



## PROFITABILITY ON CORPORATION BANKS IN ASEAN - FOCUSING OVERSEAS CHARACTERISTICS



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### ABSTRACT

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The economic role of the ASEAN region, which has high potential for growth is becoming important. In addition, financial asset inflow is increasing. Performance factors are influenced by corporate banks in ASEAN. We examined the factors that affect profitability. Institutions operate in various forms such as subsidiaries, branches, representative offices, and offices. In this case, banks below the branch were excluded for the form of corporations. Foreign banks in ASEAN need more investment than management of banking operation by result of LRGL in NIM. But this is not adopted in domestic banks, only in ROA. This means that domestic banks have a smaller impact of investment relative to foreign banks. The GDP of foreign banks in ASEAN have a positive effect in NIM instead of negative effect in ROA. The GDP of domestic banks in ASEAN have a positive effect in NIM with a weak effect in ROA. Therefore, the financial market of ASEAN is expanding as the difference between NIM and ROA increases according to the growth of economy in ASEAN. The financial market has expanded although transaction cost has increased with the global economy contraction.

**Contribution/ Originality:** This study is one of very few studies which have investigated corporation bank's profitability in the ASEAN region and it proved that the GDP scale is the most important factor in raising profitability for foreign corporations.

## 1. INTRODUCTION

### 1.1. Research Background

The banking industry in the world economy is becoming the most influential service industry in the world. Already, international trade and international financial transactions have been soaring, and the international banking activities have greatly expanded to the global financial market. In this process, banks in the ASEAN area have many potential powers with entering financial capital.

As many corporations invest directly into other countries or regions and they get more earnings, then there are more banks operating to manage the enormous capital inflow in ASEAN regions. This is why banks in the ASEAN region have an important role in the global economy.

In addition, banks in their home countries have become more active in financial markets as the global economy becomes more active due to the phenomenon of marginality after the saturation of rival banks in their home

countries. In particular, the ASEAN region is experiencing continuous economic growth compared to other regions, and there is a potential for future growth.

In the case of the ASEAN region, where there are relatively low growth countries, the amount of capital inflows will increase, so we need to confirm the sector of bank industry that affects the ASEAN economy the most, but the impact on the banks' profitability may differ between NIM and ROA. It is necessary to understand how the environmental factors of these financial institutions affect profitability and to develop the financial economy by adapting to the global financial expansion.

Although the research on the bank's profitability has been done already, no research has been conducted on the type of corporation bank that operates in the ASEAN region. In the case of corporation banks, the effect of the study on the banking industry in the ASEAN country is affected by the banking industry of the country of entry were few studied. It considers direct investment of capital to bank industry and bank's capital that is concern with size of financial market.

Recently, as the economic interest in the ASEAN region has increased, research on the financial industry in the ASEAN region has increased. The growing interest in the ASEAN regional economy research began in 1997 when the financial crisis broke out and discussions on East Asian financial cooperation began in the process of developing self-reliance. In this process, the Chiang Mai Initiative (CMI) was initiated and the importance of East Asia emerged. After the global financial crisis in 2008, the focus on the role of Japan and China increased interest in the role of ASEAN.

In this situation, research on foreign and domestic corporation banks operating in the ASEAN region is not easy to identify. The bank's discrimination for research is very important sector to confirm the financial condition for extra extension in ASEAN financial market.

### *1.2. Purpose of the Study*

The economic role of the ASEAN region is becoming more important, and the financial market is more and more publicized. In the global economy, there is growing interest in the role of the ASEAN region because it has high potential possibility for inflow direct investment. There are factors affecting the performance factors of corporation banks in ASEAN countries and it is necessary to analyze only corporate banks in terms of considering the movements of the ASEAN region's financial market.

There are various types of banks in the ASEAN region, such as branches, subsidiaries, branches, representative offices, and offices. Banks below the branch were excluded from the analysis and banks in the form of corporations where the costs and benefits were present along with the financing and economy in the ASEAN region were targeted. Therefore, we focused on the capital that has operated in the ASEAN region as it examined the performance factors of direct capital for corporate banks that are capable of independent financial accounting. From the viewpoint of the management of capital, the corporate banks are the same as that of direct investment (DI), which analyzes the performance of corporation banks by examining the direct capital.

We examined the profitability from 2013 to 2017 for corporation banks operating in the ASEAN region, and analyzed the causes of these issues through quantitative analysis. Then we checked the degree of the financial market in the ASEAN region. The results of this study were analyzed to examine the factors affecting the performance of ASEAN banks in developing countries. In addition, the effect on the performance factors of corporation banks may check the possibility of financial market development.

The main factors affecting the performance of corporation banks in the ASEAN region were reviewed and a roadmap for bank's investment was created. These roadmaps can be a sort of countermeasure in the global financial market where the economic crisis is on the rise and can allow banks to invest more effectively in their expansion of financial market. It can therefore be a cornerstone for enabling sustainable growth.

## 2. THEORY AND EXISTING RESEARCH

### 2.1. *The Direct Investment Theory*

Direct investment refers to direct financing. Indirect investment refers to indirect financing. Recently, it is mainly used to refer to the method of introducing foreign investment. In this case, direct investment is investment in which companies in any country acquire foreign companies' shares or loan funds for the purpose of management participation or technical cooperation. In contrast, indirect investment is made through the market through securities investment for the purpose of price increase or dividend income.

