





“The nexus between interest rate and bank profitability: Does bank prudential capital matter?”

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ARTICLE INFO	Rana Shahin, Manal Khalil and Helmy Sallam (2022). The nexus between interest rate and bank profitability: Does bank prudential capital matter?. <i>Banks and Bank Systems</i> , 17(2), 113-123. doi: 10.21511/bbs.17(2).2022.10
DOI	http://dx.doi.org/10.21511/bbs.17(2).2022.10
RELEASED ON	Friday, 17 June 2022
RECEIVED ON	Monday, 10 January 2022
ACCEPTED ON	Tuesday, 24 May 2022
LICENSE	 This work is licensed under a Creative Commons Attribution 4.0 International License
JOURNAL	"Banks and Bank Systems"
ISSN PRINT	1816-7403
ISSN ONLINE	1991-7074
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

57



NUMBER OF FIGURES

0



NUMBER OF TABLES

2

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 10th of January, 2022

Accepted on: 24th of May, 2022

Published on: 17th of June, 2022

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THE NEXUS BETWEEN INTEREST RATE AND BANK PROFITABILITY: DOES BANK PRUDENTIAL CAPITAL MATTER?

Abstract

The credit expansion policy and banking regulations have attracted widespread attention of bank regulators and policymakers over the last few years. This research aims to examine how the interest rate, prudential capital, and their interaction impact banking profitability in emerging economies like Egypt. The final sample of banks registered by the Central Bank of Egypt comprises 22 banks during the period of 2011–2020. The cross-sectional time-series Generalized Least Squares (GLS) regression approach is used to estimate the panel data. The findings confirm that low-interest rates indeed harm banks' profitability. In addition, higher prudential capital enhances the profitability of banks. Importantly, the impact of low-interest rates on bank profitability can be diminished only when banks are maintaining higher prudential capital. Based on the findings, it is recommended that bank managers and policymakers in Egypt as well as in similar emerging economies shall promote the application of the Basel Capital Accord to increasingly strengthen the profitability of banks, which in turn reinforces the performance of the banking sector, especially during low-interest rate times. The findings also reveal that bank-specific characteristics such as large bank size, increased efficiency, and less concentrated market enhance banks' profitability. Overall, the findings of this research are highly relevant since improved profitability is one of the main objectives of bank supervisors and regulators.

Keywords

banking regulations, low-interest rates, profitability, emerging economies, bank size, efficiency, market share

JEL Classification

G20, G30, M40

INTRODUCTION

Central banks have taken steps towards expansion policies to encourage economic growth. Expansion policy intends to improve business capital investments and the spending capacity of borrowers by reducing lending interest rates (Bernanke & Blinder, 1992). Loosening lending interest rates results in increasing the amounts of loans granted to borrowers, supporting the effectiveness of the "expansionary channel" (Almaqtari et al., 2018; Bongiovanni et al., 2021). However, it distorts the quality of lending, in line with the "risk-taking channel". In particular, banks face severe difficulties in maintaining their profitability at times of low lending interest rates (Whited et al., 2021). Since then, the question of whether banks shall reduce lending interest rates has raised an ongoing debate among academics, regulators, and practitioners.

Although the recent reform programs towards formulating the liberalization of the financial sector have encouraged the development of the stock market and enhanced the level of bank competition, banks are compelled to undertake excessive risks. Excessive risks ultimately increase the likelihood of banks' failures (Danisman & Demirel,



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Conflict of interest statement:

Author(s) reported no conflict of interest

2019). Following banks' failures, the Basel Committee on Banking Supervision announced the 'Basel Prudential Capital Accord'. Since then, policymakers and banks' regulators in different countries have required banks to maintain a minimum level of capital as a percentage of risk-weighted assets to strengthen their solvency (BIS, n.d.).

The empirical findings on the association between prudential capital ratio and bank profitability remain vague. Some studies show that higher prudential capital leads to proper and efficient management of banks' portfolios (e.g., Naceur & Kandil, 2009; Djalilov & Piesse, 2016; Rangkuti, 2021). Moreover, Robin et al. (2018) confirm that prudential capital lowers banks' requirements for external funding, hence ameliorating profitability levels. However, the negative association can be explained by the fact that prudential capital is a 'sunk cost', thus, policymakers need to set better capital targets that can improve banks' future profitability (Hakim & Neaime, 2005; Sari et al., 2018).

