ECONSTOR Make Your Publications Visible.

A Service of

ZBW

Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics

Nguyen, Hai-Tuan

Article

Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries

Cogent Economics & Finance

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Nguyen, Hai-Tuan (2023) : Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries, Cogent Economics & Finance, ISSN 2332-2039, Taylor & Francis, Abingdon, Vol. 11, Iss. 2, pp. 1-19, https://doi.org/10.1080/23322039.2023.2244769

This Version is available at: https://hdl.handle.net/10419/304176

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.



https://creativecommons.org/licenses/by/4.0/

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.









Cogent Economics & Finance

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/oaef20

Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries

Hai-Tuan Nguyen

To cite this article: Hai-Tuan Nguyen (2023) Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries, Cogent Economics & Finance, 11:2, 2244769, DOI: <u>10.1080/23322039.2023.2244769</u>

To link to this article: <u>https://doi.org/10.1080/23322039.2023.2244769</u>

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 11 Aug 2023.

|--|

Submit your article to this journal 🕝

Article views: 695



View related articles 🗹

🕨 View Crossmark data 🗹



Citing articles: 1 View citing articles 🖸



Received: 03 February 2023 Accepted: 28 July 2023

*Corresponding author: Hai-Tuan Nguyen, Business Administration Department, FPT University - Can Tho campus, Can Tho city, VietNam E-mail: tuannh64@fe.edu.vn

Reviewing editor: David McMillan, University of Stirling, United Kingdom

Additional information is available at the end of the article

FINANCIAL ECONOMICS | RESEARCH ARTICLE

Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries

🔆 cogent

economics & finance

Hai-Tuan Nguyen¹*

Abstract: This study investigates how market concentration (MC) and institutional quality (IQ) influence bank stability in developing nations, focusing on 80 banks in the ASEAN 4 countries (Indonesia, the Philippines, Malaysia, and Thailand) from 2006 to 2019. The study utilises the generalised method of moments technique to address concerns related to autocorrelation and endogeneity. The findings of the research are noteworthy. Firstly, a positive correlation between bank stability and market concentration is established, supporting the concentration-stability hypothesis. Banks operating in highly concentrated markets tend to exhibit higher stability compared to those in less concentrated markets. However, negative coefficients on square market concentration suggest a potential inverted U-shaped relationship, indicating that market concentration enhances bank stability up to a certain threshold. Secondly, the study highlights the significant impact of institutional quality on bank stability within the ASEAN 4 region. Furthermore, the study found that institutional quality might mitigate the influence of market concentration on bank stability. These results underscore the importance of a well-defined strategy for bank managers and bankers. When market concentration reaches a specific threshold, optimal bank stability is observed, and higher institutional quality contributes to improved bank stability. This research pioneers examining the effects of banking system market concentration and institutional quality on the stability of ASEAN 4 banks.

Subjects: Economics; Finance; Business, Management and Accounting

Keywords: ASEAN 4; bank stability; market concentration; institution quality

JEL Classification: G21; L22; L25; G33

1. Introduction

Banks must be financially stable to continue playing such roles and deal with various shocks. As a result, scholars and regulators must be interested in understanding the factors of a bank's financial stability. The study was initiated due to a decline in the number of banks in many

ABOUT THE AUTHOR

Hai-Tuan Nguyen is a lecturer in the Business Administration Department at FPT University - Can Tho campus. He holds a philosophy of doctorate in business administration from Asia University, Taiwan. He relishes teaching and interdisciplinary research. His main research areas are finance, marketing, management, customer behavior, and sustainable development.





© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent. countries (Committee on the Global Financial System, 2018), resulting in higher concentration ratios. This situation raised concerns about whether the reduction in market concentration led banks to assume more risks. Additionally, there were uncertainties about whether a higher banking market concentration would have enhanced bank stability. Nevertheless, the impact of market structure on bank stability is influenced by two opposing theories: the concentration-stability hypothesis and the concentration-fragility hypothesis. According to the concentration-stability hypothesis, larger banks in a concentrated banking market will be more safe (Allen & Gale, 2004; Keeley, 11990). Conversely, according to the concentration-fragility hypothesis, larger banks operating in a concentrated market may decrease stability (Boyd & De Nicolo, 2005; Schaeck et al., 2009; Uhde and Heimeshoff, 2009). Moreover, the influence of institutional quality on bank stability has become a focal point for researchers in recent times. The high and/or poor of a nation's institutions is indicated by institutional quality. According to the available literature, good institutions reduce transaction costs and asymmetric information concerns, and hence enhance financial sector resource allocation (Ho & Michaely, 1988; Williamson, 1981). Improved institutional quality might substantially impact the bank's financial stability. While the exploration of how institutional quality affects a bank's financial stability is still in its early stages, there have been numerous studies conducted to comprehend the influence of institutional quality on a country's economic and financial advancement. The investigation into how institutional quality influences bank stability has raised concerns among researchers (Canh et al., 2021), and those interested in this topic remain curious to learn more. Additionally, González-Rodríguez (2008) and Saif-Alyousfi et al. (2020) demonstrate that higher bank market concentration, which can lead to financial instability, tends to be associated with better institutional quality.

Overall, previous research has indicated a connection between market concentration and bank stability as well as between institution quality and bank stability. As a result, this research investigates the impact of market structure and institutional quality on bank stability. This research tries to fill that gap. The significance and scale of emerging markets, such as Southeast Asia, in the global economy make it noteworthy that there is a lack of empirical research exploring the effects of market concentration and institutional quality on bank stability in this particular region.

This research concentrates on the five members of the Association of Southeast Asian Nations (ASEAN – 4), namely, Indonesia, Thailand, Malaysia, and the Philippines. The study was specifically conducted in the ASEAN 4 countries for several reasons. Firstly, ASEAN has emerged as one of the most influential trading regions globally. With an average economic growth rate of 5.3% from 2006 to 2019, ASEAN-4 closely followed China in terms of economic expansion (WB, 2019a). The banking sector, as the cornerstone of the financial system, plays a crucial role in driving the remarkable economic accomplishments of ASEAN-4 countries (Fu et al., 2015; T. D. Le, 2019). In addition, any disruptions in the banking sectors of these nations could have a significant impact on the global financial system due to their extensive trading importance and open banking systems relative to other emerging regions (Ovi et al., 2020). These factors contribute to higher concentration ratios, which can have a variety of complex implications for the link among the concentration of markets (MC), quality of institutions (IQ), and stability of banks.

This paper makes several noteworthy contributions to the existing literature. Firstly, while Saha and Dutta (2022) investigated the link between governance quality and financial inclusion and stability, this research uniquely explores the impact of market concentration (MC), institutional quality (IQ), and bank stability, specifically focusing on the ASEAN 4 countries. It addresses a crucial research gap by examining how of MC and IQ interact to influence banking stability in this context, a topic that has not been previously explored. Secondly, the study's significance lies in its examination of the moderating role, shedding light on how the influence of market structure on bank stability evolves alongside the development of institutions in emerging economies. Comprehending this connection is of utmost importance, particularly since financial systems in less developed markets tend to exhibit lower stability. Therefore, any evidence that supports this hypothesis would be highly valuable for policy-makers aiming to strengthen financial stability in these economies.

The subsequent sections of our research are outlined as follows: Section 2 will provide an indepth exploration of the theories, related studies, and assumptions pertinent to the topic. In Section 3, we will describe the research approach, encompassing the estimation method, models, and variable specifications. Moving on to Section 4, we will present the estimation findings and robustness tests employed to assess the hypotheses. Finally, Section 5 will offer the conclusion of our study.

2. Literature review

2.1. Market concentration and bank stability

The existing literature significantly centers on investigating the impact of MC on the stability of the banking sector. Supporters of the "concentration-stability" theory argue that market power is advantageous as it reduces information asymmetry and improves the quality of loan portfolios (Petersen & Rajan, 1995). Market strength, in the viewpoint of Hellmann et al. (2000), helps the bank to maintain their charter value, taking risks lower. According to Allen and Gale (2004), banks' ability to gain from rising revenues prevents asset deterioration and improves the stability of the financial system. In numerous research studies, various samples, risk indicators, and concentration proxies have been employed to explore the relationship between concentration and bank stability. Fiordelisi and Mare (2014) use a sample of European cooperative banks to find a positive relationship between stability and competition (defined by the Lerner index). Second, the findings show that this crucial link remained constant during the 2007–2009 financial crisis. In five ASEAN nations, Sahul Hamid (2017) discovers that greater concentration boosts banking sector stability, hence corroborating the "concentration-stability" argument.

