

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

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Abstract

The study continues in the same momentum of empirical works on the concentration-stability relationship of the banking sector by examining such relationship for a panel of 15 Arab economies over the 2013-2019 period in the framework of dynamic panel data models and by controlling for auxiliary variables, namely the growth of the gross loan for the banking sector and the economic growth.

The findings show that the banking concentration has the power to influence the stability of the Arab banking sector, as it reflected positively on financial stability for the selected Arab economies over the period under study. They also reveal that the growth of the gross loan for the banking sector and the economic growth exert significant and positive effects on financial stability. The study provides relevant policy recommendations for the policymakers to help them enhance the stability of the Arab banking sector, depending on the intrinsic features of each country.

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Introduction

The banking sector plays an important role in financial intermediation by directing savings concentrated in deposits with the banking system to various economic sectors, thus enhancing inclusive and sustainable economic and social development. Economic development, access to finance and financial stability are issues that have gained momentum and become among the priorities, especially after the 2008 global financial crisis, particularly in emerging countries, due to the role played by banks in their economies. Therefore, standard setting bodies and central banks have warned of the need to strengthen the ability of the banking system to absorb shocks, as well as to continuously assess the risks to which the banking system may be exposed in order to enhance financial stability.

The relationship between financial stability and the desired level of banking concentration remains ambiguous. Indeed, there are two competing models that dominate the theoretical debate in this regard. On the one hand, several studies have indicated that the high level of concentration improves the stability of the banking system, the so-called "Concentration-Stability" hypothesis. On the other hand, some studies have indicated that the high level of concentration negatively affects the stability of the banking system and makes it more vulnerable to risks, the so-called "Concentration-Fragility" hypothesis.

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The “Concentration-Stability” hypothesis indicates that banking concentration may lead to higher market power and higher profits. Large-sized banks are usually characterized by strong financial positions, and have distinguished skills in risk management as well as greater experience in dealing with market data and achieving profits. However, small-sized banks may have a higher risk appetite and may even compete with other banks to attract customers and hasten to grant loans without performing an accurate credit evaluation, which may increase credit risks, that is, a more concentrated banking system can lead to a reduction in the supervisory burden, thereby enhancing the stability of the banking system in general (see Hellman et al., 2000).

The “Concentration-Fragility” hypothesis indicates that highly concentrated markets increase market power and profits for large banks. However, greater market power allows banks to rise interest rates, which in turn increases the level of risk for borrowers and the probability of non-performing loans ratio. Consequently, more competitive and less concentrated banking systems are more stable (see Vives, 2016; and Jouini and Obeid, 2020). The discrepancy between the outcomes on the concentration-stability in the literature calls for more empirical studies, especially in the emerging economies whose banking industry may differ from that of the developed countries.

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Many studies in the literature have dealt with the concentration-stability nexus of the banking sector in several regions and countries. The current study continues in the same momentum of empirical studies in the framework of dynamic panel data models for a set of 15 Arab economies over the 2013-2019 period. We control for two auxiliary variables in the model, namely the growth of the gross loan for the banking sector and the economic growth to consider a more generalized model to shed more light on various channels that may exert an effect on financial stability, thus providing relevant policy recommendations for the Arab banking decision-makers.

The outcomes show that the banking concentration follows the hypothesis of “Concentration-Stability” for the set of Arab countries over the study period. Indeed, the current level of stability of the banking sector significantly and positively responds to the changes in its past own value. The findings also reveal that banking concentration exerts a significant and positive impact on financial stability. Additionally, the financial stability significantly and positively reacts to the fluctuations in the auxiliary channels, namely the growth of the gross loan for the banking sector and the economic growth. The study provides relevant policy recommendations for the Arab banking sector authorities to help them enhance the level of financial stability, depending on the intrinsic features of each Arab banking sector.

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The remainder of the study is structured as follows. Section 1 briefly reviews related empirical studies on the concentration-stability nexus. Section 2 provides some insights on the Arab banking sector. Section 3 presents the model and the data. Section 4 introduces the econometric methodology adopted in the study to investigate the effects of banking concentration on the level of stability of the Arab banking sector. Section 5 analyses the empirical results. Concluding comments and policy recommendations are provided at the end of the study.

1. Literature review

Several empirical studies in the literature have examined the effects of banking concentration on financial stability, with no consensual outcomes about the nature of the relationship between them. Within this context, Rosse and Panzar (1977) assess the extent to which the fluctuations in input prices affect banks' revenues in 50 countries. Boot and Thakor (2000) outline that large banks can improve their financial positions, as they enhance the quality of their capital and invest their funds with higher quality. Cetorelli and Peretto (2000) reveal that higher banking concentration allows banks to conduct more accurate credit evaluation for their customers. Hellmann et al. (2000) point out that banks with higher market power make more earnings and build buffers that allow them to enhance their resilience to absorb shocks and protect them from bankruptcy.

