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ASEAN banking industry performance analysis

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Abstract

This research focuses on the banking industry in ASEAN. The ASEAN economy is one of the economic forces that needs to be considered. This is due to the fast and significant economic growth of ASEAN even in the midst of the 2008 financial crisis. In this study, we will look at the specific influence of banks, industry, macroeconomics and Country Governance Indicators in determining banking performance in ASEAN. The research period was taken during the post-crisis period, namely 2011 to 2019. The dependent variable used was bank performance as proxied by EARTA, while the independent variables were divided into 4 main categories, specific banks, industry, macroeconomics, and Country Governance Indicators. Country Governance Indicator variable using Corruption Index. The data used is sourced from the Osiris Database for all banks in ASEAN. This study uses multiple linear regression analysis techniques. The results showed that the bank-specific variables; there are 4 variables that have a significant effect on banking performance, industry indicators have no effect on bank performance, macroeconomic specific variables have a significant effect on bank performance, while the Country Governance Indicator proxied by the Corruption Index has an effect on bank performance.

Keywords bank performance; country governance indicator; ASEAN

INTRODUCTION

Banks as intermediaries have an important role in the economic development of a region. This is because one of the functions of the bank as an intermediary institution is as a liaison between parties who have funds and those who need funds, the emergence of banks as intermediary parties can reduce costs in the business transaction process (Bhattacharya and Thakor, 1993). In addition, the emergence of banks can improve the quality of investment in the process because it involves more parties and creates a multiplier effect.

ASEAN as one of the developing economic regions in Asia has a fairly high economic growth value compared to other regions in Asia. The magnitude of ASEAN's economic strength can be seen from the fairly large GDP growth, in 1999 ASEAN GDP was recorded at USD 577 million and in 2016 it grew to around USD 2,500 USD (The Future of ASEAN Time to Act, 2018). The value of GDP growth which has increased by more than 400% in less than two decades shows that ASEAN's economic strength cannot be underestimated. Along with economic growth, ASEAN also has an attractive banking industry. This is because ASEAN consists of several countries that have the characteristics of their respective economic strengths. Most ASEAN countries consist of middle upper income countries, such as Indonesia, Malaysia and Thailand, there are also countries with upper income economic groups such as Singapore, and the rest are countries with middle lower income economies (World Bank data). The differences in the economic characteristics of each country in ASEAN create a fairly varied banking industry.

The attractive ASEAN economy has become one of the factors in the development of the banking industry. It can be seen in the Osiris data that there are 94 banks throughout ASEAN, with total assets reaching IDR 48,047,892.5 billion in 2019. The development of the banking industry in ASEAN can also be seen from the increasing total assets of banks in ASEAN. Based on figure 1, In the year of 2011, banking assets in ASEAN were still below 20,000 trillion Rupiah, but 9 years later total banking assets in ASEAN more than doubled to more than 40,000 trillion Rupiah.

The rapid development of the banking industry in ASEAN countries such as Indonesia, Malaysia and Thailand have attracted the attention of several parties to develop the banking industry in ASEAN. Not only banks originating from ASEAN countries but also banks from countries outside ASEAN, such as Europe, America and several large

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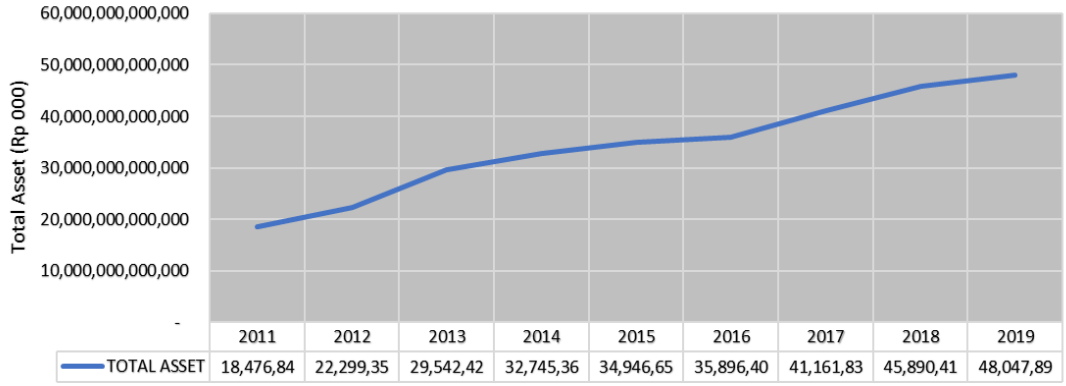

