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# The Impact of Market Power, Credit Risk, and Economic Environment on the Stability of the Arab Banking Sector

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**Abstract**

The paper presents an investigation of the dialectical relationship between banking concentration and the stability of the banking sector, using data from twelve Arab countries for the period 2014-2019 in the framework of a dynamic panel data model. The findings show that the banking sector in the Arab countries follows the "Concentration-Stability" hypothesis. That is, banking concentration has a significant positive impact on bank stability. The paper explains that this result is due to two main reasons. The first reason is that large banks tend to manage their assets and capital more efficiently compared to smaller banks, while the second reason is that systemically important banks (DSIBs) are subject to additional quantitative and qualitative regulatory requirements, especially after the global financial crisis in 2008. The paper also reveals that economic growth has a significant positive effect on bank stability, while credit risk has a significant negative impact on bank stability. The paper suggests encouraging the merger of small banks, as this leads to enhancing their operational efficiency, strengthening their financial positions, and supporting their ability to absorb potential shocks.

**Keywords:** Herfindahl–Hirschman Assets Index, Arab region, dynamic panel data models, bank stability, return on assets, generalized method of moments, credit risk

## 1. Introduction

The banking sector is considered one of the most important components of the financial system due to its vital role in supporting economic growth by attracting deposits and granting loans to investors and consumers. Therefore, central banks realize that financial stability cannot be achieved without ensuring that the financial soundness indicators of banks reflect the ability of this sector to absorb potential shocks. After the global financial crisis in 2008, central banks have persevered in monitoring, identifying, and analyzing the risks that banks may face and even developed supervisory tools for early warning so that they can predict crises before they occur, which avoids costly crisis (Obeid, 2022a). Perhaps the technique of merging banks is considered one of the tools to deal with weak or unviable banks, whether in normal or stressful times, but it is known that merging banks increases concentration in the banking sector, and here questions arose as to whether increasing banking concentration or reducing competition leads to benign or negative consequences. These questions opened the researchers' appetite to delve into the analysis of the impact of concentration in the banking sector on the stability of the bank. The relationship between the desired level of concentration in the banking sector and bank stability remains ambiguous. There are two hypotheses that dominate this theoretical debate:

*The "Concentration-Stability" Hypothesis*: This hypothesis indicated that the high concentration level enhances the stability of the banks. As large-sized banks are usually characterized by having strong financial positions and having distinguished competencies in risk management and more experience in dealing with market data and achieving profits, small-sized banks may have a higher risk appetite, even competing with other banks on attracting clients and hastening to grant loans without conducting accurate credit evaluation, which may increase credit risk (Obeid, 2023a). That is, a more concentrated banking system may lead to reducing the supervisory burden, thus enhancing the stability of the banking system in general (Hellman et al., 2000).

*The "Concentration-Fragility" Hypothesis*: Some studies revealed that the high level of concentration reflects negatively on the stability of the banking system and makes it more vulnerable to risks. A higher market power allows banks to charge higher interest rates on borrowers, which in turn increases credit risk, and therefore more competitive and less concentrated banking systems are considered to be more stable (Vives, 2016, Obeid, 2022b). The discrepancy between the results of studies that dealt with the issue of concentration and its impact on

financial stability calls for more studies and analysis, especially in emerging economies, which may differ in the impact of their banking industry by market force compared to developed countries.

Nevertheless, several empirical studies found that there is no clear relationship between an increase in the concentration of the banking system and the level of its competition (Koutsomanoli-Fillipaki and Staikouras, 2006).

There are many studies that have dealt with the impact of concentration (competition) on financial stability in several regions and countries. This study presents an attempt to examine the impact of banking concentration on bank stability in the Arab region. The remainder of the study is structured as follows: Section 1 provides some literature reviews regarding the relationship between banking concentration and bank stability. Section 2 introduces the model and the data. Section 3 presents the econometric methodology adopted in the study to investigate the concentration-stability nexus of the Arab banking sector. Section 4 analyzes the empirical results. Concluding comments are provided at the end of the study.

