



“Effects of employee stock ownership plans on firm performance – evidence from listed commercial banks of Vietnam”

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EFFECTS OF EMPLOYEE STOCK OWNERSHIP PLANS ON FIRM PERFORMANCE – EVIDENCE FROM LISTED COMMERCIAL BANKS OF VIETNAM

Abstract

This study presents the effect of employee stock ownership plans on the firm performance of joint stock commercial banks in Vietnam. By using the Cobb-Douglas production function model and regression analysis model, combined with the use of financial statement data and Employee Stock Ownership Plan (ESOP) issuance reports of 18 banks listed on Ho Chi Minh and Hanoi stock exchanges from 2015 to 2019, it is found that ESOP had a positive impact on the performance of banks, but there was a lag of about two years. It can be seen that ESOP issuance has a positive effect on the financial ratios of joint stock commercial banks. Especially, the higher the issuance ratio in accordance to the size of a bank, the better the influence on the indices. Though there are many advantages of ESOP compared to traditional bonus programs, only eight joint stock commercial banks in Vietnam have applied ESOP. Banks in particular and businesses in Vietnam in general need to prepare knowledge and resources to expand and promote the true effectiveness of ESOP. From there, some suggestions and recommendations to make the ESOP program really effective for both employees, banks and shareholders will be given.

Keywords

ESOP, employee stock ownership plans, firm performance, commercial joint stock banks performance

JEL Classification

G12, G14, G41, G30, G31

INTRODUCTION

The system of joint stock commercial banks is an important institution promoting the development of the whole economy. In which, the labor factor plays an important role in determining the success of a bank. Besides some traditional methods of retaining employees such as salary increases, bonuses, incentives, etc., many entities are applying Employee Stock Ownership Plan (ESOP). In Vietnam, the implementation of issuing ESOP shares is regulated by Circular No. 162/2015/TT-BTC of the Ministry of Finance with the name "Issuing shares under the Employee Selection Program". This is the way companies give shares to employees through certain selection criteria. In addition to buying shares directly from the company, through ESOP, employees also become owners of the firm itself, attaching the company's interests to their own, which contributes to promoting the company's performance in the future.

There are many criteria selected to allocate ESOP shares to employees such as seniority, position in charge, work efficiency, etc. Through this program, enterprises allow deserving employees to have right to buy shares at a certain time in the future at a pre-determined good price.

Eligible employees are free to purchase shares during the execution period at the pre-determined price, but often with certain transfer restrictions. When employees leave the enterprise, depending on the conditions specified in the ESOP, they can continue to hold corporate shares obtained from the ESOP, or the enterprise must commit to repurchase these shares at market price at the time of the transaction.

Although it has been applied, there is not much research about this program in Vietnam at present; also, the system of legal documents has not been fully specified, causing many difficulties in implementation.

To solve this problem, the paper builds a Cobb-Douglas production function model, OLS regression model, collects and analyzes data from joint-stock commercial banks in Vietnam to estimate and test the parameters in the model. The research results are expected to reflect the positive influence of issuing ESOP shares on a bank's performance, which helps to propose policies to develop and improve the effectiveness of the ESOP program in Vietnam.

1. LITERATURE REVIEW

The concept of ESOP was first introduced in the United States in 1956 by Louis Kelso about the issuance of preferred stock to employees (commonly known as the Kelso plan). Since then, in the world, mainly in developed financial markets, there have been many documents referring to this concept. Most of the studies have proven that ESOP helps to increase the productivity of employees thereby increasing the productivity of a company. But there are also some studies that find that ESOP negatively affects business performance or there is no direct relationship between them.

Several case studies such as Kumbhakar and Dunbar (1993), Hallock et al. (2004), Robinson and Wilson (2006), Sesil et al. (2007), Kramer (2008), Kim and Ouimet (2009), and Quarrey and Rosen (1987) have shown that ESOP or similar programs are associated with higher levels of productivity in companies; they found that companies using ESOPs grew faster than similar companies without ESOP by about 3.6% per year. However, the research results also show that companies that apply ESOP and have active employee participation in management and other important decisions will grow at a rate of 8% to 11% faster than companies without ESOP. Jones and Kato (1995) reported that employee ownership, on average, leads to a 4-5% productivity increase in Japanese firms. Mehran et al. (1999) assessed the influence of ESOP on business performance of listed firms (based on 382 ESOP announcements release from 1971 to 1995) showing that firms implementing ESOPs have ROA that is 2.7% higher than businesses that do not apply ESOP. Park et al. (2004)

found that businesses using ESOPs have better survival rates than businesses without ESOPs.

