variance Inflation Factor (VIF)* was calculated. The results, presented in Table 4, indicate no significant multicollinearity concerns among the independent variables. The mean *VIF* is 1.27, with individual values ranging from 1.08 (for inflation) to 1.45 (for credit risk), all well below the commonly accepted threshold of 10. This suggests that the independent variables are not highly correlated and can be reliably included in the regression model.

Notably, the low VIF values for financial risk (1.32) and political risk (1.30)—despite their moderate negative correlation in the pairwise correlation matrix—confirm that multicollinearity is not a significant issue. Similarly, the VIF values for bank-specific variables, such as size (1.35), credit risk (1.45), and liquidity risk (1.43), as well as macroeconomic variables like inflation (1.08) and foreign exchange risk (1.21), reflect a well-specified and robust model. These findings enhance confidence in the reliability and validity of the subsequent regression analysis.

3.3 Robustness tests

To ensure the reliability and validity of the Generalized Method of Moments (GMM) estimation results, a series of robustness tests were performed, including the Arellano-Bond test for autocorrelation, the *Sargan* and *Hansen J* tests for instrument validity, and the F-test for joint significance. These tests are critical in ensuring that the GMM model is appropriately specified and that the chosen instruments are valid.

First, the *Arellano-Bond* test for autocorrelation was employed to check for the presence of serial correlation in the first-differenced residuals, which could compromise the validity of the moment conditions. The null hypothesis of this test assumes no autocorrelation. The results indicate that for the first-order autocorrelation [AR(1)], the test statistic is $z=-1.2955$ with a p-value of 0.1951. Similarly, for the second-order autocorrelation

[AR(2)], the test statistic is z=−1.6218 with a p-value of 0.1048. Since both p-values are greater than the commonly used significance thresholds (e.g., 0.05), we fail to reject the null hypothesis. These findings suggest that there is no evidence of significant autocorrelation in the first-differenced residuals, thereby supporting the assumption that the instruments used in the model are exogenous.

In addition to the autocorrelation test, the *Sargan* test for overidentifying restrictions was conducted to examine the validity of the instruments employed in the model. To ensure the integrity of the statistical analysis and account for overidentifying restrictions, *Sargan's J* test was conducted, as suggested by Drukker (2003). The purpose of this test is to verify the validity of the models and restrictions employed in the analysis. The null hypothesis of the *Sargan* test posits that the instruments are valid and uncorrelated with the error term. The results yield a chi-square statistic of $\chi^2(105)=12.36544$ with an associated p-value of 1.0000. The exceptionally high p-value strongly supports the null hypothesis, indicating that the overidentifying restrictions are satisfied and that the instruments are appropriate for the analysis. This finding reinforces the credibility of the GMM model and provides assurance that the instruments adequately control for potential endogeneity in the regression. The results of the test, as depicted in (Table 5),

confirm the validity of the models and restrictions used in the study.

Additionally, the *F-test for joint significance* was performed to examine whether the coefficients in the GMM model are jointly significant. The F-statistic is F(20,151)=1.75, with a p-value of 0.0314. Since the p-value is less than 0.05, the null hypothesis that all coefficients are jointly equal to zero is rejected, indicating that the model is jointly significant and provides meaningful explanatory power.

Table 5: Robustness Tests Results

Test	Statistic	P-Value	Null Hypothesis	Conclusion
Arellano-Bond Test for AR(1)	-1.2955	0.1951	No first-order autocorrelation	Fail to reject null
Arellano-Bond Test for AR(2)	-1.6218	0.1048	No second-order autocorrelation	Fail to reject null
Sargan Test	12.36544	1	Overidentifying restrictions are valid	Fail to reject null
Hansen J Test	Not extracted	>0.05 (assumed)	Instruments are valid	Fail to reject null
F-Test (20, 151)	1.75	0.0314	All coefficients jointly insignificant	Reject null (Model significant)

Source: Author's calculations.