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Other previous studies have shown that low concentration improves competition and, thus, boost financial stability by pushing weak banks out of the market. Bikker and Leuvenstein (2014) outline that competition can incite banks to take higher risks to be more profitable, thus affecting negatively financial stability. Ben Ali et al. (2015) investigate the indirect effect through which banking concentration may affect financial stability for a panel of 173 countries. Karkowska and Pawłowska (2017) examine the linkages between banking concentration and financial stability for a set of 136 banks in ten Central and Eastern European countries. The results indicate that the level of banking concentration may influence risk persistence, especially during deflation, and emphasize that the concentration-stability nexus is much stronger when the banking concentration is lower.

Noman et al. (2017) examine the links between banking concentration and financial stability for ASEAN countries. The results are mixed, as the effect of banking concentration on financial stability depends on the proxy used to measure the financial stability, thus supporting the assumption of competition-stability for ASEAN banks.

2. Insights on the Arab banking sector

The banking sector in the Arab region plays an important role in the national economy through the liquidity needed for economic

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activities. Indeed, the volume of the banking sector's assets reached about \$ 3.6 trillion in 2019, which represents 142% of the GDP of the Arab region (see Arab Monetary Fund, 2020). Accordingly, it is important to strengthen the Arab banking sector, so that it can be reflected positively on the economic and financial stability in the Arab region, despite the challenges and risks faced by this sector due to regional and global shocks and crises.

To measure the operational bank's efficiency, the return on assets (ROA) and the return on equity (ROE) are the most important ratios to consider. The ROA reflects the efficiency of the credit granting process of the banking sector and its ability to maintain assets by achieving good profitability on them, thus boosting the flow of investments and improving the confidence degree in the integrity of the banking sector. From Figure 1, we observe that the ROA ranges between 1.23% and 1.51% for the Arab region over the 2013-2019 period. For the values by country (see Figure 2), Saudi banks record the highest ROA (1.8%) followed by Emirati and Qatari banks (1.6%), whereas Lebanese banks experience the lowest ROA (0.2%). These values reflect the ability of the Arab banking sector to efficiently employ the sources of its assets over the 2013-2019 period, despite the challenges and shocks that the Arab economies faced during this period.

Regarding the market share of the assets of the Arab banking sector in 2019 (see Figure 3), Emirati banks hold the greatest share, as they

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acquire 23.2% of the assets of the Arab banking sector, followed by Saudi and Qatari banks with a market share of 19.4% and 11.8%, respectively, implying that these three countries acquire 55.4% of the assets.¹ All the GCC banks acquire 66.1% of the total banking sector assets in the Arab region, whereas the share reached about 64.6% in 2018. For the non-GCC countries, Egyptian banks accounted for 10.1% of the total assets of the Arab banking sector, followed by Lebanese, Moroccan and Algerian banks with a share of 6.2%, 4.3% and 3.9%, respectively.

Figure 4 plots the ratio of the assets of the five largest banks to the total assets in the Arab banking sector over the 2013-2019 period. The average ratio reached 67.9% in 2019 and is around 67% over the 2013-2018 period, indicating a high concentration of the banking sector in the Arab region.

3. Model and data

The current study assesses the effect of banking concentration on financial stability by controlling for two auxiliary variables for a panel of 15 Arab countries (Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia,

¹ It is worth noting that the share of the Emirati, Saudi and Qatari banks reached 53% in 2018.

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Sudan, Tunisia, and the United Arab Emirates (UAE)) over the 2013-2019 period. Practically, we consider the following model:

$$\begin{cases} FS_{it} = \alpha_0 + \alpha_1 BC_{it} + \alpha_2 CR_{it} + \alpha_3 GR_{it} + u_{it} \\ i = 1, 2, \dots, N, t = 1, 2, \dots, T \end{cases} \quad (1)$$

where i stands for country and t for time, BC_{it} is the banking concentration (or competition) measured by the ratio of the assets of the five largest banks to the total assets of banks (see Bikker, 2004),² CR_{it} is the growth of the gross loan for the banking sector, GR_{it} is the real Gross Domestic Product growth, and u_{it} is the error term.