Kruse et al. (2011) analyzed the impact of employee ownership, wealth, profit sharing, and stock owning rights on attitudes, employee turnover, and employee performance and found that shared capitalism helps to increase employees' intention to stay and improve performance of the company. But most of these studies have focused only on the US and other developed countries.

In addition to the researches showing ESOP's positive impact on the performance of the business, there are still other studies that show that ESOP has no effect or negatively affects firm performance. Davidson and Worrell (1994) showed that two years after the issuance of ESOP, no improvement in firm performance was made. Yeo et al. (1999) used data of 54 companies listed on the Singapore Stock Exchange during the three years before and after the ESOP issuance and found that no significant improvement was made for better performance after applying ESOP. Trebucq and d'Arcimoles (2002) concluded that Firms with ESOPs were less profitable than firms without ESOPs. Sengupta et al. (2007) indicated that the application of ESOP did not increase the level of employee engagement and attraction. Obiyathulla et al. (2009) discovered that performance actually deteriorated for ESOP firms, for which may be the reason is because the management team benefit themselves more at the cost paid by outside shareholders. In the study by Meng et al. (2011), there was a comparison between the performance of ESOP firms and that of non-ESOP firms, and it was concluded that widespread equi-

ty ownership among employees causes ownership problems and equity ownership has no effects on employee motivation and corporate performance. Other studies have shown no direct productivity increase from ESOP (Pugh et al., 2000; Bakan et al., 2004; Bryson & Freeman, 2004). Ohkusa and Ohtake (1997) however point out that it is conditional for the employee ownership's effect on firm performance, and ESOPs do not generate higher productivity as much as direct short-term profit-sharing ESOPs. Bryson and Freeman (2004) found that only when businesses apply profit-sharing schemes, employee ownership can lead to higher productivity, and that this effect was to an equal extent to number of employees who are under the program of profit-sharing.

Besides the papers on the influence of ESOP on enterprise performance, some researchers such as Park and Song (1995) and O'Halloran (2012) have investigated the positive relationship between ESOP and employee commitment. They stated that ESOP significantly influences both job commitment and job satisfaction. It was concluded that employee motivation is affected by ESOP to some extent (Green & Heywood, 2008). In contrast, a negative correlation was found between work commitment and ESOP (Freeman, 1978), while Curme and Stefanec (2007) objected to the correlation between ESOPs and employee turnover.

In Vietnam, there are almost no studies on the impact of the issuance of preference shares to employees on the performance of enterprises. Studies in Vietnam have only stopped at recommending that businesses use the form of preferred stock issuance as a way to attract and maintain quality human resources (Luu Huu Duc, 2014; Nguyen Minh Tam, 2009). Most recently, Cao Dinh Kien and Nguyen Van Bac (2019) have relatively detailed the impact of ESOP on business performance of listed companies on HNX and HOSE. The two-sample mean t-test of matching pairs across 122 firms that issued ESOPs and 122 firms in the same industry that were similar in size and assets without using ESOPs was done. From that, it can be concluded that ESOP really positively affects the performance of listed companies.

However, the research sample that Cao Dinh Kien and Nguyen Van Bac (2019) selected did not include businesses in the banking and financial services in-

dustries. This is a specific industry group and is under the strict management of the state, playing the lifeblood role of the economy. Therefore, improving the business efficiency of banks is always concerned to improve the efficiency of the economy. Instead of selecting businesses that use and do not use ESOP working in one industry and have the similar total asset size at the time of ESOP issuance, this study on the banking industry focuses on the impact of the whole system over time, from which the lag impact of ESOP on banks' business performance is tested.