Additionally, greater concentration, in the viewpoint of proponents of "concentration-fragility," raises the risk level of the financial system. According to Boyd and De Nicolo (2005), show that banks are more likely to increase loan interest rates in an uncompetitive or highly concentrated market in order to boost profits, which raises the likelihood of bankruptcy. Saha and Dutta (2021) demonstrate that competition fosters stability, but there is also evidence of fragility when concentration exists in the banking industry. Similar to Mirzaei et al. (2013), greater concentration can worsen the moral hazard difficulties associated with larger banks, driving banks to raise excessive rates of interest on loans, making clients more likely to default, and decreasing managerial effectiveness. According to Nicoló et al. (2004), greater concentration is associated with banking industry weakness. Uhde and Heimeshoff (2009) obtained similar results for the European banking system, employing three different concentration metrics. Similarly, using the 3-firm concentration ratio and the Lerner index, Fu et al. (2014) found comparable outcomes in 14 Asian Pacific nations. Kasman and Kasman (2015) analyzed the impact of market concentration on Turkish bank stability from 2002 to 2012, using the MC5 and the HHI, and they discovered that an increasingly concentrated market is less stable. Soedarmono et al. (2013) conduct a study on the effect of bank competition on the financial stability of emerging nations, considering crisis periods. Analyzing data from a substantial examples of commercial banks in Asia from 1994 - 2009, the findings reveal a correlation between higher market dominance in the banking industry and increased capital ratios, greater income volatility, and reduced bank illiquidity. Jiménez et al. (2013) suggest that market dominance serves as the primary source of charter value, and reduced competition in the banking market enhances banking stability. Furthermore, Saif-Alyousfi et al. (2020) discover that higher bank concentration leads to increased financial fragility, indicating that banks in highly concentrated markets are less secure.

In general, the association between the concentration and bank stability tends to produce a variety of results. Given the size and impact of developing nations like Southeast Asia on the global economy, there appears to be a gap in the finance literature. While numerous articles have examined the relationship between competition and bank stability, it is crucial not to directly compare these findings to those of concentration and stability, as concentration is not always a reliable proxy for competition (Beck et al., 2006; Calice et al., 2021).

Hypothesis 1: marketconcentrationhasimpactonbanksstability

2.2. Institution quality and bank stability

Institutions play a critical role in a nation's economy. Inadequate legal systems and governance structures, often due to corruption and ineffective rules, can lead to increased economic challenges (Levine, 1998; Porta et al., 1998). During financial crises, institutional integrity becomes even more crucial, as countries with good institutional quality are better equipped to respond effectively to disruptions (Klomp & De Haan, 2014). Strong institutional quality can reduce transaction costs and address the asymmetric information problem, influencing corporate behavior and overall economic performance (Gugler et al., 2013), while robust property rights and a functional legal system are vital for overall economic and financial development (Voghouei et al., 2011). Furthermore, improved institutional quality in an economic system facilitates better financial liberalization (Anginer et al., 2014; Delis, 2012; Gazdar & Cherif, 2015; Hoque et al., 2015). Furthermore, Klomp and De Haan (2012) highlight the significant impact of institutional environment on financial stability, emphasizing the crucial role of institutions in determining the stability of banks. Elfeituri (2022) and others find that IQ positively influences bank stability. Van Duuren et al. (2020) analyzed data from 110 countries between 2000 and 2011 and found that financial openness contributes to improved financial stability. However, they also observed a negative association between problematic loans and institutions of low guality. Hou and Wang (2016) conducted a study focusing on Chinese banks and concluded that enhancing institutional quality can counteract the negative effects of bank marketization on overall stability. Bermpei et al. (2018) demonstrated that a stable political environment enhances the positive impact of capital regulation and activity limits on financial stability. Similarly, Uddin et al. (2020) analyzed 730 banks from 19 emerging nations and found that financial stability is improved by factors such as government efficiency, corruption prevention regulations, agency trust, and rule of law compliance, which reduce banks' risk. Albaity et al. (2021) examine the influence of dependability and quality of governance in the taking on risks decisions made by banks. By utilizing a database containing 202 organizations in 16 MENA countries from 2011 - 2017. The findings suggest that governance quality increases risk-taking. Shabir et al. (2021) discovered the nations with abovethreshold quality of institutions mitigate the negative impact of unpredictability of policies on financial stability. Moreover, according to Q. K. Nguyen (2022), the link between bank stability and audit committee efficacy is highly dependent on the health of each bank and the country's institutional quality. Albaity et al. (2022) show that the quality of regulation, reliability had an effect on the growth of bank credit in the countries of the Gulf Cooperation Council (GCC).

All in all, institutional quality has a positive impact on bank stability. Because when a country has good institutional quality can limit risky activities and improve stability. Based on previous studies provides evidence of the positive effects of institutional quality on bank stability. As a result, we suggest the following hypothesis.

Hypothesis 2: Institutional quality has impact on bank stability

2.3. Institutional quality moderates the relationship between market concentration and bank stability

Prior study has concentrated on the relationship between institutional quality and bank stability, as well as the relationship between concentration and bank stability. According to Chan et al. (2015), institutional quality moderates the influence of market concentration on bank efficiency. Good

institutional quality has been shown to be advantageous for financial institution supervision and surveillance (Anginer et al., 2014; Hoque et al., 2015). Moreover, González-Rodríguez (2008) and Saif-Alyousfi et al. (2020) suggest that higher institutional quality is more likely to be correlated with greater bank market concentration, which is associated with financial instability. Therefore, any negative effect should be mitigated, whereas the favorable impact of MC on bank stability should be amplified. Institutional development in developing and emergent nations is frequently inferior to that of developed nations. In addition, Tran et al. (2022) investigated the association between the structure of markets, quality of institutions, and financial stability in developing and emerging nations. Surprisingly, no studies have been conducted to examine the moderate influence of institutional quality on the relationship between MC and banking stability in ASEAN 4. In summary, any progress made through institutional reform must be significant in improving financial stability in developing economies. As a result, we arrive at the following final hypothesis:

Hypothesis 3: The association between market concentration and bank stability is mitigated by institutional quality.

3. Data and research methodology

3.1. Data

Our data was collected from numerous sources. However, the majority of bank-level data in five ASEAN countries were obtained from the Refinitiv Eikon database. As a consequence, an initial sample of 100 ASEAN-4-listed banks from the Eikon database was compiled. After excluding those with insufficient data when calculating ZSCORE and RISK, there were a total of 1,120 observations from 80 listed banks from 2006 to 2019, when data was available for the vast majority of listed banks. The State Bank of Vietnam has mandated audited financial information from commercial institutions since 2006 (T. D. Le, 2019). In addition, MC and macroeconomic variables data were obtained from the World Development Indicators dataset (WB, 2019b). Using the Worldwide Governance Indicators (WGI), institutional quality was measured. Finally, the Heritage Foundation provided information on the openness of the banking industry. Our choice of inquiry period was determined by the data availability.

3.2. Methodology

According to the preceding arguments, a dynamic model of bank's financial stability is used, one that appears such as this:

$$Zscore_{i,t} = \alpha + \alpha_1 Zscore_{i,t-1} + \alpha_2 MC_{i,t} + \alpha_3 SQMC_{i,t} + \alpha_4 IQ_{i,t} + \alpha_5 Control variables_{i,t}$$
(1)

In the following model, we also include MC*IQ to investigate the impact on bank stability ¹:

$$Zscore_{i,t} = \beta + \beta_1 Zscore_{i,t-1} + \beta_2 MC_{i,t} + \beta_3 SQMC_{i,t} + \beta_4 MC * IQ_{i,t} + \beta_5 Control variables_{i,t}$$
(2)

Following prior studies such as T. D. Le et al. (2020), Lepetit and Strobel (2013), We also utilise ZSCORE as a metric of bankstability. The *ZSCORE* of a bank is measured as $ZSCORE_{i,t} = \frac{ROA_{i,t} + EQUITY_{i,t}}{\sigma_{ROA_i}}$ where ROA_{i,t} and *EQUITY_{i,t}* are the current value of ROA and the *ratio of total equity/total assets*, respectively while σ_{ROA_i} is the standard deviation of ROA over the sample period. We employ the natural logarithm of ZSCORE to solve this problem due to its extremely skewed distribution. A higher ZSCORE number indicates greater bankstability

Market concentration (MC): market share, MC3 are used to estimate market concentration. Similar to Calice et al. (2021), Mirzaei et al. (2013). MC3 is calculated as a percentage of a country's three largest banks' total assets divided by all commercial banks' total assets (Cihak et al., 2012). A higher MC3 indicates a greater concentration in banking.

Institution quality(IQ): Institutional quality is a wide notion that encompasses several elements, including the effectiveness of thegovernment'splanning and implementation, freedomof speech and association, accountability, the prevention of corruption, and regulatory quality. The most frequently used statistics in recent institutional literature are based on the worldwide governance indicators (WGI), developed by Kaufmann et al. (1999) to encompass social, political, economic, and legal factors. The WGI data consist of six broad elements: voice and accountability, government effectiveness, corruption control, regulatory quality, rule of law, and political stability and violence, ranging from -2.5 (weak) to 2.5 (strong). Since its introduction, the WGI data has become widely used as a proxy for institutional quality, following studies by Muizzuddin et al. (2021), Uddin et al. (2020), Etudaiye-Muhtar and Abdul-Baki (2020), and others. This dataset is favored for its coverage of political and non-political institutional characteristics, inclusion of perceptions from various stakeholders, and empirical applicability. Given its substantial significance, we will also construct the institutional quality index using the WGI dataset.