Following Fu et al. (2014), Tabak et al. (2013), and Karkowska and Pawłowska (2017), the level of financial stability FS_{it} is measured as follows:

$$FS_{it} = \frac{CAR_{it} + ROA_{it}}{\sigma_i \cdot ROA_{it}} \quad (2)$$

where CAR_{it} is the capital adequacy ratio, ROA_{it} is the return on assets, and σ_i is the standard deviation of the ROA_{it} . It is worth noting that the greater the FS_{it} value, the higher the financial stability level. There is a negative relationship between the level of financial stability and the bank's probability of failure (see Berger et al., 2009).

² Other approaches are proposed to measure the banking concentration, such as the Herfindahl-Hirschman index, the Lerner index, and the Panzar-Rosse H-statistic.

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Under these conditions, the coefficient α_1 assesses the effect of banking concentration on financial stability. Given the complexity of the relationship between these variables, previous studies in the literature reveal that the nexus is positive, as evidenced by Allen and Gale (2004), and Jiménez et al. (2013). In this context, it is argued that increases in banking concentration make the market contain large banks, which usually have strong financial positions and strong risk management. However, other studies show that the relationship between financial stability and banking concentration is negative, as argued by Ben Ali et al. (2015), and Bikker and Leuvenstein (2014). In this context, it is shown that pushing unstable banks out of the market may reduce banking concentration and, thus, enhance financial stability. Additionally, competition can encourage banks to take higher risks in order to increase their profitability. It is also found in the literature that the relationship between financial stability and banking concentration cannot be significant, as indicated by Schaeck et al. (2006), and Schaeck and Čihák (2008).

The coefficient α_2 shows how financial stability responds to the changes in the growth of the gross loan for the banking sector. The coefficient sign depends on the operational efficiency and efficiency of risk management of the bank, as granting credit is the core business of the banks that make great efforts to conduct an accurate credit evaluation before granting credit in order to achieve more profits through loan interest earnings. Therefore, the cash flows will be affected if customers are unable to pay their obligations, thus

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affecting negatively the bank's profits, and pushing banks to allocate portion of profits to build the necessary provisions. It is known that the NPLs ratio is a main financial soundness indicator and is considered the most important indicator for measuring the quality of assets within the Capital adequacy, Asset quality, Management, Earnings, and Liquidity (CAMEL) system. Under these conditions, the decline in asset quality negatively affects financial stability (see Matutes and Vives 2000, Jiménez et al. (2014), and Fungacova and Weill, 2010).

The coefficient α_3 measures the effect of economic growth on financial stability. The nexus between these variables is expected to be positive, as the attractive economic environment may be reflected positively on cash flows of companies and households and, thus, on their solvency, enhancing their ability to repay their obligations to banks. Furthermore, increasing certainty and confidence in the economy may enhance the demand for investment loans, thus raising banks' profitability (see Obeid and Adeinat, 2017).

Data are annual and collected from different sources. Indeed, data on the capital adequacy ratio, the return on assets, the banking concentration, and the growth of the gross loan for the banking sector are collected from financial stability surveys; while data on real GDP are gathered from World Development Indicators published by the World Bank.

4. Econometric methodology

We opt for the system Generalized Method of Moments (GMM), proposed by Blundell and Bond (1998), to estimate the panel data model linking financial stability to banking concentration and two auxiliary variables. In addition to controlling for any potential endogeneity that may arise from regressors, the system GMM procedure is characterized by better finite sample properties for weak instruments. For the estimation of the model coefficients, the procedure considers lagged and differenced independent variables as instruments (see Hoeffler, 2002; and Das and Paul, 2011).

Practically, the dynamic panel data model is expressed as follows:

$$Y_{it} = \beta_0 + \beta_1 Y_{i,t-1} + \beta_2 X_{it} + \mu_i + v_{it} \quad (3)$$

where Y_{it} is the level of financial stability; X_{it} is the vector of regressors, namely the banking concentration, the growth of the gross loan for the banking sector, and the growth rate; μ_i is the unobserved country specific effect; and v_{it} is the error term with $E(\mu_i) = 0$, $E(v_{it}) = 0$ and $E(\mu_i v_{it}) = 0$. After taking the first-difference, the model is written as follows:

$$\Delta Y_{it} = \beta_1 \Delta Y_{i,t-1} + \beta_2 \Delta X_{it} + \Delta v_{it} \quad (4)$$

The application of the OLS method to estimate this model generates biased estimator for the coefficient β_1 , which can be alleviated by the