## 2. Literature Review

### *2.1 Competitive Indicators*

Several empirical studies in the literature have examined the impact of concentration on bank stability. Where the econometrics approach was used to measure the impact of competition or concentration on financial stability, the Herfindahl-Hirschman Index (HHI) was used to express concentration or competition, while other studies used the ratio of the assets of the five largest banks to the total assets of banks to measure the impact of concentration (Bikker, 2004). Regarding the HHI index, the following equation is used to calculate this index:

$$HHI=\sum_{i=1}^{n}\left(\frac{\mathrm{Xi}}{\sum_{i=1}^{n} Xi}\right)^2 \quad (1)$$

Where *HHI* stands for Herfindahl-Hirschman Index, $X_i$ is the value of the assets (or deposits) for the bank (*i*), and *N* is the number of banks.

The Lerner Index is also considered one of the most important indicators that measure market power, The Lerner Index ranges between 0 and 1. Higher values imply greater market power, while lower values indicate that firms have perfect competition. The formula for the index can be expressed as follows:

$$Lerner_{it}=\frac{P_{it}-MC_{it}}{P_{it}} \quad (2)$$

Where *MC* stands for bank level of marginal cost and *P* is the output price measure as total income divided by total bank assets.

The Panzar and Rosse (1977) model is considered the most famous for measuring the relationship between competitiveness and stability. This model examines the relationship between a set of firm-specific variables and other control variables and their impact on returns, as shown in the equation below:

$$logTR = a_0 + \sum_{i=1}^{n}(a_1 \log w_i) + \sum_{J=1}^{n}\left(a_2 logCF_J\right) + error \quad (3)$$

Where *TR* stands for total revenue, $w_i$ is the *i-th* input factor, and *CF* is the control variable.

Panzar and Rosse (P-R) concluded that the sum of price elasticities reflects competitiveness in the market, so that if the value of H is negative, then there is a collusive oligopolist in the market, but if it is between 0 and 1, then there is monopolistic competition, and finally, if the value is 1, there is long-run competition in the market.

$$H= \sum_{i=1}^{n} a_i \quad (4)$$

In the empirical banking studies, the log of *TR* divided by total assets (*TA*) has been used as a dependent variable in the model, while the log of *TA* was added to the P-R equation (Molyneux et al., 1996) as follows:

$$\log\left(\frac{TR}{TA}\right) = a_0 + \sum_{i=1}^{n}(a_1 \log w_i) + \sum_{J=1}^{n}\left(a_2 logCF_J\right) + \log TA + error \quad (5)$$

Where *TR* stands for total revenue, $w_i$ is the *i-th* input factor, *CF* is control variables, and *TA* is total assets.

### *2.2 The Relationship between Concentration and Bank Stability*

Several empirical studies in the literature have investigated the relationship between concentration and bank stability. Some studies indicated a positive relationship between concentration and bank stability, and other

studies found a negative relationship between concentration and bank stability, but other studies, such as Claessens and Laeven (2003), found that there is no evidence that competitiveness measures negatively relate to banking system concentration. Boot and Thakor (2000) emphasized that large banks enhance the quality of their capital and invest their funds with higher quality, thus enhancing their financial positions. Cetorelli and Peretto (2000) showed that the higher concentration in the banking sector gives banks an opportunity for more accurate credit evaluation for their customers. Hillman et al. (2000) argued that banks with greater market power earn higher profits and build buffers that enhance their ability to absorb potential shocks and protect them from bankruptcy.

Other studies have shown that low concentration leads to increased competition, thus enhancing bank stability by pushing weak banks out of the market. Competition can also encourage banks to take greater risks in order to become more profitable (Bikker and Leuvenstein, 2014), which in turn may negatively affect bank stability.

Karkowska and Pawowska (2017) examined the relationship between banking concentration and bank stability of 136 banks in ten Central and Eastern European countries. The paper aimed to discuss changes in the banking sectors, with a special focus on the change in market structure, concentration, and share of foreign capital, in order to define the relationship between market structure and financial stability using the GMM estimator. The results revealed that risk persistence is influenced by the level of bank concentration, and this effect is exacerbated during deflation. The study emphasized that the regulatory authorities should realize that the concentration-stability link is much stronger when the concentration in the banking sector is lower.

Noman et al. (2017) investigated the influence of competition on the financial stability of the commercial banks of ASEAN countries over the 1990–2014 period. They found that the impact of banking concentration on bank stability depends on the proxy used to measure bank stability.

Albaity et al. (2019) analyzed the relationship between competition and banking sectors in the Middle East and North Africa (MENA region) during the period 2006–2015. The study found that competition increased credit risks, which reduced profitability.