The purpose of a foreign direct investment (FDI) is to gain enough equity interest to provide control of a company. In some instances, it involves a company in one country opening its own business operations in another country, while in other cases it involves acquiring control of the existing assets of a business already operating in the foreign country. A direct investment can gain a majority earning in a company or a minority earning large enough to provide the investor with effective control of the company. Direct investments are mostly corporation type to make firm.<sup>1</sup>

Direct investment is distinct from portfolio investment, the purchase of common or preferred stock shares of a foreign company, and by the element of control that is sought. Control can come from sources other than an investment of capital, though the control of such things as technology are merely critical inputs. In fact, foreign direct investment is frequently not a simple monetary transfer of ownership or controlling interest but also involves complementary factors, such as organizational and management systems or technology.

Foreign direct investments can be made by individuals but are more commonly made by companies wishing to establish a business presence in a foreign country. Foreign direct investment takes many forms in actual practice but is generally classified as either a vertical, horizontal, or conglomerate investment.

A vertical direct investment is one where the investor adds foreign activities to an existing business, such as in the case of an American auto manufacturer establishing dealerships or acquiring a parts supply business in a foreign country.

Horizontal direct investment is perhaps the most common form. In horizontal investments, a business already existing in one country merely establishes the same business operations in a foreign country, such as in the case of a fast food franchise based in the United States opening restaurant locations in China. Horizontal direct investment is also referred to as a greenfield entry into a foreign market.

The conglomerate type of direct investment, the least common form, is where an existing company in one country adds an unrelated business operation in a foreign country. This is a particularly challenging form of direct investment since it requires simultaneously establishing a new business and establishing it in a foreign country. An example of conglomerate direct investment might be an insurance firm opening a resort in a foreign country.

### 2.2. *Precedent Research*

The studies on banks' profitability can be explained by using investment theory. Direct investment is related to direct financing in financial market. Aliber (1984) discussed the role of banks in determining the international expansion of multinational banks (MNB) in international finance and in terms of international capital flows. Among these, the determinants of multinational banks' entry into overseas markets are related to the theory of overseas entry. The bank's theory of foreign entry is largely divided into internalization theory and eclectic theory, which is a more standard view (Alexander, Davis, Ebrill, & Lindgren, 1997).

The internalization theory is based on the Coasian theory and can be used to internalize the transaction costs incurred when the external market is utilized under the incomplete market through the MNB. In other words, the theory emphasizes that MNB has the advantage of reducing the transaction cost by carrying out transactions

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<sup>1</sup> Trade and FDI are significant determinant for advancing abroad (Brealey & Kaplanis, 1996).

inside the company like MNE.

The theory of compromise by Buckley and Dunning (1976) is the theory that foreign direct investment decisions are made when three factors, (i) internalization, (ii) location, and (iii) ownership are secured. In other words, the theory adds location factor and ownership factor to the internalization theory.<sup>2</sup>

Accounting for the advantages of a MNE(multinational enterprise), this means that there is room for entry into the region if the particular region to which it intends to enter has a dominant advantage factor, including tariffs, tax rates, market environment characterization, and so on. The market environment of the target country will have the greatest effect on the choice of location as a factor to maximize profitability.

The ownership factor is also called ownership-specific advantage. It can be said that there is a factor of ownership when the enterpriser has professional experience and technical ability. Entrepreneurs may transfer their management capabilities to their target countries in the form of franchising or licensing to enhance their profitability and competitiveness.

This is a way to make it relatively cost-effective and efficient.<sup>3</sup> However, there is a disadvantage in that it can weaken monopolistic factors by exposing the professional experience and technology of the company to the outside world. In other words, the existence of the ownership factor refers to the possession of assets that can compete effectively with companies in the target country, including product differentiation, reputation, management know-how and economies of scale. If there is an internalization advantage factor in the above two factors, the company will enter the country or market in direct investment form while protecting the specialized ability of the enterprise.<sup>4</sup>

If foreign direct investment is more advantageous than exports, if the combination of the factors of production after the entry is more effective than the cost of combining the factors of production in overseas country, the company will make overseas production in the form of foreign direct investment. When these three foreign direct investment requirements are met, the aggregate condition of OLI (Ownership-specific advantages, Location-specific advances, and Internalization incentive advantages) in the case of a banking institution that is called a paradigm, the form of a branch or office is in the form of a franchise or a licensing, but it can be classified as a form of foreign direct investment if the institution enters into the form of a corporation.<sup>5</sup>

### 3. MATERIALS AND RESEARCH METHODS

#### 3.1. Research Methodology

In order to understand the current status of bank corporations operating in the ASEAN region, we classified all the banks in the ASEAN region. Countries in the ASEAN region included in the research were Singapore, Malaysia, Thailand, Vietnam, the Philippines, Indonesia, Laos, Myanmar, Cambodia and Brunei.

The number and proportion of banks that have entered the ASEAN region through regional classification were categorized. The most prevalent regions in the ASEAN region and the number and proportion of banks in the ASEAN countries were classified.

