



Banking in the MENA region: The pro-active role of financial and economic freedom

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Abstract

The main purpose of this paper is to check whether bank profitability benefits from bank diversification by considering the moderating role of the economic freedom (EF) and financial freedom (FF). This paper uses a sample of 83 conventional banks operating in the MENA countries over the period 2005–2020 and, performs an empirical approach based on the System Generalized Method of Moments (SGMM). To get a better understanding and reliable results on the impact of NII on bank profitability, we split the MENA region in two sub-regions. The first block contains the Gulf Cooperation Council (GCC) countries with a sample of 40 banks and, the second covers the non-GCC countries with a sample of 43 banks. Empirical findings of the aggregate analysis reveal that bank profitability is more sensitive to bank diversification and, benefits from more EF and FF. Furthermore, we found that the interaction between bank diversification, EF and FF negatively affects the level of profitability. The results of the disaggregated analysis confirm the same findings concerning the positive effect of EF and FF and the negative effect of the interactional relationship. However, the effect of bank diversification differs across the two sub-samples. © 2023 The Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.

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1. Introduction

Literature on the diversification-profitability relationship provided mixed and inconclusive results. Some studies highlighted the need for more bank diversification and reported the importance of non-interest income in improving bank profitability. For example, the studies of [DeYoung and Roland, \(2001\)](#), [Smith et al. \(2003\)](#); [Stiroh \(2004\)](#) supported the positive association between bank diversification and profitability. They argued that non-interest income tends to reduce bank risk and increase performance because; it is less volatile than interest income. The researchers concluded that more diversified banking activities can generate more benefits and lower associated risks. The second part of the literature supports the opposite view, arguing that non-interest income increases the level of bank risk and decreases bank profitability (eg., [Hai, 2021](#); [Githaiga, 2020](#); [Delpachitra and Lester, 2013](#); [Berger et al., 2010](#); [Laeven and Levine, 2007](#)). These studies showed that non-traditional banking activities are associated with a problem of information asymmetry that leads to higher agency costs. The third part of the literature does not support any significant effect of bank diversification on bank profitability and showed that non-interest income has no significant effect on bank performance ([Mercieca et al., 2007](#); and [Trujillo-Ponce, 2013](#)).

Earlier studies developed by [La Porta et al., 1999](#); [Giavazzi and Tabellini, 2005](#); reported that the success of an economy closely depends on the intervention of the government in the market. For instance, economic and financial freedom are studied as a driver for economic growth ([Heckelman & Knack, 2009](#); [Altman, 2008](#); [Powell, 2003](#); [Adkins et al., 2002](#); [DeHaan & Siermann, 1998](#)). These studies concluded that there is a positive association between economic and financial freedom and, the level of growth. Unlike the abundant studies on the effect of economic and financial freedom on growth, few studies are focused on the effect of economic and financial freedom on the level of bank efficiency and bank profitability. According to [Sufian & Habibullah \(2010\)](#), [Chortareas et al. \(2013\)](#) and [Aboagye et al. \(2018\)](#), economic and financial freedom improves bank profitability. They argued that higher economic and financial freedom enhances the entrepreneurship cycle, promotes innovation, and sustains economic growth that may translate into higher bank profits. Generally, banks that are operating in a country with minimal intervention in the banking sector earn higher return on assets and higher return on equity. Furthermore, banks that are operating in a less restricted environment tend to be engaged in competitive policies, resulting in higher level of profitability and efficiency. Nevertheless, the more banks are controlled and subject to excessive government intervention, the less free they are engaged in more diversified financial activities that reduce bank risks and improve the level of profitability.

Taking into account the moderating effect of economic and financial freedom, we are willing in this paper to investigate the impact of non-interest income on a large sample of MENA banks made up of 83 conventional banks observed during the period 2005–2020. The selected region is an interesting case study for several reasons. First, the banking sector is considered as the main source of public and private finance. Hence, it will be very useful to investigate factors that drive bank profitability and ensure bank stability in the MENA region. Second, some countries in this area, especially those located in North Africa rely on the interest income as a driver of bank profitability. Third, the overall level of non-interest income (NII henceforth) as a percentage of total income is much lower than those of other countries in the World. For example, the average value of NII during the period 2014–2017 in Cameroun is 84%, 71% in Russia 65% in Switzerland, and 60% in Finland (WDI, 2022). However, the highest ratio of NII in % of total income in the MENA region is 49% registered in Lebanon in 2016 and the weakest

ratio is 21% recorded in Egypt in 2017. The weak ratio of NII means that bank activities in the MENA region are not sufficiently diversified and, that the income revenue continues to be based on the interest revenue.

This research comes to extend the studies on the effect of bank diversification on bank profitability and contributes to the existing literature in several ways. First, to the best of our knowledge, no study explored the moderating effect of economic freedom (EF) and financial freedom (FF) in the diversification-profitability relationship. Second, this is the first study that explores the relationship between bank diversification and bank profitability in GCC and non-GCC countries. Third, the results of this paper could be very useful to policymakers and bankers to decide to engage in more diversified banking activities or to be dependent to their classical activities. Fourth, prior studies divided the MENA sample into two blocs of countries such as the Middle East and the North Africa countries. In this study; we split the sample into GCC and non-GCC countries. This makes possible to address specific recommendations to the two groups of countries based on their financial, economic and bank regulatory differences.

Using a sample of MENA banks over the period 2005–2020 and, performing an econometric framework based on an SGMM analysis, empirical findings of the overall sample indicate that bank diversification negatively affects bank profitability. However, more economic and financial freedom increases bank profitability. By splitting the sample into GCC banks and non-GCC banks and, our finding confirms the positive effect of EF and FF while results are mixed regarding the effect of bank diversification. Finally, results show that the interactional effect of EF, FF and bank diversification negatively affects the level of bank profitability for the whole sample and the two sub-samples.

The remainder of this paper is structured as follows. [Section 2](#) presents the literature review. The sample and the empirical methods are given in [section 3](#). [Section 4](#) discusses the empirical findings and, [section 5](#) concludes.

2. Literature review

2.1. Bank diversification and bank profitability

Given the importance of banks in the financial system and their effect on economic development, many studies have been conducted to explore factors that drive banking profitability and some other studies have been focused on the relationship between bank diversification and bank profitability ([DeYoung and Roland 2001](#); [Smith et al., 2003](#); [Stiroh, 2004a](#)). The results of these empirical studies show mixed results.