Cobbinah et al. (2020) employed panel vector autoregressive estimation and GMM to analyze the impact of competition on bank stability in West Africa during the period 2000–2014. The study revealed that competition improves bank stability. Ijaz et al. (2020) also found that lower banking competition enhanced economic growth and increased stability in European countries over the period 2001–2017.

Jouini and Obeid (2021) found that the banking concentration has the power to influence the stability of the Arab banking sector, as it reflected positively on bank stability for the 15 Arab economies over the period 2013–2019.

Tandelilin and Hanafi (2021) examined the nexus between bank competition and stability in Asia by using the GMM estimator on a sample of 427 Asian commercial banks. The findings revealed that competition has a significant negative impact on the stability of banks, while institutional quality plays a vital role in promoting and mitigating the negative impact of competition on stability.

Chinoda et al. (2022) investigated the effects of competition and digital financial inclusion on bank stability in Sub-Saharan Africa during the period 2014–2020, and they found that digital financial inclusion has a significant positive relationship with bank stability, while bank competition (HHI) has a significant negative effect on bank stability, which means that the banking sector in Sub-Saharan Africa follows the competition-fragility view.

## 3. Data and Variables

In this paper, we assess the relationship between banking concentration and bank stability by using the *Z-Score* for 12 Arab countries (Bahrain, Egypt, Jordan, Kuwait, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Tunisia, and the United Arab Emirates) during the period 2014–2019. The study follows the methodology that has been followed in several studies, such as Tabak et al. (2013), Fu et al. (2014), and Karkowska and Pawlowska (2017). We use the following formula for the dependent variable to express the level of bank stability:

$$Z\text{-}Score_{it} = \frac{\frac{E_{it}}{TA_{it}} + ROA_{it}}{\sigma ROA_{it}} \quad (6)$$

Where *Z-Score* stands for banking sector in country *i*, in year *t*; $\frac{E_{it}}{TA_{it}}$ is the equity of banks to their total assets, *ROA* is return on assets, and $\sigma$ is the standard deviation of *ROA*.

To empirically investigate the impact of internal and external factors on bank stability, we follow Berger et al. (2009). Since the aim of our study is to explain the impact of competition on bank stability in the Arab region, the general empirical model to achieve this purpose is as follows:

$$\textit{Bank Stability} = f\ (\text{Bank Controls, Concentration Factor, Economic Environment}) \tag{7}$$

More specifically, we consider the following econometric model:

$$\textit{Z-Score}_{it} = \beta_1 \textit{Z-Score}_{it-1} + \beta_2 CONC_{it} + \beta_3 NPL_{it} + \beta_4 SIZ_{it} + \beta_5 GDP_{it} + e_{it} \tag{8}$$

Where *Z-Score* stands for bank stability for country *i*, in year *t*, $CONC_{it}$ is the Herfindahl–Hirschman Assets Index (HHI) which computes the ratio of bank assets of each bank and the sum of all the bank's assets by squaring that ratio, $NPL_{it}$ is non-performing loans to total loans ratio, $SIZ_{it}$ is the logarithm of total assets, $GDP_{it}$ is the real Gross Domestic Product growth, and $e_{it}$ is the error term.

*The Herfindahl–Hirschman Assets Index (CONC):* The main objective of our study is to measure the effect of concentration on financial stability in the Arab region. As mentioned earlier, the relationship between banking concentration and bank stability is very complicated and has three possibilities. There are many papers that show that the relationship between these two variables is positive (see Allen and Gale, 2004; Jimenez et al., 2010), while other studies reveal that the relationship is negative (see Ben Ali et al., 2018; Bikker and Leuvenstein, 2014). Finally, some studies indicate that there is no significant statistical relationship between banking concentration and bank stability (see Schaeck et al., 2006; Schaeck and Čihák, 2008; Vives, 2000).

*Non-Performing Loans (NPLs):* we use NPLs as a control variable in our model, which is expected to have a negative impact on bank stability. As is known, NPL ratio is a main indicator among the financial soundness indicators (FSIs) that measure the quality of assets. The decline in asset quality has a negative impact on financial stability. Several studies showed a negative relationship between *NPLs* and financial stability (see Matutes and Vives 2000; Jiménez et al. 2007; and Fungacova and Weill 2009).