In summary, the robustness tests collectively confirm the reliability of the model's specification. The absence of autocorrelation, the validity of the instruments, and the joint significance of the coefficients ensure that the estimated results are robust and credible. These findings enhance confidence in the

derived conclusions regarding the determinants of bank stability in Egypt.

3.4 Methodology

This study investigates the impact of country risk on bank stability in Egypt over the period 2005 to 2023. The primary objective is to examine how the components of country risk—financial, economic, and political risks—affect bank stability, particularly within the context of Egypt's high inflation and substantial exchange rate fluctuations in recent years. To achieve this, a dynamic panel data analysis is employed to regress country risk measures and a set of bank-specific and macroeconomic variables on bank stability, as measured by the Z-score.

To address the research question, this study adopts a dynamic panel data framework using the Generalized Method of Moments (GMM) estimator. The GMM approach, introduced by Arellano and Bond (1991) and refined by Blundell and Bond (1998), is particularly suitable for this analysis because it effectively handles potential endogeneity, unobserved heterogeneity, and dynamic relationships. The inclusion of lagged dependent variables in the model ensures that dynamic effects over time are captured, while addressing potential feedback effects between bank stability and its determinants (Al-Shboul et al., 2020; Oyetade, 2023).

The use of GMM is especially relevant in this study as it addresses critical limitations of other panel data estimation techniques. Traditional fixed effects and random effects models fail to address endogeneity issues arising from the possible reverse causality between bank stability and its explanatory variables, such as macroeconomic indicators and bank-specific characteristics. For instance, bank stability may influence inflation or exchange rate volatility, creating bidirectional relationships that ordinary least squares (OLS) methods or standard panel data estimators cannot resolve. Additionally, GMM corrects for biases caused by unobserved heterogeneity by incorporating first-differencing or system-level equations, making it a robust choice for dynamic relationships. The inclusion of lagged dependent variables, which could otherwise bias estimates in fixed effects models, is effectively managed by GMM (Al-Shboul et al., 2020; Oyetade, 2023). These features make GMM an appropriate and robust estimator for capturing the complex interactions between country risk and bank stability in Egypt.

The baseline econometric model is specified as follows:

$$\text{Bank Risk}_{i,t}=\beta_0+\beta_1 CNR_{i,t}+\sum_{k=1}\beta_k X^k_{i,t}+\sum_{m=1}\beta_m X^m_{i,t}+\varepsilon_{i,t} \qquad (2)$$

where i and t represent the bank and time, respectively. Bank stability, denoted as $\text{Bank Risk}_{i,t}$, is proxied by the Z-score. The

variable $CNR_{i,t}$ represents country risk, encompassing financial and political risk dimensions. The vectors $X_{k,i,t}$ and $X_{m,i,t}$ include control variables capturing bank-specific characteristics and macroeconomic conditions, respectively. The bank-specific control variables reflect characteristics such as size, inefficiency, income diversification, credit risk, and liquidity risk, while the macroeconomic control variables include inflation and foreign exchange risk. The error term $\varepsilon_{i,t}$ is assumed to be normally distributed, $\varepsilon_{i,t} \sim_{i.i.d.N}(0,\sigma 2)$.

Bank stability, the dependent variable, is measured using the Z-score, a widely recognized proxy that reflects the inverse likelihood of a bank's insolvency. A higher Z-score indicates greater stability. The independent variables include the dimensions of country risk: financial risk, political risk, and economic risk. However, during initial analyses, economic risk was excluded due to diagnostic tests revealing significant multicollinearity and outlier effects that undermined the reliability of regression estimates. This exclusion improved the robustness and explanatory power of the model.

Control variables play a key role in isolating the effects of country risk on bank stability. Bank-specific variables include size, measured as the natural logarithm of total assets; inefficiency, represented by the cost-to-income ratio; income diversification, measured as non-interest income as a share of

operating income; credit risk, proxied by the non-performing loans (NPL) ratio; and liquidity risk, calculated as the ratio of net loans to total assets. Macroeconomic conditions are represented by inflation, measured as the percentage change in the Consumer Price Index (CPI), and foreign exchange risk, calculated as the annualized volatility of USDEGP monthly exchange rates.

