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# The Impact of Bank Competition and Institutional Quality on Bank Stability: International Evidence

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## Abstract

This study aims to determine the effects of bank competition and institutional quality on bank stability. It also intends to examine the impact of competition and institutional quality on bank stability. The System Generalized Method of Moments (SYS-GMM) is used to analyze the sample, which comprises 127 countries selected from 79 developing and 48 developed countries from 1993 to 2017, based on the Global Financial Development and Worldwide Governance Indicators. The results show that competition has a negative effect, especially in developed countries. On the other hand, the institutional quality index significantly and positively influences bank stability. Furthermore, competition and institutional quality significantly affect bank stability, particularly in developed countries. This implies that increasing institutional quality encourages higher competition, improving bank stability.

**Keywords:** Bank Stability, Bank Competition, Institutional Quality

**JEL:** G20, G21, G23, O17.

## Introduction

The financial sector has become a concern for policymakers and academics after the 2007/2008 crisis. One concern is risk-taking by banks, which could hinder economic recovery after the crisis in developed and developing countries (Altunbaş et al., 2016; Lestari et al., 2022; Turgutlu, 2010). Studies linking bank competition and bank stability have shown different results (Amidu & Wolfe, 2013; Beck, 2013; Berger et al., 2009; Clark et al., 2018; Danisman & Demirel, 2019; De Nicolo & Loukoianova, 2007; Fiordelisi & Mare, 2014; Islam et al., 2020; Soedarmono et al., 2013; Tongurai & Vithessonthi, 2020; Yudaruddin, 2022). Increased competition could improve bank stability (Goetz, 2018; Saif-Alyousfi et al., 2020; Soedarmono et al., 2013). Other studies found that increased bank competition reduces bank stability (Beck, 2013; Berger et al., 2009; Clark et al., 2018; Fiordelisi & Mare, 2014).

Several studies have shown the effect of institutional quality on bank stability (Al-Shboul et al., 2020; Bermpei et al., 2018; Boulanouar et al., 2021; Muizzuddin et al., 2021; Nguyen,

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2021; Shabir et al., 2021). Improving institutional quality increases bank stability in several areas. Amidu (2022) examined the relationship between institutional quality and competition in African banking. The study found that transparency and improving the quality of regulations increase competition. According to Delis (2012), increasing institutional quality facilitates healthy competition.

This study focuses on developing and developed countries. In line with this, Turgutlu (2010) stated that the banking sector has an important economic role in developed and developing countries. Yuan et al. (2022) stated that stability directly influences the financial system of developed countries. Moreover, Bermpei et al. (2018) showed that stability is important for developing countries. Furthermore, this study aimed to examine the effect of bank competition and institutional quality on bank stability. Muizzuddin et al. (2021) analyzed the role of institutional quality in the relationship between competition and stability in Asia.

The System Generalized Method of Moments (SYS-GMM) is used to analyze the sample, which includes 127 countries chosen from 79 developing and 48 developed countries between 1993 and 2017, based on the Global Financial Development and Worldwide Governance Indicators. The z-score was used to determine stability. Meanwhile, the Boone indicator was used to assess competition as an independent variable (Albaity et al., 2019; Boone, 2008). Following the previous studies (Muizzuddin et al., 2021; Risfandy et al., 2020; Uddin et al., 2020), the institutional quality index is calculated using an average of six dimensions: voice and accountability, political stability, regulator quality, rule of law, government effectiveness, and corruption control. This study finds that voice and accountability, political stability, government effectiveness, and corruption control positively affect bank stability when mediated by competition. However, the rule of law and quality regulators negatively affect stability mediated by competition.

Unlike the prior literature, this study contributes in three ways. First, it shows that competition negatively impacts bank stability, especially in developed countries. Banks with large market power in these countries take bigger risks through high loans and become unstable. This is in line with Berger et al. (2009), which showed that banks with great power take high risks, resulting in their instability. Second, this study shows that institutional quality positively impacts bank stability, especially in developed countries. Implementing institutional quality comprising voice and accountability, political stability, quality regulator, the rule of law, government effectiveness, and good corruption control increases bank stability. Good institutional quality encourages bank stability (Al-Shboul et al., 2020; Bermpei et al., 2018; Boulanouar et al., 2021; Muizzuddin et al., 2021; Nguyen, 2021; Risfandy et al., 2020; Shabir et al., 2021). Third, this study shows that institutional quality plays a more central role in the influence of competition on bank stability in developed rather than developing countries. Good institutional quality encourages higher competition, resulting in bank stability in developed countries (Amidu, 2022; Delis, 2012; Islam et al., 2020; Muizzuddin et al., 2021; Yuan et al., 2022). This result supports Delis (2012), who found that increasing institutional quality increases competition.