On the positive side of the effect of bank diversification, [DeYoung and Roland \(2001\)](#) using data of 472 U.S. commercial banks from 1988 through 1995, found that earnings volatility increases as the share of revenue coming from fee-based activities increases. For the same context, [Stiroh \(2004a\)](#) examined the relationship between income diversification and risk-return performance. The sample covers the American community banks over the period 1984–2000. The author finds that a greater reliance on non-interest income, particularly trading revenue, is associated with more volatile returns and lower risk-adjusted profits. For the European context, [Smith et al. \(2003\)](#) studied the variability of interest and non-interest income. To this end, they used a sample of 15 EU countries for the period from 1994 to 1998. The main empirical findings indicate that an increase in the non-interest income stabilizes profits in the

European banking industry. Additionally, [De Jonghe. & Vennet \(2007\)](#) studied the exchange-listed banks from 17 European countries over the period 1989–2004. Bank franchise value was calculated to measure the long-run performance and from a single index model, augmented by the interest rate factor, a risk measure was obtained. The results are consistent with before mentioned studies. They have shown that there exists a strong positive relationship between bank profitability and the degree of diversification. The Asian context was explored by [Nisar et al. \(2018\)](#) examined the impact of revenue diversification on bank profitability in eight South Asian countries and concluded that non-interest income has a positive impact on profitability. Recently, [Vidyarathi \(2020\)](#) used a sample of 38 listed Indian banks during the period from 2004 to 2016 to analyze the relationship between income diversification and performance he found an inverted U-shaped relationship between the income diversification and estimated efficiency parameters for the overall panel. Based on a sample of 967 banks located in 22 countries in Asia over the period 1995–2009, [Lee et al. \(2014\)](#) the relationship between non-interest income, profitability, and risk. The empirical findings of the dynamic panel generalized method of moments (GMM) technique indicate that non-interest activities of Asian banks reduce risk, but do not increase profitability. For the BRICS context, [Sharma and Anand \(2018\)](#) examined the impact of income diversification on bank performance in BRICS countries. To this end, they used a panel data set of 169 BRICS banks is sampled over the period 2001–2015. The results of the fixed effect models and System Generalized Method of Moments techniques indicate that there is a positive relationship between diversification and performance. For the GCC countries, [El Khouri and Arouri \(2018\)](#) used a sample of 69 conventional and Islamic banks listed in GCC markets over the period 2003–2015. They found that the non-interest income diversification worsens GCC banks' performance while asset-based diversification positively affects the bank performance. Using annual data of 20 Tunisian banks during the period 2005–2012, [Hamdi et al. \(2017\)](#), investigated whether bank diversification affects bank risk and performance in Tunisia. The empirical results of dynamic panel data indicate that non-interest income increases bank performance for both ROA and ROE. They also found that non-interest income significantly decreases the level of bank risk.

H1. Bank diversification leads to more bank profitability.

On the negative side of bank diversification, many studies supported evidence of the negative effect of diversification on bank stability and performance. For example, using the data of 43 countries from different parts of the world, [Laeven and Levine \(2007\)](#) found negative effects of activity diversification on the market valuation of the financial institutions. In the same line of idea, [Delpachitra and Lester \(2013\)](#) examined the effect of income diversification on the performance of Australian banks and reported a negative relationship. [Berger et al., \(2010\)](#) used a sample of 88 Chinese banks and found that diversification reduces profits. For the Vietnamese case, [Hai \(2021\)](#) explored the effect of bank diversification strategies on the Vietnamese bank's performance. To achieve this goal, he uses a sample of 13 listed banks over the period 2010–2019 and the System Generalized Method of Moments (SGMM) regression. Empirical findings indicate that income diversification decreases bank profitability. Recently, [Githaiga \(2020\)](#) investigates the relationship between Human capital, income diversification and bank performance. He uses a sample of 53 banks and panel data for the years 2010– 2018 and performs the hierarchical multiple regression. The author found that income diversification negatively affects bank profitability. While; there is a positive association between human capital and bank profitability.

H2. Bank diversification decreases bank profitability.

2.2. Economic freedom, financial freedom and bank profitability

There is an extensive literature on the impact of bank specifics, industry specifics and macroeconomics factors on bank performance. However, few studies that are focused on the effect of economic and financial freedom on the level of bank efficiency and bank profitability. In addition, most of the existing studies on the effect of EF and FF are focused on economic growth (Heckelman & Knack, 2009; Altman, 2008; Powell, 2003; Adkins et al., 2002; DeHaan & Siermann, 1998). These authors argue that a higher economic and financial freedom leads to more economic growth. Less abundant studies that are closely associated to bank profitability (Sufian & Habibullah, 2010; Chortareas et al., 2013; and Aboagye et al., 2018). Using economic and financial freedom indexes, most of the empirical researches indicate that higher economic and financial freedom improves bank profitability. For the European context, Chortareas et al (2013) examined the effect of economics and financial freedom on the performance of 27 European banks. The empirical findings of the truncated regression model combined with bootstrapped confidence intervals indicate that a higher degree of economy's financial freedom is positively related to bank profitability. The Asian context was explored by Sufian & Habibullah, 2010. The authors used a sample of Malaysian bank data from 1999 to 2007 to investigate the impact of economic freedom on bank performance. They found a positive association between economic freedom, business freedom and bank performance. Similarly, Sufian and Habibullah (2014) argue that more restrictions on bank activities and more government intervention reduce bank efficiency in Malaysia. In another study, Sufian (2014) concludes that higher financial freedom exerts a positive impact on the Islamic bank profitability in the MENA region. For the African context, Aboagye et al (2018) used a sample of 139 banks located in 11 sub-Saharan African countries over the period 2006–2012 to explore the relationship of financial freedom and competition on bank profitability. They found a positive impact of both financial and economic freedom on bank performance.

H₃. More economic and financial freedom enhances bank profitability.

When reviewing literature, we noticed the lack of studies focused on the interactional effect of EF, FF and bank profitability in the MENA region. Additionally, no study investigates this topic in a GCC and non-GCC context. This study comes to fill this gap by studying the diversification-profitability relationship in the two groups of countries.

3. Methodology

3.1. The sample

To explore the relationship between bank diversification measured by non-interest income and bank performance, we used a sample of conventional banks located in MENA countries over the period 2005–2020. The initial sample is made by 109 banks. However, due to the availability and the continuity of bank information, several banks have been excluded. For example, we excluded Islamic banks and banks for which data related to non-interest income were missing for more than three years. Hence, the final sample was reduced to 83 conventional banks.