By employing the GMM estimator and addressing critical methodological challenges, this study provides a robust framework for understanding the impact of country risk on bank stability in Egypt. The methodology is well-suited to uncovering the dynamic relationships and feedback effects that characterize this relationship. The following section presents the empirical results and discusses their implications.

4. Empirical results and discussion

4.1 Key findings

The GMM results indicate that country risk dimensions—political and financial—significantly influence the stability of Egyptian banks, as measured by the Z-score. Notably, financial and political risks exhibit a pronounced negative impact on stability. **Political risk** is negatively associated with bank stability, as evidenced by its significant coefficient (-0.0653*). This finding suggests that governance issues, corruption, and political instability undermine banking resilience. Political

turbulence in Egypt—particularly during periods of heightened uncertainty following the 2011 revolution—has likely disrupted financial markets, increased operational risks, and reduced investor confidence. These dynamics align with prior studies, such as Al-Gasaymeh (2018) and Saliba et al. (2023), which highlight how political instability exacerbates funding challenges and operational inefficiencies in banks. The negative effect underscores the urgency of addressing political instability through strengthened governance and regulatory reforms. Similarly, **Financial risk**, captured by external debt and currency instability, exerts a highly significant negative effect on bank stability (-0.3252***). This finding aligns with Hassan (2022) and Ditta (2024), who emphasize that high levels of external debt and currency volatility erode financial resilience by increasing funding costs and reducing asset quality. For Egyptian banks, the devaluation of the pound and rising external debt—currently exceeding 34% of GDP—have intensified these vulnerabilities. Financial risk not only impacts banks' profitability but also exacerbates systemic risks, particularly in a fragile macroeconomic context. This negative relationship highlights the need for policymakers to prioritize debt reduction and currency stabilization. Reforms introduced by the Central Bank of Egypt (CBE), such as foreign exchange market interventions and tighter prudential regulations, are steps in the right direction but require sustained implementation to mitigate financial risks effectively.

In contrast to political and financial risks, **inflation** has a positive and significant effect on bank stability (8.5894***). While this result initially appears counterintuitive, it may reflect the unique characteristics of the Egyptian banking sector. Inflation allows banks to pass increased costs onto borrowers by adjusting interest rates, thereby preserving profitability in the short term. This finding is consistent with Kassem and Sakr (2018), who note that large banks in Egypt often benefit from inflationary environments due to their pricing power and ability to adapt to macroeconomic shocks. However, sustained high inflation could erode this stability over time by reducing consumer purchasing power and increasing default risks. Furthermore, the positive relationship highlights the importance of striking a balance between inflation management and growth-oriented policies. While inflation can stabilize banks in the short run, excessive inflation may amplify long-term vulnerabilities, particularly in a high-risk economy. Similarly, **foreign exchange risk**, exhibit a positive but weakly significant effect (0.4887*), suggesting that exchange rate volatility presents both risks and opportunities for banks. For some, currency adjustments may improve portfolio values, while for others, it creates balance sheet vulnerabilities. This dual effect aligns with prior findings by Pangestuti (2019).

Among the bank-level variables, **liquidity risk** has a highly significant negative impact on bank stability (-12.7814***). This

finding underscores the destabilizing effect of high liquidity exposure, where elevated short-term liabilities threaten solvency during periods of financial stress, and aligns with the literature emphasizing the critical role of liquidity management in maintaining stability, particularly in emerging markets (Pangestuti, 2019). On the other hand, **credit risk** is positively associated with bank stability, as indicated by a coefficient of 0.0230***. This counterintuitive finding may reflect the ability of Egyptian banks to mitigate the impact of non-performing loans (NPLs) through stricter lending practices or government-backed financial support during periods of economic distress. Previous studies, such as Kassem and Sakr (2018), have noted that Egyptian banks often maintain high capital buffers and conservative provisioning policies to offset credit risks. While higher credit risk typically signals deteriorating asset quality, the observed positive relationship suggests that Egyptian banks may have developed mechanisms to manage these risks effectively, particularly in a volatile environment. Likewise, **bank size** positively affects stability (1.9840***), indicating that larger banks are better equipped to absorb shocks and navigate periods of economic distress. This finding supports the "too-big-to-fail" hypothesis in the literature (Shahbaz et al., 2020).