This paper tests the following hypotheses:

- H1: *Amount of capital affects the added value of commercial banks in Vietnam, i.e. $\alpha_K \neq 0$.*
- H2: *Labor affects the added value of JSC banks in Vietnam, i.e. $\alpha_L \neq 0$.*
- H3: *The issuance of bonus shares to employees affects the added value of JSC banks in Vietnam, i.e. $\alpha_E \neq 0$.*
- H4: *Business performance of JSC banks in Vietnam does not change with size, i.e. $\alpha_K + \alpha_L \neq 0$.*
- H5: *The size of total assets affects the performance of JSC banks in Vietnam, i.e. $\beta_1 \neq 0$.*
- H6: *The ratio of equity to total assets affects the business performance of joint stock commercial banks in Vietnam, i.e. $\beta_2 \neq 0$.*
- H7: *Issue rate of bonus shares to employees affects the performance of JSC banks in Vietnam, i.e. $\beta_3 \neq 0$.*

2. METHODOLOGY AND RESEARCH DATA

2.1. Research data

Due to regulations on information disclosure, only data of 18 listed banks on the official stock exchanges, namely, HoSE, HNX and UPCoM, is fully collected. Although the number of listed com-

mercial joint stock banks accounts for only 60% of the total number of banks in operation, these are all large banks with high market shares, when the total equity of these 18 banks accounts for nearly 85% of the total equity of the entire banking system. Therefore, limiting the study to only listed joint stock commercial banks can still accurately reflect the impact of the ESOP on the banking industry.

Table 1. Commercial joint stock banks listed in Vietnam (time: May 2020)

Source: Financial data and stock investment tools.

No.	Code	Exchange	Listed shares outstanding	Listing date
1	ACB	HNX	1,662,737,277	21/11/2006
2	BAB	UPCoM	650,000,000	28/12/2017
3	BID	HOSE	4,022,018,040	24/01/2014
4	CTG	HOSE	3,723,404,556	16/07/2009
5	EIB	HOSE	1,235,522,904	27/10/2009
6	HDB	HOSE	980,999,979	05/01/2018
7	KLB	UPCoM	323,695,796	29/06/2017
8	LPB	UPCoM	976,948,319	05/10/2017
9	MBB	HOSE	2,437,042,861	01/11/2011
10	NVB	HNX	410,155,587	13/09/2010
11	SHB	HNX	1,455,053,145	20/04/2009
12	STB	HOSE	1,885,215,716	12/07/2006
13	TCB	HOSE	3,500,139,962	04/06/2018
14	TPB	HOSE	856,589,206	19/04/2018
15	VBB	UPCoM	419,019,904	30/07/2019
16	VCB	HOSE	3,708,877,448	30/06/2009
17	VIB	UPCoM	924,491,395	09/01/2017
18	VPB	HOSE	2,456,748,366	17/08/2017

The issuance of bonus shares to employees at banks in Vietnam has been carried out a lot since 2015. Therefore, this paper's research scope is limited to 5 years from 2015 to 2019. Therefore, the sample size in this study is 90 samples.

2.2. Methodology

Different from business activities of production or commercial enterprises, business activities of commercial banks have their own characteristics that are associated with money, credit and related to many different groups of subjects. Financial ratios are the most commonly used tools in evaluating, analyzing and reflecting the performance of this industry. Based on collectible panel data,

combined with world views, the study proceeds from the Cobb-Douglas production function and simple OLS model to evaluate the bank's business performance.

2.2.1. Cobb-Douglas model

The production function describes the relationship between the inputs to a production process and the output produced by the process. It tells us the maximum amount of output that can be produced from any given combination of factors of production. The output measure Q depends on the inputs: capital (K), labor (L) and other inputs. In this study, another factor to be considered is the impact of ESOP (E) stock.

$$Q = F(K, L, E). \quad (1)$$

The form of the Cobb-Douglas production used to describe the influence of ESOP share issuance on the business performance of Joint Stock Commercial Banks will be as follows:

$$\ln Q_{it} = \alpha_0 + \alpha_K \cdot \ln K_{it} + \alpha_L \cdot \ln L_{it} + \alpha_E \cdot E_{it} + u_{it}, \quad (2)$$

where $\ln Q_{it}$ is the natural logarithm of the value added of bank i in year t ; $\ln K_{it}$ is the natural logarithm of the capital of bank i in year t ; $\ln L_{it}$ is the natural logarithm of bank i in year t ; E_{it} is an ESOP dummy variable by assigning the value 1 to bank i using ESOP in year t , and 0 for the rest. α_0 is a constant, α_K , α_L , and α_E are the elasticity of output in terms of capital, labor and ESOP, respectively; u_{it} is the error.