To get a better understanding and reliable results on the impact of NII on bank profitability we split MENA region into two sub-regions based on the classification of the International Monetary Funds' World Economic Outlook. The first bloc contains the Gulf Cooperation Council (GCC) countries with a sample of 40 banks and the second involves the non GCC countries with a sample of 43 banks (see Table 1).

Table 1

Number of banks by country.

GCC countries		Non-GCC countries	
Countries	Number of banks	Countries	Number of banks
Bahrain	4	Egypt	8
Kuwait	5	Morocco	8
Oman	5	Tunisia	10
Qatar	4	Jordan	13
Saudi Arabia	8	Lebanon	4
United Arab Emirates	14		
Number of banks	40	Number of banks	43
Whole sample	83 banks		

The current study uses the return on assets (ROA) and the return on equity (ROE) as dependent variables that reflect profitability. As explanatory variables, we introduced in the econometric model three categories of variable. The first category is relative to bank specifics and covers bank diversification measured by the ratio of the non-interest income (NII). The loan to deposit (LTD) ratio to measure the liquidity risk. We also included bank size (BS) to explain changes in bank performance. Capital adequacy ratio (CAR) is considered as a key determinant of bank performance is also included. The second category of variables is relative to industry specifics. Bank concentration (CONC) and bank competition (LERN) are recognized as drivers for bank profitability and bank stability. The third category is relative to the global financial crisis of 2008 (crisis) and the macroeconomic conditions proxied by the growth rate of GDP (GDPG) and the inflation rate (INF). Banks operate in a financial and macroeconomic environment that affects their profitability and stability.

Data related to bank-level data which concern financial and accounting variables are obtained from the Thomson Reuters database and annual reports of each bank. However, country-level data that reflect industry specifics and macroeconomic conditions are collected from two main sources. The first one is the Global financial indicators database and the World Bank Indicators Database.

3.2. Empirical approach and model specification

This paper uses an empirical strategy based on the SGMM approach. Using the SGMM method help solving the problem of endogeneity which is considered one of the most serious problems in corporate and banking finance. Additionally, the OLS and the fixed- and random-effect (FE and RE) models always face several problems like omitted variables bias and measurement errors. To overcome this problem, in this study we use the SGMM method proposed by Blundell and Bond (1998). Finally, the SGMM method provides robust and more efficient results (Zhou et al., 2014; Teixeira & Queirós, 2016; Danisman & Tarazi, 2020; Hakimi et al., 2021).

The empirical strategy followed in this paper is based on three steps. In the first step, we explored the diversification-profitability relationship. In the second step, we investigated the effect of EF and FF on bank profitability. In the third step, we tested whether bank profitability benefits from the interactional between EF, FF and bank diversification.

To check whether economic and financial freedom mediate the diversification-profitability, we include in the econometric model the index of Economic Freedom (EF) and the index of

Table 2

Definition of variables.

Variables	Definitions	Measures
Dependent variables (PROF)		
ROA	Return on assets	Net income after tax to total assets
ROE	Return on equity	Net income after tax to total equities
Bank diversification, Economic and Financial Freedom		
NII	Bank diversification	Non-interest income in % of total income.
EF	Economic Freedom	The overall economic freedom index (<i>scale from 0 to 100</i>)
FF	Financial Freedom	The specific financial freedom index (<i>scale from 0 to 100</i>)
EFxNII	Interactional variable	The interaction between EF and bank diversification
FFxNII	Interactional variable	The interaction between FF and bank diversification
Bank specifics		
NPLs	Non-performing loans	Bank nonperforming loans to gross loans (%)
BS	Bank size	Natural logarithm of total assets
CAR	Capital adequacy ratio	Bank capital to total assets (%)
LTD	Liquidity risk	Loans to deposits ratio (%)
Industry specifics		
CONC	Bank Concentration	Bank concentration (%)
LERN	Bank competition	The Lerner index
Financial environment and macroeconomic conditions		
CRISIS	Global financial crisis of 2008	Dummy variable that takes 0 before the crisis of 2008 and 1 after
GDPG	The growth rate of GDP	Annual growth rate of GDP (%)
INF	The inflation rate	Consumer price index (%)

Financial Freedom (FF) (Sufian & Habibullah, 2010; Chortareas et al., 2013; and Aboagye et al., 2018). The econometric model to be tested is given in the equation (1):

$$\begin{aligned}
 PROF_{i,t} = & \beta_0 + \beta_1 PROF_{i,t-1} + \beta_2 NII_{i,t} + \beta_3 EF_{i,t} + \beta_4 FF_{i,t} \\
 & + \beta_5 EFxNII_{i,t} + \beta_6 FFxNII_{i,t} \\
 & + \beta_7 \sum_{i=1}^n CONTVAR + \varepsilon_{i,t}
 \end{aligned}$$

All variables' definitions are given in Table 2.

4. Analysis and results

4.1. Results of the aggregate analysis: the whole sample

4.1.1. Findings of the effect of bank diversification

The first step of the empirical strategy followed in this paper consists to test the impact of bank diversification measured by the NII ration on the bank performance in MENA region measured by the ROA and the ROE. Empirical findings are given in Table 3.

From Table 3, we noticed that bank diversification significantly decreases bank profitability, measured by ROA and ROE. Theoretically, it was reported that bank diversification measured by non-interest income tends to reduce bank risk and increase performance because it is less volatile than interest income. More diversified banking activities can generate more benefits and

Table 3

Results of the whole sample.

ROA	ROA		ROE	ROE	
	Coef.	Z		Coef.	Z
ROAL1.	0.242	39.880 ***	ROEL1.	0.757	98.720 ***
NII	-0.005	-4.550 ***	NII	-0.110	-8.820 ***
NPLs	0.002	0.560	NPLs	-0.163	-3.390 ***
LTD	0.007	1.401	LTD	-0.032	-5.690 ***
BS	-0.230	-4.780 ***	BS	-3.230	-8.590 ***
CAR	0.078	24.530 ***	CAR	0.125	2.730 ***
CONC	0.014	5.220 ***	CONC	0.205	5.650 ***
LERN	-0.846	-2.320 **	LERN	-1.691	-3.430 ***
CRISIS	-0.879	-19.760 ***	CRISIS	-4.955	-10.760 ***
GDPG	0.021	4.960 ***	GDPG	0.102	2.600 ***
INF	-0.016	-4.790 ***	INF	0.022	0.430
_cons	2.004	4.390 ***	_cons	50.092	17.250 ***
AR(1)	-1.393			-2.003	
Prob	0.163			0.045	
AR(2)	0.873			1.312	
Prob	0.382			0.189	
Sargan test	45.705			49.300	
Prob	0.360			0.235	
Obs	838			861	

Note: ***, **and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

lower risks. Nevertheless, in this study we found the opposite result. More bank diversification reduces bank profitability. This result can be explained as follow: at this stage of bank diversification, non-interest income is enabling to positively impacts bank profitability in the MENA region. Additionally, it may be that MENA banks have invested heavily in the information technology infrastructure to provide more electronic banking and financial services, but they have learned less. In other words, there is no harmony between the cost and the earning of this investment in the information technology infrastructure. The negative effect of NII on bank profitability is in line with the works of [Hai \(2021\)](#), [Githaiga \(2020\)](#). Therefore, we reject H1 and we accept the second hypothesis H2.