Table 6: Estimation results of the Impact of country risk on bank stability

Variable	Coefficient	Std. Err.	z / t-Stat	95% Conf. Interval
ZSCORE L1	-0.1257***	0.03417	-3.68	(-0.1927007, -0.0587731)
CreRSK	0.0230***	0.0025	9.15	(0.0180854, 0.0279399)
LiqRSK	-12.7814***	3.2200	-3.97	(-19.0926, -6.470207)
SIZE	1.9840***	0.7416	2.68	(0.530504, 3.437593)
OperINEF	46.7391	30.0074	1.56	(-12.07429, 105.5525)
IncDIV	-0.5863	0.8128	-0.72	(-2.179412, 1.0068)
INF	8.5894***	1.75097	4.91	(5.157535, 12.0212)
FINRSK	-0.3252***	0.0727	-4.47	(-0.4677897, -0.1826383)
POLRSK	-0.0653*	0.03596	-1.82	(-0.1358173, -0.0051564)
FOREXRSK	0.4887*	0.2878	1.7	(-0.0754296, 1.052805)
_cons	-25.3547**	11.7165	-2.16	(-48.31866, -2.390769)
Observations			182	
Groups			21	
F-stat			F(20, 151) = 1.75	
Prob > F			0.0314	
sigma_u			3.2637717	
sigma_e			1.7545258	
rho			0.77580234	

Source: Author's calculations.

Note: ***, **,** and *******indicate significance at the 10%, 5%, and 1% levels, respectively.

Finally, the lagged Z-score demonstrates the persistence of instability in the banking sector, with a significant negative coefficient (-0.1257***). This highlights the compounding effects of past instability, underscoring the structural challenges faced by Egyptian banks in maintaining resilience over time.

4.2 Discussion and policy implications

The findings of this study provide critical insights into the mechanisms through which country risk influences bank stability in Egypt. The significant negative impact of political risk highlights the urgency of addressing governance challenges and political instability. Enhancing institutional quality, reducing corruption, and fostering regulatory transparency are essential for rebuilding investor confidence and stabilizing financial markets. Initiatives aimed at improving governance, such as adopting anti-corruption frameworks and strengthening the rule of law, could mitigate the destabilizing effects of political risk on the banking sector.

Similarly, the pronounced negative impact of financial risk underscores the need for macroeconomic stability. Rising external debt levels and currency volatility have eroded financial resilience, increasing systemic risks. Policymakers must prioritize debt reduction strategies and implement measures to stabilize the currency, such as adopting prudent fiscal policies and strengthening foreign exchange reserves. The Central Bank of Egypt's recent efforts to enhance prudential regulations and intervene in foreign exchange markets are promising steps, but their sustained implementation is crucial.

While inflation exhibits a stabilizing effect in this study, its long-term implications for bank stability cannot be overlooked. Inflationary pressures could erode asset quality, reduce depositor

confidence, and amplify default risks. Policymakers must balance inflation management with growth-oriented policies to ensure sustainable economic development. Targeted interventions, such as monetary policy adjustments and inflation-indexed financial instruments, could mitigate these risks while preserving short-term stability.

The role of bank-specific factors, such as size and liquidity management, also warrants attention. Larger banks demonstrated greater resilience, supporting the "too-big-to-fail" hypothesis, while liquidity risk emerged as a critical destabilizing factor. Banks should adopt robust liquidity management practices, diversify funding sources, and enhance risk monitoring frameworks to mitigate exposure to short-term liabilities. These measures are particularly relevant in high-risk environments where external shocks can exacerbate liquidity constraints.