3.2.1. Control variables

Bank size is controlled by a natural logarithm of total assets, as measured by SIZE. The too-big-to-fail hypothesis demonstrates that larger banks are more inclined to take greater risks, leading to a higher rate of bank failure (Beck et al., 2006; T. D. Le, 2020, 2021). Others, however, find the opposite (Pennathur et al., 2012). LATA, Liquid assets to total asset, is a measure used to manage liquidity risk. The better the bank's stability, the larger the liquidity ratio (Shim, 2013; Son & Liem, 2020; Vithessonthi, 2014), However, according to Delis and Staikouras (2011), contend that the dangers a bank faces increase with its liquidity ratio. Furthermore, ROA, returnonassets, is established because moreprofitable bankscan withstandfinancialshocksbetter, boosting bankstability (Athanasoglou et al., 2008). Higher profitability, however, may imply high-risk premia when there is insufficient bank oversight and asymmetric information (Hellmann et al., 2000). Following (Barth et al., 2004; T. D. Q. Le & Nguyen, 2022; Mercieca et al., 2007). FREE, The banking freedom index is used to account for the impact of the banking system's openness. Several studies indicate that a banking system that has functioned in a more competitive market because of a greater level of openness of the banking system appears to pursue the best appropriate risk-control strategies and objectives (Mercieca et al., 2007). This increased competition may result in lower interest margins, reducing banking system profitability and putting a risk to bank stability (T. D. Le, 2017). GDP is to control for the effect of economic growth. And INF is to control for the effect of inflation.

Furthermore Baselga-Pascual et al. (2015) utilized the System Generalized Method of Moments (SGMM) estimator to study bank stability with dynamic models and panel data. They addressed endogeneity by using lagged values of the explained variable and other explanatory variables as instruments (Roodman, 2009). The two-step GMM estimator, known for its efficiency and robustness against heteroscedasticity and cross-correlation (Roodman, 2009), was employed. Effectiveness and reliability were ensured through the AR(2) test for second-order serial correlations and the Sargan/Hansen over-identifying tests to confirm instrument validity.

4. Empirical results

4.1. Descriptive statistics

Table 1 shows descriptive statistics of the variables in the study. The mean for bankstability (*ZSCORE*) is 27.219. Furthermore, the average values for *MC*3 is 46.045, respectively. Institutional quality variables have value in the rangefrom -2.5(weak)to2.5(strong).

Additionally, we also examine whether multicollinearity among independent variables may exist. Tables 2 and 3 present the results of the correlation matrix and varianceinflationfactor(*VIF*) values, respectively. There is a relatively high correlation between *ZSCORE* and *SIZE*, their VIF values are less than 10, suggesting that there is no multicollinearity among them.² Overall, market concentration and institution quality are positively associated with bankstability.

Table 1. The d	escriptive statis	tics of variables			
Variable	Obs	Mean	Std. Dev.	Min	Max
ZSCORE	1,120	27.21	3.296	20.970	33.433
MC3	1,120	46.045	16.735	23.452	100.000
VAE	1,120	-0.275	0.510	-1.538	0.185
PVE	1,120	-0.650	0.587	-1.778	0.404
GEE	1,120	0.115	0.421	-0.332	1.267
RQE	1,120	-0.075	0.349	-0.669	0.838
RLE	1,120	-0.289	0.365	-0.719	0.623
CCE	1,120	-0.446	0.296	-0.839	0.411
SIZE	1,120	28.947	3.091	22.129	34.655
ROA	1,120	1.374	0.945	-2.357	3.847
LATA	1,120	0.127	0.075	0.004	0.336
FREE	1,120	49.358	11.177	30.000	70.000
GDP	1,120	5.289	1.574	-1.500	7.500
INF	1,120	5.350	4.993	-6.000	22.700

Notes: ZSCORE, the mean returns on assets and the mean standard deviation of ROA over the sample period, combined with the current period value of EQUITY; The three-market concentration (MC3). The structural indicator of the degree of concentration of banks within an economy, measured by the concentration of assets held by the three major banks in each economy. A higher value indicates a higher level of market concentration: Institutional quality proxies from WGI report on six dimensions of governance, voice and accountability(VAE), political stability-(PVE), government effectiveness (GEE), regulatory quality (RQE), rules of law (RLE), and control of corruption (CCE). FREE, the financial freedom index, SIZE the natural logarithm of total assets. ROA, returns on assets; LATA, the ratio of liquid assets to total assets; GDP, the growth rate of gross domestic products; INF, the inflation. All variables have been weinsorized at the 1% and 99% levels (except for market concentration, Institutional quality and financial freedom and macroeconomic variables). (Robust standard errors are in parentheses. *,** and *** the Significant at 10, 5 and 1% levels, respectively)

4.2. The base models

This section presents the empirical results of our research. Tables 4 display the results for our models. We constrain the lagged value of the dependent variable to one to minimize the number of moment conditions, in line with T. D. Le (2020) and T. D. Le and Ngo (2020). In all models, the coefficient of the lagged dependent variable (ZSCOREt-1) is positive and significant, falling between the fixed-effect coefficient (0.62) and pooled estimation³ (0.78), indicating the adequacy of the system GMM estimation. The p-value of the Hansen test is statistically insignificant, suggesting no rejection of the null hypothesis, which indicates no over-identification constraints and confirms the legitimacy of the instruments. While the null hypothesis of no first-order autocorrelation between first residual differences is rejected based on the significant p-value of the AR(1) test, the moment conditions of our model are still satisfied in all models due to the insignificant p-value of the AR(2) test. Therefore, diagnostic testing is justified based on the findings.

Table 4 presents the coefficients of the market concentration variable (MC3), indicating a positive and significant relationship. This study supports the "concentration-stability" hypothesis, suggesting that higher market concentration is associated with increased stability in the banking sector. The higher market concentration enhances market power, reduces information asymmetry, and improves loan quality, thereby contributing to greater bank stability. This finding supports Hypothesis 1a and aligns with previous research (Beck et al., 2006; Schaeck et al., 2009). However, the negative coefficient on SQMC3 suggests that market concentration may lower bank stability up to a certain threshold. This could be due to banks in less competitive or highly concentrated markets increasing lending rates to boost profits, which raises the risk of bankruptcy. This result contrasts with Abdesslem et al. (2022). In summary, our findings support the theory that higher banking concentration leads to greater bank stability up to a specific threshold.

Table 2. 1	The correlat	tion matrix	of variable	S										
	ZSCORE	MC3	VAE	PVE	GEE	RQE	RLE	CCE	SIZE	ROA	LATA	FREE	GDP	INF
ZSCORE	1													
MC3	0.503	Ţ												
VAE	0.085	-0.243	1											
PVE	0.274	0.217	-0.469	1										
GEE	0.417	0.667	-0.136	.416	1									
RQE	0.479	0.563	0.095	.179	0.909	1								
RLE	0.291	0.586	-0.270	.554	0.943	0.861	1							
CCE	0.216	0.452	-0.092	.566	0.902	0.835	0.903	1						
SIZE	0.878	-0.568	-0.125	.256	-0.561	-0.634	-0.422	-0.349	1					
ROA	0.126	0.000	0.137	202	-0.051	0.007	-0.102	-0.110	0.054	1				
LATA	-0.046	-0.067	0.431	191	-0.224	-0.215	-0.321	-0.249	-0.016	0.067	-			
FREE	-0.133	-0.166	0.399	237	0.265	0.509	0.254	0.306	-0.260	0.075	-0.113	1		
GDP	0.141	-0.146	0.031	.108	-0.228	-0.286	-0.217	-0.143	0.183	0.006	0.262	-0.276	1	
INF	0.153	-0.096	-0.072	093	-0.459	-0.526	-0.491	-0.450	0.306	-0.009	0.119	-0.585	.293	1

Table 3. Var	iance inflatio	n Factor (VIF)	results			
Variable			VIF Z	SCORE		
MC3	1.97	2.31	3.01	2.88	2.85	2.39
VAE	1.82					
PVE		1.73				
GEE			2.92			
RQE				3.77		
RLE					2.59	
CCE						1.84
SIZE	1.96	2.48	1.91	2.02	1.9	1.91
ROA	1.04	1.11	1.04	1.03	1.06	1.06
LATA	1.46	1.15	1.16	1.16	1.24	1.16
FREE	2.33	1.99	2.06	2.73	2.02	2.09
GDP	1.21	1.26	1.21	1.21	1.22	1.24
INF	1.71	1.86	1.84	1.73	1.96	1.8
Mean VIF	1.69	1.74	1.9	2.06	1.86	1.68

In terms of institution quality characteristics, this study investigated the influence of the institutional environment on the financial stability of emerging-market banks. Six WGI indicators, namely voiceandaccountability, politicalstability, government effectiveness, regulatoryquality, theruleoflaw, and corruptioncontrol, were used as proxies forinstitutionalquality. Models 1, 3, 5, 7, 9, and 11 demonstrated that the quality of the institutional environment significantly affects the financial stability of emerging-market banks, leading to improved bank stability. This finding aligns with our Hypothesis 2 and is consistent with previous studies conducted in emerging and developing countries (Bermpei et al., 2018; Uddin et al., 2020). It is indicated by the results that financial liberalization is facilitated by better institutional quality in an economic system (Delis, 2012; Gazdar & Cherif, 2015). Additionally, good institutional quality can reduce transaction costs and address the asymmetric information problem, contributing to enhanced bank performance and stability (Gugler et al., 2013).