The value added of a bank is calculated by the total of profitable assets including: deposits with the State Bank of Vietnam, deposits with other credit institutions, loans to customers, security investments, security traded for each financial year. Capital is measured by equity. All these data are taken from the balance sheet in the financial statements. Labor is recognized as the total number of employees of the bank based on the financial statement notes. Because the information in the financial statements is recorded at the end of the period, to estimate the information for the year, both the added value, capital and labor use the average of the beginning and ending values of the year. The

ESOP dummy variable is recorded with a value of 0 or 1 based on the Bank's completion of ESOP shares issuance during the year and information published on the mass media such as the Bank's website and the State Securities Commission.

The hypotheses to be tested in this model are *H1*, *H2*, *H3*, *H4*.

2.2.2. Regression model

To study more closely the influence of ESOP stock issuance on bank performance, the regression with dependent variables ROA, ROE, NIM representing the Bank's profitability will be conducted. In particular, the independent variable ESOP shows whether to issue ESOP or not as in the Cobb-Douglas model. ESOP variable is also measured by the ratio of ESOP shares to the total number of outstanding shares at the time of issue. Besides, other independent variables such as total assets, equity/total assets, etc. are also used to examine the effectiveness of ESOP stock issuance according to bank size.

The research regression model has the form:

$$y_{it} = \beta_0 + \beta_1 \cdot \ln(TTS_{it}) + \beta_2 \cdot TETA_{it} + \beta_3 \cdot \%ESOP_{it} + u_{it}, \tag{3}$$

where y_{it} is the ROA, ROE, NIM of bank i in time t ; $\ln(TTS_{it})$ is the natural logarithm of the total assets of bank i in time t ; $TETA_{it}$ is the ratio of equity to total assets of the bank i in time t ; $\%ESOP_{it}$ is the ratio of issuing ESOP shares to total outstanding shares of bank i at time t ; β_0 , β_1 , β_2 , and β_3 are regression coefficients, u_{it} is the error.

ROA, ROE and NIM are the basic financial indicators that measure the Bank's business performance. ROA, ROE and NIM announced by commercial banks or the State Bank are not used because there

is not enough information of all the banks over the years. Therefore, these indicators have been self-calculated. Total assets and equity are both taken from the balance sheet in the financial statements. Similarly, in the Cobb-Douglas model, total assets and equity are both computed as the average of the beginning and ending values of the year. The issue rate of ESOP shares is taken from the statement of issuance and the ESOP share issuance report announced by the Bank after implementing the ESOP.

The hypotheses to be tested in this model are *H5*, *H6*, *H7*.

3. MODEL RESULTS

3.1. Cobb-Douglas production function model estimation results

Based on the results using STATA software, the Cobb-Douglas model has adjusted R^2 of 0.9388, meaning 93.88% of the Bank's output value added is explained by equity, ownership, number of employees and the issuance of ESOP shares. The $F(3.86) = 456.17$, $Prob. > F = 0.0000$ is statistically significant at the 5% level, i.e. regression coefficients of the equation are not simultaneously zero.

The Cobb-Douglas production function model has the form:

$$\ln Q = 0.8778 \cdot \ln K + 0.2490 \cdot \ln L - 0.3277 \cdot E + 2.3972. \tag{4}$$

P value $> |t|$ of all parameters are less than 0.05, i.e. the parameters are statistically significant at 5% level. But ESOP's β_E has a negative sign, showing the opposite effect on the Bank's value added. Thus, contrary to our expectations, the issuance of ESOP shares has an adverse effect on the performance of Vietnamese JSC banks.

Table 2. Results of the Cobb-Douglas production function model

Source: Calculated and synthesized using STATA 14 software.