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GMM approach using instruments. This can be done based on the following moment conditions by assuming no autocorrelation in the disturbance term and no correlation between the regressors and the future values of the error term (see Carkovic and Levine, 2005):

$$E[Y_{i,t-j}(v_{it} - v_{i,t-1})] = 0, \quad j \geq 2, 3, \dots, (T - 1); \quad t = 3, 4, \dots, T \quad (5)$$

$$E[X_{i,t-j}(v_{it} - v_{i,t-1})] = 0, \quad j \geq 2, 3, \dots, (T - 1); \quad t = 3, 4, \dots, T \quad (6)$$

To solve the issue of weak instruments in the first difference estimators in Eqs. (5) and (6), Blundell and Bond (1998) combine the levels and differences models in a system of equations such that

$$E[Y_{i,t+p}v_{it}] - E[Y_{i,t+q}v_{it}] = 0, \quad \forall p, q \quad (7)$$

$$E[X_{i,t+p}v_{it}] - E[X_{i,t+q}v_{it}] = 0, \quad \forall p, q \quad (8)$$

Additional moment conditions are considered:

$$E[\Delta Y_{i,t-1}(\mu_i + v_{it})] = 0 \quad (9)$$

$$E[\Delta X_{i,t-1}(\mu_i + v)] = 0 \quad (10)$$

Consistent and efficient model estimators are determined by the system GMM procedure based on the moment conditions given by Eqs. (5), (6), (9) and (10).

5. Analysis of the results

5.1. Descriptive analysis

The summary statistics reported in Table 1 reveal that Iraq experiences the highest average level of financial stability (937.346) followed by Kuwait (172.629) and Jordan (165.437), indicating that the operational efficiency of the banking sector in these countries is better compared to the other economies.³ The average return on assets for Iraq, Kuwait and Jordan is higher than the average level of financial stability over the full panel of countries (151.150). The volatility of the level of financial stability differs across the countries under study, as indicated by the values of standard deviation, where Iraq is the most volatile (243.657), and Sudan is the least volatile (1.639). Furthermore, the results reveal discrepancies in the average and volatility of the banking concentration, the growth of the gross loan for the banking sector, and the economic growth across economies.

The correlations between the level of financial stability and the considered determinants are reported in Table 2. The values by country provide evidence of mixed (positive and negative) relationships between the level of financial stability on the one hand, and the banking concentration, the growth of the gross loan for the

³ See Figure 5 that plots the evolution of the level of financial stability in the Arab banking sector over the 2013-2019 period.

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banking sector, and the economic growth on the other hand across the economies under study. For the full panel of countries, the level of financial stability is positively connected to the banking concentration (0.300), the growth of the gross loan for the banking sector (0.094), and the economic growth (0.114). This correlation analysis cannot be conclusive regarding the nature and the intensity of the relationship between the level of financial stability and the other variables, leading us to study such relationship for the considered set of countries based on the above econometric methodology to achieve the objectives of the study.

5.2. Determinants of financial stability

The estimate results of the reactions of the level of financial stability to the changes in the banking concentration, the growth of the gross loan for the banking sector, and the economic growth are presented in Table 3. They indicate that the current level of financial stability responds positively and significantly to its past own level. Indeed, an increase by one unit in the past level of financial stability generates an increase by 0.410 unit in the current level. The banking concentration, the growth of the gross loan for the banking sector, and the economic growth are relevant drivers, as they have the power to significantly and positively affect the level of financial stability. Within this context, it is found that an increase by one unit in the banking concentration, the growth of the gross loan for the banking

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sector, and the economic growth leads to an increase by 3.336, 1.081, and 4.738 unit in the level of financial stability, respectively.

The significant and positive effect of the banking concentration on financial stability can be due to the fact that a merger between banks in Arab countries has led to strengthen their financial positions, thus highlighting the important role of central banks in the Arab region in encouraging the merger between banks, and the existence of resolution techniques that put the liquidation solution as the last option within the banking crisis. Moreover, these results show that banks, regardless of their size, may have efficient and effective risk departments that balance between generating profits and risk management. Finally, the application of Basel requirements regarding banks of Domestic Systemically Important Banks (D-SIBs) requires additional capital buffers. Therefore, the D-SIBs usually enjoy high capital adequacy with effective risk management, which will be reflected positively on financial stability through enhancing the ability of large banks to absorb potential shocks.

The significant and positive relationship between the growth of the gross loan for the banking sector and financial stability emphasizes that the ability of bank management to generate profits efficiently, taking into account the risks of customers, will reflect positively on financial stability. This result shows that the efficiency of granting credit in the banking sector leads to achieve more financial stability levels.

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The significant and positive impact of economic growth on financial stability is expected, as improved economic conditions may encourage investment and borrowing, and create an attractive economic environment on the one hand, and enhance the solvency of individuals and companies on the other hand, thus leading to enhance financial stability.