Results also indicate that well capitalized banks are more profitable. This result is confirmed for both ROA and ROE. The coefficient of the capital adequacy ratio is positive and significant at the level of 1%. When equity increases, the cost of capital decreases and hence improves the level of profitability. Furthermore, an increase in the bank capital may raise expected costs and financial distress. A higher level of capital reduces the incentives of shareholders to adopt speculative behaviour and excessive risks. Well capitalized banks have highly bank ratings which affect the cost of debt, reduce financial expenses and improve bank profitability. Capital may positively affect bank profitability through monitoring channels. To avoid losses, shareholders have more incentive to monitor and require higher efficiency which positively turns on bank profitability. This finding is in line with the works of [Bourke \(1989\)](#), [Molyneux and Thornton \(1992\)](#), [Goddard et al. \(2004\)](#), [Berger \(1995\)](#) and [Mehran and Thakor \(2011\)](#).

Bank's profitability in the MENA region is found to be more sensitive to an increase in the level of NPLs. An increase of 1% of the NPLs ratio, decreases bank profitability by 10.9%. When

a large percentage of loans are considered non-performing loans, the bank financial performance of the lender will be negatively affected since it results in a loss of the principal and the interest. Hence, the ability, to create new loans and pay operating costs will decrease. In addition, a higher level of NPLs ratio negatively affects the future profitability of banks and reduces the attractiveness of future potential investors. Hence, the bank profitability will decrease, and the stock price will be down. This result corroborates the findings of [Hakimi, Boussaada, and Hamdi \(2020\)](#), [Iannotta et al. \(2007\)](#), [Barros et al. \(2007\)](#), and [Chiorazzo et al. \(2008\)](#).

The global financial crisis of 2008 is found to be negatively and significantly associated with bank profitability. In the period of crisis, the ability of borrowers to fulfil their commitments is reduced. It results in a deterioration of the quality of loans portfolios and an increase of the level of NPLs, one of the most serious concerns that affect bank profitability. Additionally, banks in the period of crisis become more rigid regarding credit distribution. Hence it results in a decrease in the interest revenue that lowers bank profitability. This result is in line with the works of [Hakimi, Boussaada, and Hamdi \(2020\)](#) and [Zaiane and Ben Moussa \(2021\)](#). Findings also indicate that growth economic positively and significantly affects the level of bank profitability, while; the inflation rate exerts a negative and significant effect. The level of growth economic plays a crucial role in driving bank profitability. In a stable macroeconomic environment marked by an improvement of economic conditions, the quality of loans improves which leads to an increase in the ability of borrowers to faithful their commitments. Hence, the probability of solvency increases, the level of NPLs decreases which positively affects the profitability of banks. This result is in line with [Athanasoglou et al. \(2008\)](#), [Calza et al. \(2003\)](#), [Hakimi, Boussaada, and Hamdi \(2020\)](#).

Unlike the effect of GDP, we found that any increase in the inflation rate significantly decreases bank profitability. A higher level of inflation increases the operating costs and the financial expenses and consequently, it results in a decrease in bank profitability. Additionally, due to an increase in financial expenses, any increase in the inflation rate reduces the ability of borrowers to repay their loans. In this case, the quality of loans is deteriorated and the level of NPLs increases which decreases the profitability of banks. This result corroborates the works of [Revel \(1979\)](#), [Perry \(1992\)](#), [Athanasoglou et al. \(2006\)](#), [Pasiouoras and Kosmidou \(2007\)](#), and [Alexiou and Sofoklis \(2009\)](#), and [Hakimi, Boussaada, and Hamdi \(2020\)](#).

4.1.2. Findings of the effect of economic freedom and financial freedom on bank profitability

The second step from the empirical strategy consists to check whether bank profitability in the MENA region benefits from economic and financial freedom. In other words, we investigated whether more economic and financial freedom leads to more bank profitability. Empirical findings are displayed in [Table 4](#).

Results indicate that both EF and FF significantly increase bank profitability measured by ROA and ROE. Therefore, we accept the assumption of the third hypothesis (H3). The coefficient of EF and FF is positive and statistically significant at the level of 1%. A 1% increase in the EF increases bank profitability by 2.4% for ROA and 30% for ROE. Similarly, an increase by 1% of FF increases the ROA by 4.3% and the ROE by 20%. This result implies that more economic and financial freedom improves bank profitability in the MENA region. More economic and financial freedom enhances the entire entrepreneurship cycle, promotes innovation, and sustains economic growth that may translate into higher bank profits. Furthermore, banks that are operating in a country with minimal intervention in the banking sector earn higher return on assets and higher return on equity. Banks that are operating in a less restricted environment tend to be engaged in competitive policies resulting in higher level of profitability

Table 4

The effect of EF, FF on bank profitability.