Figure 1.
ASEAN banking industry performance

countries in Asia such as China, Japan, Korea and India. Banks originating from abroad usually have different characteristics and capital components from banks originating from ASEAN countries. As research by Sufian and Noor (2013), the origin of the bank has different effects on the performance of banks in India, the bank does not always have a uniform impact on the profitability where the bank operates. In addition to the origin of the bank (origin), many factors affect the profitability of a bank. These include specific banks, industry and macroeconomics. Research on bank profitability starts with Ho and Saunders (1981) who explain that profitability as proxied by Net Interest Margin (NIM) is influenced by Risk Aversion, the market structure in which the bank operates, and also the size of the transactions carried out.

Several profitability studies were conducted based on the area of operation, such as the research of Islam and Nishiyama (2016) which found that many commercial banking profitability performances in South Asia were influenced by specific banks, macroeconomics and competition. Meanwhile, in Europe, research conducted by Maudos and Guevara (2004) explains the low profitability of the banking industry there. In addition to research conducted in certain regions, several studies were conducted in certain countries (single country research), such as Trinugroho, et.al (2014) research which explains that the high profitability of banks in Indonesia is influenced by banking market power. Entrop et.al (2014) also found that bank profitability in Germany is influenced by market power and operating costs, besides that there are still studies by Maudos and Solis (2006) in Mexico, Fungachova and Poghosyan in Russia (2011), Williams (2007) in Australia, Sufian, et.al. (2012) in India, Khan et.al (2014) in Pakistan, Abduh and Issa (2018) in Kuwait and Hesse (2007) in Nigeria. These studies focus on the specific bank indicators of each banking industry.

This study is a development of research from Hamid (2017) which examines the market structure of the profitability and stability of banks in ASEAN. In previous research, market structure and bank-specific factors affect bank profitability. However, this study includes the influence of country governance indicators, according to Chan, et.al (2015) the role of a country's governance has a considerable influence in the formation of a bank's profitability. One indicator of good governance is the corruption index. According to Mongid and Tahir (2011) the level of corruption in a country has a positive effect on the level of formation of bank profitability in that country, in other words, the higher the level of corruption in the country, the bank can produce better profitability as well. This is different from the results of Chendan Liao's (2009) research which states that corruption has a negative effect on bank profitability. Therefore, the purpose of this study is to examine the specific bank factors, industry, macroeconomic and country governance indicators on the formation of bank profitability in ASEAN. Based on the description of the background, there are several problems, namely as follows: The influence of specific bank, industry and macroeconomic indicators has different effects when considering the element of ownership in the industry. Country Governance Indicator proxied by the corruption index has a different effect on the formation of bank profitability in a country.

LITERATURE REVIEW AND HYPOTHESES

Bank performance

One of the functions of a bank as an intermediary institution is as a liaison between parties who have funds and those who need funds, the emergence of banks as intermediary parties can reduce costs in the business transaction process (Bhattacharya and Thakor, 1993). In a study conducted by Nurbaiti in 2016, in carrying out its function as a collector and manager of public funds, the financial performance of a bank is measured by the aspect of profitability which is based on the importance of business profit because after all banks are profit-oriented and profit-oriented businesses. In its measurement in a bank, profitability is a specific measure of the performance of a bank, where it is the goal of company management by maximizing shareholder value, optimizing various levels of return, and minimizing existing risks (Hasan, 2003). In the research that became the reference of this research, namely the research of M. Mateev & P. Bachvarov in 2020, the measurement of profitability in a bank is proxied by EARTA and EARGL to measure the level of profitability at a bank. EARTA or Earning to Total Assets is measured by comparing earnings at a bank with total assets at a bank. According to Kasmir (2008), earnings or profitability is a measure of a bank's ability to increase its profit every period or to measure the level of business efficiency and profitability achieved by the bank concerned. Meanwhile, EARGL or Earning to Gross Loan is measured by comparing earnings at a bank with Gross Loan or gross loan. Gross Loan itself is the total amount of credit issued to banks during the accounting period. In this study, EARTA and EARGL data were collected through the OSIRIS database.