Dependent variable $\ln Q$	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
$\ln K$	0.8778088	0.0817429	10.74	0.000	0.7153094	1.040308
$\ln L$	0.2490774	0.0903711	2.76	0.007	0.0694255	0.4287293
E	-0.327679	0.1109792	-2.95	0.004	-0.5482982	-0.1070597
_cons	2.397224	0.6689158	3.58	0.001	1.067463	3.726985

That the coefficient β_E of ESOP has a negative sign and is significant at the 5% level can be explained by the following reasons. First, to implement the ESOP program, the Bank incurs a significant expense for the issuance of shares, or for the ESOP to operate smoothly, which requires consulting, training, and development costs, with personnel involved in the development and management of the ESOP, which also contributes to a decrease in the productivity of workers. Second, when applying ESOP for the first time, trade unions and employees may have doubts about the purpose for which managers implement ESOP, creating some negative sentiment in the workplace. Third, OLS regression can be greatly affected by labor and capital factors, so the estimated coefficient of ESOP is also affected.

In addition, through actual research data, among the joint stock commercial banks that have implemented ESOP, there are many banks that announced successful implementation of ESOP in Q4 2019, so the effectiveness of ESOP cannot be fully reflected in the year. This is also consistent with some other studies on latency of ESOP impact.

Due to the limitation in the number of banks used in previous years, this research paper uses 2 more lag variables, $E - 1$ and $E - 2$, to evaluate the impact of issuing ESOP to the Bank's business performance in years $i + 1$ and $i + 2$. After running the model again with 2 new variables, the following results were obtained:

The adjusted parameter $R^2 = 0.9376$, i.e. 93.76% of the output value added of the Bank is explained by the factors included in the study. F value (5, 48) = 160.23; Prob. > F = 0.0000 is statistically significant at 5% level, that is, the regression coefficients of the equation are not equal to 0. Only $P > |t|$ of

parameter $E - 2$ is greater than 0.05, while all other parameters are significant at 5% level. But after the coefficients β_E and β_{E-1} of parameters E and $E - 1$ bear the sign “-”, the coefficient β_{E-2} of parameter $E-2$ has the sign “+”. This partly proves the above inference that ESOP issuance positively influences the banks' business performance, but it must be about 2 years from the time of issuance.

With a view to check the results of the production function model with the input factors K , L and E are significant or not, the study has carried out some tests with the 3-variable model ($\ln K$, $\ln L$ and E). Multicollinearity and heteroskedasticity tests of the model are done with $VIF = 5.57 < 10$ and Prob. > $\chi^2 = 0.9079 < 0.05$. That is, the model does not have multicollinearity nor heteroskedasticity. The model with the variables used is relatively suitable.

3.2. Regression results with ROA, ROE and NIM

3.2.1. Regression results run with ROA

Using OLS regression with ROA and independent variables, the following results were obtained (see Table 4).

Testing the phenomenon of multicollinearity and heteroskedasticity of the ROA regression model, the value $VIF = 1.18 < 10$ and Prob. > $\chi^2 = 0.0162 < 0.05$. That is, the model does not have multicollinearity, but heteroskedascity exists. Thus, the ROA regression model is not really suitable.

To overcome the phenomenon of heteroskedascity, the ROA regression model when removing the variable TETA was re-run, and get the following results (see Table 5).

Table 3. Results of running Cobb-Douglas production function model (with lagged variable)

Source: Calculated and synthesized based on STATA 14.

Dependent variable $\ln Q$	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
$\ln K$	0.8807332	0.1007381	8.74	0.000	0.6781857	1.083281
$\ln L$	0.2412108	0.1129533	2.14	0.038	0.014103	0.4683187
E	-0.4772802	0.1521216	-3.14	0.003	-0.7831411	-0.1714193
$E-1$	-0.4324389	0.1855648	-2.33	0.024	-0.8055419	-0.0593359
$E-2$	0.1690138	0.2274519	0.74	0.461	-0.288309	0.6263366
_cons	2.478713	0.8334118	2.97	0.005	0.8030266	4.1544

Table 4. Regression results with ROA

Source: Calculated and synthesized based on STATA 14.