	ROA				ROE			
	Economic Freedom		Financial Freedom		Economic Freedom		Financial Freedom	
	Coef.	Z	Coef.	Z	Coef.	z	Coef.	Z
PROF	0.267	41.720 ***	0.285	37.690 ***	0.768	83.770 ***	0.769	80.040 ***
PROF (-1)	0.024	3.440 ***	—	—	0.301	5.410 ***	—	—
EF	—	—	0.043	8.130 ***	—	—	0.207	5.130 ***
FF	0.005	1.470	-0.007	-1.920 *	-0.199	-3.570 ***	-0.207	-3.730 ***
NPLs	0.010	18.340 ***	0.010	18.700 ***	-0.026	-4.740 ***	-0.026	-5.370 ***
LTD	-0.388	-11.400 ***	-0.391	-9.820 ***	-3.921	-10.400 ***	-4.150	-10.150 ***
BS	0.069	18.790 ***	0.060	16.310 ***	-0.142	-3.080 ***	-0.172	-4.140 ***
CAR	0.021	7.660 ***	0.011	3.950 ***	-0.237	-5.770 ***	-0.295	-8.190 ***
CONC	-1.984	-5.410 ***	-1.797	-3.340 ***	19.655	4.790 ***	25.206	6.270 ***
LERN	-0.815	-15.020 ***	-0.845	-15.840 ***	-4.645	-7.220 ***	-4.345	-6.470 ***
CRISIS	0.018	3.960 ***	0.028	6.590 ***	0.028	0.550	0.078	1.570
GDPG	-0.010	-2.480 ***	-0.014	-3.240 ***	-0.032	-1.000	0.018	0.580
INF	1.647	2.800 ***	1.831	4.430 **	34.519	9.920 ***	47.173	20.090 ***
_cons	-1.444		-1.446		-2.102		-2.085	
AR(1)	0.148		0.148		0.035		0.037	
Prob	0.647		0.952		1.034		1.103	
AR(2)	0.517		0.340		0.308		0.269	
Prob	45.345		42.368		47.336		48.050	
Sargan	0.347		0.49		0.302		0.275	
Prob	55		55		55		55	
Instruments	838		838		861		861	
Observations								

Note: ***, ** and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

and efficiency. On the contrary, the more banks are controlled and the more the government intervention, the less free they are engaged in more diversified financial activities that reduce bank risks and improve the level of profitability. This result is in line with [Sufian & Habibullah \(2010\)](#), [Chortareas et al. \(2013\)](#) and [Aboagye et al. \(2018\)](#).

4.1.3. Findings of the interactional effect of economic freedom and financial freedom and bank diversification on bank profitability

The third step from the empirical strategy consists in exploring the interactional effect of EF, FF and NII with bank profitability. In other words; we investigated whether bank profitability in the MENA region benefits from an interaction between EF, FF and NII. Empirical results are displayed in [Table 5](#).

Unlike the positive effect of the EF and FF on bank profitability, results in [table 5](#) indicate that the interaction between economic and financial freedom and bank diversification ($EF \times NII$ and $FF \times NII$) is negatively and significantly associated with the level of bank profitability. This implies that more diversification within less restriction (more economic and financial freedom) decreases the level of bank profitability. Hence, the positive effect of EF and FF has been tackled through the negative effect of bank diversification. In countries with less restriction and less government intervention in the bank sector, bank diversification activities can favor the bank risk-taking behavior that erodes bank profitability. Hence, to get full benefit from economic and financial freedom, bankers and policy makers are invited to control bank diversification. In other words,

Table. 5

The interactional effect of EF, FF and bank diversification on bank profitability.

	Profitability (PROF) is ROA				Profitability (PROF) is ROE			
	Economic Freedom		Financial Freedom		Economic Freedom		Financial Freedom	
	Coef.	Z	Coef.	Z	Coef.	z	Coef.	Z
PROF	0.241	39.420 ***	0.237	40.600 ***	0.753	100.110 ***	0.750	96.790 ***
PROF(-1)	0.241	39.420 ***	0.237	40.600 ***	0.753	100.110 ***	0.750	96.790 ***
EFxNII	-0.001	-4.340 ***	—	—	-0.002	-7.940 ***	—	—
FFxNII	—	—	0.003	0.001	—	—	-0.002	-7.040 ***
NPLs	0.002	0.520	-0.002	-0.670	-0.161	-3.340 ***	-0.164	-3.500 ***
LTD	0.007	15.420 ***	0.007	14.330 ***	-0.032	-5.870 ***	-0.032	-5.670 ***
BS	-0.235	-4.970 ***	-0.233	-4.870 ***	-3.294	-8.910 ***	-3.275	-8.750 ***
CAR	0.078	24.510 ***	0.076	24.410 ***	0.112	2.520 **	0.107	2.380 **
CONC	0.015	5.480 ***	0.016	5.520 ***	-0.193	-5.290 ***	-0.182	-4.860 ***
LERN	-0.836	-2.240 **	-1.030	-2.500 **	12.395	3.250 ***	11.542	3.007 ***
CRISIS	-0.878	-19.990 ***	-0.889	-21.530 ***	-4.874	-10.590 ***	-5.082	-11.740 ***
GDPG	0.021	5.050 ***	0.022	5.130 ***	0.112	2.870 **	0.096	2.430 **
INF	-0.016	-4.770 ***	-0.017	-5.470 ***	-0.011	-0.220	0.007	0.150
_cons	2.016	4.390 ***	1.868	3.830 ***	49.743	17.160 ***	48.906	16.380 ***
AR(1)	-1.392		-1.397		-2.007		-2.016	
Prob	0.163		0.162		0.044		0.043	
AR(2)	0.875		0.760		1.291		1.261	
Prob	0.381		0.447		0.196		0.207	
Sargan	46.160		47.092		49.487		50.119	
Prob	0.345		0.308		0.230		0.211	
Instruments	55		55		55		55	
Observations	838		838		861		861	

Note: ***, ** and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

banks are invited to carefully adopt the new business model through a good decision-making on the choice of the diversified activities. Additionally, banks are invited to not adopt bank risk-taking and speculative behaviors when they diversified their activities.

4.2. Results of the disaggregate analysis: GCC Countries VS non-GCC countries

Before delving into the analysis, it is worth mentioning that there exists a macroeconomic heterogeneity between MENA countries despite belonging to the same bloc. In fact, the MENA region contains both ends of the spectrum; it ranges from the wealthiest and biggest oil producing countries to the politically unstable and oil importing countries. Moreover, MENA countries contain some countries that are endowed with modern financial sector and infrastructure and, they even became financial hubs such as Bahrain, the UAE and Saudi Arabia. On the other side, some other countries from the same bloc are endowed with a poor infrastructure and, their financial system is still archaic. Therefore, to get a better understanding and reliable results on the impact of NII on bank profitability we split MENA region into two sub-regions based on the classification of the International Monetary Funds' World Economic Outlook. The first bloc contains the Gulf Cooperation Council countries and the second involves the remaining countries.

4.2.1. The effect of bank diversification on bank profitability

We follow the same empirical strategy for the disaggregate analysis based on the GCC and non-GCC countries. First, we checked the effect of NII on bank profitability. Second, we explored the effect of EF and FF on bank profitability measured by both ROA and ROE. Third, we tested the interactional effect between EF, FF and NII on bank profitability. The results of the first step (NII→bank profitability) are displayed in [Table 6](#) below.