5.3. Diagnostic analysis

In addition to the statistical significance of all the model coefficients, as evidenced above, we check the validity of the estimated model and, thus, the consistency of the two-step system GMM estimators by applying the Wald test for overall significance, the second-order serial correlation test, and the Sargan test for validity of the over-identifying restrictions. The results reported in Table 3 indicate that the Wald test rejects the null hypothesis that all coefficients (except the constant term) are equal to zero, thus providing evidence of overall significance of the model. Additionally, the results reveal no autocorrelation in the first-differenced errors, as the test does not reject the null hypothesis. Finally, the Sargan test does not reject the null hypothesis of validity of the over-identifying restrictions, thus suggesting overall validity of the instruments. Overall, all the diagnostic tests support the two-step system GMM estimators of the relationship between the level of financial stability and the three determinants, namely the banking concentration, the growth of the gross loan for the banking sector, and the economic growth.

Conclusion and policy recommendations

The study examines the relationship between financial stability and banking concentration by controlling for two auxiliary variables, namely the growth of the gross loan for the banking sector and the economic growth, in the Arab region for a panel of 15 economies over the 2013-2019 period by applying the system GMM estimation method in the framework of dynamic panel data models. The obtained results show evidence of significant and positive effects of banking concentration on financial stability. Furthermore, the auxiliary determinants have the power to exert a significant and positive effect on financial stability. The analysis provides relevant policy recommendations for the Arab banking decision-makers:

1. Arab central banks could continue to strengthen the banking crisis management system based on suitable resolution techniques to deal with weak banks, to encourage the merging of small-sized banks, and to make the liquidation solution as the last solution to deal with the weak banks.
2. Arab central banks could carry out supervision tasks on banks by applying the principle of proportionality, and intensify inspection missions on D-SIBs.
3. The no exaggeration of the licensing of new banks, provided that the license takes into account market conditions.

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4. The departments of banking supervision and financial stability in central banks could coordinate to monitor the risks arising from the banking system from micro and macro perspectives.

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References

Allen, F. and Gale, D. (2004). Competition and financial stability. *Journal of Money, Credit and Banking*, 36, 433–480.

Arab Monetary Fund (2020). *Arab Financial Stability Report*, Abu Dhabi, UAE.

Ben Ali, M., Timoumi, I. and Zeitun, R. (2015). Banking concentration and financial stability: Evidence from developed and developing countries. *Economics Discussion Papers 2015-22*, Kiel Institute for the World Economy (IfW).

Berger, A., Klapper, L. and Turk-Ariss, R. (2009). Bank competition and financial stability. *Journal of Financial Services Research*. 35, 99–118.

Bikker, J.A. (2004). *Competition and Efficiency in a Unified European Banking Market*. Edward Elgar, Cheltenham.

Bikker, J.A. and Leuvensteijn, M. (2014). *A New Measure of Competition in the Financial Industry: The Performance-Conduct-Structure Indicator*. Routledge.

Blundell, R. and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87, 115–143.

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Boot, A. and Thakor, A. (2000). Can relationship lending survive competition? *Journal of Finance*, 55, 679–713.

Carkovic, M. and Levine, R. (2005). Does foreign direct investment accelerate economic growth? In T. Moran, E. Graham, & M. Blomstrom (Eds.), *Does foreign direct investment promote development?* (pp. 195–220). Washington, DC: Institute for International Economics and Center for Global Development.

Cetorelli, N. and Peretto, P.F. (2000). Oligopolopoly banking and capital accumulation. Federal Reserve Bank of Chicago, Working paper, No. 2000-2.

Das, A. and Paul, B.P. (2011). Openness and growth in emerging Asian economies: evidence from GMM estimations of a dynamic panel. *Economics Bulletin*, 31, 2219–2228.

Fungacova, Z. and Weill, L. (2010), How Market Power Influences Bank Failures: Evidence from Russia. Working Papers of LaRGE Research Center 2010-08, Laboratoire de Recherche en Gestion et Economie (LaRGE), Université de Strasbourg.

Fu, X., Lin, Y. and Molyneux, P. (2014). Bank competition and financial stability in Asia Pacific. *Journal of Banking and Finance*, 38, 64–77.

Hellmann, T.F., Murdoch, K.C. and Stiglitz, J.E. (2000). Liberalization, moral hazard in banking and prudential regulation:

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

are capital requirement enough? *American Economic Review*, 90, 147–165.