In addition, the bank's major operating segments that have operated in the ASEAN region were classified. In the case of uncertainty of major business divisions, an additional business segment was indicated and the status was summarized.

As a factor affecting the profitability of the bank and the NIM and ROA as the factor of the bank, we used the ND (loan to deposit ratio), which is the basic profit of the bank, to determine the performance of the bank

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<sup>2</sup> Firms in each country or financial center is important role for advancing of commercial bank (Buch, 2000).

<sup>3</sup> Abreu and Mendes (2001) show that loan to asset ratio is most effective factor for profitability.

<sup>4</sup> Information or regulation cost has various influence in each country (Claudia, 2003).

<sup>5</sup> Commercial bank is most affected by default risk (Angbazo, 1997) and it is related with loan loss reserve to gross loan in this paper.

institution and used the total loan to identify the asset-related status.

In addition, the size of the bank was formed by the total asset (TAS) and the equity variable (EQU) was used as the direct capital of the corporation bank. It is used only to form a corporation to grasp the flow of direct investment (DI). In order to determine the effect of bank profitability and the bank's soundness, a loan loss reserve ratio (LRGL) and total equity to total assets ratio (TETA) was used. Finally, we used the GDP and inflation (INF) as the growth rate of the countries that have entered into international finance.<sup>6</sup>

This study was aimed at all the banks in the world who have entered the ASEAN region but there were some banks which were not included in the data and the main method of data classification was manual classification and there may have been a limit on data classification. In addition, banks in the ASEAN region have a limited time to collect sufficient time-series data because they are short-lived in disclosing bank performance data. Therefore, we analyzed the current status of banking institutions in the ASEAN region between 2013 and 2017 and analyzed the factors of profitability.

In order to enhance the profitability of banks, the analysis of financial expansion activities have been conducted, but the most significant impact was that the GDP growth of the country was the most important influence that can be explained by the rapidly changing ASEAN economy.

### 3.2. Data

Most of the data used for this study were obtained from Bank Focus, which is the data on the performance of banks in the world. The data in Table 1 includes the countries of the world's banks, assets, net interest income (NIM), and major business sectors in the ASEAN region in the years 2013 and 2017. Since the data collected were based on ASEAN banks, we have separately categorized corporation's cases in which operated in the ASEAN region.

In order to examine the direct investment of financial institutions, this study focused only on the cases of bank in the form of corporations in order to examine the cases of direct investment, and excluded the indirect firms of branches and offices. Therefore, in order to select only the corporate type of banks in the ASEAN region, there were criteria that included: first, merger and acquisition; second, the head office is not the head office; and third, all banks operating individual accounting.

Table-1. Data description and source.

Division	Item	Variable Name	Variable Description	Period	Source
Dependent Variable	Profitability	NIM	Net Interest Margin	2013~2017	Bank Focus
		ROA	Return on Assets	2013~2017	Bank Focus
Independent Variable	Efficiency Variable	ND	proportion of loan-to-deposit ratio	2013~2017	Bank Focus
	Macro Environment Variable	INF	Inflation Index	2013~2017	IMF, World outlook database
		GDP	GDP size	2013~2017	World Bank
	Equity	EQU	Equity Size	2013~2017	Bank Focus
	Asset	NTTA	Net loan ratio (total loans to total assets)	2013~2017	Bank Focus
		TAS	Total Asset	2013~2017	Bank Focus
	Soundness	LRGL	Rate loan loss reserve to gross loan	2013~2017	Bank Focus
		TETA	Total equity to total asset	2013~2017	Bank Focus

<sup>6</sup> Bourke (1989) shows that concentration of bank is related in profitability in US. Domestic, then variable of concentration was except in research.

In addition, since there are many banks that do not agree to provide bank information to Bank Focus, there was a limitation in the data which only has data from banks listed in the database. In addition, macroeconomic variables such as the economic growth rate (GDP) and inflation rate (INF) were based on the World Bank and IMF database.

The Total Asset variable was used as a benchmark for the size of the bank. ROA (return on asset) and NIM (net interest margin) were used as the main performance variables. The main operating segments of the bank refers to the introduction and operating reports of the banking activities of each bank's website. If the main operating segments were not limited to one, the first, second, and third operating segments were classified.

### 3.3. Analysis Method

Based on the above discussion, we set up the estimation equation as shown in Equation 1 below to examine the effect of financial development on economic growth.

$$Y_{i,t} = \alpha_i + \beta_1 BV_{i,t} + \beta_2 MV_{i,t} + \epsilon_{i,t} \quad (1)$$

In the Equation 1, the dependent variable, Y, represents the bank's profitability and NIM, ROA, BV is the bank performance variable,  $BV=[ND, EQU, NTTA, TAS, LRGL, TETA]$ ,  $MV=[INF, GDP]$ .

In this study, we proceeded in order based on three methodologies. First, we use the pooled least square method (pooled LS) of Equation 1. At this time, the t-value was calculated using a modified variance-covariance matrix using White's method to consider the heteroscedasticity.

