Factors affecting the business efficiency of listed joint stock commercial banks in Vietnam

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ABSTRACT

This research is conducted to measure factors affecting the business efficiency of listed joint stock commercial banks. The balanced data was collected from 253 financial statements of 23 listed joint stock commercial banks for the period 2010 – 2020. By analyzing panel data with the fixed effects model (FEM) and random effects model (REM), the research results show that the size of total assets, market share, cost-to-revenue ratio, the ratio of equity to total assets, the ratio of bad debts to outstanding loans, provision expenses for credit risks on outstanding loans, marginal income, and the ratio of non-interest income to interest income affect are statistically significant on the business efficiency of commercial banks listed on Vietnam's stock market. Although the outstanding loans– to-deposit ratio has a negative effect on ROA and the credit growth rate has a positive influence on ROA, the influence of these two variables is not statistically significant. The independent variables explain the dependent variable ROA by 71.64% and the dependent variable Tobin's Q by 28.17%. Recommendations are then proposed to improve the efficiency of listed joint stock commercial banks; in particular, including: increasing assets through an increase in capital for development investment, especially in the period after the epidemic has been under control; increasing and developing reasonable mobilization and lending; saving operating costs and strictly controlling not only the provision for general risks but also the provision for specific risks; concerning increasing non-interest income through improving the quality of commercial bank services. The research also shows the limits of the study, which has not yet assessed the business efficiency by using non-financial criteria such as customer satisfaction or banks' branding. On the other hand, for banks, the financial cycle is very large and depends closely on State Bank's regulations, but this study has not yet mentioned it.

Key words: business efficiency, listed banks, fixed impact model (FEM), random effects model (REM)

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INTRODUCTION

Business efficiency – equally called business results – is not only a goal and a criterion for evaluating the existence and development of each bank, but also the basis for stakeholders to make decisions on whether to invest, finance or eventually become a business partner. Recognizing its importance, many domestic and foreign authors have conducted research regarding this field. In particular, they are interested in factors affecting banks' business efficiency in various contexts or countries.

For example, the studies of Sufian and Chong in the Philippines for the period 1990 – 2005, Gul et al. in Pakistan for the period 2005 – 2009, Raphael in Tanzania for the period 2005 – 2011, Bandaranayake and Jayasinghe in Sri Lanka for the period 2001 – 2011, Khan et al. in emerging countries in the period 2008 – 2014; researches in Vietnam by Nguyen in the 2007 – 2011 period, Vo in the 2009 – 2017 period, and Le in the period 2009 – 2017 can be cited [1–8].

However, most of these researches studied performance under normal business operating conditions and environments, which had not been affected by events on a macro scale such as the Covid-19 pandemic spreading globally recently.

Because of the importance of business efficiency, stakeholders such as bank administrators, state banks, customers and investors, etc., are interested with different goals in mind. Good business efficiency means a healthy bank, capable of existing, developing in the long-term and contributing to the development of the economy. On the contrary, a weak business efficiency of banks will greatly affect the banking system, leading to the financial instability of the national economy.

It is therefore imperative to identify and measure factors that affect the business efficiency of the banking sector, especially during the period of time affected by the Covid-19 pandemic. The research results are the basis to help administrators determine appropriate solutions and recommendations in order to improve the business efficiency of banks sustainably.

THEORETICAL FRAMEWORK AND RESEARCH MODEL

Theoretical framework

Business efficiency is a concept that can be understood and measured from many different viewpoints. Previous studies have shown that the framework of business efficiency has changed over time. Yuchtman and Seashore define business efficiency as firms' ability to utilize limited resources in production, whereas. Porter argues that it is the ability of companies to create value for customers. The research by Price suggests that business efficiency is firms' productivity and conformity with market requirements. Peterson and Behfar define that business efficiency is the ability to effectively exploit available resources in order to achieve goals as well as satisfy customers' needs while Adam considers it as the company's ability to keep up with market trends and increase business performance[9–13].