Bank specific variables

In determining the influence of Bank Specific Variables on Bank Performance, it is necessary to look at each proxy in Bank Specific Variables. As in the size or size of the bank in this study, it is measured using the Natural Logarithm of Total Assets. According to previous research from Wai Peng Wong and Qiang Deng (2014), large size banks tend to be less efficient and negative on bank performance. For Credit Risk, which is proxied by comparing Non-Performing Loans with Total Loans in a Bank. The greater the credit risk, the higher the Non-Performing Loan or the lower the Total Loan, which if it occurs will have an impact on the decline in bank performance as proxied by profitability. Thus, Credit Risk has a negative effect on Bank Performance. The Liquidity Risk is calculated through the Loan to Deposit Ratio (LDR) which is proxied by the total credit provided by the amount of third-party funds. LDR indicates the ability of a bank to provide funds for debtors from capital funds or funds collected from the public. The larger the LDR will make the Bank have the opportunity to get a large profit from the interest lent. Thus, Liquidity Risk has a positive effect on Bank Performance. Banking efficiency is proxied by comparison of Operating Expense and Total Assets in a bank. The greater the Operating Expense indicates a fairly high banking activity which can have a positive effect on Banking Profitability. Non-Interest Income on bank-specific variables is measured by the comparison of Non-Interest Income with Total Assets. Just like Net Interest Margin, Non-Interest Income is also income that provides profit for the Bank. The greater the Non-Interest Income, the higher the Bank's Performance will be. Thus, Non-Interest Income has a negative effect on bank performance.

Industry specific variables

The Industrial Indicator variable can be measured using the market concentration variable. According to Sutardjo et al. (2011) one that shows an increase or decrease in the market concentration of banks in Indonesia is shown by the Herfindahl and Hirschman index (HHI). The Herfindahl-Hirschman Index (HHI) is a measure of market concentration which you calculate by adding up the square of the market share of each company in the industry. The higher the Herfindahl-Hirschman Index will reflect a fairly high Market Share which indicates the ability of a bank to dominate the market and consumers. Thus, Industrial Indicators will have a positive effect on Banking Performance.

Macroeconomic specific variables

Macroeconomic indicators are factors in the analysis of economic development in a region. The use of macroeconomic indicators is very broad, including to predict economic

developments and economic trends in the future. In this study, Macroeconomic Indicators are used to see their effect on the profitability of a bank with variables including: inflation, GDP Growth, GDP percapita Growth, Consumer Price Index, and Interest. According to Bank Indonesia, inflation can be defined as an increase in the prices of goods and services in general and continuously within a certain period of time. Inflation calculation is carried out by the Central Statistics Agency (BPS), link to SEKI-IHK metadata. An increase in the price of one or two goods alone cannot be called inflation unless the increase extends (or causes price increases) to other goods (Bank Indonesia, 2020).

GDP (Gross Domestic Product) Growth or GDP growth reflects a measure of a country's economic development and to what extent the country's economy has grown or shrunk. In general, GDP indicators are published quarterly by the statistical agency of each country. GDP Percapita Growth is the growth rate of a country's per capita income. Income per capita itself reflects the average income of all residents in a country. For the measurement of a country's per capita income, it can be calculated by dividing a country's national income with the country's population.

The Consumer Price Index or Consumer Price Index is an index number that describes changes in the prices of goods and services consumed by the general public in a certain period with a predetermined time period (Karlina, 2017). The Consumer Price Index is an indicator used to represent changes in the average retail price level at the consumer level for certain types of goods and services. Interest or interest rate is one of the Macro Economic Indicators used to control the economy of a country. The interest rate according to Boediono (2014) is “the price of using loanable funds. The interest rate is one indicator in determining whether someone will invest or save. The data for Macroeconomic Indicator Variables are obtained through data from the World Bank for several countries according to the scope of the research.

Country governance indicator

Country Governance Indicator is proxied by Corruption Estimation (CE) data where this data is an estimate by assigning country scores to aggregate indicators, in standard normal distribution units, which ranges from about -2.5 to 2.5. The larger the estimated number, it will reflect that the country has a fairly low level of corruption. This index also shows how the governance and quality of regulations provided by the government for the industry concerned. The higher the level of corruption in a country indicates that the business and economic environment in that country is not favorable for the development of the banking business in particular. The lower quality of the business environment will make it difficult for banks to develop and end up with the bank's low performance Djalilov and Lam (2019).