ROA (Dependent variable)	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
TTS	0.003041	0.0005928	5.13	0.000	0.0018626	0.0042194
TETA	0.1534539	0.0278405	5.51	0.000	0.0981087	0.2087991
%ESOP	0.4740353	0.1748745	2.71	0.008	0.1263963	0.8216742
_cons	-0.0610004	0.0122576	-4.98	0.000	-0.0853678	-0.0366331

Table 5. ROA regression results (remove TETA variable)

Source: Calculated and synthesized based on STATA 14.

Dependent variable ROA	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
TTS	0.0017312	0.0006281	2.76	0.007	0.0004828	0.0029796
%ESOP	0.7344222	0.194739	3.77	0.000	0.3473573	1.121487
_cons	-0.0247973	0.01197	-2.07	0.041	-0.0485889	-0.0010057

Based on the results, the ROA regression model has the following form:

$$OA = 0.002 \cdot TTS + 0.734 \cdot \%ESOP - 0.024. \tag{5}$$

impacts on ROA of the Bank. When all other conditions are unchanged, if the %ESOP variable goes up by 1 unit, the ROA variable rises by 0.734 units.

3.2.2. Regression results with ROE

The coefficients of all parameters have $P > |t| < 0.05$, which means that the parameters are significant (at the 5% level of statistical significance). At the same time, testing the phenomenon of multicollinearity and heteroskedasticity of the ROA regression model, the value $VIF = 1.01 < 10$ and $Prob. > \chi^2 = 0.3409 > 0.05$. That is, the model has no multicollinearity nor heteroskedasticity. Thus, the ROA regression model was relatively suitable.

Using OLS regression with ROE and total assets, the ratio of total equity to total assets and the ESOP share issue rate, the following results were obtained (see Table 6).

The coefficient β_3 of the parameter %ESOP = 0.734 has a positive sign. Thus, issuing ESOP positively

From the result table, it is clear that the coefficient of TETA has the value $P > |t| = 0.204 > 0.05$, so there is no statistical significance at the 5% level. So this parameter is not really suitable in the model. The study continued to run again when removing the TETA variable, obtained the following results (see Table 7).

Table 6. Regression results with ROE

Source: Calculated and synthesized based on STATA 14.

Dependent variable ROE	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
TTS	0.038884	0.0074185	5.24	0.000	0.0241365	0.0536315
TETA	0.4463978	0.348425	1.28	0.204	-0.2462481	1.139044
%ESOP	4.802569	2.188557	2.19	0.031	0.4518603	9.153277
_cons	-0.6601808	0.1534044	-4.30	0.000	-0.9651387	-0.355223

Table 7. ROE regression results (remove TETA variable)

Source: Calculated and synthesized based on STATA 14.

Dependent variable ROE	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
TTS	0.0350738	0.0068213	5.14	0.000	0.0215157	0.0486319
%ESOP	5.560035	2.114942	2.63	0.010	1.356359	9.76371
_cons	-0.5548659	0.1299984	-4.27	0.000	-0.8132518	-0.29648

Table 8. Regression results with NIM

Source: Calculated and synthesized based on STATA 14.

Dependent variable NIM	Coefficient	Standard deviation	t	P > t	Significant interval of 95%	
TTS	0.0029269	0.0008237	3.55	0.001	0.0012894	0.0045644
TETA	0.195455	0.038688	5.05	0.000	0.1185458	0.2723641
%ESOP	0.5462294	0.2430105	2.25	0.027	0.0631405	1.029318
_cons	-0.0419126	0.0170335	-2.46	0.016	-0.0757741	-0.008051

Based on the results of running on STATA software, the ROE regression model has the form:

$$ROE = 0.035 \cdot TTS + 5.56 \cdot \%ESOP - 0.555. \quad (6)$$

The coefficients of all parameters have $P > |t| < 0.05$, which means that the parameters are significant at the 5% level of statistical significance. Testing the phenomenon of multicollinearity and heteroskedasticity of the ROE regression model, the value $VIF = 1.01 < 10$ and $Prob > \chi^2 = 0.4983 > 0.05$. That is, the model has no multicollinearity or heteroskedasticity. Thus, the ROE regression model was relatively suitable.

The coefficient β_3 of the parameter $\%ESOP = 5.56$ (a positive number). Thus, issuing ESOP positively affects the banks' ROE.