*The natural logarithm of the assets (SIZ):* This variable is expected to have a positive or negative impact on bank stability. The relationship between bank size and bank stability is still not clear and depends on the features of the banking system in each country. Some studies indicate that an increase in bank assets leads to a decline in the stability of the banking sector. Large banks are associated with an increase in the number of NPLs. So, this argument supports the concentration-fragility hypothesis (see Beck, 2008). Other studies revealed that the relationship between the size of banks and stability would be positive (see Karkowska and Pawlowska, 2017).

*The real Gross Domestic Product growth (GDP):* We include the GDP growth rate (GR) in our model to capture economic risk; this variable is expected to have a positive effect on the stability of the banking system. The attractive economic environment will enhance the cash flows of companies and households' sectors, thus enhancing their ability to pay their obligations to banks. Also, increasing certainty and confidence in the economy will lead to an increase in the demand for loans directed to investment in productive projects, which in turn will raise the profitability of banks (see Obeid et al., 2017).

**4. Econometric Methodology**

In order to assess the responses of bank stability to the fluctuations in the bank-specific concentration, and economic variables, this paper uses the difference Generalized Method of Moments (GMM), developed by Arellano and Bond (1998), to estimate dynamic panel data models. Practically, the model takes the following form:

$$\begin{cases} Y_{it} = \alpha_i + \beta Y_{i,t-1} + \gamma B'_{it} + \delta M'_{it} + \varphi F'_{it} + v_{it} \\ \quad i = 1, 2, \dots, N,\ t = 1, 2, \dots, T \end{cases} \tag{9}$$

where $i$ stands for cross-section dimension (country) and $t$ for time series dimension (time period); $Y_{it}$ is bank stability; $B_{it}$ is the vector of bank control variables (non-performing loans and natural logarithm of the assets); $M_{it}$ is the vector of concentration Factor, and $F_{it}$ is the vector of economic environment indicator; and $v_{it}$ is the disturbance term. Regarding the model coefficients, $\alpha_i$ measure the individual-specific effects; the coefficient $\beta$ assesses the response of the bank stability to its past own values, the vector $\gamma$ assesses the effects of the bank-specific factors on bank stability, the vector $\delta$ assesses how bank stability reacts to the concentration factor, and the vector $\varphi$ reveals the impact of the economic indicators on the bank stability.

We use the GMM estimators, which remove the individual-specific effect by transforming the model into the first difference form:

$$\Delta Y_{it} = \beta \Delta Y_{i,t-1} + \gamma \Delta B_{it} + \delta \Delta M_{it} + \varphi \Delta F_{it} + \Delta v_{it} \quad (10)$$

Arellano and Bond (1998) improved the first-differenced GMM estimator that opts for two or more lagged values of the independent variables as instruments; they assumed no autocorrelation in the error term $v_{it}$ and weak exogenous explanatory variables. Thus, the estimator is based on the following moment conditions:

$$E\left[X_{i,t-j} \Delta v_{it}\right] = 0, \;\; j \geq 2, t = 3, 4, \ldots, T \quad (11)$$

where $X_{i,t-j} = Y_{i,t-j}, B_{i,t-j}, M_{i,t-j}, F_{i,t-j}$.

Arellano and Bond (1998) proposed calculating one-step and two-step estimators. In our paper, we use the two-step GMM estimator that is asymptotically more efficient than the one-step GMM estimator.

## 4. Analysis of Results

Table 1 presents the descriptive statistics of the variables used to investigate the nexus between market power and the stability of banks in the Arab region, while Table 2 reports the correlation matrix. The values by country provide evidence of negative and positive relationships between the dependent and independent variables. Regarding the full panel, the stability of the bank is positively affected by the independent variables, except NPLs. This leads us to further investigate the intensity of these relationships by using the above econometric methodology.