Based on the previous discussion, the research problem can be stated as follows: "Investigating whether interest rate, prudential capital, and their interaction affect the profitability of banks in Egypt." The banking sector in Egypt is an interesting case study of an emerging market since it has experienced fundamental changes in the last two decades. The Central Bank of Egypt (CBE) started to enact reform programs and regulations to strengthen the vitality of banks in Egypt and sustain economic growth (CBE, 2009).

1. LITERATURE REVIEW

The literature review can be divided into two research streams. The first stream highlights research works that focus on the association between interest rate and banking profitability. The second stream discusses studies related to prudential capital and profitability.

1.1. Interest rate and bank profitability

Several studies provide evidence that low lending interest rates diminish banks' profits. Thus, low lending rates are less effective in stimulating banks' financial performance (e.g., Mamatzakis & Bermpei, 2016; Wambari & Mwangi, 2017; Claessens et al., 2018; Simoens & Vennet, 2021; Whited et al., 2021). Claessens et al. (2018) conclude that the net interest margins will decline by another 9 points for each additional year of "low for long". Hence, decreased lending interest rates have a detrimental impact on banks' ability to build and attract capital and on their lending growth channel, which may undermine the banking sector going forward and overall real economic growth. Other lines of evidence find that banks tend to expand their leverage and reduce their capital buffer, consistent with the "risk-taking channel" during the period of low lending interest rates (e.g., Nguyen & Boateng, 2015; Brana et al., 2019). A study by Moyo and Roux (2020) also re-

ports that the low lending interest rate policy weakens the financial institutions during the crisis period. In addition, the findings of Avdjiev and Serena (2020) show that the low lending interest rates deteriorate the quality of borrowers. In the same vein, Rubio and Yao (2020) reveal that lower lending interest rates stimulate the indebtedness of borrowers. Thus, borrowers become more exposed to credit risks whenever interest rates increase again. On the contrary, the evidence documented by Almaqtari et al. (2018) shows that banks can generate greater profits during periods of low lending rates, supporting the effectiveness of the 'expansionary channel'. Moreover, other studies confirm that decreased lending interest rates trigger banks to retain lower levels of provisions. Thus, they can maintain their overall performance, supporting the evidence of "evergreening" (e.g., Bikker & Vervliet, 2018; Breit et al., 2019). Likewise, the findings of prior studies provide evidence consistent with the importance of a low lending interest rate policy in sustaining the overall stability of financial institutions and stimulating economic activities (e.g., V. D. Dang & V. C. Dang, 2020; Matthys et al., 2020).

1.2. Prudential capital and bank profitability

Several prior findings lend support to the "positive view" of maintaining higher levels of prudential capital. Higher prudential capital diminishes the

equity risk, thus, investors tend to require lower equity returns. Importantly, higher prudential capital reduces the costs of debts, which in turn helps in enhancing banks' profitability (e.g., Swamy, 2018; Agoraki et al., 2021). Overall, many researchers have promoted the crucial role of the Basel framework in the banking sector by arguing that prudential capital is not binding and does not regulate banks in the wrong way (e.g., Naceur & Kandil, 2009; Bandt et al., 2018; Robin et al., 2018; Le et al., 2020).

Analyzing the MENA region, Bitar et al. (2016) conclude that banks that maintain higher levels of a prudential capital shift towards more rational lending activities, enhanced supervision, and better risk management strategies. Several recent studies show that prudential capital can effectively enhance the loan quality for both conventional and Islamic banks, as shown in the findings of (e.g., Hoque & Liu, 2021). In addition, the findings of Harkati et al. (2020) and Agoraki et al. (2021) show that higher prudential capital improves banks' safety net, thus enlarging the confidence of depositors, which in turn increases the demand for deposits that represent a stable source for banks to fund their activities. Adding to this work, Anh (2021) provides recent evidence that better-capitalized banks operating in ASEAN economies during the period 2005–2015 are less prone to agency costs, thus, they perform more efficiently. Overall, the study mentions that regulators have to ensure the adoption of prudential capital in the banking sector to increase banks' efficiency, which in turn promotes the performance of the financial system and helps in achieving social welfare.