3.2.3. Regression results with NIM

Using OLS regression with dependent variable NIM and independent variables gives the following results (see Table 8).

Based on the results of running on STATA software, the NIM regression model has the form:

$$NIM = 0.003 \cdot TTS + 0.195 \cdot TETA + 0.546 \cdot \%ESOP - 0.042. \quad (7)$$

Testing for multicollinearity, $VIF = 1.18 < 10$, that is, the model does not have multicollinearity, all variables can be included in the model at the same time. Testing the phenomenon of heteroskedasticity, $Prob. > \chi^2 = 0.4678 > 0.05$, which means that the model does not have heteroskedasticity.

Thus, the regression model of NIM with the independent variables is relatively suitable. Through the model, the coefficient β_3 of the share issuance rate has a value of 0.546, that is, when other factors are constant, if the ESOP share issuance rate increases by 1 unit, the NIM value will increase by 0.546 unit and issuing ESOP has a positive effect on the banks' NIM.

Through the regression ROA, ROE, NIM with independent variables, it can be seen that ESOP issuance positively influences financial ratios of the joint stock commercial banks. Especially, the higher the issuance ratio in accordance to the size of the bank, the better the influence on the indexes. However, it is still recommended to limit the issuance ratio to a reasonable level, usually less than 2%, to avoid negative effects of ESOP issuance such as dilution of shares, conflicts of interests.

CONCLUSION

Industries in Vietnam that were hit hard by COVID-19 in 2020–2021 include tourism, aviation, accommodation, services, export of agricultural and aquatic products, and import and export businesses. This is a huge challenge to the growth goals of the Government of Vietnam and the banking industry.

From the regression results in part 4, it can be asserted that the issuance of ESOP to employees has a positive effect on the business performance of JSC banks in Vietnam, especially on important financial indicators (ROA, ROE and NIM); the more ESOP shares are issued, the higher the profitability. The mode results also prove that the issuance of ESOP has a positive effect on the added value of the JSC banks, but it must be in the long term (from about 2 years later), and right at the time of issuance, it will limit the output of the banks. Thus, it can be understood that banks that are targeting rapid growth in

the short run should not apply the ESOP program for employees. Only after reaching a certain level of development and paying more attention to long-term goals, should banks consider applying the use of ESOP to both motivate employees and increase business efficiency. For the time being, these banks can research and prepare the necessary conditions to implement ESOP in the future.

Some banks with large total assets and a large number of employees such as Vietcombank, BIDV, etc. should seriously consider using ESOP in the near future. ESOP contributes to raising capital, ensuring capital adequacy to realize the bank's business goals, thereby improving profits, assets, and business efficiency. With the number of employees, the large scale of current assets helps to limit the negative impact of the ESOP issuance in the first time. At the same time, these are large banks whose share prices are often higher than par value and many times higher than other banks. For example, Vietcombank's share is usually priced at over VND80,000, BIDV's share is usually close to VND40,000 VND, etc. When these banks issue ESOPs for employees, they will receive a larger "bonus" than other banks, thereby creating a greater motivation to stick with and devote to the bank.

Since this paper is among the first studies that go deeply in looking for the influencing effect of ESOP on bank performance in Vietnam, it sets the first footprint to this topic.

In detail, the following implications can be considered for commercial banks in Vietnam if they want to improve the effectiveness of ESOP and promote the positive influence of ESOP on banks' performance:

- Identifying the bank's development goal for each period

Banks that determine the target of rapid growth in the short term should not apply the ESOP for employees because of the Cobb-Douglas result. When reaching a certain level of development and paying more attention to long-term goals, the bank should consider applying the use of ESOP to both motivate employees and increase business efficiency. At the present time, these banks can research and prepare the necessary conditions to be able to implement ESOP in the future.

Also in the results of the Cobb-Douglas model, it can be seen that the capital factor has a much stronger impact on the added value of the bank than the labor factor (the coefficient $\beta_K = 0.8778$ is larger than the coefficient $\beta_L = 0.2490$). To increase the output, banks should pay more attention to financial sources. There are some banks with large enough equity capital, who can reduce the adverse effect of issuing ESOP shares in the first year, thereby increasing their continuous business performance, such as Vietcombank, BIDV, etc.