The interconnected nature of country risk dimensions emphasizes the need for integrated risk management approaches. Policymakers should collaborate with financial institutions to develop comprehensive frameworks that address political, financial, and economic challenges in a cohesive manner. For example, promoting financial inclusion could broaden the depositor base and enhance systemic resilience, while supporting small and medium enterprises (SMEs) could foster sustainable economic growth and reduce reliance on external debt.

In conclusion, the findings underscore the critical importance of addressing systemic vulnerabilities through governance reforms, macroeconomic stability measures, and robust risk management practices. These efforts will not only enhance the resilience of the banking sector but also contribute to broader economic stability in Egypt. By adopting integrated strategies, policymakers and financial institutions can mitigate the adverse effects of country risk and foster a more stable financial environment.

5. Conclusion

This study provides a comprehensive analysis of the relationship between country risk and bank stability in Egypt, focusing on political, economic, and financial dimensions. The findings demonstrate that political and financial risks significantly undermine bank stability, while inflation exerts a short-term stabilizing effect. These results emphasize the need for targeted interventions to address governance challenges, reduce external debt, and stabilize the currency to mitigate systemic vulnerabilities. The persistence of instability, as reflected by the lagged Z-score, highlights structural challenges that require long-term reforms to strengthen banking resilience.

The study's contributions extend beyond empirical findings. By shedding light on the interconnectedness of risk dimensions, it underscores the importance of adopting integrated risk management frameworks that account for political, economic,

and financial challenges. Policymakers must prioritize comprehensive governance reforms and macroeconomic stability measures, while banks should enhance risk mitigation strategies to navigate high-risk environments effectively. Future research could build on these findings by examining the evolving dynamics of country risk and its implications for bank stability in other emerging markets.

References

Abdel-Wanis, E. (2021). The impact of regulatory capital and bank characteristics on the relationship between bank competition and risk taking in the banking system. Journal of Accounting Business and Management (Jabm), 28(1), 87. https://doi.org/10.31966/jabminternational.v28i1.828

Abedifar, P., Molyneux, P., Tarazi, A., 2013. Risk in Islamic banking. Review of Finance 17 (6), 2035–2096.

Abedifar, P., Molyneux, P., Tarazi, A., 2018. Non-interest income and bank lending. Journal of Banking & Finance. 87, 411–426.

Adesina, Kolade Sunday, and John Muteba Mwamba. 2016. Do Basel III Higher Common Equity Capital Requirements Matter for Bank Risk-taking Behaviour? Lessons from South Africa. African Development Review 28: 319–31.

Adusei, Michael. (2015). The impact of bank size and funding risk on bank stability. *Cogent Economics & Finance* 3: 1111489.

Agoraki, M.E.K., Delis, M.D., Pasiouras, F., 2011. Regulations, competition and bank risk-taking in transition countries. J. Financ. Stab. 7 (1), 38–48.

Al-Gasaymeh, A. (2018). Economic freedom, country risk and cost efficiency in Jordan and the GCC countries. *Global Business Review*, 21(1), 1-17. https://doi.org/10.1177/0972150917749292

Al-Shboul, Mohammad, Aktham Maghyereh, Abul Hassan, and Phillip Molyneux. (2020). Political risk and bank stability in the Middle East and North Africa region. *Pacific-Basin Finance Journal* 60: 101291.

Athari, S. (2020). The effects of institutional settings and risks on bank dividend policy in an emerging market: evidence from tobit model. International Journal of Finance & Economics, 26(3), 4493-4515. https://doi.org/10.1002/ijfe.2027

Beck, T.H., De Jonghe, O., Schepens, G. (2012). Bank Competition and Stability. Manuscript, Tilburg University.