In Models 2, 4, 6, 8, 10, and 12 of Table 4, the interaction between market concentration and institutional quality demonstrate a positive and significant relationship. This suggests that in emerging countries, better institutional quality strengthens the positive influence of bank concentration on the bank's financial stability. In other words, in less competitive markets, high institutional quality restricts banks from indulging in excessive risk-taking activities. This aligns with the argument that strong IQ enables better oversight (Anginer et al., 2014) and monitoring of financial institutions (Hoque et al., 2015), leading to a reduction in the likelihood of risky bank activities.

The positive effect of bank size (SIZE) on ZSCORE is significant, implying that larger banks tend to be more diversified and possess higher risk management expertise. This finding aligns with Son et al. (2016). Additionally, as expected, bank stability is positively associated with return on assets (ROA), consistent with the findings of L. T. Nguyen and Nguyen (2021) and Son et al. (2016). The liquidity ratio (LATA) also has a significant and positive effect on ZSCORE, indicating that higher liquidity ratios are linked to greater bank stability. This observation is in line with previous studies by Shim (2013), Son and Liem (2020), and Vithessonthi (2014). Furthermore, financial freedom (FREE) exhibits a significant and positive effect on ZSCORE, suggesting that banks operating in regions with higher financial freedom tend to have greater stability or lower risk levels. This finding is consistent with the results of Chortareas et al. (2013), who found that financial freedom enhances bank performance. When banks have more operational freedom, they may engage in more suitable, less risky activities than when they are restricted. Moreover, the positive relationship

lable 4. Ke	gression est	Imates										
	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE
ZSCORE _{t-1}	(1)	(2)	(3)	(†)	(5)	(9)	Ē	(8)	(6)	(10)	(11)	(12)
ZSCORE _{t-1}	0.779*** (0.003)	0.777*** (0.004)	0.769*** (0.044)	0.727*** (0.045)	0.741*** (0.038)	0.752*** (0.021)	0.712*** (0.044)	0.694*** (0.051)	0.754*** (0.005)	0.705*** (0.043)	0.697*** (0.020)	0.729*** (0.005)
MC3	0.005*** (0.001)	0.004*** (0.001)	0.016** (0.006)	0.008* (0.005)	0.007** (0.003)	0.007* (0.004)	0.002*** (0.001)	0.007** (0.004)	0.005*** (0.002)	0.008** (0.005)	0.005* (0.003)	0.008** (0.002)
SQMC3	-0.002*** (0.001)	-0.003** (0.001)	-0.001** (0.000)	-0.000** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.005** (0.002)	-0.012*** (0.002)	-0.001*** (0.000)	-0.002*** (0.000)	-0.001* (0.000)	-0.001** (0.000)
VAE	0.043** (0.019)											
PVE			0.045*** (0.051)									
GEE					0.446*** (0.012)							
RQE							0.504*** (0.024)					
RLE									0.376*** (0.010)			
CCE											0.129* (0.071)	
MC3*VAE		0.001** (0.001)										
MC3*PVE				0.005*** (0.000)								
MC3*GEE						0.002** (0.001)						
MC3*RQE								0.001*** (0.001)				
MC3*RLE										0.001*** (0.002)		
												(Continued)

Page 10 of 19

* cogent - economics & finance

ZSCORE _{t-1}	ZSCORE (1)	ZSCORE (2)	ZSCORE (3)	ZSCORE (4)	ZSCORE (5)	ZSCORE (6)	ZSCORE (7)	ZSCORE (8)	ZSCORE (9)	ZSCORE (10)	ZSCORE (11)	ZSCORE (12)
MC3*CCE												0.002** (0.001)
SIZE	0.232*** (0.004)	0.229*** (0.004)	0.261*** (0.036)	0.291*** (0.042)	0.266*** (0.041)	0.216*** (0.028)	0.501*** (0.017)	0.315*** (0.050)	0.522*** (0.012)	0.340*** (0.045)	0.5310*** (0.021)	0.279*** (0.008)
ROA	0.053*** (0.011)	0.034** (0.013)	0.162*** (0.008)	0.062*** (0.006)	0.099** (0.043)	0.047 (0.033)	0.038*** (0.008)	-0.054 (0.040)	0.139*** (0.008)	0.094*** (0.008)	0.072*** (0.019)	0.124*** (0.019)
LАТА	0.808*** (0.109)	1.114*** (0.126)	0.369 (0.375)	-0.159 (0.501)	0.917* (0.493)	1.590*** (0.360)	2.004*** (0.170)	0.851 (0.607)	1.579*** (0.149)	1.938*** (0.114)	1.130*** (0.272)	-0.202 (0.240)
FREE	0.001 (0.000)	0.000 (0.001)	0.004*** (0.000)	-0.005 (0.003)	0.001 (0.002)	0002 (0.001)	0.007*** (0.000)	-0.003 (0.004)	0.004*** (0.000)	0004*** (0.000)	0.003*** (0.001)	-0.001 (0.001)
GDP	0.002 (0.002)	0.008*** (0.003)	0.003 (0.005)	0.010 (0.007)	-0.001 (0.002)	-0.006 (0.004)	0.008*** (0.001)	0.001 (0.007)	0.006*** (0.001)	0.005*** (0.001)	-0.001 (0.004)	0.010*** (0.003)
INF	-0.004*** (0.001)	-0.005*** (0.001)	-0.011*** (0.003)	-0.010*** (0.003)	-0.003 (0.002)	-0.003 (0.002)	-0.018*** (0.001)	-0.009*** (0.003)	-0.011*** (0.001)	-0.012*** (0.000)	-0.005*** (0.001)	-0.006*** (0.001)
Constant	-0.866 (0.138)	-0.738 (0.142)	-1.169 (0.569)	-1.271 (0.111)	-1.022 (0.448)	-1.110 (0.423)	-1.679 (0.210)	-0.638 (0.510)	-2.081 (0.184)	-2.002 (0.199	-1.128 (0.287)	-0.857 (0.209)
No. of Obs	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027
No. of Groups	80	80	80	80	80	80	80	80	80	80	80	80
AR(1) <i>p</i> -value	0.009	600.0	0.013	0.007	0.007	0.013	0.008	0.012	0.007	0.007	0.008	0.008
AR(2) <i>p</i> -value	0.432	0.415	0.505	0.385	0.422	0.369	0.347	0.454	0.346	0.326	0.415	0.534
Hansen test <i>p-</i> value	0.592	0.645	0.126	0.386	0.433	0.134	0.500	0.339	0.393	0.511	0.160	0.186
Notes: ZSCORE The structural a higher level (GEE), regulatc liquid assets t	; the mean retuindicator of the indicator of the of market concurvy any quality (RQE) o total assets;	urns on assets an e degree of conc entration: Institu), rules of law (R) GDP, the growth	nd the mean sta entration of bar utional quality p LE), and control h rate of gross v	Indard deviation iks within an ec roxies from WG of corruption (C domestic produ	n of ROA over th conomy, measur il report on six (CCE). FREE, the fi Lots, INF, the in	ie sample perio ed by the conc dimensions of g inancial freedor flation. All vario	d, combined wit entration of ass jovernance, voic n index, SIZE th ables have beer	h the current pe ets held by the 1 ie and accounta e natural logarit n weinsorized a	riod value of EG three major ban bility (VAE), poli thm of total ass t the 1% and 9	RUITY; The three ks in each econ tical stability(PV ets. ROA, return: 9% levels (exce	-market concen omy. A higher w (E), government s on assets; LAT pt for market c	tration (MC3). Ilue indicates effectiveness A, the ratio of oncentration,

between GDP and ZSCORE confirms the traditional view that economic growth increases the demand for financial products and services offered by the banking system during cyclical upswings, leading to higher profitability and bank stability (Athanasoglou et al., 2008; Dietrich & Wanzenried, 2014). Ultimately, ZSCORE is adversely affected by inflation rates (INF), suggesting that they could elevate the risk of loan default by impacting borrowers' financial situations, jeopardizing their liquidity, and diminishing their ability to repay (Pervan et al., 2015).