In the disaggregated analysis we will pay more attention to the impact of non-interest income on bank profitability. The output of the model has provided two different results and, they are as follows:

First, non-interest income has a negative and significant impact on bank profitability for the case of the GCC countries. Although these countries have modern financial infrastructures and some of them have become centers for Islamic Finance and hubs of business, this outcome should not surprise. In fact, banking activities in this region is highly concentrated on some specific sectors such as the real estate and construction, the reason why they were harshly hit by the global financial crisis in 2008 and the Dubai real estate crash is the best example. The high concentration on one sector explains how the economy of these countries is not diversified. These countries are heavily depending on oil price and on average, for the region during 2000–2017, oil revenues were close to 80% of government revenues, oil exports amounted to 65% of total exports, and oil GDP represented 42% of total GDP ([IMF, 2018](#)). This shows that the private sector is almost inexistent. During the past 20 years, GCC banks have massively invested in technology which normally generates some additional revenues to banks. However,

Table 6

Results of the effect of NII on bank profitability (*GCC vs non GCC countries*).

	<i>GCC countries</i>				<i>Non GCC countries</i>			
	ROA Coef.	Z	ROE Coef.	Z	ROA Coef.	Z	ROE Coef.	Z
Prof (-1)	-0.159	-3.130 ***	0.086	3.660 ***	0.335	22.140 ***	0.973	19.530 ***
NII	-0.005	-2.570 ***	-0.060	-3.290 ***	0.013	3.880 ***	0.181	4.990 ***
Npls	-0.057	-5.570 ***	-0.205	-7.540 ***	-0.020	-2.680 ***	-0.120	-1.190 ***
Ltd	0.016	5.260 ***	0.087	3.860 ***	0.005	5.420 ***	-0.061	-8.120 ***
Bs	-0.016	-0.300	1.417	10.100 ***	0.461	5.330 ***	-1.713	-1.650 *
Car	0.099	7.000 ***	0.280	2.330 **	0.063	10.510 ***	0.280	2.210 **
Conc	-0.007	-1.090	0.026	0.420	-0.028	-9.670 ***	-0.177	-3.740 ***
Lern	0.627	1.050	-5.381	-0.990	-8.754	-7.600 ***	0.773	0.100
Crisis	-3.086	-7.810 ***	-11.194	-8.140 ***	-0.151	-1.670 *	-2.158	-0.990
Gdpg	0.037	10.960 ***	0.165	3.050 ***	0.020	2.630 ***	0.148	1.890 *
Inf	-0.072	-6.100 ***	-0.649	-3.640 ***	-0.041	-5.720 ***	-0.024	-0.320
_cons	2.988	3.340 ***	0.619	0.120	-3.194	-3.490 ***	36.416	3.940 ***
AR(1)	-0.748		-1.815		-1.276		-1.351	
Prob	0.458		0.069		0.207		0.176	
AR(2)	0.595		0.861		0.961		0.875	
Prob	0.551		0.388		0.336		0.381	
Sargan test	27.738		20.330		27.515		27.094	
Prob	0.997		0.998		0.968		0.972	
N instr	55		55		55		55	
Obs	412		412		448		448	

Note: ***, ** and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

the use of these technologies in the GCC countries is free of charge are there is no taxations on financial transactions. Therefore, there is no fees and commissions and hence, no non-interest income for GCC banks. Therefore, the lack of a private sector means the lack non-interest income. Hence, we reject H1 and alternatively we accept H2.

Second, non-interest income has a positive and significant impact on bank profitability for the case of non-GCC countries. Unlike the first bloc, the second one has non-advanced financial services and, the cost of banking operations is extremely high. For example, the cost of opening a bank account in Egypt is around 30 Egyptian Pounds per customer and, a similar amount is required as a monthly account fee. For some other countries, such as Tunisia, banks do not charge fees for opening a bank account, but they require a minimum deposit that a client must always keep in his bank account and, penalties are applied if this policy is not respected. Moreover, in most non-GCC countries, basic transactions such as ATM withdrawal cheque deposits from a different bank than yours are also subject to bank commissions. Furthermore, the cost of maintaining a bank account is exorbitant due to commissions and fees. All these costs charged by banks explain why non-interest income is high in these countries, but they also explain the low level of banked people. According to the [World Bank \(2017\)](#), around 30–40% of the adult population and more than half the enterprises in Tunisia remained unserved or underserved by the mainstream financial sector during the period 2011–2017. For the case of Egypt, the average value for Egypt during the same period was 18.48% with a minimum of 9.72% in 2011 and a maximum of 32.07% in 2017. For Morocco, bank accounts are used by 28% of the adult population. For Algeria, people with bank accounts, percent of the population over 14 years of age, 2011 – 2017 is 42.18%. For comparison during the same period, Bahrain is 76.35%, the UAE 76.77%, Qatar is 65.88% and the world average based on 142 countries is 58.52%. To conclude, although fees and commissions generate high revenues for banks in non-GCC countries, they are also an obstacle and a burden to financial inclusion as poorer cannot afford access to finance. Regarding the other explanatory variables, their signs and significances are similar to the results found in the aggregated analysis.

4.2.2. Findings of the effect of economic freedom and financial freedom on bank profitability

The second step from the empirical strategy consists to investigate whether more economic and financial freedom leads to more bank profitability in GCC and non-GCC countries. Empirical findings are displayed in [Table 7](#) below.

Unlike the results of the aggregate analysis that confirm the positive effect of both EF and FF on bank profitability, the results of the disaggregate analysis indicate that the effect of EF and FF differs across the two regions GCC and non-GCC countries. Findings displayed in [table 7](#) show that for the GCC countries, EF does not exert any significant effect of bank profitability measured by both ROA and ROE. However, we found the opposite results for the non-GCC countries. More FF significantly increases the level of bank profitability. The coefficient of FF is positively and significantly associated with both ROA and ROE. While; not significant effect was found regarding the effect of EF.

To benefit from the positive effect of EF and FF, countries in the GCC region should be focus on the financial dimension rather than the economic dimension. More constrains banks' degree of financial freedom leads to inefficient resources allocation process and lowers interest margin. This result is convergent to [La Porta et al. \(1998\)](#); [Fries and Taci, \(2005\)](#), [Sufian & Habibullah \(2010\)](#), [Chortareas et al. \(2013\)](#) and [Aboagye et al. \(2018\)](#). On the contrary, a great importance should be assigned to EF to improve bank profitability in the non GCC countries. The indirect effect of EF on bank profitability can be explained through an economic impact.