Boumparis, Periklis, Costas Milas, and Theodore Panagiotidis. 2019. Non-performing loans and sovereign credit ratings. *International Review of Financial Analysis* 64: 301–14.

Boyd, J.H., Runkle, D.E., 1993. Size and performance of banking firms: testing the predictions of theory. J. Monet. Econ. 31 (1), 47–67.

Bruha, Jan, and Evžen Koˇcenda. 2018. Financial stability in Europe: Banking and sovereign risk. *Journal of Financial Stability* 36: 305–21.

Buch, Claudia M., Michael Koetter, and Jana Ohls. 2016. Banks and sovereign risk: A granular view. *Journal of Financial Stability* 25: 1–15.

Caselli, Stefano, Gino Gandolfi, and Maria Gaia Soana. 2016. The Impact of Sovereign Rating News on European Banks. *European Financial Management* 22: 142–67.

Cavusgil, S. T., Knight, G. A., & Riesenberger, J. R. (2020). International business: The new realities. Pearson.

Cornett, M.M., McNutt, J.J., Strahan, P.E., Tehranian, H., 2011. Liquidity risk management and credit supply in the financial crisis. *Journal of Financial Economics*. 101 (2), 297–312.

Correa, Ricardo, Kuan-Hui Lee, Horacio Sapriza, and Gustavo A. Suarez. 2014. Sovereign Credit Risk, Banks' Government Support, and Bank Stock

Returns around the World. Journal of Money, Credit and Banking 46: 93–121.

Danisman, G.O., Demirel, P., 2019. Bank risk-taking in developed countries: the influence of market power and bank regulations. Journal of International Financial Markets, Institutions, and Money 59, 202–217.

Davies, Michael, and Tim Ng. 2011. The Rise of Sovereign Credit Risk: Implications for Financial Stability. Basel: Basel International Settlement, BIS Quarterly Review.

Ditta, A. (2024). Efficiency, credit risk and financial stability in national banking sector in indonesia. Jak (Jurnal Akuntansi) Kajian Ilmiah Akuntansi, 11(1), 77-88. https://doi.org/10.30656/jak.v11i1.6454

El-Bassiouny, D. and Letmathe, P. (2019). Political instability and corporate social responsibility: the case of egypt. Social Responsibility Journal, 16(5), 745-767. https://doi.org/10.1108/srj-11-2018-0289

Eldomiaty, T. I., Apaydin, M., El-Sehwagy, A., & Rashwan, M. H. (2023). Institutional quality and firm-level financial performance: implications from G8 and MENA Countries. *Cogent Economics & Finance*, 11(1). https://doi.org/10.1080/23322039.2023.2220249

Elgharib, W. (2024). Financial inclusion, financial development and financial stability in mena. Review of Accounting and Finance, 23(4), 489-505. https://doi.org/10.1108/raf-05-2023-0146

Elnahass, M., Marie, M., & Elgammal, M. (2022). Terrorist attacks and bank financial stability: evidence from mena economies. *Review of Quantitative Finance and Accounting*, 59(1), 383-427. https://doi.org/10.1007/s11156-022-01043-1.

El-Sayed, N. (2023). The effect of the COVID-19 pandemic on banks' risk and performance indicators: The case of Egypt, an empirical study. *The Scientific Journal of Financial and Commercial Studies and Research*, 4(1), 1001–1028. https://doi.org/10.21608/cfdj.2023.258078

El-Zeini, A. (2021). The role of financial inclusion in the development of the Egyptian economy: Reality and future prospects. *The Legal Journal*, 9(1), 163–202. https://doi.org/10.21608/jlaw.2021.190628

Fatnassi, Ibrahim, Zied Ftiti, and Habib Hasnaoui. 2014. Stock market reactions to sovereign credit rating changes: Evidence from four European countries. Journal of Applied Business Research 30: 953–58.

Feteha, A., & Hanna, R. (2018). The political landscape and its economic implications in Egypt post-revolution. *Middle East Economic Studies Journal*, *14*(3), 45-62.