## 1. Literature review

After the 2007/2008 global crisis, financial stability became a topic of discussion among

academics and policymakers. The impact of the crises on economic conditions has become a concern, encompassing global financial crises, wars, and health crises such as the COVID-19 pandemic. (Yudaruddin et al., 2023a; Riadi et al., 2022; Lestari et al., 2021). Furthermore, how it will impact the financial sector (Maria et al., 2022; Riadi et al., 2022; Yudaruddin, 2022a; Paminto et al., 2023). Subsequently, studies have shown the factors affecting financial stability. Acosta-Smith et al. (2021) found that leverage ratio requirements increase bank risk-taking in EU banks. According to Kim et al. (2020), diversification reduced bank stability before the crisis but increased during the crisis. Cubillas et al. (2021) showed that financial liberalization increased risk-taking in developed and developing countries. Defung & Yudaruddin (2022) showed economic freedom in economic freedom encourages bank stability. Furthermore, Yudaruddin (2022) found that capital ratio and financial development increased financial stability in Central Asia. Adusei (2015) and Ali & Puah (2018) showed that banks funding their activities using deposits increase stability. Noman et al. (2018) analyzed the effect of bank regulation on bank stability in Southeast Asia. The results showed that bank regulations, especially capital and supervision, promote financial stability. Additionally, Yusgiantoro et al. (2019) found that bank consolidation increases capital that prevents system fragility.

## Competition and bank stability

Studies have discussed the effect of competition on financial stability (Amidu & Wolfe, 2013; Beck, 2013; Berger et al., 2009; Clark et al., 2018; Danisman & Demirel, 2019; De Nicolo & Loukoianova, 2007; Fiordelisi & Mare, 2014; Islam et al., 2020; Soedarmono et al., 2013; Tongurai & Vithessonthi, 2020; Yudaruddin, 2022; Yudaruddin, 2023b). According to Marcus (1984) and Keeley (1990), higher competition increases the banks' risk-taking incentives. The discussion regarding the effect of competition on stability is growing, with studies showing different results.

First, several studies show that increased competition reduces bank stability. Islam et al. (2020) found that increasing market concentration could increase the risk of defaults, reducing bank stability in Indonesia and Thailand. According to Beck (2013), increased competition would significantly impact risk-taking bank incentives. Berger et al. (2009) showed that a less competitive market triggers banks to take higher risks, resulting in "too big to fail" during a crisis, which affects bank instability. Additionally, Clark et al. (2018) showed that banks with market power increase their loan portfolios, leading to bad loans and causing bank instability.

Second, high competition increased bank stability in Asia (Soedarmono et al., 2013), Indonesia, and Thailand (Islam et al., 2020). Islam et al. (2020) found that banks with enormous market power mitigated additional risk in their loans, increasing their financial stability in Malaysia and Singapore. According to Saif-Alyousfi (2018), low market power or competition reduces bank risk-taking and increases their stability. Goetz (2018) showed that competition increased bank profitability and assets, increasing bank stability in US banking. Moreover, Fiordelisi & Mare (2014) found that reduced competition lowered stability in the short and long term in European cooperative banks.

### Institutional quality and bank stability

Studies have shown that institutional quality is more important in influencing bank stability. Al-Shboul et al. (2020) analyzed the effect of political stability on bank stability in the MENA region. The results showed that increasing political instability increased information asymmetry, which could destabilize banks. Boulanouar et al. (2021) examined the effect of institutional quality measured by the quality of regulations, the rule of law, and Government Effectiveness on bank stability in GCC Countries. The study found that good regulatory quality could maintain the banking system's fragility. This results in stronger law and order necessary to improve bank stability in the GCC countries. Furthermore, Bermpei et al. (2018) analyzed the effect of institutional quality measured by political stability, the rule of law, and corruption control on financial stability in emerging markets. The results showed that political instability negatively impacts bank stability. Improving the rule of law increases stability in developing countries. In contrast, controlling corruption negatively impacts bank stability. These results indicate that increased corruption improves banks' performance to avoid complicated bureaucracy. Muizzuddin et al. (2021) found that voice, accountability, and political stability negatively impact bank stability in Asia, while government effectiveness and regulator quality have a positive impact. Furthermore, Shabir et al. (2021) found that good institutional quality mitigates the risk of political uncertainty on bank stability. Nguyen (2021) showed that increasing institutional quality encourages the audit committee's role in maintaining bank stability. According to Chen et al. (2015), high corruption increases the banks' risk-taking behavior in emerging countries.