A different view suggests that increased prudential capital negatively impacts banks' profitability. The findings of Sari et al. (2018) confirm that banks tend to reserve funds to cover unexpected losses, however, these reserved funds impede them from generating profits. After examining a sample comprised of European banks covering the period from 2001 to 2015, Oino (2018) indicates that the increase of Tier 1 by 1 unit reduces a bank's return on assets (ROA) by 0.02 units. The findings reveal that in response to such capital, banks optimize their risk-weighted assets by replacing risky assets with safer assets or adjusting risk weights to lower capital requirements. The findings thus do not support the expansion of prudential capital. Similarly, the recent evidence documented by Mateev and Bachvarov (2021) con-

firms that prudential capital is negatively associated with the profitability of 308 banks in the Middle East and North Africa (MENA) countries covering the period from 2005 to 2015. Thus, the evidence supports the "private interest view" and is not consistent with the "public interest view". The study suggests that regulatory bodies shall take steps towards improving the impact of prudential capital on bank profitability, especially during the period of the coronavirus disease 2019 pandemic. Bui et al. (2017) further show that increased prudential capital comes at the expense of lending growth while depending on a sample from Australia during 2002–2014. In general, the study recommends that regulators shall optimize the costs of increased capital that is necessary for maintaining banks' profitability. In a follow-up study, Haque (2019) observes that higher prudential capital leads to higher entry barriers and larger activity restrictions, which trigger banks to face greater opportunity costs since they have fewer diversification opportunities.

2. AIMS

This research aims to examine whether low lending interest rates contribute to decreasing bank profitability. Furthermore, it examines whether prudential capital positively affects the profitability of banks. Most importantly, it investigates whether the profitability of banks may be ameliorated under the current low lending interest rates with an increase in prudential capital.

3. RESEARCH HYPOTHESES

The research hypotheses are stated as follows:

H_1 : *There is a positive association between lending interest rates in one year and bank profitability in the subsequent year.*

H_2 : *There is a positive association between prudential capital in one year and bank profitability in the subsequent year.*

H_3 : *The larger the prudential capital, the less positive the association between banks' lending interest rates in one year and bank profitability in the subsequent year.*

4. RESEARCH METHODOLOGY

The annual consolidated financial data of banks registered by the CBE are gathered through Thomson Reuters. The sample period is from 2011 to 2020. Data from 2010 are required because of lagged independent variables. The final sample consists of 22 banks with 181 bank-year observations.

The reason for selecting this research window is that the board of directors of the CBE on 16 December 2008 amended some accounting policies and measurement principles to conform with the recent accounting standards and with the rules for the preparation and presentation of financial statements and the principles of recognition and measurements. One of the most significant changes that have occurred in the accounting policies and the financial statements due to the application of these accounting amendments is the disclosure requirements for the method of capital risk management, including the presentation of prudential capital at the level of the bank as a whole and its external branches. Banks are required to apply the modified rules starting from 31 December 2010 (CBE, 2008).

4.1. Research model

The model can be stated as follows:

$$\begin{aligned} \text{PROFITABILITY}_{it} = & \beta_0 + \beta_1 \text{RATE}_{it-1} + \\ & + \beta_2 \text{CAPITAL}_{it-1} + \\ & + \beta_3 \text{RATE}_{it-1} \cdot \text{CAPITAL}_{it-1} + \\ & + \sum_{j=1}^N \beta_j \text{CONTROLS}_{jit-1} + \varepsilon_{it-1}, \end{aligned} \quad (1)$$

4.1.1. Bank profitability

ROA is traditionally used in the literature since it is less influenced by leverage. Thus, it is a reliable accounting measure to proxy for the profitability of a bank i at year t (Bandt et al., 2018). Following the approaches of several previous studies, the ROA ratio is calculated as income before discontinued operations and extraordinary items scaled by the average assets. A higher ratio indicates higher profitability (e.g., Wambari & Mwangi, 2017; Bandt et al., 2018; V. D. Dang & V. C. Dang, 2020; Duho et al., 2020; Adesina, 2021). Measures

of bank profitability shall not be limited to ROA (Chen et al., 2018; Kanga et al., 2020). Thus, in addition to ROA, the research employs the net interest margin (NIM) to provide a comprehensive analysis and robust results to the research questions. Following the methodology of Kanga et al. (2020), NIM is measured as net interest income scaled by total assets. A higher ratio of NIM indicates greater bank profitability.