Second, we used the fixed effects model (FEM) and the random effects model (REM) to analyze the unique characteristics of individual countries. We added the effect of the area and the year, which is not observed in the basic model of Equation 1, is as shown in the following Equation 2. At this time, Hausman test was performed to confirm the conformity of the model.

$$Y_{i,t} = \alpha_i + \beta_1 BV_{i,t} + \beta_2 MV_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t} \quad (2)$$

Third, in this study, we used the system GMM model to estimate the dynamic effects of financial development among dynamic panel analysis methods proposed by Manuel and Bover (1995) and Blundell and Bond (1998). The dynamic panel model used the past values of dependent variables as explanatory variables, and the linear regression model of a general panel is shown in the following Equation 3.

$$Y_{i,t} = \alpha_i + \beta_1 Y_{i,t-1} + \beta_2 MV_{i,t} + u_{i,t} \quad (3)$$

$$u_{i,t} = v_i + \epsilon_{i,t}$$

( $u_{i,t}$ : error term,  $v_i$ : Individual country effect,  $\epsilon_{i,t}$ : Probabilistic disturbance)

In general, in the case of the fixed effect model and the random effect model used in the panel analysis, the lagged variable of the dependent variable was used as the explanatory variable. Therefore, taking the inconsistent estimator for this reason, a dynamic panel analysis method should be used to obtain a consistent estimate. The first differential dynamic GMM of Arellano and Bond (1991) was the differential GMM using the first-order differential model as shown in Equation 3. The method of estimating the coincident estimator was used as an instrumental variable of the endogenous explanatory variable of the differential model.

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

Manuel and Bover (1995) and Blundell and Bond (1998) have further developed the dynamic panel model using GMM, and proposed a System GMM that uses the level variable and the differential paradigm as dependent variables. System GMM is an estimation form that combines the level equation and the differential equation of

Equation 4 as in Equation 3. In the first-order differential equation, the level lag parameter of the explanatory variable was used. It is used as a tool variable. Therefore, the System GMM using additional tool parameters has an advantage that it can obtain a more efficient match estimate than the existing difference GMM.

However, the use of lagged variables in the use of instrumental variables required the autocorrelation of error terms to be tested, since the condition that no autocorrelation should be satisfied in the error term was required.

In this study, the Sargan test was conducted to test the suitability of model setting and tool parameter use. In addition, if the number of instrument variables was larger than the number of endogenous explanatory variables, over estimation could be done.

The null hypothesis of the over identification test was that all selected instrument variables are not correlated with the error term, indicating that there is a problem with the fit of the over-identified model if the null hypothesis was rejected. However, the Sargan test is only valid when the error term is iid. (independent and identically distributed), and the null hypothesis can be rejected in Sargan test results because of the problem of heterogeneity.

For this reason, if there is heterogeneity, we can confirm the suitability of model and instrument variables using the Hansen test method. Therefore, in this study, instead of the system GMM, General Dynamic GMM was used because there were limitations in the research that could not pass the Hansen test in most cases according to the small sample.

## 4. EMPIRICAL ANALYSIS

### 4.1. Analysis of Profitability Factors of Banking in ASEAN

In order to examine the effects of the period from 2013 to 2017 on the profitability of banking institutions in ASEAN region, we analyzed the bank performance factors.

First, we used Pooled Least Squares, a joint regression analysis model, for the general analysis of profit factors. The regression analysis using the panel data was used to analyze the fixed effects that affect the banks' activities, and then compared with the whole region in ASEAN region. Finally, we examined the robustness of the factors affecting the profitability of banking institutions through the Generalized Method of Moments (GMM), which took into account the dynamic effects of bank profitability.

Table 2 and Table 3 show the data of basic statistics and correlation between variables related to NIM, and Table 4 and Table 5 are related to ROA.

#### 4.1.1. ASEAN Regional Bank Performance Factor Basic Statistics

Table-2. Basic statistics (ASEAN Regional Bank - NIM).

Variable	NIM	ND	LRGL	NLTA	INF	GDP	EQU	TAS	TETA
Average	4.1	91.4	2.8	58.7	339.4	476,000,000,000	1,579,485	20,650,173	20.4
Median	3.6	78.6	1.8	62.7	255.0	344,000,000,000	385,826	2,927,588	11.8
Maximum	32.7	998.6	47.6	95.8	892.6	1,090,000,000,000	37,858,745	1,360,000,000	1,305.9
Minimum	-4.7	1.2	0.0	0.4	8.6	13,900,000,000	-466,671	9,102	-20.4
Standard Deviation	3.7	79.7	3.6	18.1	240.3	303,000,000,000	4,048,625	90,877,336	54.6
Skewness	2.4	5.1	5.6	-1.0	0.7	1	6	12	15.5
Kurtosis	15.8	39.0	50.6	4.1	2.5	3	40	165	318.1
Obs.	1,085	1,085	1,085	1,085	1,085	1,085	1,085	1,085	1,085

Table-3. Correlation (ASEAN NIM model).