- Enhancing the management of ESOPs for employees

ESOP does not have an immediate effect, so it is not recommended to apply ESOP on a regular basis, especially if it is applied every year. If applied regularly, it is likely that the bank will be adversely affected by ESOP in the first 2 years after issuance. Even when ESOP shares are issued continuously in large quantities, but the growth rate of the business cannot keep up with the pace, it will lead to a decline in earnings per share.

Besides, it is easy to see that the issuance of bonus shares to employees has not been strictly managed yet. The issuance of ESOPs does not take place regularly, so from the time of planning to the completion of the issuance, it usually only takes 6 months at most. So when there is a need to use ESOP, the leaders assign relevant departments to coordinate implementation; and when the ESOP is finished, these departments will no longer be responsible for the ESOP-related problems. In the long term, there will be no recognition of effectiveness from the program through individual and bank performance; employee's income, employee's absenteeism rate.

Thus, to enhance the good effect of the ESOP program and thereby improve the business efficiency of the bank, it is necessary to strictly manage information and ESOP conduction both before and after the ESOP to have the most up-to-date information, a basis for policy adjustments in the future.

- Limiting negative effects of ESOP share issuance

To limit conflicts of interest between employees and existing shareholders, the bank should transparently disclose the criteria for selecting employees as well as a detailed list of ESOP issuance results. Limit the use of ESOP by the management board to gain large profits from buying shares at cheap prices, with few restrictions on transfer, and big lots of shares to be redistributed. Simultaneously, the bank should also develop specific target results for each individual who is allocated ESOP shares to associate individual effectiveness with collective performance.

The effect of stock dilution is also a matter of great concern to existing shareholders when conducting ESOPs. An obvious fact in the General Meeting of Shareholders is that small shareholders often authorize large shareholders to attend in the management board. For many reasons, when the ESOP program is approved by the General Meeting of Shareholders, the corporate governance rights of these shareholders, already small, will be even smaller. Besides, to implement ESOP, companies also need a certain amount of capital to implement and complete the program. To harmonize these issues, joint-stock companies, in addition to issuing ordinary shares to employees, can study the option to buy shares. ESOP is a program to issue stock options to key employees of the business. Instead of issuing ordinary shares, stock options programs use stock options. Instead of holding shares at the present time, employees have the right to buy shares at the moment in the future when the share price increases or not to buy if the price decreases. Meanwhile, the banks always collect the option premium from this issue. But currently in Vietnam, the option contract is a derivative instrument without any specific regulations allowing it to be exercised. Therefore, besides implementing ESOP according to the traditional method, Vietnamese banks can completely research to be ready to exercise the option when there is a full legal basis.

This paper aims to give evidence of the employee stock ownership plans' effect on the firm performance of JSC banks in Vietnam. By using the Cobb-Douglas production function model combined with OLS regression model, financial indicators and the stock issuance of 18 JSC banks listed on the stock market which accounts for nearly 85% of the whole Vietnamese commercial banking system equity, this study finds that there is a relationship between the issuance of bonus shares to employees and the bank's business performance, which is mainly positive. In particular, the positive effect may not show up immediately, but has a delay of 1-2 years. Through data collection of the entire banking system, it can be seen that the issuance of ESOPs has been successfully used and implemented by only a few banks in 2017–2018. Many cases are only for the purpose of raising capital, and in addition, because of the transfer restriction, the real effect on employees is not high and it is difficult to be accurately assessed.

This paper concludes that JSC banks will need to seriously consider whether to issue ESOPs in the short or long term. The benefits in the short term may not exceed costs, which may make ESOPs not as efficient as expected. But the ESOP issuance can bring about clear benefits two years after that, which may be a good choice for most of Vietnamese JSC banks.

Since the number of banks listed on the market, as well as the number of banks implementing ESOP, is not large, the impact studied in this paper is still limited. Besides, this paper only concentrates on examining the effect of ESOP issuance on business performance without much mention of capital structure, technology, employee motivation, etc. As the Vietnamese banking system is increasingly improved, it will open up more in-depth research directions for this topic.

AUTHOR CONTRIBUTIONS

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