4.1.2. Interest rate

According to V. D. Dang and V. C. Dang (2020), there is no consensus in the literature on the best proxy to reflect interest rates. Prior studies use the interest income on loans to net loans ratio to capture the average net price of the loan that bank i charges on its borrowers at year $t-1$ (e.g., Nguyen & Boateng, 2015; Wambari & Mwangi, 2017; Harkati et al., 2020). Net loans represent loans and advances to banks and customers net of provisions for doubtful accounts.

4.1.3. Prudential capital

Prudential capital is proxied by the capital adequacy ratio of a bank i at year $t-1$. This ratio is computed as common equity Tier 1, additional Tier 1 capital, and Tier 2 capital, net of some regulatory adjustments to total risk-weighted assets, as introduced by the Basel Committee on Banking Supervision (e.g., Bitar et al., 2016; Bikker & Vervliet, 2018; Harkati et al., 2020).

This research investigates the role of prudential capital on the association between interest rate and bank profitability. Thus, the research uses an additional dummy variable for banks maintaining higher prudential capital based on their prudential capital size. Banks with an average prudential capital of greater than 0.16 were categorized as highly capitalized banks.

4.1.4. Other determinants of bank profitability

Bank $SIZE_{it-1}$ is proxied by the natural logarithm of total assets, as commonly done in the literature (e.g., Drakos et al., 2016; Brana et al., 2019, among others). Large-sized banks have more opportunities to invest in better-advanced technologies (Adesina, 2021). Further, they believe that

they are “too big to fail” institutions (Markoulis et al., 2021). Therefore, they have the willingness to take on profitable though riskier assets (Duho et al., 2020). Bank size is expected to be positively associated with subsequent year bank profitability. The second covariate is the natural logarithm of cash and cash equivalents ($CASH_{it-1}$) as a proxy for cash holdings.¹ It is generally viewed that a higher cash holdings level has a crucial role in lowering transaction costs because of maintaining liquid assets when responding to payments and also has a buffer role during unexpected contingencies. Thus, banks’ managers shall increase their cash holdings level to enhance their profitability (Fernandes et al., 2021). It is expected to find cash holdings in one year are positively associated with bank profitability in the subsequent year.

The third covariate is the ratio of total expenses to total revenues ($EFFICIENCY_{it-1}$) as a proxy for bank efficiency. A higher value of this ratio implies that a bank is less efficient. Less efficiency can be attributed to reduced bank managers’ experiences and less advanced technical abilities in attenuating expenses and managing risks, which may lead to deteriorated profitability (Drakos et al., 2016). It is expected that inefficient banks are associated with worse profitability. Further, the ratio of bank deposits to aggregate deposits ($MARKET_{it-1}$) is employed to control for bank market share. Banks with larger market shares are efficient and compete aggressively to attain greater profits, which reflects “scale economies” benefits. Thereafter, those banks are more financially secured than those with smaller market shares, in line with the “concentration stability” hypothesis (Shim, 2019; Khan et al., 2020). It is expected to find bank market share in one year is positively associated with the subsequent year bank profitability.

The impact of bank ownership is controlled by introducing a governmental dummy variable ($GOVERNMENT_{it-1}$), that takes 1 if government shareholding in a bank is 50% or more of ownership and 0 otherwise. Government ownership is likely to be associated with lower profitability. The intuition is that government-owned banks are more involved in “directed lending programs”, which in turn suppress banks’ profitability (Pak,

2020; Duho et al., 2020). Finally, a crisis dummy variable ($CRISIS_{it-1}$) is included that equals 1 if the year is 2011, 2012, or 2013 and 0 otherwise. As such, it is possible to capture the uniqueness of the political and economic instability three-year period of 2011–2013 in recent Egyptian history. It is expected that the coefficient of the dummy variable for crisis is negatively associated with the profitability of banks. The negative association is consistent with the “risk-taking channel” during the period of crisis (Danisman & Demirel, 2019; Teixeira et al., 2020).