4.3. Robustness check

4.3.1. Alternative of bank stability

According to Galloway et al. (1997) and Hovakimian and Kane (2000), ZSCORE was replaced with RISK as a measure of bank risk, calculated by the yearly volatility of weekly stock returns. Higher volatility in banks' stock returns indicates greater bank risk and lower bank stability.

The findings in Table 5 demonstrate that marketconcentration (MC3) and institutionalquality(IQ) are negatively related to RISK. Furthermore, SQMC3 is positive and significant with RISK. The results in Models 2, 4, 6, 8, 10, and 12 in Table 5 demonstrate the interaction terms between MC3 and IQ. The result in Table 5 is supported by the coefficient of interaction terms, which is negative and significant for RISK. This suggests that in developing and emerging economies, institutions with higher institutionalquality have a stronger positive impact on the financial stability of banks. This is consistent with González-Rodríguez (2008); Saif-Alyousfi et al. (2020)in conclusion, our ZSCORE model's results are further supported by the RISK model's robustness analysis.

4.3.2. Alternative of market concentration

We were replacing three market concentration (MC3) with *five market concentration* (MC5) variable, the concentration of assets held by the five major banks in each economy—to test whether *five market concentration* (MC5) positive the stability of developing and emerging countries banks in Table 6. The results were consistent, significant, and continue to show their signs. According to prior findings that more market concentration and greater institutional quality improve the stability of the banking industry in developing and emerging nations, the MC5 and *institutional quality* variables demonstrate a positive connection with *bankstability*. Additionally, the results in Models 2, 4, 6, 8, 10, and 12 in Table 6 demonstrate that the coefficients of interaction between *institutional quality* and market concentration are positive and significant, respectively, supporting the main conclusions we presented above.

5. Conclusion

This study examines the relationship between market concentration, institutional quality, and a bank's financial stability using data from 80 banks in ASEAN 4 countries spanning the period from 2006 to 2019. The research reveals intriguing findings. Firstly, it indicates a positive association between bank stability and market concentration. According to the concentration-stability hypothesis, banks operating in highly concentrated markets tend to be more stable than those in less concentrated ones. However, the negative coefficients on SQMC suggest a possible inverted U-shaped relationship, implying that market concentration enhances bank stability up to a certain threshold. Secondly, the study demonstrates the significant impact of the institutional environment on the bank stability of ASEAN 4 countries. Furthermore, it suggests that institutional development may mitigate the influence of market concentration on bank stability. The research also explores the interaction terms between MC and IQ, shedding light on how the effect of market concentration on bank stability evolves as institutions in emerging countries improve. The findings underscore the significant influence of higher institutional guality on bank financial stability in emerging countries. In essence, robust institutional quality deters banks from taking excessive risks in highly concentrated markets. These results provide the foundation for regression models that utilize bank stability and market concentration variables as replacements to further investigate the research objectives.

lable 5. Ko	Dustness test	t using the p	oank risk									
RISK _{t-1}	RISK (1)	RISK (2)	RISK (3)	RISK (4)	RISK (5)	RISK (6)	RISK (7)	RISK (8)	RISK (9)	RISK (10)	RISK (11)	RISK (12)
RISK _{t-1}	0.236*** (0.017)	0.231*** (0.016)	0.248*** (0.006)	0.254*** (0.006)	0.292*** (0.003)	0.287*** (0.003)	0.249*** (0.007)	0.238*** (0.003)	0.233*** (0.003)	0.231*** (0.003)	0.240*** (0.004)	0.235*** (0.024)
MC3	-0.035*** (0.019)	-0.029*** (0.001)	-0.027*** (0.009)	-0022** (0.008)	-0.012*** (0.001)	-0.032*** (0.001)	-0.046*** (0.011)	-0.057*** (0.005)	-0.062*** (0.004)	-0.076*** (0.004)	-0.017*** (0.003)	-0.068*** (0.032)
SQMC3	0.001*** (0.000)	0.003** (0.000)	0.001*** (0.001)	0.001*** (0.000)	0.010*** (0.001)	0.020*** (0.006)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.002*** (0.000)	0.003 *** (0.000)	0.001*** (0.000)
VAE	-0.829*** (0.216)											
PVE			-0.221*** (0.034)									
GEE					-0.966*** (0.017)							
RQE							-0.261*** (0.013)					
RLE									-0.668*** (0.038)			
CCE											-1.651*** (0.033)	
MC3*VAE		-0.047*** (0.008)										
MC3*PVE				-0.015*** (0.000)								
MC3*GEE						-0.019*** (0.000)						
MC3*RQE								0.008 (0.001)				
MC3*RLE										-0.010*** (0.001)		
												(Continued)

* cogent - economics & finance

1 4010 20 100												
RISK _{t-1}	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK	RISK
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
MC3*CCE												0.010 (0.014)
SIZE	-0.144***	-0.036***	0.124	-0.038***	-0.161***	-0.161***	-0.017***	-0.015	-0.052***	-0.046***	-0.053***	0.038
	(0.002)	(0.002)	(0.010)	(0.002)	(0.004)	(0.005)	(0.001)	(0.002)	(0.006)	(0.007)	(0.009)	(0.057)
ROA	-0.199***	-0.396**	-0.266***	-0.249***	-0.133***	-0.191***	-0.102***	-0.124***	-0.324***	-0.392***	0.031	0.303
	(0.006)	(0.009)	(0.008)	(0.008)	(0.012)	(0.010)	(0.005)	(0.006)	(0.008)	(0.010)	(0.031)	(0.250)
LATA	-0.088	-4.091***	-0.149***	-0.010***	-2.252***	3.320	-0.377***	-1.667***	-1.767***	-1.606***	-3.212***	-9.972***
	(0.083)	(0.155)	(0.049)	(0.043)	(0.148)	(0.207)	(0.107)	(0.292)	(0.068)	(0.068)	(0.301)	(0.306)
FREE	-0.019***	-0.026***	-0.023***	-0.022***	-0.021***	-0.022***	-0.005***	-0.036***	-0.027***	-0.032***	-0.028***	-0.030***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
GDP	-0.060***	-0.086***	-0.0073***	-0.069***	-0.118***	-0.114***	-0.069***	-0.032***	-0.032***	-0.066***	-0.056***	-0.061***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)
INF	0.127***	0.139***	0.184***	0.185***	0.194***	0.193***	0.036***	0.069***	0.069***	0.184***	0.203***	0.200***
	(0.001	(0.002)	(0.001)	(0.001)	(0.002)	(0.003)	(0.001)	(0.003)	(0.002)	(0.002)	(0.004)	(0.004)
Constant	-3.739	-5.783	-0.478	2.812	6.102	6.466	0.436	1.340	8.333	9.127	4.981	5.941
	(1.336)	(1.280)	(0.603)	(0.054)	(0.133)	(0.194)	(0.060)	(0.370)	(0.161)	(0.166)	(0.304)	(0.229)
No.of Obs	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027	1027
No.of Groups	80	80	80	80	80	80	80	80	80	80	80	80
AR(1) <i>p</i> -value	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
AR(2) <i>p</i> -value	0.134	0.148	0.112	0.108	0.488	0.391	0.143	0.109	0.213	0.670	0.574	0.481
Hansen test <i>p</i> -value	0.721	0.798	0.487	0.491	0.491	0.505	0.106	0.106	0.725	0.730	0.131	0.130
Notes: RISK, th concentration of governance freedom index variables have parentheses. *	he yearly volatil of assets held t , voice and acc , SIZE the natur been weinsoriz ,* and *** the 5	ity of weekly str by the three maj ountability (VAE al logarithm of ied at the 1% a significant at 10	ock returns; The jor banks in each :), political stabil total assets. RO nd 99% levels (e), 5 and 1% leve	three-market cr h economy. A hit lity (PVE), govern A, returns on as except for marke !s, respectively).	oncentration (M gher value indic nment effective sets; LATA, the :t concentratior	IC3). The struct ates a higher le eness (GEE), reg ratio of liquid a ', Institutional (ural indicator of evel of market co ulatory quality i issets to total a juality and finar	the degree of c oncentration: In (RQE), rules of I (sets; GDP, the g sisets for ar	concentration of stitutional quali aw (RLE), and cc growth rate of gi nd macroeconor	^b banks within a ty proxies from ¹ ontrol of corrupt ross domestic p mic variables). (f	n economy, me WGI report on s tion (CCE). FREE roducts; INF, th Robust standard	usured by the x dimensions the financial e inflation. All e errors are in