Table 3 reports the results of the estimation of our model that we use in the study, where the results show that the effect of banking concentration has a significant positive effect on the stability of the bank, meaning that the relationship between concentration in the banking sector and the stability of the bank in the Arab countries follows the "concentration-stability" hypothesis. An increase in banking concentration of 1 unit leads to an increase in the stability of the bank of 1.146 units. This result shows that systemically important banks (DSIBs) are more efficient in managing their assets and capital. In addition to that, the regulatory requirements of capital adequacy, liquidity, and other requirements in general are higher for large-sized banks due to their systemic importance. Therefore, a high concentration in the banking sector indicates greater stability and reduces the possibility of a systemic financial crisis. Also, DSIBs are usually subject to intense supervision by central banks, according to the requirements of the Basel Committee on Banking Supervision. It should be noted that many Arab central banks have issued instructions that include quantitative and qualitative requirements for DSIBs. Therefore, there are two aspects that justify the conclusion reached by this paper. The first aspect is that large banks are inherently more experienced and efficient in risk management compared to smaller banks, and the second aspect is the strict regulatory requirements to which systemically important banks are subject. Thus, the increase in concentration in the banking sector is logically expected to lead to its stability.

Regarding non-performing loans, the results show that there is a significant negative relationship between this variable and the stability of the bank, as the deterioration of the asset quality leads to a decline in the degree of stability of the bank as a result of the possibility of a decrease in its profits generated from granting loans. Furthermore, the decline in the asset's portfolio quality would incur additional financial costs, as the bank would be obliged, according to accounting standards, to deduct provisions from profits to face credit risks. It should be noted that the size of credit facilities may be affected in general by macroprudential policy tools used to reduce systemic risks, so the use of any of these tools may reduce the impact of NPLs on the stability of the bank, for example, by setting a cap on the debt-to-income ratio that will restrict the ability of customers to borrow, enhance responsible finance, and thus reflect positively on financial stability (Obeid, 2023c). Also, the easing of those restrictions will lead banks to expand borrowing, especially if this is accompanied by an accommodative monetary policy (Obeid and Awad, 2018).

With regard to the size of the bank (assets), the results show that there is a significant positive relationship between the size of the bank and its stability, as large-sized banks are usually characterized by high operational efficiency and have a greater ability than small-sized banks to manage risks and generate profits (Obeid, 2023b).

Finally, the results show that there is a significant positive relationship between economic growth and the stability of the bank, as a stable economic environment attracts more investments and enhances the confidence of depositors and investors in the economy and the banking system. Moreover, the cash flows of the bank's clients from both the individual and corporate sectors will improve during periods of economic prosperity. thus,

enhancing their ability to fulfill their obligations to banks (Obeid and Awad, 2017).

Table 1. Descriptive statistics of the variables

| **Country** | SIZ | CONC | NPL | GDP |
|---|---|---|---|---|
| **Bahrain** | | | | |
| Mean | 4.312 | 0.129 | 3.024 | 3.386 |
| Std. Dev. | 2.042 | 1.550 | 4.165 | 1.412 |
| **Egypt** | | | | |
| Mean | 6.142 | 0.137 | 6.648 | 4.125 |
| Std. Dev. | 1.088 | 4.215 | 7.151 | 1.209 |
| **Jordan** | | | | |
| Mean | 1.218 | 0.112 | 5.831 | 2.352 |
| Std. Dev. | 2.113 | 0.423 | 4.314 | 0.529 |
| **Kuwait** | | | | |
| Mean | 5.135 | 0.103 | 2.152 | 0.304 |
| Std. Dev. | 0.815 | 1.431 | 0.542 | 2.369 |
| **Morocco** | | | | |
| Mean | 5.321 | 0.141 | 7.412 | 3.240 |
| Std. Dev. | 0.652 | 0.261 | 6.561 | 1.281 |
| **Oman** | | | | |
| Mean | 3.221 | 0.174 | 2.415 | 2.393 |
| Std. Dev. | 2.211 | 0.444 | 2.261 | 2.638 |
| **Palestine** | | | | |
| Mean | 0.912 | 0.171 | 3.315 | 2.960 |
| Std. Dev. | 2.113 | 1.215 | 4.355 | 3.111 |
| **Qatar** | | | | |
| Mean | 6.215 | 0.167 | 1.621 | 2.746 |
| Std. Dev. | 0.142 | 1.899 | 0.451 | 2.425 |
| **Saudi A.** | | | | |
| Mean | 8.626 | 0.136 | 1.651 | 2.022 |
| Std. Dev. | 7.441 | 0.340 | 0.826 | 1.657 |
| **Sudan** | | | | |
| Mean | 0.370 | 0.191 | 7.848 | 1.808 |
| Std. Dev. | 4.251 | 4.251 | 6.831 | 3.192 |
| **Tunisia** | | | | |
| Mean | 2.210 | 0.121 | 15.512 | 1.975 |
| Std. Dev. | 6.215 | 0.451 | 5.121 | 0.729 |
| **UAE** | | | | |
| Mean | 9.415 | 0.165 | 4.431 | 3.249 |
| Std. Dev. | 0.548 | 1.408 | 4.073 | 1.546 |
| **Full panel** | | | | |
| Mean | 4.425 | 0.146 | 5.155 | 2.253 |
| Std. Dev. | 3.541 | 4.513 | 5.834 | 4.467 |

*Source.* author's calculations.