Hoeffler, A.E. (2002). The augmented Solow model and the African growth debate. *Oxford Bulletin of Economics and Statistics*, 64, 135–158.

Jiménez, G., Lopez, J.A. and Saurina, J. (2013). How does competition impact bank risk-taking? *Journal of Financial Stability*, 9, 185–195.

Jiménez, G., Ongena, S., Peydró, J.L. and Saurina, J. (2014). Hazardous times for monetary policy: What do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking? *Econometrica*, 82, 463–505.

Jouini, J. and Obeid, R. (2020). Determinants of the non-performing loans in the Arab banking sector: Evidence from dynamic panel data models. Arab Monetary Fund.

Karkowska, R. and Pawłowska, M. (2017). The concentration and bank stability in Central and Eastern European countries. NBP Working Papers 272, Narodowy Bank Polski, Economic Research Department.

Matutes, C. and Vives, X. (2000). Imperfect competition, risk taking and competition in banking. *European Economic Review*, 44, 1–34.

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Noman, A.H., Gee, C.S. and Isa, C.R. (2017). Does competition improve financial stability of the banking sector in ASEAN countries? An empirical analysis. *PLoS ONE*, 12, 1–27.

Obeid, R. and Adeinat, M. (2017). Determinants of net interest margin: An analytical study on the commercial banks operating in Jordan (2005-2015). *International Journal of Economics and Financial Issues*, 7, 515–525.

Schaeck, K., Čihák, M. and Wolfe, S. (2006). Are more competitive banking systems more stable. *IMF Working Papers 2006/143*, International Monetary Fund.

Schaeck, K. and Čihák, M. (2008). How does competition affect efficiency and soundness in banking? *ECB Working Paper*, No. 932.

Rosse, J.N. and Panzar, J.C. (1977). Chamberlin vs Robinson: an empirical study for monopoly rents. *Bell Laboratories Economic Discussion Paper*, 90.

Tabak, B.M., Fazio, D. and Cajueiro, D.O. (2013). Systemically important banks and financial stability: The case of Latin America. *Journal of Banking and Finance*, 37, 3855–3866.

Vives, X. (2016). *Competition and Stability in Banking: the Role of Regulation and Competition Policy*. Princeton University Press, Princeton.

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Table 1. Summary statistics of the variables

Country	FS	BC	CR	GR
Bahrain				
Mean	132.986	41.900	1.014	3.386
Std. Dev.	16.096	2.660	5.178	1.399
Egypt				
Mean	31.156	60.714	7.671	4.125
Std. Dev.	7.099	4.386	28.162	1.211
Iraq				
Mean	937.346	80.714	11.386	3.905
Std. Dev.	243.657	3.946	18.640	5.986
Jordan				
Mean	165.437	54.159	11.829	2.352
Std. Dev.	12.214	0.586	14.316	0.530
Kuwait				
Mean	172.629	78.271	6.143	0.304
Std. Dev.	16.914	2.521	7.576	2.373
Lebanon				
Mean	87.282	49.460	-2.286	0.034
Std. Dev.	80.744	5.738	17.060	3.471
Libya				
Mean	148.312	87.167	0.786	-0.701
Std. Dev.	82.202	2.546	8.922	17.278
Morocco				
Mean	154.823	79.729	6.571	3.240
Std. Dev.	15.641	0.431	19.575	1.293

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Table 1 - bis. Summary statistics of the variables

Country	FS	BC	CR	GR
Oman				
Mean	76.527	79.586	10.371	2.393
Std. Dev.	10.101	0.453	11.768	2.629
Palestine				
Mean	65.908	69.271	11.571	2.960
Std. Dev.	4.726	1.403	6.488	3.099
Qatar				
Mean	33.281	78.757	12.757	2.746
Std. Dev.	5.899	2.190	11.447	2.674
Saudi A.				
Mean	95.717	64.757	11.329	2.022
Std. Dev.	8.338	0.341	10.816	1.744
Sudan				
Mean	6.280	57.000	2.886	1.808
Std. Dev.	1.639	1.633	34.820	3.211
Tunisia				
Mean	60.010	56.709	0.571	1.975
Std. Dev.	7.154	0.554	9.141	0.859
UAE				
Mean	99.560	57.571	4.771	3.249
Std. Dev.	9.589	1.618	5.073	1.596
Full panel				
Mean	151.150	66.384	6.491	2.253
Std. Dev.	226.587	13.502	15.824	4.983

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Table 2. Correlations between financial stability and the other variables