Different theories to measure business efficiency have been highlighted in many studies. The research by Kaplan and Norton[14] proposes to use the Balance Score Card model with the following angles: finance, internal processes, R&D capabilities, and clientele to evaluate business efficiency. Neely et al.[15] recommend using the performance prism framework to measure business efficiency, especially to evaluate efficiency through shareholder satisfaction, operational capacity, processes and development strategies of the company, as well as contributions to its stakeholders. In addition to that, business efficiency can also be measured by traditional financial indicators such as Return on Assets – ROA, Return on Investment – ROI[16], Return on Equity – ROE[17], Return on Sales – ROS[18], Return on Capital Employed – ROCE[19]; however, as these indicators are calculated based on past data figuring on annual financial statements, the ensuing business efficiency evaluation is relatively obsolete and not updated accordingly to the market in real-time. Therefore, Carter et al., Rose and Rolle et al. propose to apply Tobin's method – which assesses a firm's business efficiency based on its market value through the value of its stock actually traded at that specific moment in time. The results of this evaluation method objectively and accurately reflect the actual situation of firms in general and of the banking sector in particular[20–22].

From various theories, many empirical studies have been conducted on the business efficiency of banks by methods and research models such as the Tobit regression model[3,6] Linear Regression Model[4,8] FEM – Fixed Effects Model[5,7]. In addition to that, many studies use combinations of different indicators to measure banks' business efficiency, such as the study of Gul et al. which employs only ROA, ROE, ROCE and NIM (Net Interest Margin). Sufian and Chong uses ROA in their measurements. Khan et al. also uses NIM and ROA to measure efficiency. As for Nguyen research is conducted using 3 indicators namely economic efficiency, technical efficiency and allocative efficiency in order to measure business results. Vo uses ROE, and Le uses ROA and ROE to measure the business results of banks[1,2,5–8].

Proposed research model

Based on the literature reviews, along with the analysis of the current situation of banks' operations in the current context, this study proposes a research model taking the form of:

$$\mathbf{Y}_{it} = \beta_0 + \beta_j \mathbf{X}_{jt} + \mathbf{w}_{it}$$

In which: t is the data series from financial statements for the period from 2010 to 2020 of 23 joint-stock commercial banks, i is the dependent variables Y, measured by financial indicators including Y1 being ROA; Y2 being banks' Tobin's Q, and j is the independent variables X as measured by the following criteria: X1 being the total asset size; X2 being the market share; X3 being the cost-to-income ratio; X4 being the ratio of outstanding loans to deposits; X5 being the ratio of equity to total assets; X6 being the ratio of bad debts to outstanding loans; X7 being the cost of provision for credit risks on outstanding loans; X8 being the dummy variable representing the Covid-19 pandemic; X9 being the marginal interest income; X10 being the ratio of non-interest income to interest income; and X11 being the credit growth rate. The independent and dependent variables are defined as: ROA is the indicator that evaluates the profitability of an asset – it is a measure of the efficiency of utilized assets, reflecting the bank's ability to earn net profit per unit of assets. A ROA with steady growth over the years is a good sign for the bank. However, if fluctuations are shown to be erratic, it means that the bank's business operations are not stable, therefore not good. According to Rozzani and Rahman, banks are most optimal when the ROA is $\geq$ 1.5%.[23]

ROE is the indicator of the profitability of equity – or the measure of the efficiency of the use of equity. ROE reflects the bank's ability to earn net profit per unit of equity. The higher the ROE, the more efficient the use of capital. This indicator is analyzed by investors, and compared with stocks of the same industry in the market before investment decisions are made. According to Rozzani and Rahman, banks are most optimal when the ROE is $\geq$ 22%.[23]

Tobin's Q is calculated based on the market value of a bank divided by its total assets. The higher this coefficient is, the easier and cheaper it is for banks to raise capital because its market price is relatively high compared to the cost of raising additional capital. Thus this coefficient is balanced when the bank's market value equals the cost of replacement.

Within the scope of this research model, the authors only choose two representative dependent variables to measure the bank's business efficiency, namely ROA and Tobin's Q – the former being utilized to measure past business efficiency at book value, and the latter being utilized to measure business efficiency at the market value at specific times in question. (Table 1).

X1 – The total asset size shows the bank's capacity, strength and position in the market. Banks with larger asset sizes tend to have an easier time increasing profits. Many studies confirm that the size of total assets often has a positive impact on the business efficiency of banks [2–4,6,8].

X2 – Market share is the part of the market that a bank has captured, or its redistribution of the market relative to its competitors. In business activities, in order to help banks make good profits, it is necessary to have the right directions and guidelines, which can only be made possible with the determination of market share.