Variable	NIM	ND	LRGL	NLTA	INF	GDP	EQU	TAS	TETA
NIM	1								
ND	0.153	1							
LRGL	-0.032	0.165	1						
NLTA	0.125	0.373	-0.148	1					
INF	0.221	0.003	-0.042	0.237	1				
GDP	0.060	-0.018	0.087	-0.023	0.215	1			
EQU	-0.084	-0.018	-0.008	0.100	-0.050	-0.169	1		
TAS	-0.009	-0.024	-0.021	-0.018	0.061	0.081	0.458	1	
TETA	0.023	0.100	-0.034	-0.044	-0.017	-0.011	-0.037	-0.011	1

Table-4. Basic statistics (ASEAN Regional Bank - ROA).

Variable	ROA	ND	LRGL	NLTA	INF	GDP	EQU	TAS	TETA
Average	1.2	92.2	2.8	59.5	339.1	474,000,000,000	1,680,304	22,059,217	20.5
Median	1.1	79.0	1.8	63.0	255.0	344,000,000,000	414,513	3,263,488	11.5
Maximum	17.5	998.6	47.6	95.8	892.6	1,090,000,000,000	37,858,745	1,360,000,000	1305.9
Minimum	-9.7	1.2	0.0	0.4	8.6	13,900,000,000	-466,671	9,102	-20.4
Standard Deviation	2.0	78.8	3.6	17.3	239.1	301,000,000,000	4,187,794	94,270,028	56.6
Skewness	1.9	5.1	5.9	-1.1	0.7	1	5	11	15.0
Kurtosis	25.7	40.0	55.6	4.4	2.5	3	37	153	297.5
Obs.	1005	1005	1005	1005	1005	1005	1005	1005	1005

Table-5. Correlation (ASEAN ROA model).

Variable	NIM	ND	LRGL	NLTA	INF	GDP	EQU	TAS	TETA
NIM	1								
ND	0.172	1							
LRGL	0.032	0.391	1						
NLTA	-0.215	0.183	-0.157	1					
INF	0.030	0.032	0.278	-0.030	1				
GDP	-0.027	0.011	-0.053	0.063	0.249	1			
EQU	0.028	-0.033	0.073	-0.004	-0.067	-0.178	1		
TAS	-0.017	-0.024	-0.020	-0.026	0.064	0.082	0.459	1	
TETA	0.001	0.095	-0.036	-0.032	-0.013	-0.008	-0.041	-0.011	1

#### 4.1.2. Factor of Profitability on Foreign Bank in ASEAN

We know that from the result in the pooled equation procedure in Table 6, most of the variables were statistically significant in the model. ND had a positive effect on NIM and so did the GDP. An increase in GDP had



a positive influence on NIM. And NLTA and LRGL had a negative (-) influence on NIM.

If NLTA decreased, profit to NIM increased generally. So the net loan amount was not effective in improving profitability for foreign banks. LRGL was also negative (-) on profit generally. The increase of loan loss reserves to gross loan increases the ratio of cost related with management funding, so profitability to NIM decreased.

We know that the increasing GDP in advanced countries impacts the positive effectiveness to profitability related with NIM. And EQU also had a positive effect on NIM. Therefore, foreign banks in the ASEAN region need an increasing GDP and a high ratio of equity for profitability in the ASEAN region.

Looking at the result of the paneled procedure, the variables with positive effects were GDP and EQU. These were expressed by the increasing coefficient of GDP and EQU compared with the pooled procedure. Rising GDP significantly and positively affects the profitability of NIM.

Compared with the ROA model, the GDP variable has a negative (-) effect on ROA and on NIM. Rising GDP has a relationship with the expansion of financial market in the ASEAN region. Rising NIM increases the profitability of interest goods in the financial market and ROA may be decreased because rising interest increases the competition between corporates in financial institutions. Therefore, the cost of management for corporate increases.

**Table-6.** Factor of profitability on ASEAN foreign bank.

ASEAN						
Variable	Dependent Variable					
	Pooled		Paneled		GMM	
	NIM	ROA	NIM	ROA	NIM	ROA
			Fixed	Random	Fixed	Random
ND	0.010*** (0.002)	0.003*** (0.000)	0.010 (0.007)	0.005*** (0.002)	0.001 (0.007)	0.005*** (0.001)
NLTA	-0.010** (0.005)	0.002** (0.001)	-0.035*** (0.015)	-0.008 (0.008)	-0.043*** (0.018)	-0.004 (0.007)
LRGL	-0.116*** (0.009)	-0.125*** (0.009)	-0.089*** (0.030)	-0.137*** (0.021)	-0.102*** (0.028)	-0.030*** (0.041)
INF	-0.017*** (0.002)	0.006*** (0.001)	-0.153*** (0.021)	0.008 (0.003)	-0.158*** (0.022)	0.008 (0.011)
GDP	0.018*** (0.002)	-0.010*** (0.001)	0.151*** (0.020)	-0.009*** (0.003)	0.153*** (0.022)	-0.009** (0.004)
EQU	0.690*** (0.220)	0.271*** (0.087)	1.114** (0.005)	-0.442 (0.384)	1.283** (0.631)	0.458 (0.268)
TAS	-0.003*** (0.000)	0.001*** (0.000)	-0.003 (0.002)	0.165 (0.105)	-0.003 (0.002)	0.176 (0.113)
TETA	0.000 (0.000)	0.000* (0.000)	0.001 (0.001)	0.000 (0.000)	0.001 (0.000)	0.000 (0.000)
C	-30.387 (5.501)	21.028 (2.832)	-309.928 (43.470)	20.887** (8.266)	-313.776 (40.29)	20.392 (8.654)
Obs	176	176	176	176	160	158
Number of Bank	43	43	43	43	43	43
R <sup>2</sup>	0.147	0.369	0.358	0.342	0.374	0.349
Houseman			16.297 [0.038]	12.257 [0.140]		
Sargan					0.000	0.027
Hauseman					0.901	1.042

Note: ( ) means standard errors, \*\*\*, \*\* means 1, 5percent significance level, respectively.