### The role of institutional quality and competition on bank stability

Recent studies have shown a relationship between institutional quality and the effect of competition on bank stability. Muizzuddin et al. (2021) analyzed the effect of institutional quality measured by voice and accountability, political stability, government effectiveness, regulatory quality, the rule of law, corruption control, and competition measured by the Lerner Index on stability in Asia. The study found that voice, accountability, and political stability increase the stability of banks with strong market power. An effective government triggers increased competition and higher efficiency, making the banking system more stable. Moreover, improving the rule of law and regulatory quality mitigates the negative impact of competition on bank stability. Controlling corruption positively affects stability when competition is low. Amidu (2022) explained the relationship between institutional quality and competition in African banking. The study found that transparency and improving the quality of regulations increase competition. Delis (2012) also found that increasing institutional quality could increase healthy competition.

## 2. Data and methodology

This study was conducted on 48 developed and 79 developing countries from 1993 to 2017. It used institutional quality data obtained from Global Financial Development and Worldwide Governance Indicators (Muizzuddin et al., 2021; Uddin et al., 2020).

### Dependent Variable

Stability was measured using the z-score (Muizzuddin et al., 2021; Yudaruddin, 2022; Yudaruddin, 2023b):

$$Z - Score_{i,t} = \frac{ROA_{i,t} + EQ/TA_{i,t}}{STDV\ ROA_{i,t}}$$

Where ROA is the return on assets for country-level i at time t, EQ/TA is equity to total assets ratio, while STDV (ROA) is the standard deviation of return on assets.

### Independent Variable

The competition was used as an independent variable measured using the Boone indicator (Albaity et al., 2019; Boone, 2008) as follows:

$$\ln(\pi_{i,t}) = \alpha_0 + \beta_t lnMC_{i,t}$$

Where $ln(\pi_{i,t})$ and $lnMC_{i,t}$ denote the log of profits (measured by return on assets) and marginal costs for the ith bank at time t, respectively. The coefficient β indicates the Boone indicator which may take a negative or positive sign. A large negative β indicates high competition because a bank may earn more profit by lowering its marginal cost at the expense of inefficient banks in a more competitive environment.

Second, this study also uses independent variables using an institutional quality index which is measured from an average of 6 dimensions, namely voice and accountability, political stability, regulator quality, rule of law, government effectiveness, and control of corruption following the previous study (Muizzuddin et al., 2021; Risfandy et al., 2020; Uddin et al., 2020)

### Control variable

We also added some bank-specific and macroeconomic control variables that affect bank stability such as liquidity as measured by Loan to Deposit Ratio (Adelopo et al., 2017), bank diversification as measured by Non-Interest Income (Yudaruddin, 2023b), Capital to total assets (Bermpei et al., 2018), Inflation rate and GDP (Yudaruddin, 2022).

### Methodology

The purpose of our study is to examine the role of institutional quality in the effect of competition on bank stability in all countries, developing and developed countries as for Equation 1.

$$Z - Score_{i,t} = \alpha_0 + \beta_1 Z - Score_{i,t-1} + \beta_2 BOONE_{i,t} + \beta_3 ISQ_{i,t} + \beta_4 LDR_{i,t} + \beta_5 NII_{i,t} + \beta_6 CAPTA_{i,t} + \beta_7 Inf_{i,t} + \beta_8 GDP_{i,t} \quad (1)$$

Where i and t denote country level i and year t. Several studies use lagged dependent as $Z - Score_{i,t-1}$ sebagai variabel instrumen validitas GMM selain AR2 test, and Hansen-J test (Muizzuddin et al., 2021; Yusgiantoro et al., 2019). In this study, the main independent variables were Competition (BOONE) and Institutional Quality Index (ISQ). The control variables were Bank Specific (LDR, NII, CAPTA) and Macroeconomics (INF, GDP).