Country	BC	CR	GR
Bahrain	-0.354	-0.124	-0.343
Egypt	0.179	0.222	-0.184
Iraq	0.257	0.001	0.690
Jordan	0.150	-0.146	-0.473
Kuwait	0.648	-0.458	0.248
Lebanon	-0.565	-0.995	-0.864
Libya	-0.056	-0.719	0.167
Morocco	0.614	-0.323	-0.216
Oman	-0.154	0.408	-0.457
Palestine	0.669	0.473	0.162
Qatar	0.950	-0.119	-0.838
Saudi A.	-0.226	-0.152	-0.745
Sudan	0.254	-0.388	-0.385
Tunisia	0.354	0.208	0.027
UAE	-0.291	-0.085	-0.025
Full Panel	0.300	0.094	0.114

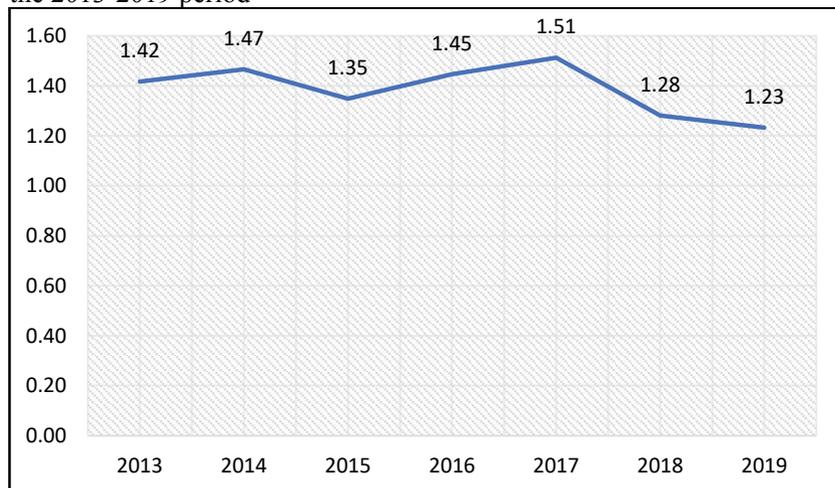
Table 3. Two-step system GMM estimates

Variable	Coefficient	Standard Error
FS(-1)	0.410***	0.007
BC	3.336***	0.106
CR	1.081***	0.079
GR	4.738***	0.301
Wald Test	1.461E+5 ⁺⁺⁺	
	(0.000)	
Autocorrelation Test	0.993	
	(0.321)	
Sargan Test	11.523	
	(0.905)	

Notes: Wald test for overall significance of the model, Autocorrelation test for no second-order serial correlation in first-differenced errors, and Sargan test for overall validity of the instruments. The values in parentheses are the *p*-values of the tests. *** stands for statistical significance at the 1% level. +++ stands for rejection of the null hypothesis at the 1% level.

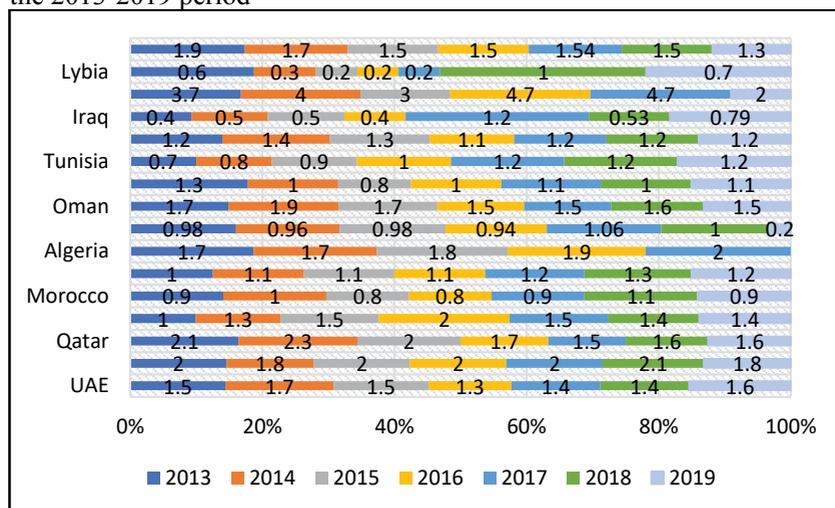
Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Figure 1. Evolution of the average ROA in the Arab banking sector over the 2013-2019 period



Source: Arab Monetary Fund (2020), Arab Financial Stability Report.