The result of the analysis in the GMM procedure is similar to the paneled procedure for most of the variables. The GDP's statistic more strongly significant. The GDP of the advancing country is an important variable affecting NIM. It's also negatively (-) impacting ROA consistently. Rising GDP contributes profit to the financial

market. The EQU variable is also consistently in NIM model. All the coefficients have a positive effect on NIM and it is only significant for ROA in the pooled model. EQU has a positive effect on increasing profitability for ASEAN region based foreign banks.

#### 4.1.3. Sectors on Profitability of Foreign Banks

Table 7 below shows the results of various impacts on the profitability of foreign banks in the ASEAN region. ND can be seen in the pooled and paneled model as affecting NIM only. It shows that the rate of deposit partially impacts the profits of banking operations. Increasing the rate of net loan to deposits benefits foreign banks in the ASEAN region. Therefore, taking loan in financial market, bank of finance earning in NIM increase. Operating loans are effective in the ASEAN financial market. Banks in the ASEAN region need to be aggressive.

But the net loan to total asset, NLTA, variable shows a negative (-) effect in all models on NIM and there is only an effect in the pooled method on ROA. Increasing net loans raise a possibility of getting deficits for financial goods. Increasing the total amount of loan is negative from various angles and is actively on financial condition.

LRGL, loan loss reserve to gross loss is negative (-) for all methods for NIM and ROA. Increasing loan loss reserves reduces the profits of banks.

The GDP size of the countries that have operated in the ASEAN and the countries that have banking activities only show a positive effect on NIM. In the ASEAN region, foreign banks deal a lot with NIM. Banks in the ASEAN regions are related with GDP size as the expansion of activity on finance raises profit by foreign banks' performance. When the economy is growing, the banks' aggressive activities lead to a profit for the ASEAN region's foreign banks.

Table-7. Analysis of impacts on foreign bank performance in ASEAN.

Variable	ASEAN					
	Pooled		Paneled		GMM	
	NIM	ROA	NIM	ROA	NIM	ROA
ND	(+)	(+)	(+)	(+)		(+)
NLTA	(-)	(+)	(-)		(-)	
LRGL	(-)	(-)	(-)	(-)	(-)	(-)
INF	(-)	(+)	(-)		(-)	
GDP	(+)	(-)	(+)	(-)	(+)	(-)
EQU	(+)	(+)	(+)		(+)	
TAS	(-)	(+)				
TETA		(+)				

Note: It expressed that only significant effect in model.

#### 4.1.4. Effect on Profitability of Foreign Banks in ASEAN

The profitability of foreign bank in the ASEAN region are summarized in Table 8. The effects of NLTA on the NIM of the ASEAN region are the strongest. But NLTA in ROA is the only variable that is significant for banking performance.

LRGL, rate of loan loss reserve to gross loan, had the strongest negative effect in all models. Decreasing the rate of loan loss reserve raises the profitability of foreign banks in the ASEAN regions in all models. Foreign banks in the ASEAN region fare better in taking aggressive investment for profit.

Both performance variables have the greatest impact on the profitability of the ASEAN region's foreign banks. However, since the coefficient of GDP size is also significantly larger than the coefficient of net lending variable, it can be seen that GDP has the important effect of increasing the NIM of foreign banks operating in ASEAN countries.

The impact of ASEAN on ROA shows that the GDP have a strong positive relationship with NIM. And it had the greatest negative (-) effect on the ROA of the ASEAN region's foreign banks. However, since the coefficient of

bad debt provision is about 1.5 times higher than that of the economic growth variable, it can be seen that loss reserve provision LRGL has the greatest effect on the decrease in ROA of foreign banks operating in ASEAN countries. The effect of LRGL is the strongest and the variable INF also had a negative relationship with NIM.

In ASEAN, foreign banks can earn profit because almost countries in the ASEAN region experience GDP growth in the economy. They can operate with enormous capital in a financial market that is included with liability in various financial goods.

**Table-8. Impact on profitability of foreign banks.**

Effect on profitability		
Variable	NIM	ROA
ND	Midium(+)	Strongness(+) <sup>***</sup>
NLTA	Strongness(-)	Weakness(+)
LRGL	Strongness(-) <sup>***</sup>	Strongness(-) <sup>***</sup>
INF	Strongness(-)	Weakness(-)
GDP	Strongness(+) <sup>***</sup>	Strongness(-)
EQU	Strongness(+)	Weakness(+)
TAS	Weakness(-)	Weakness(+)
TETA		Weakness(+)

Note: \* All models, two and one model, when statistically significant, are expressed as Strongness, Medium, Weakness.  
\* Indicate the variable factor that has the strongest effect among variables in \*\*\*.