(1) (1) <th>Ň</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>ZCODE</th> <th>ZCODE</th> <th></th> <th>ZCLOBE</th> <th>ZCCODE</th> <th>ZCLODE</th>	Ň							ZCODE	ZCODE		ZCLOBE	ZCCODE	ZCLODE
77***********************************	(1) (1) (2)		5 CYE	(3)	(4)	(5)	(9)	(2)	(8)	(9)	(10)	(11)	(12)
0031.1 0.032.1 0.033.1 0.013 0.0013	0.696*** 0.6 (0.012) (0	0.6	587*** .009)	0.686*** (0.044)	0.688*** (0.046)	0.736*** (0.028)	0.705*** (0.024)	0.746*** (0.002)	0.742*** (0.001)	0.714*** (0.005)	0.709*** (0.017)	0.700*** (0.013)	0.775*** (0.020)
0.0001 0.0001<	0.007* 0.004)	0).003*** (0.001)	0.032** (0.012)	0.033*** (0.012)	0.018** (0.006)	0.011** (0.005)	0.003** (0.001)	0.007*** (0.001)	0.008* (0.004)	0.012** (0.005)	0.006*** (0.001)	0.033*** (0.011)
-0.001 0.0 0.0 0 <th0< td=""><td>-0.005*** (0.001)</td><td></td><td>-0.003** (0.000)</td><td>-0.002*** (0.001)</td><td>-0.002*** (0.001)</td><td>-0.001** (0.000)</td><td>-0.001** (0.000)</td><td>-0.008** (0.001)</td><td>-0.010** (0.000)</td><td>-0.003*** (0.003)</td><td>-0.002*** (0.012)</td><td>-0.002*** (0.0010)</td><td>-0.005*** (0.003)</td></th0<>	-0.005*** (0.001)		-0.003** (0.000)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001** (0.000)	-0.001** (0.000)	-0.008** (0.001)	-0.010** (0.000)	-0.003*** (0.003)	-0.002*** (0.012)	-0.002*** (0.0010)	-0.005*** (0.003)
	0.127** (0.058)												
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				-0.001 (0.069)									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$						0.166** (0.070)							
(0.000) (0.033**) (0.033**) (0.033**) (0.033**) (0.000) (0.01) (0.01) (0.01) (0.01) (0.01) (0.000) (0.001) (0.01) (0.01) (0.01) (0.01) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001) (0.001)								0.149*** (0.040)					
0.000* 0.165** 0.000* 0.001 0.000* 0.01 0.000* 0.02* 0.001 0.02* 0.001 0.02* 0.001 0.02* 0.001 0.02* 0.001 0.002* 0.001 0.002* 0.001 0.002* 0.001 0.002* 0.001 0.002* 0.001 0.002** 0.001 0.002** 0.001 0.002** 0.001 0.002** 0.001 0.002** 0.001 0.002**										0.233*** (0.062)			
0.000* 0.002** 0.002** 0.002** 0.001 0.002** 0.002** 0.002** 0.001 0.002** 0.002** 0.002** 0.001 0.001** 0.002*** 0.002*** 0.001 0.001** 0.002*** 0.002*** 0.001 0.001*** 0.002*** 0.002***												0.165*** (0.019)	
0.001, (0.001) 0.002* 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<			0.000** (0.000)										
0.002* 0.002* 0.001 0.002*** 0.001 0.002*** 0.001 0.002*** 0.001 0.002*** 0.001 0.002***					0.002** (0.001)								
0.002*** 0.002*** 0.001 0.001 0.001 0.002***							0.002* (0.001)						
0.002*** (0.001)									0.002*** (0.001)				
											0.002*** (0.001)		

Table 6. (Co	ntinued)											
ZSCORE _{t-1}	ZSCORE (1)	ZSCORE (2)	ZSCORE (3)	ZSCORE (4)	ZSCORE (5)	ZSCORE (6)	ZSCORE (7)	ZSCORE (8)	ZSCORE (9)	ZSCORE (10)	ZSCORE (11)	ZSCORE (12)
MC5*CCE												0.003* (0.002)
SIZE	0.276*** (0.048)	0.292*** (0.022)	0.370** (0.049)	0.368*** (0.053)	0.304*** (0.029)	0.306*** (0.026)	0.254*** (0.022)	0.259*** (0.021)	0.303*** (0.017)	0.287*** (0.014)	0.309*** (0.004)	0.266*** (0.077)
ROA	-0.087 (0.045)	-0.067 (0.009)	-0.092 (0.116)	-0.064 (0.062)	0.056*** (0.005)	-0.064 (0.063)	-0.034 (0.015)	0.041** (0.016)	0.070** (0.027)	0.038* (0.022)	0.056*** (0.004)	-0.031 (0.059)
LАТА	-0.629 (0.380)	0.535*** (0.131)	1.792** (0.848)	1.842*** (0.612)	1.258*** (0.119)	2.414*** (0.768)	0.209 (0.160)	0.155 (0.163)	1.478*** (0.263)	1.582*** (0.286)	0.695*** (0.601)	2.223*** (0.804)
FREE	-0.001 (0.002)	-0.000 (0.001)	0.004 (0.005)	0.005 (0.003)	0.000)	0.007** (0.003)	0.002*** (0.001)	0.001*** (0.000)	0.001 (0.001)	0.005*** (0.001)	0.002*** (0.000)	0.004 (0.003)
GDP	0.022*** (0.007)	0.024*** (0.003)	0.005 (0.010)	0.004 (0.008)	0.011*** (0.001)	0.001 (0.005)	0.012*** (0.003)	0.013*** (0.003)	-0.002 (0.003)	0.002 (0.003)	0.005*** (0.002)	-0.001 (0.007)
INF	-0.012*** (0.003)	-0.008*** (0.001)	-0.002 (0.005)	-0.004 (0.004)	-0.017*** (0.001)	-0.005 (0.005)	-0.004*** (0.002)	-0.005*** (0.001)	-0.001 (0.002)	-0.002 (0.002)	-0.009*** (0.001)	-0.007*** (0.006)
Constant	0.542 (0.476)	0.269 (0.190)	-1.901 (1.611)	-1.895 (1.025)	-1.628 (0.104)	-3.540 (1.202)	-0.293 (0.158)	-0.446 (0.155)	-1.444 (0.363)	-1.118 (0.407)	-0.874*** (0.076)	-2.875 (1.048)
No.of Obs	994	994	994	994	994	994	994	994	994	994	994	994
No.of Groups	80	80	80	80	80	80	80	80	80	80	80	80
AR(1) <i>p</i> -value	0.007	0.007	0.013	0.008	0.006	0.010	0.008	0.008	0.008	0.008	0.008	0.009
AR(2) <i>p</i> -value	0.613	0.608	0.452	0.366	0.445	0.337	0.495	0.505	0.359	0.361	0.453	0.347
Hansen test <i>p</i> -value	0.170	0.209	0.147	0.595	0.660	0.771	0.258	0.356	0.225	0.520	0.938	0.525
Notes: ZSCORE The structural a higher level ((GEE), regulato liquid assets tr Institutional qu	, the mean retu indicator of the of market conce ry quality (RQE) o total assets; (Jality and finan	trns on assets ar degree of conce entration: Institu , rules of law (RI 3DP, the growth cial freedom an	nd the mean str entration of ban trional quality <i>p</i> .E), and control 1 rate of gross (d macroeconorr	andard deviation ks within an ec oxies from WGi of corruption (C domestic produ nic variables). (F	n of ROA over th pnomy, measur r report on six d CEJ. FREE, the fi cts; INF, the in tobust standard	he sample perio ed by the conce limensions of gc inancial freedor flation. All varia l errors are in p	d, combined wi entration of asse vernance, voice n index, SIZE the ibles have been arentheses. *,**	th the current p ts held by the th and accountab a natural logarith weinsorized at and *** the Sigr	eriod value of E rree major banl lility (VAE), politi rum of total asse the 1% and 95 lificant at 10, 5	QUITY; The five- ks in each econt ical stability (PV ets. ROA, returns 3% levels (excel and 1% levels,	-market concen omy. A higher v (E), government s on assets; LAT, pt for market c respectively)	ration (MC5). Ilue indicates effectiveness 3, the ratio of oncentration,

The findings indicate that a well-defined strategy is crucial for bank managers and bankers. Bank stability is observed to be higher when market concentration reaches a specific threshold. Additionally, higher institutional quality contributes to improved bank stability. However, the study may have certain limitations. The indicators used for market concentration and bank stability, like those in previous similar studies, may not fully reflect real-world practices. In the future, conducting in-depth interviews and surveys with bankers and regulatory bodies could provide better insights into these concerns.

Acknowledgments

The author is grateful to FPT University for funding the publication of this paper.

Funding

The work was supported by the FPT University.

Author details

Hai-Tuan Nguyen¹ E-mail: tuannh64@fe.edu.vn ORCID ID: http://orcid.org/0000-0003-4845-6608 ¹ Business Administration Department, FPT University -

Can Tho Campus, Can Tho city, VietNam.

Citation information

Cite this article as: Does institutional quality reduce the impact of market concentration on bank stability? Evidence of developing countries, Hai-Tuan Nguyen, *Cogent Economics & Finance* (2023), 11: 2244769.