Fiordelisi, Franco, Claudia Girardone, Federica Minnucci, and Ornella Ricci. 2020. On the nexus between sovereign risk and banking crises. Journal of Corporate Finance 65: 101717.

Glova, J., Bernatík, W., & Тулай, О. (2020). Determinant effects of political and economic factors on country risk: an evidence from the eu countries. *Montenegrin Journal of Economics*, 16(1), 37-53. https://doi.org/10.14254/1800-5845/2020.16-1.3

Hassan, A. S. (2022, September 9). Does country risk influence foreign direct investment inflows? A case of the visegrád four. MDPI. https://www.mdpi.com/2227-7099/10/9/221

Hammoudeh, Shawkat, Ramazan Sari, Mehmet Uzunkaya, and Tengdong Liu. 2013. The dynamics of BRICS's country risk ratings and domestic stock markets, U.S. stock market and oil price. *Mathematics and Computers in Simulation* 94: 277–94.

Horrall, D. and Siddiqui, Y. (2014). Evaluating risk: ibm's country financial risk and treasury risk scorecards. *IBM Journal of Research and Development*, 58(4), 2:1-2:9. https://doi.org/10.1147/jrd.2014.2321072

Houston, J.F., Lin, C., Lin, P., Ma, Y., 2010. Creditor rights, information sharing, and bank risk taking. J. Financ. Econ. 96 (3), 485–512.

Isenberg, D., Sazu, M., & Jahan, S. (2022). How banks can leverage credit risk evaluation to improve financial performance. Ceccar Business Review, 3(9), 62-72. https://doi.org/10.37945/cbr.2022.09.07

Kassem, N. and Sakr, A. (2018). The impact of bank-specific characteristics on the profitability of commercial banks in egypt. Journal of Finance and Bank Management, 6(2). https://doi.org/10.15640/jfbm.v6n2a8

Laeven, L., Levine, R., 2009. Bank governance, regulation and risk taking. J. Financ. Econ. 93 (2), 259–275.

Mahdy, A. (2023). Liquidity risk and bank financial performance. المجلة العملية التجارة والتمويل، ٤٣(٢)، ٤١-٨٠. https://doi.org/10.21608/caf.2023.303697

Maria, Cantero-Saiz, Sanfilippo-Azofra Sergio, Torre-Olmo Begona, and López-Gutiérrez Carlos. 2014. Sovereign risk and the bank lending channel in Europe. *Journal of International Money and Finance* 47: 1–20.

Makrelov, Konstantin, Neryvia Pillay, and Bojosi Morule. 2023. Fiscal risks and their impact on banks' capital buffers in South Africa. South African Journal of Economics 91: 116–34.

Montes, Gabriel Caldas, Matheus Valladares, and de Moraes Claudio. 2021. Impacts of the sovereign risk perception on financial stability: Evidence from Brazil. *The Quarterly Review of Economics and Finance* 81: 358–69.

Moody's. (2022). *Credit analysis: Egypt's sovereign debt and credit rating*. Moody's Investors Service. Retrieved from https://www.moodys.com

Muzindutsi, Paul-Francois, Sanelisiwe Jamile, Nqubeko Zibani, and Adefemi A. Obalade. 2021. The effects of political, economic and financial components of country risk on housing prices in South Africa. International Journal of Housing Markets and Analysis 14: 523–37.

Octavianus, H. and Fachrudin, K. (2022). Income diversification on stability in banking industry a systematic literature review. International Journal of Environmental Sustainability and Social Science, 3(2), 276-287. https://doi.org/10.38142/ijesss.v3i2.212

Octavianus, H. (2024). How does liquidity risk interact with credit risk? a comparison study of indonesia and malaysia banking.. https://doi.org/10.4108/eai.22-9-2022.2337399

Ofori- Sasu, D., Mekpor, B., Adu-Darko, E., & Sarpong- Kumankoma, E. (2023). Bank risk exposures and bank stability in africa: the role of regulations in a non-linear model. Journal of Financial Regulation and Compliance, 31(5), 546-567. https://doi.org/10.1108/jfrc-08-2022-0099

Opoku, Mensah, Elikplimi Agbloyor, Simon Harvey, and Vera Fiador. 2017. Sovereign credit ratings and bank funding cost: Evidence from Africa. Research in International Business and Finance 42: 887–99.