The competition interacted with the institutional quality index on bank stability in developing and developed countries using panel data analysis (Muizzuddin et al., 2021; Yudaruddin, 2022; Yusgiantoro et al., 2019; Yudaruddin et al., 2024).

$$Z - Score_{i,t} = \alpha_0 + \beta_1 Z - Score_{i,t-1} + \beta_2 BOONE_{i,t} + \beta_3 ISQ_{i,t} + \beta_4 (BOONE_{i,t} * ISQ_{i,t}) + \beta_5 LDR_{i,t} + \beta_6 NII_{i,t} + \beta_7 CAPTA_{i,t} + \beta_8 Inf_{i,t} + \beta_9 GDP_{i,t} \quad (2)$$

The analysis of the effect of competition and institutional quality on bank stability showed the possibility of reverse causality problems. Therefore, this study used the System Generalized Method Moment (SYS-GMM) analysis proposed by Blundell & Bond (1998). It also considered the limited sample correction proposed by Windmeijer (2005). In this case, the instruments are valid when the AR (2) and the Hansen-J tests are accepted.

## 3. Result and Discussion

### Result

Table 1 shows descriptive statistics on all countries, comprising observations (OBS), average values (MEAN), and Standard deviations (STD.DEV):

**Table 1.** Descriptive Statistics (All Countries)

| VARIABLES | MEASUREMENT | OBS. | MEAN | STD. DEV. |
|---|---|---|---|---|
| ZSCORE | Bank Stability | 3908 | 13.40 | 8.620 |
| BOONE | A measure of degree of competition, calculated as the elasticity of profits to marginal costs | 2520 | -0.550 | 7.816 |
| ISQ | Average Institutional Quality Index | 3721 | -0.008 | 0.923 |
| LDR | Loan to Deposit Ratio (%) | 4393 | 94.12 | 86.17 |
| NII | Non-Interest Income (%) | 3884 | 39.11 | 15.20 |
| CAPTA | Capital to Total Asset (%) | 2046 | 9.891 | 4.026 |
| INF | Inflation Rate (%) | 4494 | 82.92 | 33.68 |
| GDP | Growth of Gross Domestic Product (%) | 4760 | 7.234 | 11.46 |

**Source:** Author Calculation 2022

Then Table 2 shows our descriptive statistics divided into two, namely developing countries and developed countries consisting of observations (OBS), average values (MEAN) and standard deviations (STD.DEV), the results are as follows:

**Table 2.** Descriptive Statistics (Developing Versus Developed Countries)

| VARIABLES | DEVELOPED COUNTRIES | | | DEVELOPING COUNTRIES | | | DIFF. (t-stat) |
|---|---|---|---|---|---|---|---|
| | OBS. | MEAN | STD. DEV. | OBS. | MEAN | STD. DEV. | |
| ZSCORE | 2644 | 14.12 | 9.102 | 1264 | 11.90 | 7.289 | -2.221*** |
| BOONE | 1662 | -0.124 | 1.987 | 858 | -1.374 | 13.07 | -1.250*** |
| ISQ | 2574 | -0.242 | 0.814 | 1147 | 0.517 | 0.939 | 0.759*** |
| LDR | 3117 | 84.39 | 58.55 | 1276 | 117.9 | 128.1 | 33.47*** |
| NII | 2616 | 37.61 | 15.39 | 1268 | 42.21 | 14.33 | 4.601*** |
| CAPTA | 1192 | 10.25 | 3.459 | 854 | 9.389 | 4.661 | -0.862*** |
| INF | 3169 | 82.47 | 35.44 | 1325 | 84.00 | 29.01 | 1.530 |
| GDP | 3207 | 7.464 | 11.27 | 1553 | 6.758 | 11.83 | -0.706** |

**Source:** Author Calculation 2022

**Table 3.** Correlation Matrix

| VARIABLES | BOONE | ISQ | LDR | NII | CAPTA | INF | GDP |
|---|---|---|---|---|---|---|---|
| BOONE | 1.000 | | | | | | |
| ISQ | -0.141 | 1.000 | | | | | |
| LDR | 0.107 | 0.158 | 1.000 | | | | |
| NII | -0.119 | 0.034 | -0.077 | 1.000 | | | |
| CAPTA | 0.093 | -0.467 | -0.064 | 0.076 | 1.000 | | |
| INF | 0.006 | 0.066 | 0.080 | -0.120 | -0.028 | 1.000 | |
| GDP | -0.002 | -0.163 | -0.020 | 0.040 | 0.115 | -0.256 | 1.000 |

**Source:** Author Calculation 2022

Table 3 shows the presence or absence of multicollinearity. The calculation results show that the highest correlation matrix value between the Institutional quality index and capital is -0.467. This value is still below 0.8, implying the absence of multicollinearity (Lestari et al., 2022).