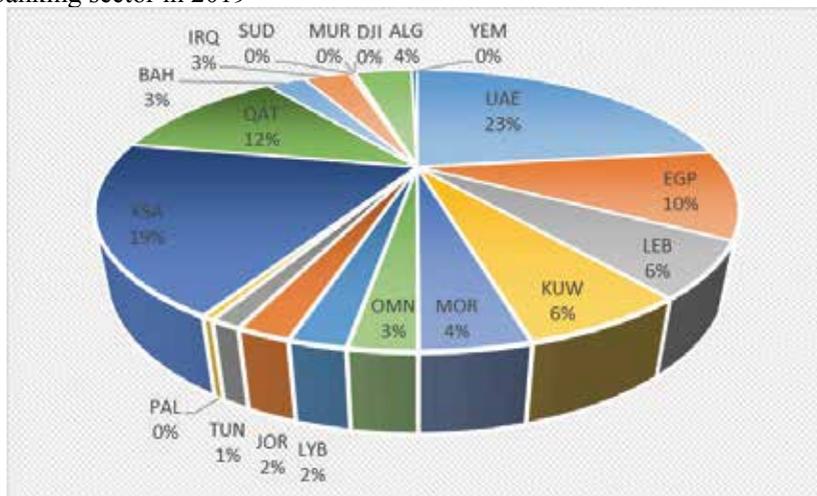
Figure 2. Evolution by country of the ROA in the Arab banking sector over the 2013-2019 period



Source: Arab Monetary Fund (2020), Arab Financial Stability Report.

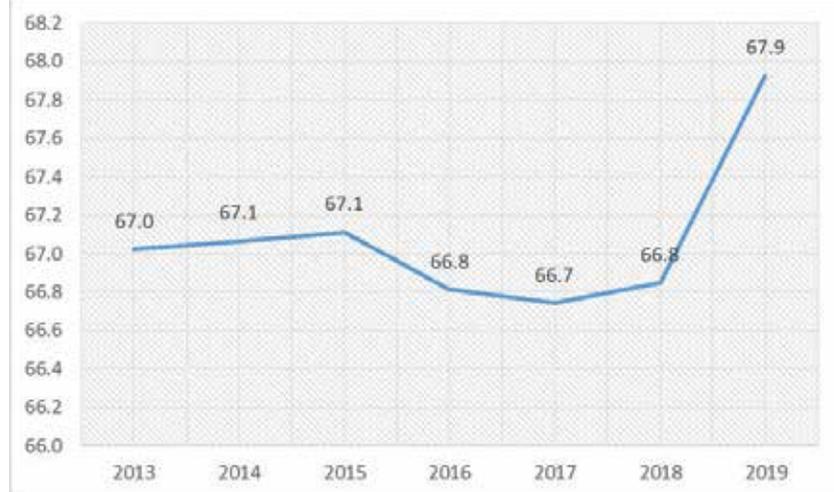
Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Figure 3. Evolution by country of the market share of the assets of the Arab banking sector in 2019



Source: Arab Monetary Fund (2020), Arab Financial Stability Report.

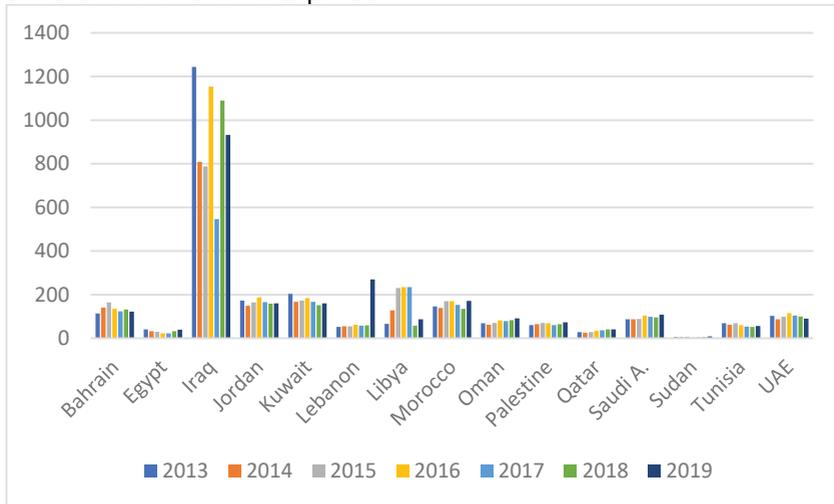
Figure 4. Evolution of the ratio of the assets of the five largest banks to the total assets in the Arab banking sector over the 2013-2019 period



Source: Arab Monetary Fund (2020), Arab Financial Stability Report.

Effects of Concentration on Stability of the Banking Sector: Evidence from Selected Arab Countries

Figure 5. Evolution of the level of financial stability in the Arab banking sector over the 2013-2019 period





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