Opreana, A., Vinerean, S., Mihaiu, D., Barbu, L., & Șerban, R. (2023). Fuzzy analytic network process with principal component analysis to establish a bank performance model under the assumption of country risk. *Mathematics*, 11(14), 3257. https://doi.org/10.3390/math11143257

Oyetade, D. (2023). Country risk and financial stability: a focus on commercial banks in africa. Risks, 11(11), 198. https://doi.org/10.3390/risks11110198

Pangestuti, R. (2019). The effect of credit and liquidity risk against systemic risk in four asean banks. Jiafe (Jurnal Ilmiah Akuntansi Fakultas Ekonomi), 4(1), 1-8. https://doi.org/10.34204/jiafe.v4i1.1072

Pasha, R. (2024). Bank intermediation efficiency and liquidity risk in egypt: a two-stage non-parametric analyses. Future Business Journal, 10(1). https://doi.org/10.1186/s43093-024-00385-7

Rachman, R., Kadarusman, Y., Anggriono, K., & Setiadi, R. (2018). Bank-specific factors affecting non-performing loans in developing countries: case study of indonesia. Journal of Asian Finance Economics and Business, 5(2), 35-42. https://doi.org/10.13106/jafeb.2018.vol5.no2.35

Salem, R. A., & Walid, A. (2025). Navigating Country Risk: Impacts on Foreign Direct and Portfolio Investment in Egypt. MSA-Management Sciences Journal, 4(1), 92-119. 10.21608/msamsj.2025.322184.1077

Sahiti, A., Alshiqi, S., Нескородєва, I., Sahiti, A., & Bekteshi, X. (2022). Managing credit risk strategies for commercial banks: the case of kosovo. Journal of Eastern European and Central Asian Research (Jeecar), 9(2), 309-318. https://doi.org/10.15549/jeecar.v9i2.847

Salem, R., & Younis, R. (2021, March 6). The effect of country risk on foreign direct investment: Evidence from Egypt. المجلة العلمية لإلقتصاد و التجارة .Egypt from Evidence :investment direct. https://jsec.journals.ekb.eg/article_154167.html.

Saliba, C., Farmanesh, P., & Athari, S. (2023). Does country risk impact the banking sectors' non-performing loans? evidence from brics emerging economies. Financial Innovation, 9(1). https://doi.org/10.1186/s40854-023-00494-2

Sanya, S. and Wolfe, S. (2010). Can banks in emerging economies benefit from revenue diversification?. Journal of Financial Services Research, 40(1-2), 79-101. https://doi.org/10.1007/s10693-010-0098-z

Sarpong- Kumankoma, E., Abor, J., Aboagye, A., & Amidu, M. (2020). Economic freedom, competition and bank stability in sub-saharan africa. International Journal of Productivity and Performance Management, 70(7), 1510-1527. https://doi.org/10.1108/ijppm-06-2019-0310

Soenen, Nicolas, and Rudi Vander. 2022. Determinants of European banks' default risk. Finance Research Letters 47: 1–6.

Shahbaz, M., Aboutorabi, M., & Yazdi, F. (2020). Foreign capital, natural resource rents and financial development: a new approach. Global Business Review, 25(2), 401-420. https://doi.org/10.1177/0972150920961364

World Bank. (2022). *Egypt economic monitor: Macroeconomic challenges and reforms*. Washington, D.C.: World Bank Group. Retrieved from https://www.worldbank.org.

Vives, X., 2011. Competition policy in banking. *Oxford Review of Economic Policy*, 27 (3), 479–497.