**Table 4.** Impact Bank Competition and Institutional Quality on Bank Stability (All Countries)

| VARIABLES | EQUATION 1 | EQUATION 2 |
|---|---|---|
| ZSCORE. L1. | 0.7936*** | 0.7961*** |
| | (0.0824) | (0.0817) |
| BOONE | -0.0226*** | -0.2160* |
| | (0.0062) | (0.1161) |
| ISQ | 0.2442*** | 0.2483*** |
| | (0.0873) | (0.0898) |
| BOONE*ISQ | | 0.1079* |
| | | (0.0619) |
| LDR | -0.0031** | -0.0030** |
| | (0.0012) | (0.0011) |
| NII | -0.0250*** | -0.0255*** |
| | (0.0094) | (0.0097) |
| CAPTA | 0.0359** | 0.0347* |
| | (0.0179) | (0.0179) |
| INF | 0.0002 | 0.0004 |
| | (0.0048) | (0.0049) |
| GDP | 0.0026 | 0.0026 |
| | (0.0063) | (0.0063) |
| Constanta | 3.6307** | 3.5729** |

| VARIABLES | EQUATION 1 | EQUATION 2 |
|---|---|---|
| | (1.3884) | (1.2396) |
| Dummy Years | YES | YES |
| Observations | 1360 | 1360 |
| Num. of groups | 127 | 127 |
| Num. of Instruments | 39 | 40 |
| AR(1) test | 0.001 | 0.001 |
| AR(2) test | 0.135 | 0.135 |
| Hansen-J test | 0.612 | 0.598 |

Note: *** sig 1%, **sig 5%, *sig 10%, Robust standard errors are in parentheses.

**Source:** Author Calculation 2022

The baseline results in Table 4 show that bank competition significantly and negatively affects bank stability in all countries, while the institutional quality index has a positive influence. The interaction between competition and institutional quality significantly and positively affects bank stability in all countries. AR (2) results have a value of 0.135 and 0.135 on Eq (1) and (2), respectively. They have the Hansen-J value of 0.612 and 0.598 on Eq (1) and (2), respectively.

**Table 5.** Impact Bank Competition and Institutional Quality on Bank Stability (Developing Versus Developed Countries)

| VARIABLES | DEVELOPING COUNTRIES | | DEVELOPED COUNTRIES | |
|---|---|---|---|---|
| | EQUATION 1 | EQUATION 2 | EQUATION 1 | EQUATION 2 |
| ZSCORE. L1. | 0.9502*** | 0.9461*** | 0.7986*** | 0.7923*** |
| | (0.0544) | (0.0543) | (0.0352) | (0.0353) |
| BOONE | -0.1742 | -0.0490 | -0.0238*** | -0.3107** |
| | (0.3132) | (0.3058) | (0.0034) | (0.1462) |
| ISQ | 0.0891 | 0.0979 | 0.8444** | 0.8998** |
| | (0.0838) | (0.0903) | (0.3551) | (0.3620) |
| BOONE*ISQ | | 0.1939 | | 0.1601* |
| | | (0.2546) | | (0.0805) |
| LDR | -0.0005 | -0.0004 | -0.0032 | -0.0034 |
| | (0.0005) | (0.0005) | (0.0043) | (0.0044) |
| NII | -0.0177* | -0.0184* | 0.0034 | 0.0008 |
| | (0.0100) | (0.0100) | (0.0052) | (0.0052) |
| CAPTA | 0.0553** | 0.0573* | 0.0268 | 0.0264 |
| | (0.0277) | (0.0288) | (0.0483) | (0.0491) |
| INF | 0.0008 | 0.0008 | 0.0042 | 0.0042 |

| VARIABLES | DEVELOPING COUNTRIES | | DEVELOPED COUNTRIES | |
|---|---|---|---|---|
| | EQUATION 1 | EQUATION 2 | EQUATION 1 | EQUATION 2 |
| | (0.0045) | (0.0047) | (0.0072) | (0.0073) |
| GDP | -0.0064 | -0.0064 | 0.0310*** | 0.0306*** |
| | (0.0081) | (0.0081) | (0.0090) | (0.0092) |
| Constanta | 0.5465 | 0.6139 | 0.8456 | 0.9705 |
| | (1.2063) | (1.1976) | (1.2021) | (1.2014) |
| Dummy Years | YES | YES | YES | YES |
| Observations | 778 | 778 | 582 | 582 |
| Num. of groups | 79 | 79 | 48 | 48 |
| Num. of Instruments | 39 | 40 | 39 | 40 |
| AR(1) test | 0.024 | 0.024 | 0.002 | 0.002 |
| AR(2) test | 0.143 | 0.146 | 0.275 | 0.277 |
| Hansen-J test | 0.551 | 0.553 | 0.107 | 0.114 |

Note: *** sig 1%, **sig 5%, *sig 10%. Robust standard errors are in parentheses.