X3 – The expense-to-income ratio is an indicator of a bank's ability to control costs. This indicator shows how much the bank ought to spend in order to gain 1 unit of currency of income. It is an important financial indicator that clearly shows the relationship between inputs and outputs in a bank's business operations. In this sense, the lower the cost-to-income ratio the better, that is, the better the bank's ability to control costs, the more efficient it is [1,7].

X4 – The outstanding loans-to-deposit ratio is an indicator used to assess the creditworthiness of the credit and the ability to self-mobilize for loan use. Outstanding loans are considered to be the least liquid assets despite having the possibility to gain the highest yields. Therefore, the more substantial this ratio is, the lower the bank's liquidity but the higher the profitability [2,7].

X5 – The ratio of equity to total assets. Equity is a prerequisite for viability, as it determines the scale of operations and security, and it is also a decisive factor in the process of initiating and formulating policies to develop business activities. Nguyen [27] believes that commercial banks that possess agency in equity will have many opportunities and be able to limit multiple risks in business operations. Research by Sufian and Chong [1] shows that there is a positive correlation between equity on total assets and the business efficiency of banks.

X6 – The ratio of bad debts to outstanding loans. This ratio reflects the quality of a bank's lending activities. If the bank in question is unable to well manage bad debts, this ratio will grow to become more substantial and negatively affect business efficiency. Raphael; Vo; and Le [3,7,8] all come to the same conclusion that this ratio has a negative impact on banks' business efficiency.

X7 – The credit provision expense is the expense set aside to eventually compensate for possible losses on bad debts that the bank has lent to customers. It is easy to see that the cost of credit provision is directly, positively, proportional to bad debts. When bad debts increase, the pressure of provisioning will become more substantial, thereby reducing profits and business efficiency.

X8 – The COVID-19 pandemic. According to Nguyen [28], the Covid-19 pandemic has swept across the world, causing unprecedented negative impacts on the world economy and Vietnam. Therefore it will negatively affect the business efficiency of banks.

X9 – The marginal interest income is the difference in percentage between interest income and interest expense payable by the bank. This indicator shows how much banks are actually earning in the difference in interest rates between deposit activities and credit investment activities. Researches by Le; and Bandaranayake and Jayasinghe [4,8] have found that this marginal interest income has a positive impact on the business efficiency of banks.

X10 – The ratio of non-interest income to interest income. Le,; Sufian and Chong,; and Raphael [1,3,8] have shown results stating that this ratio has a positive impact on banks' business efficiency.

X11 – The credit growth rate is the growth rate of the outstanding loans, which is the percentage or the number of times change occurs within the credit balance at a certain time compared to the previous period. Credit growth is very important because this is the main source of income for banks. These independent variables are in Table 2.

RESEARCH METHOD

Sampling method and data collection

The study uses a sample of data collected from balance sheets of the annual financial statements of 23 listed joint-stock commercial banks in Vietnam in the time period from 2010 to 2020. Currently, there are 25 joint-stock commercial banks in Vietnam as listed on 3 stock exchanges: HOSE, HNX and Upcom. However, due to the inability to gain access to data from

Table 1: Dependent variables in the research model

No	Dependent variable	Notation	Formula	Sources
1	Return on total assets	ROA	Profit after tax / Total assets	Dam; Zeitun and Tian (2014) [24,25]
2	Bank's market value	Tobin's Q	(Equity's market value + Book value of debts) / Total assets	Hoang and Vo; Adhikary and Hoang; Marinova et al.; Rolle et al. [17,19,22,26]

Table 2: Independent variables in the research model

No	Independent variable	Notation	Description	Expected sign
1	Size of total assets	X1	Natural logarithm of total assets	+
2	Market share	X2	Total assets of each bank divided by the total assets of all banks	+
3	Cost-to-income ratio	X3	Total operating expenses divided by the total operating income	-
4	Outstanding loans -to-deposit ratio	X4	Total customer loans divided by the total customer deposits	+
5	Equity-to-assets ratio	X5	Equity divided by total assets	+
6	Ratio of bad debts to outstanding loans	X6	Bad debts divided by outstanding loans	-
7	Provision expense for credit risk on outstanding loans	X7	Provision expense for credit risk divided by outstanding loans	-
8	Covid-19 pandemic	X8	Year affected by the Covid-19 pandemic: value equal to 1 Otherwise equal to 0	-
9	Net interest margin	X9	The difference in percentage between interest income and interest expense, which shows how much banks are making profits in the difference in interest rates between deposits and credits.	+
10	Ratio of non-interest income to interest income	X10	Non-interest income divided by interest income	+
11	Credit growth rate	X11	[(Credit balance at the end of the reported period divided by the credit balance at the end of the previous period) x100]-100	+