Based on the methodology of prior literature, all independent variables are lagged by one period to avoid problems of endogeneity (e.g., Brei et al., 2019; Danisman & Demirel, 2019). In addition, the bank-level data are winsorized to exclude outliers (Tukey, 1977). Before applying panel data regression analysis, the independent variables are transformed using the natural logarithm to reduce skewness (Danisman & Demirel, 2019).

5. RESULTS

Table 1 provides summary statistics for the main variables used in the regressions. It reports the number of observations (N), mean, median, standard deviation (Std.), minimum (Min.), and maximum (Max.) for the total sample of banks. The return on assets (ROA) varies between –6% and 4% with an average of 2%. The average NIM for the sample of banks in Egypt is 4% with a minimum of 1% and a maximum value of 7%. The interest rate ($RATE_{it-1}$) ranges from 6% and 20%, with a mean (median) of 10% (10%) and a standard deviation of 3%. The mean prudential capital for our sample banks is 16% and has shown little variation across the years. This implies that, on average, banks are motivated to maintain a capital cushion above the minimum requirements of the Basel Capital Accord. The mean result for the interaction term ($RATE_{it-1} \cdot CAPITAL_{it-1}$) is 5%. The mean size of our banks is LE10.58m and ranges from LE8.41m to LE14.25m. On average, the cash holdings of sample banks represent LE9.15m. The mean (median) of total expenses to total revenues is 1.67 (1.54) during the research investigation pe-

¹ According to the International Accounting Standard (IAS, 2022), cash comprises “cash on hand and demand deposits.” Cash equivalents are “short-term and highly liquid investments that can be easily converted into cash and are not subject to risk”

Table 1. Summary statistics (2011–2020)

Variables	N	Mean	Median	Std.	Min	Max
$PROFITABILITY_{it}: ROA$	181	0.02	0.02	0.01	-0.06	0.04
$PROFITABILITY_{it}: NIM$	181	0.04	0.03	0.01	0.01	0.07
$RATE_{it-1}$	181	0.10	0.10	0.03	0.06	0.20
$CAPITAL_{it-1}$	181	0.16	0.15	0.04	0.07	0.29
$RATE_{it-1} \cdot CAPITAL_{it-1}$	181	0.05	0.00	0.06	0.00	0.17
$SIZE_{it-1}$	181	10.58	10.52	1.08	8.41	14.25
$CASH_{it-1}$	181	9.15	9.03	1.21	6.23	12.60
$EFFICIENCY_{it-1}$	181	1.67	1.54	0.67	0.11	4.92
$MARKET_{it-1}$	181	0.01	0.00	0.04	0.00	0.26

riod. Finally, the mean bank market share is 1% with a standard deviation of 4%.

The Fisher test for panel unit root based on the augmented Dickey-Fuller test is checked to assess whether there is stationarity in the time series data. The findings confirm the stationarity of the time series since the p-values are less than 5%, thus, rejecting the null hypothesis. Moreover, the findings show that there is cointegration among variables of our models (Gujarati, 2003). The variance inflation factor (VIF) for independent variables in the regression model is calculated to test the problem of multicollinearity. The test confirms that there is no multicollinearity problem among regressors of the model since the VIF value is 2.57, which is far from the threshold of 10 (Baum, 2006). The results of the modified Wald test prove the presence of heteroscedasticity among regression residuals. In addition, the results of the Wooldridge test confirm that the residuals are serially correlated over time. Overall, the findings support the validity of the alternative hypotheses since the p-values are less than 5%. As for Gujarati (2003), in such cases, it is always preferable to choose the cross-sectional time-series “generalized least squares” (GLS) regression approach in favor of ordinary least squares (OLS) to avoid making misleading inferences.