**Source:** Author Calculation 2022

Table 5 shows that bank competition significantly and negatively affects bank stability in developed countries but has no impact in developing countries. The institutional quality index positively influences bank stability in developed countries but has no effect in developing countries. Furthermore, the interaction between competitive banks and institutional quality significantly and positively affects bank stability in developed countries. In developing countries, AR (2) has a value of 0.143 and 0.146 on Eq (1) and (2), respectively. The Hansen-J value is 0.551 and 0.553 on Eq (1) and (2), respectively. The AR (2) in developed countries has a value of 0.275 and 0.277 on Eq (1) and Eq (2), respectively. The Hansen-J value is 0.107 and 0.114 on Eq (1) and (2), respectively. Overall, the results have an AR value of (2) and Hansen's J test > 0.05, meaning the instrument is valid (Yusgiantoro, 2019).

## Discussion

The effect of the competition is significantly negative, especially in developed countries. This implies that banks with considerable market power increase their risk through high loans, making them unstable. The results support Berger et al. (2009), which found that banks with great power take high risks, creating instability in developed countries. In line with this, Clark et al. (2018) showed that banks with market power increase their loan portfolios, resulting in bad loans and bank instability.

This study also examines the effect of institutional quality on bank stability. The findings show that political stability does not affect bank stability. The rule of law, government effectiveness, corruption control, and regulatory quality significantly and positively affect bank stability, especially in developing countries. The results indicate that institutional quality is improved through

the increased rule of law, government effectiveness, corruption control, and regulatory quality. This protects banks from a system of fragility caused by high risks to the state. The results support Muizzuddin et al. (2021), who showed that government effectiveness and regulator quality positively impacted bank stability in Asia. Furthermore, Boulanouar et al. (2021) examined the effect of institutional quality measured by the quality of regulations, the rule of law, and Government Effectiveness on bank stability in emerging markets. This study found that good regulatory quality maintains the banking system's fragility. This strengthens the rule of law and order necessary to improve bank stability in emerging markets. Similarly, Bermpei et al. (2018) found that increasing the role of law and corruption control maintains bank stability in developing countries.

This study examines the effect of competition interacted with the institutional quality index on bank stability. The findings showed that institutional quality plays a more central role in the influence of competition on bank stability in developed rather than developing countries. Good institutional quality encourages higher competition, resulting in bank stability in developed countries. This result supports Muizzuddin et al. (2021), who found that increased institutional quality encourages healthier competition and bank stability. Amidu (2022) explained the relationship between institutional quality and competition. The study found that transparency and improving the quality of regulations increase competition. Additionally, Delis (2012) found that institutional quality improvement promotes healthy competition.

## 4. Conclusion

Many studies discuss the relationship between competition and stability. However, only a few examine the relationship between institutional quality and stability. This study aimed to examine the effect of competition and institutional quality on bank stability among 79 developing and 48 developed countries from 1993 to 2017. Panel data were analyzed using System GMM analysis to achieve the study objectives. The results showed that competition negatively affects bank stability, especially in developed countries. The institutional quality index measured by the rule of law, government effectiveness, corruption control, and regulatory quality significantly and positively influences bank stability. The relationship between competition and institutional quality affects bank stability, especially in developed countries. Therefore, increasing institutional quality encourages higher competition and bank stability in developed countries.

The findings of this study carry significant policy implications. Low competition threatens bank stability, meaning policymakers should improve institutional quality to protect banks from fragility. In developed countries, careful regulation of competition in the banking sector is essential to maintain a healthy balance between fostering competition and ensuring stability. Enhancing institutional quality, encompassing aspects such as the rule of law, government effectiveness, corruption control, and regulatory frameworks, is crucial to promoting greater bank stability.

This research possesses several limitations. Firstly, despite covering a study period of 25 years, the most recent period, including the COVID-19 era, has not been accounted for in this analysis. Incorporating data from such a period could bolster the

study's capacity to establish stronger claims regarding the causality between competition and stability. Secondly, the study solely utilized data from developing and developed countries. For a more comprehensive understanding, future investigations could incorporate bank-level data. They could also discuss several continents or regions such as MENA, ASEAN, GCC, and BRICS.

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