Viet Capital Commercial Joint Stock Bank (Ban Viet Bank) and Vietnam Thuong Tin Commercial Joint Stock Bank (Vietbank), this study is conducted on the remaining 23 joint-stock commercial banks. Because of the relatively small size of these two banks mentioned above, they do not significantly affect the overall business efficiency of the banking industry, therefore their exclusion from the analyzed data still ensures the credibility of evaluation results.

Methods of data analysis

Before analyzing the Fixed Effects Model (FEM) and Random Effects Model (REM), the study performs multi-collinearity test after having analyzed the linear model. As the results of the VIF ratio are <2, it can be said that there is no multicollinearity taking place.

The FEM and REM analysis methods are used to identify factors affecting the banking sector's business efficiency. The Hausman test is used in order to determine the optimal model. After the optimal model is decided, an autocorrelation test using the Wooldridge

test, variance change by Wald test are used. As it is found that the ROA and Tobin's Q models have these limitations, the General Least Squares method (GLS) is used to estimate the factors affecting the business efficiency of banks, thereby overcoming the phenomenon of autocorrelation and heteroscedasticity within the model.

RESULTS AND DISCUSSION

The current business efficiency of banks

The results of Figure 1 show that the efficiency indicators of banks (ROE, ROA and Tobin's Q) have variations in different periods. Especially:

For ROE: From 2010 to 2016 there is a downward trend, with a fast decline in the 2010-2012 period and a relatively slower decline in the 2012-2016 period. In contrast, in the period from 2016 to 2019 ROE had a very fast growth (from 5.78 in 2016 to 14.18 in 2019), nearly tripling in 4 years. However, by 2020, this indicator slightly decreased to 13.69.

For ROA: The period from 2010 to 2012 tends to increase slightly from 4.39 to 4.57, however, from 2012 to 2020 it tends to decrease steadily over the years, particularly in 2012 it is 4.57 but by 2020 ROA is reduced to 3.22 (equivalent to a 25% reduction).

For Tobin's Q: For the period from 2010 to 2015, there is a steady decrease over the years (from 1.45 in 2010 to 0.48 in 2015). But in the period from 2016 to 2019 there is a slight increase from 0.48 in 2016 to 1.12 in 2019. In 2020, it decreases to 1.09.

Due to the impact of the Covid-19 epidemic, in 2020 the ROE, ROA and Tobin's Q indicators all decreased compared to previous years.

Factors affecting the business efficiency of banks

Analysis of variables as used in the research model

The average ROA in the period 2010-2020 was equal to 0.90% (Se = 0.04), lower than that from the research results of Nguyen et al.,[29] (ROA $\geq$ 1%), and that from Rozzani and Rahman as assessed using the Camel benchmarks (ROA $\geq$ 1.5%). This reflects that the use of assets of banks has not been optimal. In which, Tien Phong Commercial Joint Stock Bank (TPB) had the lowest ROA value of 0% in 2011; and Saigon Bank for Industry and Trade Joint Stock Commercial (Saigon Bank) had the highest ROA value of 3.00% in 2010 (Table 3).

The average Tobin's Q in the period 2010 – 2020 was 3.71 (Se = 0.12), of which the lowest was 1.70 for Nam A Commercial Joint Stock Bank (NAB) in 2020

and the highest was for Tien Phong Commercial Joint Stock Bank (TPB) at 15.85 in 2012. This result shows that shares of listed banks in Vietnam are being valued higher than what they should be (Table 3).

X1: The average size of total assets reached 8.05 (Se = 0.03). In general, X1 of banks increased steadily in the period 2010 – 2020 because banks are focusing on increasing the scale favorable for business expansion. In which, the smallest bank's X1 belonged to Kien Long Bank (KLB) whose X1 was equal to 7.10 in 2010; and the bank with the largest X1 was Bank for Investment and Development of Vietnam (BIDV), whose X1 was equal to 9.18 in 2020.