Table 2. Correlations between the bank stability and the other variables

| **Country** | SIZ | CONC | NPL | GDP |
|---|---|---|---|---|
| Bahrain | 1.112 | -0.354 | 0.023 | -0.343 |
| Egypt | 2.514 | 0.179 | -0.125 | -0.184 |
| Jordan | 3.152 | 0.150 | -0.251 | -0.473 |
| Kuwait | 0.159 | 0.648 | 2.134 | 0.248 |
| Morocco | -1.025 | 0.614 | -3.151 | -0.216 |
| Oman | -0.253 | -0.154 | -2.125 | -0.457 |
| Palestine | -2.103 | 0.669 | -0.921 | 0.162 |
| Qatar | 3.251 | 0.950 | -0.051 | -0.838 |
| Saudi A. | 1.235 | -0.226 | 0.025 | -0.745 |
| Sudan | 2.012 | 0.254 | -1.352 | -0.385 |
| Tunisia | -0.258 | 0.354 | -2.130 | 0.027 |
| UAE | -0.025 | -0.291 | 0.325 | -0.025 |
| Full Panel | 1.023 | 0.300 | -0.035 | 0.114 |

*Source.* author's calculations.

Table 3. Two-step system GMM estimates (Z-Score the dependent variable)

| **Variable** | Coefficient | Prob. |
|---|---|---|
| *Z-Score* (-1) | 0.380*** | 0.005 |
| *CONC* | 1.146*** | 0.006 |
| *NPL* | -1.231** | 0.031 |
| *SIZ* | 1.021** | 0.045 |
| *GDP* | 3.215* | 0.075 |
| Wald Test | 1.315E+5+++ | |
| | (0.000) | |
| Autocorrelation Test | 0.984 | |
| | (0.361) | |
| Sargan Test | 15.75 | |
| | (0.516) | |
| Hansen Test | 3.54 | |
| | (0.739) | |

**Notes:** Wald test for overall significance of the model, Autocorrelation test for no second-order serial correlation in first-differenced errors, Sargan test refers to overall validity of the instruments while Hansen test check over-identifying restrictions. The values in parentheses are the *p*-values of the tests. ***, ** and * refer to statistical significance at the 1%, 5% and 10% level respectively. +++ stands for rejection of the null hypothesis at the 1% level.

*Source.* author's calculations.

## 7. Conclusion and Policy Suggestions

Using a dynamic panel data framework, the paper presents an investigation of the dialectical relationship between banking concentration and stability of the bank using the data of the banking sector in twelve Arab countries for the period 2014–2019. The results show that the banking sector in the Arab countries follows the hypothesis of concentration–stability. Accordingly, the study recommends conducting more analytical studies on the dialectical relationship between banking concentration and bank stability. The paper also recommends that central banks encourage mergers of small banks in order to enhance banking competition and the operational efficiency of banks. In times of crisis, it is imperative that the selection of the merger tool or purchase and assumption (as a tool of crisis resolution techniques) be based on the least cost analysis methodology. Finally, it is important for central banks to apply the principle of "proportionality" in banking supervision and to intensify supervision over banks of systemic importance.

The paper also recommends the importance of developing risk management tools in the banking sector, especially early warning indicators and micro- and macro-stress tests, in order to identify the risks that the bank may be exposed to. This includes adopting scenarios that measure the impact of systemic and economic risks on financial soundness indicators (FSIs) and their implications for financial stability. It is also important for central banks to continuously assess systemic risks and apply stress tests that measure contagion risks in the financial system in order to ensure continuous improvement of the operational efficiency of banks and enhance their ability to face systemic risks and absorb potential shocks. The paper also suggests that central banks continue to strengthen governance and risk management frameworks in the banking sector and intensify supervision of DSIBs.

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