In this research proposal in accordance with the explanation of the above variables based on the research that has been done, we make a hypothesis from this research as follows:

H1 : Specific Bank Indicators (X1) have an effect on the performance of ASEAN Banking Companies.
H2 : Industrial Indicators (X2) have an effect on the performance of ASEAN Banking Companies.
H3 : Macroeconomic Indicators (X3) have an effect on the performance of ASEAN Banking Companies.
H4 : Country Governance Indicator (X4) has an effect on the performance of ASEAN Banking Companies.

METHODS

This research, when viewed from the type of data, includes quantitative descriptive research, while when viewed from the relationship between variables, it is causal research. This study is to see the performance of the ASEAN banking industry by looking at the influence of Bank Specific (X1), Industry (X2), Macroeconomics (X3), Country Governance Indicator (X4) on Banking Performance (Y) in banking companies on the Indonesia Stock Exchange for the period 2011-2019. Overall, this research used a time period of 9 years (2011-2019) with a sample of 89 banks. This study uses ownership control variables. The ownership control variable used in this research is a dummy variable. This ownership variable is seen from foreign and government ownership. The foreign ownership variable has a value of 1 when the majority of the bank is owned by foreign owners (institutions or individuals).

Table 1.
Variables operational definition and measures

No.	Variable	Proxy	Source	Reference
		Dependent Variable		
1	Banking Performance	EARTA (Bank interest income minus bank interest expenses divided by total asset)	Osiris	Mateev (2020); Demirgüç-Kunt et al.(2013); Anginer and Demirgüç-Kunt (2014)
		EARGL (Bank interest income minus bank interest expenses is divided gross loans)	Osiris	Mateev (2020); Demirgüç-Kunt et al.(2013); Anginer and Demirgüç-Kunt (2014)
		Independent Variable		
2	Bank Specific Indicator			
	Credits Risk	NPL/Total Loans	Osiris	Fungachova and Poghosyan (2011)
	Liquidity Risk	Loans/deposits	Osiris	Trinugroho *et al.* (2014);Lopez-Espinosa et al. (2011)
	Risk Aversion/Capital ratio	Equity/Total Assets	Osiris	McShane And Sharpe (1985)
	Efficiency Banking	Operating Expenses/Total Assets	Osiris	Trinugroho *et al.* (2014)Hawtrey and Liang (2008)
	Size	Ln (Total Asset)	Osiris	Entrop *et al.* (2014)
	Non-Interest Income	Non-Interest Income/Total Assets	Osiris	Ho and Saunders (1981)
3	Industry Indicator			
	Market Concentration	Herfindahl Index (∑((assetsindividual bank)/(total assetsindustry banking))^2	Osiris	Fungachova and Poghosyan (2011)
4	Macroeconomics Indicator			
	Inflation	Level inflation from each each country the year	World Bank	Demirgüc-Kunt and Huizinga (1999)
	GDP Growth	GDP growth ratefrom each country every year.	World Bank	Demirgüc-Kunt and Huizinga (1999), Claeys and Vennet (2008), Gelos (2006), Valverde And Fernandez (2007)
	GDP Per capita Growth	Annual percentage changes in GDP per capita	World Bank	Djalilov and Lam (2019)
	Consumer Price Index	Consumer price index (%). It measures the price level in the economy.	World Bank	Hamid (2020)
	Interest Rate	The value of real interest rates each year in a country	World Bank	Claeys and Vennet(1998)

5	Country Governance Indicators			
	Corruption Estimation	*Corruption Estimates* provide country scores on aggregate indicators, in standard normal distribution units, i.e., ranging from about -2.5 to 2.5	World Bank	Djalilov and Lam (2019)
		Control Variable		
6	Variable Control Ownership			
	Dummy Foreign Ownership	Bank part big owned by Foreign	Osiris	Mateev (2020)
	Dummy Government Ownership	Bank part big owned by the government	Osiris	Mateev (2020)

Government ownership variable when the bank is majority owned by the government. Data collection techniques with documentation, researchers look for data and then tabulate the data according to the number of variables. Researchers took data from the Osiris Database and the World Bank website. This research uses eviews software in data processing. The description and measurement of each variable used in this research is explained in Table 1.