Table 7

The effect of EF, FF on bank profitability in GCC and Non-GCC countries.

	<i>GCC countries</i>				<i>Non-GCC countries</i>			
	(ROA)		(ROE)		(ROA)		(ROE)	
PROF (-1)	0.054	0.021	0.093	0.152	0.404	0.373	0.961	1.017
EF	1.350	0.680	2.590 ***	4.600 ***	24.78 ***	21.64 ***	25.150 ***	25.810 ***
	0.017	—	0.081	—	0.061	—	0.369	—
FF	1.130	—	0.990	—	4.35 ***	—	2.880 ***	—
	—	0.056	—	0.365	—	-0.029	—	0.443
NPLs	—	4.470 ***	—	3.670 ***	—	-1.350	—	1.510
	-0.060	-0.052	-0.259	-0.152	-0.023	0.010	-0.016	-0.011
LTD	-9.040 ***	-6.500 ***	-6.180 ***	-3.070 ***	-5.69 ***	1.390	-0.340	-0.170
	0.032	0.030	0.121	0.109	0.005	0.005	-0.055	-0.067
BS	9.310 ***	7.050 ***	3.590 ***	2.750 ***	6.38 ***	7.66 ***	-6.060 ***	-7.080 ***
	0.075	0.008	1.228	1.109	0.281	0.224	-0.472	-2.848
CAR	1.530	0.310	5.490 ***	2.970 ***	2.06 **	1.540	-0.260	-2.020 **
	0.108	0.081	0.042	-0.074	0.058	0.068	0.528	0.507
CONC	7.010 ***	4.000 ***	0.470	-0.730	3.83 ***	7.27 ***	6.170 ***	5.740 ***
	0.005	-0.016	0.082	-0.086	0.016	0.038	-0.193	-0.413
LERN	0.440	-2.380	1.660 *	-1.340	2.94 ***	2.87 ***	-3.250 ***	-2.440 ***
	-1.683	0.688	-7.027	6.912	-7.849	-7.685	-3.348	-8.317
CRISIS	-1.550	1.040	-2.120 **	1.560	-10.390 ***	-6.810 ***	-0.590	-1.330
	-2.984	-3.120	-14.657	-14.218	-0.439	-0.307	-6.323	-4.500
GDPG	-6.220 ***	-9.510 ***	-10.390 ***	-11.510 ***	-6.460 ***	-7.310 ***	-8.360 ***	-3.700 ***
	0.051	0.052	0.170	0.165	0.085	0.071	1.362	1.312
INF	6.360 ***	12.470 ***	2.870 ***	2.270 **	16.080 ***	18.220 ***	10.500 ***	8.070 ***
	0.001	-0.028	0.070	-0.317	-0.178	-0.173	0.439	0.451
_cons	-0.040	-3.300 ***	1.340	-3.190 ***	-18.550 ***	-15.060 ***	0.390 ***	1.240
	-0.795	-1.245	-4.155	-11.597	-4.266	-0.313	1.975	40.479
AR(1)	-0.790	-1.510	-0.710	-1.880 *	-3.490 ***	-0.250	0.100	3.330 ***
	-1.142	-1.259	-1.871	-1.834	-1.351	-1.326	-1.332	-1.288
Prob	0.253	0.207	0.06	0.066	0.176	0.184	0.182	0.197
AR(2)	689	1.001	1.023	1.31	1.335	1.236	0.798	0.782
	0.49	0.316	0.306	0.19	0.181	0.216	0.424	0.434
Sargan	25.488	23.303	22.594	18.034	28.361	20.375	21.82	21.272
Prob	0.984	0.993	0.995	0.999	0.588	0.998	0.997	0.997
Instruments	55	55	55	55	55	55	55	55
Observations	412	412	412	412	448	448	448	448

Note: ***, ** and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

Countries with high level of economic freedom experienced growth rates and lower rates of unemployment and inflation. In this case, lending activity will be growing fast and generates more operating income that increases bank profitability.

4.2.3. Results of the interactional effect of economic freedom and financial freedom and bank diversification on bank profitability

The third step from the empirical strategy consists to explore the interactional effect of EF, FF and NII on bank profitability in the GCC and non GCC countries. Empirical results are displayed in [Table 8](#).

Table 8

The interactional effect of EF, FF and bank diversification on bank profitability in GCC and non-GCC Countries.

	<i>GCC countries</i>				<i>Non-GCC countries</i>			
	PROF is (ROA)		PROF is (ROE)		PROF is (ROA)		PROF is (ROE)	
	<i>EF*NII</i>	<i>FF*NII</i>	<i>EF*NII</i>	<i>FF*NII</i>	<i>EF*NII</i>	<i>FF*NII</i>	<i>EF*NII</i>	<i>FF*NII</i>
PROF (-1)	0.163	0.131	0.077	0.064	0.371	0.360	0.948	1.039
EF*NII	3.16 ***	9.02 ***	2.230 **	1.990 *	24.540 ***	23.850 ***	17.340 ***	21.830 ***
FF*NII	-0.002	—	-0.001	—	0.000	—	-0.003	—
NPLs	-2.520 **	—	-4.510 ***	—	0.660	—	-5.470 ***	—
LTD	—	-0.001	—	0.000	—	-0.001	—	-0.004
BS	—	-2.67 ***	—	-0.990	—	-6.270 ***	—	-4.740 ***
CAR	-0.058	-0.053	-0.219	-0.172	-0.021	-0.020	0.004	-0.046
CONC	-5.780 ***	-7.600 ***	-4.940 ***	-4.650 ***	-2.610 ***	-2.390 ***	0.050	-0.550
LERN	0.016	0.018	0.073	0.085	0.005	0.005	-0.072	-0.083
CRISIS	5.410 ***	6.100 ***	2.310 **	2.520 **	10.590 ***	7.880 ***	-7.710	-7.960 ***
GDPG	-0.020	-0.032	1.441	1.538	0.224	0.180	-0.723	-0.668
INF	-0.380	-0.670	7.900 ***	8.670 ***	2.340 **	1.580	-0.820	-0.790
_cons	0.100	0.077	0.240	0.140	0.064	0.049	0.372	0.313
AR(1)	7.370 ***	4.090 ***	2.140 **	1.250	5.860 ***	3.540 ***	4.170 ***	3.230 ***
Prob	-0.007	0.007	0.006	0.017	0.025	0.034	-0.166	-0.139
AR(2)	-1.090	0.820	0.100	0.450	5.440 ***	8.070 ***	-4.020 ***	-3.130 ***
Prob	0.656	-0.498	-4.463	-3.166	-8.694	-7.957	3.435	8.706
Sargan	1.080	-0.540	-0.730	-0.470	-7.240 ***	-8.320 ***	0.590	1.280
Prob	-3.087	-3.124	-11.095	-12.752	-0.362	-0.378	-6.374	-7.104
Instruments	-7.910 ***	-14.550 ***	-10.030 ***	-11.060 ***	-5.760 ***	-8.310 ***	-7.960 ***	-7.090 ***
Observations	0.037	0.031	0.188	0.176	0.076	0.054	0.306	0.271
	11.340 ***	6.090 ***	3.430 ***	3.830 ***	6.590 ***	5.390 ***	4.600 ***	3.750 ***
	-0.019	-0.021	0.131	-0.188	-0.184	-0.193	-1.506	-1.627
	-2.500 **	-4.960 ***	1.440	-2.270 ***	-20.090	-23.260 ***	-6.550 ***	-7.950 ***
	3.002	2.609	3.488	1.315	-0.416	-0.191	33.027	30.543
	3.410 ***	4.280 ***	1.080	0.390	-0.480	-0.190	4.310 ***	3.540 ***
	-0.739	-0.909	-1.776	-1.742	-1.334	-1.285	-1.301	-1.470
	0.459	0.367	0.075	0.081	0.182	0.198	0.193	0.141
	0.592	0.711	0.851	0.832	1.256	1.388	1.142	1.162
	0.553	0.471	0.394	0.405	0.209	0.165	0.253	0.245
	21.717	20.737	21.36	21.605	23.233	20.830	20.247	22.168
	0.997	0.998	0.997	0.996	0.994	0.998	0.998	0.996
	55	55	55	55	55	55	55	55
	412	412	412	412	448	448	448	448