X2: Market share had an average value of 4.35 (Se = 0.32) in the period 2010 – 2020. Market share has shifted between banks over the years; however, Bank for Investment and Development of Vietnam (BIDV) still enjoyed the largest market share of 19.19 in 2015; while the smallest part belonged to Saigon Bank for Industry and Trade Joint Stock Commercial Bank (Saigon Bank) at 0.27 in 2020.

X3: The average cost-to-income ratio reached 0.52 (Se = 0.01), with Saigon Bank having the lowest X3 ratio of 0.23 in 2010 and National Bank having the largest X3 ratio of 1.00 in 2013.

X4: The average loan-to-deposit ratio was 0.87 (Se = 0.01), higher than the requirement of the State Bank of 0.80, above the ratio of 0.80 – 0.90 of economists. Vietnam Maritime Commercial Joint Stock Bank had the lowest X4 ratio of 0.37 in 2014, and Bac A Commercial Joint Stock Bank had the highest X4 ratio of 1.81 in 2011. Major banks' X4 revolved around 0.75 to 0.90.

X5: The ratio of equity to total assets had an average value of 0.09 (Se = 0.00). This ratio is relatively high, showing that banks have made good use of financial leverages. In which, in 2011 Asia Commercial Bank (ACB) had the lowest X5 of 0.04 and KLB had the highest X5 for a value of 0.26 in 2010.

X6: The ratio of bad debts to outstanding loans had an average value of 0.02 (Se = 0.00), in accordance with standards set by the State Bank and showing that bad debts are well controlled. Many banks had their X6 equal to 0 such as An Binh Bank (from 2010 to 2011); Maritime Bank (2010 – 2012) and Oriental Bank (2014 – 2015). SHB had the highest X5 of 0.09 in 2012.

X7: The average cost of credit provision expense to outstanding loans was 0.01 (Se = 0.00). Saigon Hanoi Bank had the lowest X7 of -0.01 in 2012 – 2013, and Maritime Bank had the highest X7 of 0.06 in 2016.

X8: X8 is a dummy variable that takes the value of 0 for the year without the Covid-19 pandemic factor,
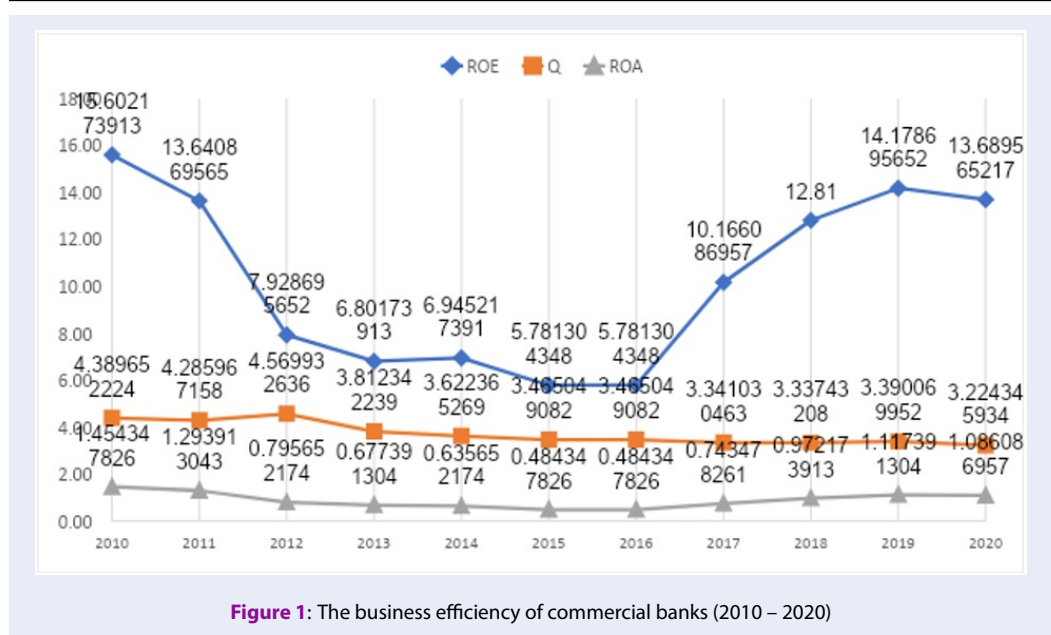
Figure 1: The business efficiency of commercial banks (2010 – 2020)