Notes

- (Because of the multi-collinearity, Equation(2) doesnot incorporate institutionqualityvariables, as evidenced by our VIF test (not tabulated here).
- 2. Any VIF exceeding 10 indicates aproblem of multicollinearity (Hair et al., 2010).
- 3. Results of fixed effect and pooled estimations are available on request.

Disclosure statement

No potential conflict of interest was reported by the author(s).

References

- Abdesslem, R. B., Dabbou, H., & Gallali, M. I. (2022). The impact of market concentration on bank risk-taking: evidence from a panel threshold model. *Journal of the Knowledge Economy*, 1–25. https://doi.org/10. 1007/s13132-022-01028-4
- Albaity, M., Md Noman, A. H., & Mallek, R. S. (2021). Trustworthiness, good governance and risk taking in MENA countries. *Borsa Istanbul Review*, 21(4), 359–374. https://doi.org/10.1016/j.bir.2020.12.002
- Albaity, M., Saadaoui Mallek, R., Al-Tamimi, H. A. H., & Molyneux, P. (2022). Do trust and country governance affect credit growth in GCC countries? International Journal of Islamic & Middle Eastern Finance & Management, 16(3), 516–538. https://doi. orq/10.1108/IMEFM-07-2021-0293
- Allen, F., & Gale, D. (2004). Competition and financial stability. Journal of Money, Credit and Banking, 36 (3b), 453–480. https://www.jstor.org/stable/3838946
- Anginer, D., Demirguc-Kunt, A., & Zhu, M. (2014). How does competition affect bank systemic risk? *Journal of Financial Intermediation*, 23(1), 1–26. https://doi. org/10.1016/j.jfi.2013.11.001
- 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

- Barth, J. R., Caprio, G., & Levine, R. (2004). Bank regulation and supervision: What works best? *Journal of Financial Intermediation*, 13(2), 205–248. https://doi. org/10.1016/j.jfi.2003.06.002
- Baselga-Pascual, L., Trujillo-Ponce, A., & Cardone-Riportella, C. (2015). Factors influencing bank risk in Europe: Evidence from the financial crisis. *The North American Journal of Economics & Finance*, 34, 138–166. https://doi.org/10.1016/j.najef.2015.08.004
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2006). Bank concentration, competition, and crises: First results. *Journal of Banking & Finance*, 30(5), 1581–1603. https://doi.org/10.1016/j.jbankfin.2005.05.010
- 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
- Boyd, J. H., & De Nicolo, G. (2005). The theory of bank risk taking and competition revisited. *The Journal of Finance*, 60(3), 1329–1343. https://doi.org/10.1111/j. 1540-6261.2005.00763.x
- Calice, P., Leonida, L., & Muzzupappa, E. (2021). Concentration-stability vs concentration-fragility. New cross-country evidence. Journal of International Financial Markets, Institutions and Money, 74, 101411. https://doi.org/10.1016/j.intfin.2021.101411
- Canh, N. P., Schinckus, C., Su, T. D., & Chong, F. H. L. (2021). Institutional quality and risk in the banking system. Journal of Economics, Finance and Administrative Science, 26(51), 22–40. https://doi.org/10.1108/ JEFAS-01-2020-0012
- Chan, S.-G., Koh, E. H., Zainir, F., & Yong, C.-C. (2015). Market structure, institutional framework and bank efficiency in ASEAN 5. Journal of Economics and Business, 82, 84–112. https://doi.org/10.1016/j.jecon bus.2015.07.002
- Chortareas, G. E., Girardone, C., & Ventouri, A. (2013). Financial freedom and bank efficiency: Evidence from the European Union. *Journal of Banking & Finance*, 37 (4), 1223–1231. https://doi.org/10.1016/j.jbankfin. 2012.11.015
- Cihak, M., Demirgüç-Kunt, A., Feyen, E., & Levine, R. (2012). Benchmarking financial systems around the world. The World Bank.
- Committee on the Global Financial System-CGFS. (2018). Structural Changes in Banking After The Crisis. *CGFS Papers* (No. 60). Bank for International Settlements.
- Delis, M. D. (2012). Bank competition, financial reform, and institutions: The importance of being developed. Journal of Development Economics, 97(2), 450–465. https://doi.org/10.1016/j.jdeveco.2011.05.012
- Delis, M. D., & Staikouras, P. K. (2011). Supervisory effectiveness and bank risk. *Review of Finance*, 15(3), 511–543. https://doi.org/10.1093/rof/rfq035
- Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-, middle-, and high-income countries. *The Quarterly Review of Economics & Finance*, 54(3), 337–354. https://doi.org/ 10.1016/j.qref.2014.03.001

- 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
- Etudaiye-Muhtar, O. F., & Abdul-Baki, Z. (2020). Market structure, institutional quality and bank capital ratios: Evidence from developing countries. European Journal of Management and Business Economics, 30(1), 92–107. https://doi.org/10.1108/ ejmbe-09-2019-0158
- Fiordelisi, F., & Mare, D. S. (2014). Competition and financial stability in European cooperative banks. *Journal* of International Money and Finance, 45, 1–16. https:// doi.org/10.1016/j.jimonfin.2014.02.008
- Fu, X. M., Lin, Y. R., & Molyneux, P. (2014). Bank competition and financial stability in Asia Pacific. *Journal of Banking & Finance*, 38, 64–77. https://doi.org/10. 1016/j.jbankfin.2013.09.012
- Fu, X. M., Lin, Y. R., & Molyneux, P. (2015). Bank capital and liquidity creation in Asia Pacific. *Economic Inquiry*, 54 (2), 966–993. https://doi.org/10.1111/ecin.12308
- Galloway, T. M., Lee, W. B., & Roden, D. M. (1997). Banks' changing incentives and opportunities for risk taking. *Journal of Banking & Finance*, 21(4), 509–527. https:// doi.org/10.1016/S0378-4266(96)00052-0
- Gazdar, K., & Cherif, M. (2015). Institutions and the finance-growth nexus: Empirical evidence from MENA countries. Borsa Istanbul Review, 15(3), 137–160. https://doi.org/10.1016/j.bir.2015.06.001
- González-Rodríguez, F. (2008). The relationship between charter value and bank market concentration: The influence of regulations and institutions. *Applied Financial Economics*, 18(2), 153–172. https://doi.org/ 10.1080/09603100601083215
- Gugler, K., Mueller, D. C., Peev, E., & Segalla, E. (2013). Institutional determinants of domestic and foreign subsidiaries' performance. *International Review of Law and Economics*, 34, 88–96. https://doi.org/10. 1016/j.irle.2013.01.003
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Canonical correlation: A supplement to multivariate data analysis. Multivariate Data Analysis: A Global Perspective (7th ed.). Pearson Prentice Hall Publishing.
- Hellmann, T. F., Murdock, K. C., & Stiglitz, J. E. (2000). Liberalization, moral hazard in banking, and prudential regulation: Are capital requirements enough? *The American Economic Review*, 90(1), 147–165. https:// doi.org/10.1257/aer.90.1.147
- Ho, T. S., & Michaely, R. (1988). Information quality and market efficiency. Journal of Financial and Quantitative Analysis, 23(1), 53–70. https://doi.org/ 10.2307/2331024
- Hoque, H., Andriosopoulos, D., Andriosopoulos, K., & Douady, R. (2015). Bank regulation, risk and return: Evidence from the credit and sovereign debt crises. Journal of Banking & Finance, 50, 455–474. https:// doi.org/10.1016/j.jbankfin.2014.06.003

Hou, X., & Wang, Q. (2016). Institutional quality, banking marketization, and bank stability: Evidence from China. Economic Systems, 40(4), 539–551. https://doi. org/10.1016/j.ecosys.2016.01.003

- Hovakimian, A., & Kane, E. J. (2000). Effectiveness of capital regulation at US commercial banks, 1985 to 1994. The Journal of Finance, 55(1), 451–468. https:// doi.org/10.1111/0022-1082.00212
- Jiménez, G., Lopez, J. A., & Saurina, J. (2013). How does competition affect bank risk-taking? Journal of Financial Stability, 9(2), 185–195. https://doi.org/10. 1016/j.jfs.2013.02.004