Note: ***, ** and * indicate the rejection of null-hypothesis at 1%, 5% and 10% significance levels, respectively.

Results given in Table 7 indicate no change regarding the interactional effect between EF, FF and NII. Either for the whole sample or the two sub-samples GCC and non GCC, the interactional effect is negative and significant for both ROA and ROE. Once again, we conclude that more diversification within less restriction (higher economic and financial freedom) decreases the level of bank profitability in the GCC and non GCC countries. In fact, to get full benefit from economic and financial freedom, bankers and policy makers are invited to control bank diversification. When adopting the new business model, a good decision-making on the choice of the diversified activities is strongly needed.

5. Conclusion

This paper aims to check whether bank profitability benefits from bank diversification in the MENA region. More precisely, we initially estimate the moderating effect of EF and FF in the diversification-profitability relationship. To do this, we used a sample of 83 conventional banks over the period 2005–2020. Empirical findings of the SGMM indicate that bank diversification negatively affects bank profitability for the entire sample. Additionally, we found that more economic and financial freedom boost bank profitability. However, we found that the interaction between EF, FF and NII hinders the level of bank profitability in the MENA region. This implies that more diversification with less restriction and government intervention significantly decreases bank profitability.

To get a better understanding and reliable results into the impact of NII on bank profitability we split MENA region into two sub-regions based on the classification of the International Monetary Fund's methodology. The first bloc contains the Gulf Cooperation Council countries and the second involves the remaining countries. The results of the disaggregated analysis show that non-interest income has a negative and significant impact on bank profitability for the case of the GCC countries. This result reveals that banks in the Gulf region are not diversifying enough their activities as they have been focusing since a long time on basic activities especially financing real estate and construction sector. The reliance on oil and energy revenues lead the economy to be less diversified and hence the banking sector is, despite it is modern and provides advanced services. As for non-GCC countries, non-interest income has a positive and significant impact on bank profitability. This result is misleading because it could reflect that the banking sector in these countries is diversified and working well but the reality is totally different as revenues from non-interest activities is mostly coming from fees and commissions which in turn excludes a large part of the population. Empirical findings also confirm the positive effect of economic and financial freedom on the level of bank profitability for both GCC and non-GCC countries. The higher level of EF and FF is a driver for bank profitability measured by both ROA and ROE. As for the results of the aggregate analysis, we also found that the interaction between EF, FF and NII significantly decreases bank profitability in the two regions.

Concerning the effect of macroeconomic environment, we found that stable macroeconomic conditions marked by a high level of economic growth significantly contributes to an improvement of bank profitability. On the contrary, we found that a higher inflation rate increases the financial expenses and decreases the ability of borrowers to repay their loans which adversely affects bank profitability.

The results of this paper could have important policy implications for both policymakers and bankers. First, to improve profitability, MENA banks should operate in an environment marked by higher economic and financial freedom. It was found that less restriction and less government intervention (higher EF and FF) boost the level of bank profitability. Second, since bank diversification and the interactional effect between EF, FF and NII lower the level of profitability, MENA banks are invited to control the engagement in more diversified bank activities. More control and governance are needed to limit speculative behaviors and bank risk-taking. Third, policymakers in the GCC region should focus on diversifying their economies to be less reliant to oil price fluctuations that could harm the well-functioning of their economies. For GCC banks, the recent introduction of VAT (5% in Oman and the UAE, 10% in Bahrain and 15% in KSA) will help bank getting additional non-interest income. However, banks should also avoid concentrating their activities on one sector only and they should support the private sector and especially the SMEs. Fourth, for non-GCC countries, banks should ease the access to

finance to people by lowering the costs of opening and maintain accounts and, removing the commissions of basic financial transactions such as money withdrawal from other banks. Reducing and removing these useless costs will encourage households to move their money into the financial system and banks will be the first to enjoy this additional liquidity and the overall economy will also get benefits from this move. Also, having additional funds and more liquidity, banks in non-GCC countries can invest in new technology and FinTech to improve their financial services and to enhance the financial inclusion and, this in turn will generate additional revenues.

The most obvious limitation of the study is the use of the non-interest ratio as the only measure of bank diversification. There are other measures that can be used as robustness check for the relationship between bank diversification and bank performance. As index of freedom, this study is only based on the economic and financial index. Additionally, the sample of MENA banks is only limited to the conventional banks.

Future studies should consider other measure of bank diversification and other indices of freedom like monetary freedom, business freedom, and investment freedom. In addition, we extend the sample to cover Islamic bank. A comparative analysis between Islamic and conventional banks in the MENA region provides more details on the diversification-performance relationship and the moderating role of economic and financial freedom.

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