Table 3: Descriptive statistics of variables

Variable	Average	Variance	Min	Max
ROA	0.90	0.04	0.00	3.00
Tobin's Q	3.72	0.12	1.70	15.85
X1	8.05	0.03	7.10	9.18
X2	4.35	0.32	0.27	19.19
X3	0.52	0.01	0.23	1.00
X4	0.87	0.01	0.37	1.81
X5	0.09	0.00	0.04	0.26
X6	0.02	0.00	0.00	0.09
X7	0.01	0.00	-0.01	0.06
X8	0.09	0.02	0.00	1.00
X9	0.00	0.00	0.00	0.04
X10	0.24	0.02	-1.09	3.00
X11	22.02	1.23	-11.00	113.00

especially from 2010 to 2019 and takes the value of 1 for the year affected by the Covid-19 pandemic, especially in 2020.

X9: The average marginal interest was 0.00 (Se = 0.00). Tien Phong Bank had the lowest X9 index of 0.00 in 2011 and Saigon Bank had the highest X9 of 0.04 in 2012.

X10: The ratio of non-interest income to interest income reached the average value of 0.24 (Se = 0.02). Tien Phong Bank had the lowest X10 of -1.09 in 2011

and Ho Chi Minh Development Joint Stock Commercial Bank (HDB) had the highest X10 of 3.00 in 2013. X11: The average credit growth rate is 22.02 (Se = 1.23). Tien Phong Bank had the lowest X11 of -11.00 in 2011 and Southeast Asia Commercial Joint Stock Bank's highest X11 was 113.00 in 2010 (Table 3).

Factors affecting the business efficiency

From results of the GLS model (Table 4), we can see that the variables X2 = 0.261, X3 = -0.024 and X7 = -

Table 4: Panel data analysis results using FEM and GLS models

Variable	ROA		Tobin's Q	
	FEM	GLS	FEM	GLS
X1	*0.248	***0.261	***-1.614	***-0.762
X2	**-0.517	***-0.024	0.026	0.027
X3	***-2.560	***-2.554	-0.893	*0.870
X4	0.114	-0.093	-0.118	0.084
X5	**2.364	**1.808	***22.640	***18.080
X6	**-3.361	**3.138	2.920	3.513
X7	***-26.921	***-22.591	1.501	2.769
X8	0.048	-0.016	**0.433	-0.078
X9	***23.447	***23.159	***-25.658	***14.877
X10	**0.202	***0.189	-0.092	0.164
X11	0.001	0.001	0.001	-0.001
Cons	-.294	-0.321	***15.791	***8.543
R-sq (%)	71.64		28.17	

*, ** and *** correspond to the significance levels of 10%, 5% and 1%

2.554 had a negative effect on ROA with statistical significance, while the variables X1 = 0.261, X5 = 1.808, X6 = 3.138, X9 = 23.159 and X10 = 0.189 had a statistically significant positive effect with ROA. And while the variable X4 = -0.093 had a negative effect on ROA and X11 = 0.001 had a positive influence on ROA, the influence of these two variables is not statistically significant. These results are similar to those of previous studies of Gul et al.,; Raphael,; Bandaranayake and Jayasinghe,; Nguyen,; Le,; Sufian and Chong,; Vo,; Nguyen) [1–4,6–8,27].

This model had R-sq = 71.64% significant, meaning that these variables explain the variation of ROA at the level of 71.64%.

Similarly, for the Tobin's Q model, the variable X1 = -0.762 had a statistically significant negative effect on Tobin's Q, and the variables X3 = 0.870, X5 = 18.080 and X9 = 14.877 had a statistically significant positive effect on Tobin's Q. And the variables X8 = -0.078 and X11 = -0.001 had a negative effect on Tobin's Q and the variables X2 = 0.027, X4 = 0.084, X6 = 3.513, X7 = 2.769 and X10 = 0.164 but without statistical significance. This model had R-sq = 28.17%, which means that these variables explain the variation of Tobin's Q at the level of 28.17%. These results are consistent with those of the previous studies of Hoang and Vo; Adhikary and Hoang; Marinova et al.; Rolle et al.) [18,19,22,26].