#### 4.2. Analysis of Profitability Factors of Domestic Bank in ASEAN

##### 4.2.1. Factor of Profitability on Domestic Bank in ASEAN

We can see that from the result in the pooled equation, many variables were statistically significant in both the NIM and ROA models. ND had a negative effect on NIM but a positive effect on ROA and NLTA. But there are no effective variables listed in the paneled and GMM models shown in Table 9.

NLTA had the most positive effect in all of the NIM model. As it increases, profit to NIM increases. Increasing net loan mount creates profitability for domestic banks.

LRGL was also negative (-) on profit in all models for ROA. Increasing loan loss reserve reduces profitability in ROA. Increasing the ratio of cost related with management funding means that ROA would be decreased.

We know that increasing GDP in advancing country only increases profitability related with NIM. And EQU also has a positive effect on NIM. So domestic banks in the ASEAN region need an increasing GDP and high ratio of equity for profitability in the ASEAN region. This is similar to foreign banks.

GDP and EQU are important variable have a similar effect on NIM that is positive. All banks in the ASEAN region need to consider developing GDP and EQU.

But ND, NLTA and LRGL are different way to conduct management. Domestic banks don't need an outcome of net loan to deposit but need an increasing amount of loan for operating funds.

LRGL also has a different effect with foreign banks. LRGL for domestic banks has a significant impact on ROA only. This means that loan loss reserve is better for domestic banks than for foreign banks because domestic banks can operate and manage it effectively.

Table-9. Factor of profitability on ASEAN domestic bank.

ASEAN						
Variable	Dependent Variable					
	Pooled		Paneled		GMM	
	NIM	ROA	NIM	ROA	NIM	ROA
			Fixed	Fixed	Fixed	Fixed
ND	-0.002*** (0.000)	0.003*** (0.000)	-0.002 (0.002)	0.003 (0.001)	-0.002 (0.002)	0.000 (0.001)
NLTA	0.075*** (0.002)	0.008*** (0.002)	0.078** (0.008)	0.009 (0.007)	0.078*** (0.009)	0.014 (0.008)
LRGL	-0.014 (0.010)	-0.011*** (0.011)	-0.012 (0.031)	-0.110*** (0.035)	-0.002 (0.033)	-0.104*** (0.034)
INF	0.002*** (0.000)	-0.001 (0.001)	0.001 (0.001)	-0.000 (0.000)	0.001 (0.003)	-0.000 (0.000)
GDP	0.009*** (0.001)	0.002*** (0.000)	0.010*** (0.003)	0.003 (0.002)	0.010*** (0.003)	0.003 (0.002)
EQU	0.056*** (0.007)	-0.028*** (0.003)	0.057*** (0.021)	-0.026** (0.011)	0.058** (0.022)	-0.026*** (0.010)
TAS	-0.005*** (0.000)	0.001*** (0.000)	-0.005*** (0.000)	0.178*** (0.052)	-0.005*** (0.001)	0.199*** (0.054)
TETA	0.005*** (0.000)	0.024*** (0.005)	0.067*** (0.022)	0.027 (0.017)	0.077*** (0.025)	0.049** (0.023)
C	-20.095*** (2.942)	-9.670** (2.263)	-21.630* (8.945)	-12.454* (6.922)	-22.045** (9.597)	-13.242 (8.041)
Obs	909	829	909	829	830	732
Number of Bank	202	197	202	197	202	196
R <sup>2</sup>	0.242	0.084	0.245	0.097	0.243	0.101
Houseman			38.363 [0.000]	48.765 [0.000]		
Sargan					0.000	0.000
Hauseman					0.956	1.007

Note: ( ) means standard errors, \*\*\*, \*\* means 1, 5percent significance level, respectively.

#### 4.2.2. Sectors on Profitability of Domestic Banks

Table 10 below shows the results of various impact on the profitability of domestic banks in the ASEAN region.

ND was negative (-) for NIM in the pooled model only. It had a different result with ROA that was positive. So ND, was not significant as a variable for domestic banks.

But the net loan to total asset, NLTA, variable shows a positive (+) effect in all models for NIM. This is a different result with foreign banks. Increasing net loan may generate profits for domestic bank in the ASEAN region. Increasing the total amount of loan is positive for the financial market for domestic corporations.

LRGL, loan loss reserve to gross loss was negative (-) effect for all models of ROA. Increasing loan loss reserve reduces a profit from a decrease in the performance of banks to reducing assets but it doesn't impact NIM.

GDP size have operated positively in domestic corporation and only the countries that have banking activities show a positive effect on NIM. This means that the effect of GDP is lower for a domestic bank than it is for a foreign bank.