Hypothesis testing was carried out using Generalized Least Square. The use of this method is not only because the data we use is Unbalanced Panel Data, the use of this method can help overcome the problem of heteroscedasticity. Meanwhile, the autocorrelation test cannot be performed on balanced panel data. The autocorrelation test aims to see whether in the linear regression model there is a correlation between confounding errors in period t and confounding errors in period t-1. Thus, the autocorrelation test can only be carried out on time series data, because what is meant by autocorrelation is a value in a particular sample or observation that is greatly influenced by the value of the previous observation. Therefore, research that uses cross section data or panel data does not need to carry out autocorrelation tests. Normality and multicollinearity tests were carried out in this study. The test results showed the data was quite normal and passed the multicollinearity test. The equation of the test model used is as follows:

$$\text{Performance } (Y) = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + e$$

Information:
- Y : Performance
- α :constant value of regression equation
- β : Regression coefficient
- e : error term
- X1 : Bank Specific
- X2 : Industry
- X3 : Macro Economy
- X4 : Country Governance Indicator

RESULTS AND DISCUSSION

The population in this study are banks located in ASEAN. ASEAN member countries consist of 10 countries, namely Brunei, the Philippines, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand and Vietnam, but in this study only 7 countries were used. This is not only due to data limitations but also some countries do not meet the requirements to be a sample in this study.

In this study, the descriptive statistics in the Table 2 shows the number of samples used in this study, the number of observations, the mean value, the maximum value, the minimum value and the standard deviation. The dependent variable used is bank performance as proxied by EARTA, while the independent variables in descriptive statistical measurements are 4, namely: specific banks, industry indicators, macroeconomics, and Country Governance Indicators. Specific bank consisting of six variables, namely credit risk, liquidity risk, risk aversion, banking efficiency,

Table 2.
Descriptive statistics

	Dependent Var	Independent Var												
	EARTA	CR	RL	RA	EF	SIZE	NII	HERF	CPI	GROW	CAP	INL	INT	COR
Mean	0.03	0.04	0.79	0.12	0.02	25.34	0.02	0.05	124.48	0.05	0.04	0.04	0.04	-0.31
Max	0.11	0.97	3.78	0.52	0.18	29.42	0.15	0.06	163.52	0.07	0.07	0.19	0.06	2.17
Min	-0.02	0.00	0.18	0.04	0.00	20.31	-0.01	0.05	103.17	0.01	0.00	-0.01	0.01	-0.70
St. Dev.	0.02	0.07	0.23	0.05	0.02	1.90	0.02	0.00	16.24	0.01	0.01	0.03	0.01	0.52
N	758	743	750	758	758	758	758	801	792	792	792	792	792	792

bank size and non-interest income. Industry indicators are proxied by market concentration. Macroeconomic specific variables consist of the inflation rate and the Growth of Gross Domestic Product, as well as the Country Governance Indicator which is proxied by the Corruption Index.

Banks in ASEAN have an average NPL ratio of 4%, while the average NPL ratio of ASEAN countries is quite diverse. The Philippines and Indonesia have higher average NPL ratios than ASEAN's average NPL ratios. The highest and lowest NPL ratio values at a bank in ASEAN are in Indonesia at 97% at PT Bank Pembangunan Daerah Banten TBK in 2014 and the lowest NPL ratio at 0.0002% at Maspion Bank Indonesia in 2013. ASEAN's average is quite high, this can be seen from the average loan to deposit ratio of 79%. The value of this ratio shows that banks in ASEAN lend almost as much as their deposits. Several countries in ASEAN have liquidity risk below the ASEAN average liquidity risk. Only 3 countries have liquidity risk above the ASEAN average, namely Indonesia, Malaysia and Thailand, this can indicate that the economy in these countries is developing because more funds from banks are absorbed by the public than other countries in ASEAN.

A Bank in Thailand named Thanachart Capital Public Company in 2019 had the highest liquidity risk of 378%. This shows that the bank issued a loan that was larger than the total deposit it received, while the lowest liquidity risk was with a bank in the Philippines named Philtrust Bank in 2017 of 18%, this value is very far from the average liquidity risk of ASEAN. The average level of risk aversion of banks in ASEAN is 12.03%, most of the average risk aversion of banks in ASEAN countries is below the ASEAN average. Only Indonesia and the Philippines have average risk aversion above 12.03%, namely 15% and 12.4%. This shows that banking assets in Indonesia and the Philippines are sourced from greater equity than other countries in ASEAN. PT Bank Artos Indonesia in 2019, the highest level of risk aversion of 52%, this shows that the source of assets owned by the bank is greater from equity. The lowest risk aversion was at a bank in Vietnam called the Joint Stock Commercial Bank in 2017 at 4%.