Some managerial implications to improve the business efficiency of banks

From the analysis results, it has been shown that there are many factors that directly affect the business efficiency of banks. Thus, the study proposes a number of recommendations in order to improve operational efficiency, namely to raise the ROA and Tobin's Q targets of banks.

The recommendation to increase assets through an increase in equity

As the size of assets has a positive impact on ROA, banks need to actively increase assets through an increase in capital for development investment, especially in the period after the epidemic has been under control. In addition to that, an increase in capital helps banks have more leverage to overcome the risk of bad debts as stipulated in Circular 14/2021/TT-NHNN. To concretize this, banks can increase capital through the issuance of more shares, the distribution of dividends in shares and the issuance of bonds and certificates of deposit in the medium and long term. However, the study also shows that equity on total assets also has a positive effect on ROA and Tobin's Q, which indicates that increasing total assets is a necessity for banks at this moment to increase business efficiency.

The recommendation concerning capital mobilization and lending

Research results have shown that marginal interest income has a positive effect on ROA and Tobin's Q, therefore, in order to increase mobilized capital as well as lending, banks need to develop reasonable mobilization and lending policies.

Regarding deposit and lending interest rates: as this factor is of a major concern for customers, banks need to set up an appropriate interest rate, ensuring both competitiveness and cost-effectiveness. Depending on the strengths of each bank to have an optimal interest rate because interest rates are an effective tool to adjust the bank's deposit and lending scale.

For customers: in addition to the interest rate factor, banks need to ensure the safety and confidentiality of information, while also providing payment and transaction benefits. To attract customers, it is necessary to have suitable products for each target, and because each customer has different needs, banks need to carefully study this demand in order to optimize loaning while maintaining a healthy level of capital recovery and bad debts ratio.

The recommendation for cost management

Results have shown that the ratio of operating expenses to income and the ratio of provision expenses to outstanding loans have a negative effect on the business performance (ROA) of banks. Therefore, to increase efficiency, banks can perform the following tasks such as:

Saving operating costs: Each bank's operating expenses include many items such as administrative expenses, salary expenses, management expenses, office electricity and water costs, etc. They need to develop and issue an operating program including specific annual anti-waste saving practices, together with a strict reward and punishment mechanism to achieve quality saving efficiency. In addition to that, banks need to organize and arrange personnel with the right strengths and expertise to improve labor productivity, thereby saving salary costs.

Strictly control provision expenses: According to regulations, banks have two provision expenses in lending activities including provisions for general risks and provisions for specific risks. In which, general risk provisions are made according to regulations for the entire loan balance from group 1 to group 5. Therefore, banks ought to strictly control the cost of specific risk provisions. To do this, banks must well control debts from groups 2 to 5, minimize the generation of bad debts by focusing on completing loan appraisal procedures, risk management in the lending process as well as effective post-borrowing control.

The recommendation concerning increasing non-interest income

Existing services should be improved, while new banking services should be developed. New product development should be accelerated to improve customer satisfaction and attract new customers. Specifically, banks can put into operation more financial technology (Fintech) services, which is currently a rising field with a lot of potential.

The quality of banking services should be improved. This can be said to be a key factor to retain customers in this period of fierce competition.

CONCLUSION

Research on business efficiency in general, and the business efficiency of banks in particular, is very important. While studies have employed different criteria to evaluate performance, financial indicators are still among the most commonly used.

From 253 financial statements of 23 commercial banks, this study has shown that there are many factors affecting the business efficiency of banks, including financial, non-financial, as well as management factors. From there, the study has proceeded to propose some managerial propositions to improve the business efficiency for banks.

This study only focuses on business efficiency as evaluated by financial indicators and has not yet assessed it using non-financial criteria such as customer satisfaction or banks' branding. On the other hand, for banks, the financial cycle is very large and this depends closely on State Bank's regulations, but this study has not yet mentioned.