As shown in Table 2, the results suggest that $RATE_{it-1}$ has a significant positive impact on ROA and NIM, as the coefficient of 0.005 and 0.009 indicate. Hence, the first research hypothesis is accepted. The regression results also show that $CAPITAL_{it-1}$ has a positive influence on ROA and NIM with a coefficient of 0.003 and 0.004 and is statistically significant at conventional lev-

els. Thereafter, the second research hypothesis is accepted. The specifications with interaction terms allow investigating whether the sign of the association between interest rate and bank profitability can change depending on banking regulations. This is particularly interesting in the case of prudential capital, where the interest rate is positively associated with bank profitability and is statistically significant at conventional levels and the coefficients of the interaction term of interest rate with prudential capital are found to be negative and are statistically significant at conventional levels. Hence, for example, the findings show that for banks with prudential capital ratios higher than 0.16, the association between interest rate and ROA and NIM turns negative, as evident by the significant negative coefficients of $RATE_{it-1} \cdot CAPITAL_{it-1}$ -0.011 and -0.012. Then, the third research hypothesis is accepted.

Concerning bank-specific and macro-economic control variables, $SIZE_{it-1}$ has a significant positive impact on ROA and NIM with the coefficient of 0.005 and 0.002. $CASH_{it-1}$ has a positive influence on NIM with a coefficient of 0.002 at a significance level of 1%. However, $CASH_{it-1}$ is statistically insignificant with ROA. As for $EFFICIENCY_{it-1}$, the results show that it has a significant negative impact on the ROA and NIM with the coefficient of -0.011 and -0.006. Contrary to the expectations, the findings reveal that $MARKET_{it-1}$ has a significant negative influence on the ROA and NIM, as the coefficient of -0.001 and -0.001 indicate. The coefficient of the $GOVERNMENT_{it-1}$ is negatively associated with NIM with a coefficient of -0.002 at a significance level of 5%. Finally, the coefficient of the $CRISIS_{it-1}$ has a positive impact on NIM with a coefficient of 0.002 at a significance level of 1%.

Table 2. Main results using cross-sectional time-series Generalized Least Squares regression – banks (2011–2020)

Variables	Predicted sign	Performance _{it}			
		ROA _{it}		NIM _{it}	
		Coef.	Z	Coef.	Z
INTERCEPT	+/-	-0.034	-2.03**	0.013	2.21**
RATE _{it-1}	+	0.005	2.30**	0.009	8.63***
CAPITAL _{it-1}	+	0.003	2.10**	0.004	7.46***
RATE _{it-1} ·CAPITAL _{it-1}	-	-0.011	-1.75*	-0.012	-1.64*
SIZE _{it-1}	+	0.005	4.34***	0.002	4.69***
CASH _{it-1}	+	0.001	1.35	0.002	9.04***
EFFICIENCY _{it-1}	-	-0.011	-8.12***	-0.006	-5.42***
MARKET _{it-1}	+	-0.001	-2.21**	-0.001	-4.15***
GOVERNMENT _{it-1}	-	0.000	-0.18	-0.002	-2.05**
CRISIS _{it-1}	-	0.000	0.65	0.002	14.57***
Year fixed effects		YES		YES	
Firm fixed effects		YES		YES	
P-value		0.0000		0.0000	
Observations		181		181	
Number of banks		22		22	

Note: *, **, and *** represent significance at the 10%, 5%, and 1% levels, respectively. Fixed effects “year” and “firm” are used to control for “serial correlation” and “heteroskedasticity” in regression residuals, respectively.