The level of banking efficiency in ASEAN sees an average operating expenses to total asset ratio of 2%. Almost all banks in ASEAN have a level of banking efficiency equal to or below the ASEAN average, only banks in Indonesia whose efficiency level is 1% higher than the ASEAN average of 3%, while the bank with the worst efficiency level is PT Bank Banten TBK Regional Development in 2016 was 18% and a Philippines named Philippine Business Bank Inc had the lowest operating expenses to total asset ratio of 0.066%. Banks in ASEAN have quite varied company sizes. Singapore has the largest average total banking industry assets compared to other countries in ASEAN, while Indonesia is the country with the lowest average total banking industry assets. When viewed in more detail, the size of the banking sector seen from the total assets of each bank in ASEAN is still led by a bank in Singapore. DBS Bank Ltd. Singapore in 2015 had assets of 5.97 trillion rupiah, this value makes DBS Bank Ltd. as the bank with the largest company size in ASEAN during the observation period. PT Bank Artos Indonesia in 2018 became the bank with the smallest bank size in ASEAN during the observation period with total assets of 664 million rupiah. The average bank size in several ASEAN countries is already above the average bank size in ASEAN, only Indonesia and Laos are below the ASEAN average bank size. The ratio of non-interest income or Non-Interest Income compared to Total Assets in ASEAN banking has an almost uniform value, which is between 1% and 3% for all countries in ASEAN. The ratio of non-interest income to the largest total assets is at a bank in Thailand

Table 3.
Regression testing results

Independent Var	**EARTA**
Constant	-0.042308***
	(-4.633276)
Bank Specific Indicator	
Credit Risk	-0.000024
	(-0.003878)
Liquidity Risk	0.011942***
	(7.04621)
Risk Aversion	0.04897***
	(9.476532)
Banking Efficiency	0.109831***
	(3.42662)
Size	0.000077
	(0.426274)
Non-Interest Income	0.092809***
	(7.930546)
Industry Indicator	
Market Concentration	0.044374
	(0.482066)
Macroeconomic Indicator	
Inflation	0.060312***
	(4.9945)
GDP Growth	-0.18149**
	(-2.37142)
GDP Percapita Growth	0.195707**
	(2.22398)
Consumer Price Index	0.000132***
	(6.600059)
Interest Rate	0.576512***
	(12.25537)
Country Governance Indicator	
Corruption Index	-0.009718***
	(-16.11452)
Obs	731
Adj. R^2	0.781611

called Thanachart Capital Public Company of 15% in 2019.

The concentration of the banking market in ASEAN describes a uniform concentration level of 5%. Meanwhile, the Consumer Price Index Indicator in ASEAN is at the level of 124% with the highest value in the observation period in 2019 in Vietnam at 163% and the lowest in the observation period in 2011 in Malaysia with a Consumer Price Index of 103%. . For Economic Growth and Economic Growth Per capita countries in Asean showed almost the same results where the State of Thailand became the country with the largest Economic Growth and Economic Growth Per capita in the range of 7% which occurred in 2012. The lowest value of Economic Growth and Economic Growth Per capita in Singapore was in in 2019 where Economic Growth was at 0.7%, while for Per capita Economic Growth it was at a negative number, namely -0.4%. The average inflation rate in ASEAN is 4%, there are not many countries whose average inflation rate exceeds the ASEAN average, only Indonesia and Vietnam whose average inflation rate is higher than ASEAN, namely 5% and 6%.

The highest inflation in the observation period based on data from the World Bank occurred in Vietnam in 2011 where the inflation rate was in double digits, namely 18.6%. At interest rates, the average ASEAN country provides an interest rate of 4%. Malaysia is the only country that provides the lowest average interest rate during the observation period with an average interest rate of 2%. The observation period for interest rates in ASEAN, the highest interest rate was in Indonesia in 2012 at 5.84%, while the lowest interest rate value during the observation

period occurred in Malaysia in 2015 where the country only charged an interest rate of 1 ,43%. In the Corruption Index variable, the proxy used is the Corruption Estimation (CE) data where this data is an estimate by assigning a country score to the aggregate indicator, in standard normal distribution units, which ranges from about -2.5 to 2.5. The larger the estimated number, it will reflect that the country has a fairly low level of corruption. In the Corruption Index data in the 2018 observation period, Singapore has the highest estimated score of 2.17 which shows the success of government management to overcome corruption in the country. Meanwhile, the lowest estimated value was in Indonesia in 2011 with a Corruption Estimation (CE) value of -0.7.