LIST OF ABBREVIATIONS

ACB: Asia Commercial Bank

BIDV: Bank for Investment and Development of Vietnam

FEM: Fixed effects model

GLS: General least squares method

HDB: Ho Chi Minh Development Joint Stock Commercial Bank

HNX: Ha Noi Stock Exchange

HOSE: Hochiminh Stock Exchange

KLB: Kien Long Commercial Joint Stock Bank

NAB: Nam A Commercial Joint Stock Bank

NIM: Net Interest Margin

REM: Random effects model

ROA: Return of Assets

ROCE: Return on Capital Employed

ROE: Return on Equity.

ROI: Return on Investment

ROS: Return on Sales

R&D: Research and Development

Saigon Bank: Saigon Bank for Industry and Trade

SHB: Saigon Hanoi Commercial Joint Stock Bank

TPB: Tien Phong Commercial Joint Stock Bank

Upcom: Unlisted Public Company Market

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CONFLICT OF INTEREST

The authors hereby declare that there is no conflict of interest in the publication of this article.

AUTHORS CONTRIBUTION

Dang Quang Vang is in charge of evaluating the theoretical underpinnings, providing an overview of the state of earlier investigations, and suggesting policy implications based on the findings. Choosing estimate techniques, gathering and processing data, and analyzing regression findings are all the responsibilities of Le Na.

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Các yếu tố ảnh hưởng đến hiệu quả kinh doanh của các ngân hàng thương mại cổ phần niêm yết tại Việt Nam

Đàng Quang Vắng[*]**, Lê Na**

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TÓM TẮT

Thực hiện nghiên cứu nhằm đo lường các yếu tố ảnh hưởng tới hiệu quả hoạt động kinh doanh của các ngân hàng thương mại. Dữ liệu được thu thập từ 253 báo cáo tài chính của 23 ngân hàng thương mại niêm yết giai đoạn 2010 - 2020. Nghiên cứu sử dụng phương pháp phân tích dữ liệu bảng bằng mô hình tác động cố định (FEM) và mô hình tác động ngẫu nhiên (REM), kết quả nghiên cứu đã chỉ ra quy mô tổng tài sản; thị phần; tỷ lệ chi phí trên doanh thu, tỷ lệ vốn chủ sở hữu trên tổng tài sản; tỷ lệ nợ xấu trên dư nợ; chi phí dự phòng rủi ro tín dụng trên dư nợ; thu nhập cận biên và tỷ lệ thu nhập ngoài lãi trên thu nhập từ lãi ảnh hưởng và có ý nghĩa thống kê đối với hiệu quả kinh doanh của các ngân hàng đang niêm yết trên thị trường chứng khoán của Việt Nam. Mặc dù tỷ lệ dư nợ cho vay trên huy động có tác động âm đến ROA và tốc độ tăng trưởng tín dụng có tác động dương đến ROA, nhưng mức độ ảnh hưởng của hai biến này không có ý nghĩa thống kê. Các biến độc lập giải thích cho biến phụ thuộc ROA bằng 71,64% và biến phụ thuộc Tobin's Q bằng 28,17%. Từ đó đề xuất các kiến nghị nhằm nâng cao hiệu quả hoạt động của các ngân hàng thương mại cổ phần niêm yết; trong đó, bao gồm: gia tăng tài sản thông qua tăng vốn đầu tư phát triển, đặc biệt trong giai đoạn sau khi dịch bệnh được kiểm soát; gia tăng và phát triển huy động và cho vay hợp lý; tiết kiệm và kiểm soát chặt chẽ chi phí hoạt động, không chỉ trích lập dự phòng rủi ro chung mà cả trích lập dự phòng rủi ro cụ thể; về tăng thu nhập ngoài lãi thông qua nâng cao chất lượng dịch vụ ngân hàng thương mại. Nghiên cứu cũng chỉ ra hạn chế là chưa đánh giá hiệu quả kinh doanh bằng các chỉ tiêu phi tài chính như sự hài lòng của khách hàng hay thương hiệu ngân hàng. Mặt khác, đối với ngân hàng, chu kỳ tài chính là rất lớn và phụ thuộc chặt chẽ vào quy định của ngân hàng Nhà nước nhưng nghiên cứu này chưa đề cập đến.

Từ khoá: hiệu quả hoạt động kinh doanh, ngân hàng niêm yết, mô hình tác động cố định (FEM), mô hình tác động ngẫu nhiên (REM).

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