6. DISCUSSION

In line with the prior research findings, easing lending interest rate policy diminishes banks' profits (Mamatzakis & Bermpei, 2016; Wambari & Mwangi, 2017; Claessens et al., 2018; Simoens & Vennet, 2021; Whited et al., 2021). However, the finding contradicts the studies which support the effectiveness of the ‘expansionary channel’ (e.g., Almaqtari et al., 2018). The findings also support the argument by Naceur and Kandil (2009) that banks operating in Egypt tend to experience a rise in profits with an increase in prudential capital. Therefore, prudential capital plays an instrumental role in the financial performance of banks, as Bandt et al. (2018) and Le et al. (2020) suggest. However, this finding conflicts with the previous studies that conclude that the larger the prudential capital, the lower the profitability of a bank in Egypt (e.g., Hakim & Neaime, 2005). Most importantly, the significant negative coefficients of the interaction term, $RATE_{it-1} \cdot CAPITAL_{it-1}$ show the larger the prudential capital ratio, the less positive is the association between interest rate in one year and bank profitability in the subsequent year. Hence, the prudential capital seems advisable to

increasingly strengthen banks' profitability at low-interest rates times.

The positive association between bank size and profitability is probably owing to the exposure of large-sized banks to new markets Chen et al. (2018) or their investment in advanced technologies that eventually improve profitability (Adesina, 2021). Moreover, the findings agree with the studies which confirm that increased cash holdings contribute positively to bank profitability (e.g., Fernandes et al., 2021). This positive association can be explained in the lights of Dimitropoulos et al. (2020) and Jabbouri and Almustafa (2021), who illustrate that enhanced bank profitability is due to the costs mitigation when raising capital and extraction of more investment opportunities. As for efficiency, the negative association implies that the less efficient bank operations are (since higher values for the ratio indicate less efficient operations), the lower the levels of their profitability. As suggested by Drakos et al. (2016), inefficient bank operations could refer to diminutive expertise and outdated technical capabilities in controlling expenses and risks, which should lead to lower profitability and greater financial fragility.

The negative association between bank market share and profitability disagrees with the findings of Shim (2019) and Khan et al. (2020), who confirm that banks operating in highly concentrated markets are able to generate higher profits. Additionally, the negative association between government ownership and bank profitability is aligned with the prior work of (Duho et al., 2020; Pak, 2020). According to Pak (2020), this negative association may be attributed to the directed lending program constraining the profitability of government-owned banks. Finally, the positive impact of the crisis on NIM does not match with the studies of (Danisman & Demirel, 2019; Teixeira et al., 2020). It is consistent with the empirical ev-

idence of Bikker and Vervliet (2018) and Mateev and Bachvarov (2021). As argued by Bikker and Vervliet (2018), many banks adjust their business strategies during crisis years, and therefore, their financial performance is less affected. Many studies support the notion that banks curb their lending investments in response to the sharp decline of inflows, such as Ali and Iness (2020). The strict regulations moreover seem to significantly restrict excessive risk-taking by banks, especially in the crisis period (Teixeira et al., 2020). The findings of this research also support the notion that banks operating in Egypt responded to the crisis with huge investments in treasury bills and governmental notes.

CONCLUSION

Banks play a fundamental role in the economy, thus, their profitability affects economic growth. In this regard, this research examines the impact of interest rates on bank profitability and how prudential capital influences the profitability of banks. Furthermore, it contributes to the literature through examining the association between the interacting effect of interest rate and prudential capital on banking profitability. Using a sample comprising 22 banks in Egypt covering the period from 2011 to 2020, the findings reveal a significant positive association between interest rate and bank profitability. Consequently, the low-interest rate decreases bank profitability. Also, the findings provide empirical evidence that higher levels of prudential capital ameliorate banks' profitability. Most importantly, the findings show that the profitability-reducing effects of low-interest rates are diminished for banks that maintain higher levels of prudential capital. This research reveals novel findings that will guide policymakers and bank regulators to point out the importance of maintaining a higher prudential capital ratio for enhancing bank profitability within a low-interest rate environment. The findings thus support the ongoing efforts of the Central Bank of Egypt in reinforcing the Basel Capital Accord framework and suggest that banks' regulators need to ensure banks' compliance with Basel III capital requirements, to address the problem of low profitability during expansion policy. As a future research direction, the analysis can be deepened by enlarging the sample size, extending the investigation period, and subdividing the sample according to bank-specific characteristics. Future research may also focus on investigating the impact of other bank regulations on the association between interest rate and bank profitability.

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ACKNOWLEDGMENTS

The authors are grateful to Mr. Ali Shaker and Amira Ragab for their valuable support.

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