**Table-10.** Analysis of impacts on domestic bank performance in ASEAN.

Variable	ASEAN					
	Pooled		Paneled		GMM	
	NIM	ROA	NIM	ROA	NIM	ROA
ND	(-)	(+)				
NLTA	(+)	(+)	(+)		(+)	
LRGL		(-)		(-)		(-)
INF	(+)					
GDP	(+)	(+)	(+)		(+)	
EQU	(+)	(-)	(+)	(-)	(+)	(-)
TAS	(-)	(+)	(-)	(+)	(-)	(+)
TETA	(+)	(+)	(+)		(+)	(+)

Note: It expressed that only significant effect in model.

#### 4.2.3. Effect on Profitability of Foreign Banks in ASEAN

The profitability of foreign banks in the ASEAN region are summarized in Table 11. The NLTA had the strongest negative (+) effect on NIM. But NLTA on ROA is in only one in significance for banking performance.

LRGL, rate of loan loss reserve to gross loan, had the strongest negative effect in all models. Decreasing rate of loan loss reserve raises the profitability of foreign banks in the ASEAN regions for all models.

Foreign banks in the ASEAN region would find it better to make aggressive investment for profit. Both performance variables have the greatest impact on the profitability of the ASEAN region's foreign banks. However, since the coefficient of GDP size is also significantly larger than the coefficient of net lending variable, it can be seen that GDP has the important effect of increasing the NIM of foreign banks operating in ASEAN countries.

**Table-11.** Impact on profitability of domestic banks.

Variable	Effect on profitability	
	NIM	ROA
ND	Weakness(-)	Weakness(+)
NLTA	Strongness(+)	Weakness(+)
LRGL		Strongness(-)***
INF	Weakness(+)	
GDP	Strongness(+)	Weakness(+)
EQU	Strongness(+)***	Strongness(-)
TAS	Strongness(-)***	Strongness(+)***
TETA	Strongness(+)	Midium(+)

Note: \* All models, two and one model, when statistically significant, are expressed as Strongness, Medium, Weakness.  
\* Indicate the variable factor that has the strongest effect among variables in \*\*\*.

GDP's effectiveness on ROA shows that it has a strong positive effect on NIM. And It has the non-effect on the ROA of ASEAN. This is different result with foreign banks. We can know that Influence of GDP is more effective to foreign bank than domestic bank.

It notes that loan loss reserve, LRGL has the greatest effect on the decrease in ROA of domestic banks

operating in ASEAN. Effect of LRGL is most strong to the profitability, but it is weaker than effect of foreign bank.

In the ASEAN region, domestic banks can earn a profit because most countries in the ASEAN region experience GDP growth in the economy. So foreign banks would like to move into ASEAN countries because foreign banks have more advantages that help them be profitable when operating corporations in the ASEAN region.

#### 4.3. Characteristics of ASEAN Foreign Bank

We know that foreign banks' are affected by the macroeconomic environment and ability of management in the ASEAN region. As seen in Table 12, the GDP scale of the advancing country is the most significant factor for profitability of corporations in the ASEAN region.

Therefore, corporations overseas have an opportunity to get profit through operating financial activity in the ASEAN region. The financial market in the ASEAN region still has the potential ability for financial expansion.

Table-12. Characteristics of ASEAN foreign Bank

Factors to advance overseas		Variable	NIM	ROA
Size of Bank		TAS		
Efficiency of Bank		ND		
Location Characteristics	Degree of Economic Integration	EQU		
	Regulatory Restriction	TETA		
	Profit Opportunities	GDP	+	-

Note: It means that only significant 1% in model for robustness.

## 5. CONCLUSION

Due to the global economy, the interconnections between countries and regions are increasing. As globalization accelerates, so does the relationship to society, culture, politics as well as the economic sector.

The world economy is looking for a viable market for sustainable growth, but it is not easy to find an alternative. Since 2000, the world economy has been actively expanding into overseas markets in order to develop new markets. In order to confirm flow of capital and direct investment, banks have operated financial markets in various countries in order to gain the advantage of financial profitability. In particular, they have been actively operating in the ASEAN region, which is maintaining steady growth within influence profit.

This study examined the factors affecting the financial profitability of corporate banks in the ASEAN region. Quantitative analysis was carried out on factors affecting the financial profit index of banks from 2013 to 2017. As a result, NIM (Net Interest Margin), which is a representative financial institution's return variable, was most positively affected by the GDP for foreign corporations.

ROA, which represents the ratio of return to total assets, was only negatively affected. This means that raising NIM and reducing ROA allows the economy in the ASEAN region to sustainably grow.

Direct investment to the ASEAN region is effective investment though the result varies as to whether the country is a developing or developed country. Most countries in the ASEAN region are developing countries, in other words, foreign corporate banks in the ASEAN region that are supported by economy growth have the most important influence.

Corporate banks in the form of corporations that have operated in the ASEAN region and can be regarded as direct investment. In recent years, however, the number of corporate banks has increased due to the contraction of the global economy and the increase in protectionism in ASEAN because the GDP in the ASEAN region grew sustainably. As the profitability of ASEAN's corporate banks is not affected by the size of assets or equity capital, it is desirable to operate in the form of retail banking or professional banking rather than the form of full banking.

In addition, it is the economic growth of the country that has the most important effect to generate earnings and is more effective in foreign corporations than domestic corporations, so it is necessary to take into account the economic growth individually by identifying the countries that have operated banking institutions overseas.

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