- Kasman, S., & Kasman, A. (2015). Bank competition, concentration and financial stability in the Turkish banking industry. *Economic Systems*, 39(3), 502–517. https://doi.org/10.1016/j.ecosys.2014.12.003
- Kaufmann, D., Kraay, A., & Zoido-Lobaton, P. (1999). Governance Matters. Available at SSRN 188568.
- Klomp, J., & De Haan, J. (2012). Banking risk and regulation: Does one size fit all? Journal of Banking & Finance, 36(12), 3197–3212. https://doi.org/10.1016/j. jbankfin.2011.10.006
- Klomp, J., & De Haan, J. (2014). Bank regulation, the quality of institutions, and banking risk in emerging and developing countries: An empirical analysis. *Emerging Markets Finance and Trade*, 50(6), 19–40. https://doi.org/10.1080/1540496X.2014.1013874
- Le, T. D. (2017). The interrelationship between net interest margin and non-interest income: Evidence from Vietnam. *International Journal of Managerial Finance*, 13(5), 521–540. https://doi.org/10.1108/IJMF-06-2017-0110
- Le, T. D. (2019). The interrelationship between liquidity creation and bank capital in Vietnamese banking. *Managerial Finance*, 45(2), 331–347. https://doi.org/ 10.1108/MF-09-2017-0337
- Le, T. D. (2020). The interrelationship among bank profitability, bank stability, and loan growth: Evidence from Vietnam. *Cogent Business & Management*, 7(1), 1840488. https://doi.org/10.1080/23311975.2020. 1840488
- Le, T. D. (2021). Can foreign ownership reduce bank risk? Evidence from Vietnam. *Review of Economic Analysis*, 13(2), 1–24. https://doi.org/10.15353/rea.v13i3.1726
- Le, T. D., & Ngo, T. (2020). The determinants of bank profitability: A cross-country analysis. *Central Bank Review*, 20(2), 65–73. https://doi.org/10.1016/j.cbrev. 2020.04.001
- Le, T. D. Q., & Nguyen, D. T. (2022). Bank stability, credit information sharing and a shift toward households' lending: International evidence. *International Journal* of Managerial Finance, 18(5), 979–996. https://doi. org/10.1108/IJMF-07-2021-0311
- Le, T. D., Nguyen, V. T., & Tran, S. H. (2020). Geographic loan diversification and bank risk: A cross-country analysis. *Cogent Economics & Finance*, 8(1), 1–20. https://doi.org/10.1080/23322039.2020.1809120
- Lepetit, L., & Strobel, F. (2013). Bank insolvency risk and time-varying Z-score measures. Journal of International Financial Markets, Institutions and Money, 25, 73–87. https://doi.org/10.1016/j.intfin. 2013.01.004
- Levine, R. (1998). The legal environment, banks, and long-run economic growth. *Journal of Money, Credit and Banking*, 30(3), 596–613. https://doi.org/10.2307/ 2601259
- Mercieca, S., Schaeck, K., & Wolfe, S. (2007). Small European banks: Benefits from diversification? Journal of Banking & Finance, 31(7), 1975–1998. https://doi.org/10.1016/j.jbankfin.2007.01.004
- Mirzaei, A., Moore, T., & Liu, G. (2013). Does market structure matter on banks' profitability and stability? Emerging vs. advanced economies. *Journal of Banking & Finance*, 37(8), 2920–2937. https://doi.org/ 10.1016/j.jbankfin.2013.04.031
- Muizzuddin, M., Tandelilin, E., Hanafi, M. M., & Setiyono, B. (2021). Does institutional quality matter in the relationship between competition and bank stability? Evidence from Asia. *Journal of Indonesian Economy* and Business, 36(3), 283–301. https://doi.org/10. 22146/jieb.v36i3.1428
- Nguyen, Q. K. (2022). Audit committee structure, institutional quality, and bank stability: Evidence from

ASEAN countries. Finance Research Letters, 46, 102369. https://doi.org/10.1016/j.frl.2021.102369

Nguyen, L. T., & Nguyen, K. V. (2021). The impact of corporate social responsibility on the risk of commercial banks with different levels of financial constraint. Asia-Pacific Journal of Business Administration, 13(1), 98–116. https://doi.org/10. 1108/APJBA-12-2019-0252

- Nicoló, G. D., Bartholomew, P., Zaman, J., & Zephirin, M. (2004). Bank consolidation, internationalization, and conglomeration: Trends and implications for financial risk. *Financial Markets, Institutions and Instruments*, 13 (4), 173–217. https://doi.org/10.1111/j.0963-8008.2004. 00076.x
- Ovi, N., Bose, S., Gunasekarage, A., & Shams, S. (2020). Do the business cycle and revenue diversification matter for banks' capital buffer and credit risk: Evidence from ASEAN banks. *Journal of Contemporary Accounting & Economics*, 16(1), 100186. https://doi. org/10.1016/j.jcae.2020.100186
- Pennathur, A. K., Subrahmanyam, V., & Vishwasrao, S. (2012). Income diversification and risk: Does ownership matter? An empirical examination of Indian banks. *Journal of Banking & Finance*, 36(8), 2203–2215. https:// doi.org/10.1016/j.jbankfin.2012.03.021
- Pervan, M., Pelivan, I., & Arnerić, J. (2015). Profit persistence and determinants of bank profitability in Croatia. Economic research-Ekonomska istraživanja, 28(1), 284–298. https://doi.org/10.1080/1331677X. 2015.1041778
- Petersen, M. A., & Rajan, R. G. (1995). The effect of credit market competition on lending relationships. *The Quarterly Journal of Economics*, 110(2), 407–443. https://doi.org/10.2307/2118445
- Porta, R. L., Lopez de Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113–1155. https://doi.org/10.1086/250042
- Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. *The Stata Journal*, 9(1), 86–136. https://doi.org/10.1177/ 1536867X0900900106
- Saha, M., & Dutta, K. D. (2021). Nexus of financial inclusion, competition, concentration and financial stability: Cross-country empirical evidence. *Competitiveness Review: An International Business Journal*, 31(4), 669–692. https://doi.org/10.1108/CR-12-2019-0136
- Saha, M., & Dutta, K. D. (2022). Does governance quality matter in the nexus of inclusive finance and stability? *China Finance Review International*, 13(1), 121–139. https://doi.org/10.1108/CFRI-08-2021-0166
- Sahul Hamid, F. (2017). The effect of market structure on banks' profitability and stability: Evidence from ASEAN-5 countries. *International Economic Journal*, 31(4), 578–598. https://doi.org/10.1080/10168737. 2017.1408668
- Saif-Alyousfi, A. Y., Saha, A., & Md-Rus, R. (2020). The impact of bank competition and concentration on bank risk-taking behavior and stability: Evidence from GCC countries. *The North American Journal of Economics & Finance*, 51, 100867. https://doi.org/10. 1016/j.najef.2018.10.015
- Schaeck, K., Cihak, M., & Wolfe, S. (2009). Are competitive banking systems more stable? *Journal of Money*,

Credit and Banking, 41(4), 711–734. https://doi.org/ 10.1111/j.1538-4616.2009.00228.x

- 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
- Shim, J. (2013). Bank capital buffer and portfolio risk: The influence of business cycle and revenue diversification. *Journal of Banking & Finance*, 37(3), 761–772. https://doi. org/10.1016/j.jbankfin.2012.10.002
- Soedarmono, W., Machrouh, F., & Tarazi, A. (2013). Bank competition, crisis and risk taking: Evidence from emerging markets in Asia. *Journal of International Financial Markets, Institutions and Money, 23*, 196–221. https://doi.org/10.1016/j.intfin.2012.09.009
- Son, T. H., & Liem, N. T. (2020). Financial development, business cycle and bank risk in Southeast Asian countries. The Journal of Asian Finance, Economics & Business, 7(3), 127–135. https://doi.org/10.13106/ jafeb.2020.vol7.no3.127
- Son, T. H., Nghia, H. T., & Liem, N. T. (2016). Factors affecting bank risk-taking: Evidence from Southeast Asian countries. *Journal of Economic Development*, 23(2), 120–136. https://doi.org/10.24311/jed/2016.23.2.08
- Tran, H. S., Nguyen, T. D., & Nguyen, T. L. (2022). Market structure, institutional quality and bank stability: Evidence from emerging and developing countries. Competitiveness Review: An International Business Journal. https://doi.org/10. 1108/CR-02-2022-0016
- 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
- Uhde, A., & Heimeshoff, U. (2009). Consolidation in banking and financial stability in Europe: Empirical evidence. Journal of Banking & Finance, 33(7), 1299–1311. https://doi.org/10.1016/j.jbankfin.2009. 01.006
- Van Duuren, T., de Haan, J., & van Kerkhoff, H. (2020). Does institutional quality condition the impact of financial stability transparency on financial stability? *Applied Economics Letters*, 27(20), 1635–1638. https://doi.org/10.1080/13504851.2019.1707762
- Vithessonthi, C. (2014). The effect of financial market development on bank risk: Evidence from Southeast Asian countries. *International Review of Financial Analysis*, 35, 249–260. https://doi.org/10.1016/j.irfa.2014.10.005
- Voghouei, H., Azali, M., & Law, S. H. (2011). Does the political institution matter for financial development? *Economic Papers: A Journal of Applied Economics and Policy*, 30(1), 77–98. https://doi.org/10.1111/j.1759-3441.2011.00095.x
- WB. (2019a). World Development Indicators: GDP Growth (annual %). World Bank, Washington, DC.
- WB. (2019b). World Development Indicators. World Bank, Washington, DC.
- Williamson, O. E. (1981). The economics of organization: The transaction cost approach. American Journal of Sociology, 87(3), 548–577. https://doi.org/10.1086/ 227496