In the results of bank specific regression there are 2 variables (Table 3), namely credit risk and company size which are not significant. The liquidity risk variable shows a positive and significant effect at 1% (0.017785). The risk aversion variable also shows a positive and significant effect at 1% (0.048961). Furthermore, the banking efficiency variable also has a positive and significant effect of 1% (0.119088). The bank size variable shows a negative and significant effect of 1% (-0.000486). While the non-interest income variable shows a positive and significant effect at 5% (0.035618). In the second test, industry variables were also included to see their effect on bank performance. All bank-specific variables show the same results and directions as the previous test. Credit risk variable shows no significant effect. The liquidity risk variable shows a positive and significant direction of 1% (0.018143), the risk aversion variable also shows a positive and significant direction 1% (0.054845), the bank efficiency variable shows a positive and significant direction 1% (0.136664), the variable bank size shows a negative and significant direction of 10% (-0.000344), and the non-interest income variable shows a positive and significant direction at 10% (0.027128), while the industry variable shows a positive and significant direction of 1% (0.457823).

In the third regression, apart from bank-specific variables and industry variables, macroeconomic variables were added. The results of this regression do not show a change in the direction or significance of the bank-specific variables but the industry variables actually become insignificant in this regression model. For macroeconomic variables, it shows that the five variables have a significant effect on bank performance. The inflation rate variable has a positive and significant effect at 1% (0.069723). The GDP growth variable shows a negative direction and is significant 5% (-0.242248). The GDP per capita variable shows the opposite direction, which is positive and significant at 5% (0.273141). Another macro variable, namely the consumer price index (CPI), shows a positive and significant direction of 1% (0.00072). The interest rate variable shows a positive and significant direction of 1% (0.388197). In the last regression we include all independent variables, namely: specific bank, specific industry, macro economy and country governance indicators. In the results of this test, for the specific bank variable, only the size of the bank has changed to be insignificant, while the other bank-specific variables have not changed. The industrial variables also still showed insignificant results. The macroeconomic variables also show the same results as before, all variables are significant, while for the country governance indicator variable, it shows a negative direction and is significant 1% (-0.009718).

In addition to testing our research model with the dependent variable of bank performance as proxied by EARTA, we also perform a robustness test by replacing the proxy of the dependent variable with EARGL. This test which shown in table 4 shows that several variables show a consistent direction. At a specific bank, the credit risk variable consistently shows a negative but not significant direction, the risk aversion variable, bank efficiency, bank size and non-interest income shows a consistently positive and significant direction. The specific industry also shows consistent results, the regression model shows positive and significant results, the third and fourth tests show consistent results as the previous regression results, which are positive and insignificant.

In macroeconomic variables, only inflation and interest rate variables show consistent results with previous tests, which are positive and significant. For the country governance indicator variable, the results are consistent with the previous test, which is significant negative. These results indicate that some of the variables in this test are robust enough to be used as independent variables from bank performance.

Table 4.
Robustness test

Independent Variable	***EARGL***
Constant	-0.000056
	(-0.002983)
Bank Specific Indicator	
Credit Risk	-0.00291
	(-0.987652)
Liquidity Risk	-0.012397***
	(-4.896421)
Risk Aversion/Capital ratio	0.130151***
	(28.12699)
Bank Efficency	0.128744***
	(2.967592)
Size	-0.000231
	(-0.749992)
Non-Interest Income	0.261588***
	(9.555773)
Industry Indicator	
Market Concentration	-0.02555
	(-0.155947)
Macroeconomic Indicator	
Inflation	0.108876***
	(5.30877)
GDP Growth	-0.091875
	(-0.933993)
GDP Percapita Growth	0.06511
	(0.637815)
Consumer Price Index	0.000064*
	(1.885671)
Interest Rate	0.729726***
	(12.48447)
Obs	731
Adj. R^2	0.789382

In the results of testing the performance of banks in ASEAN, almost all variables show significant results. Credit risk and market concentration variables that show insignificant results. Although not significant, credit risk shows a negative direction in accordance with research from Abduh, M. and Issa, M. S. (2018), A.S.M. Azad, et. al. (2019), Williams (2007), Hesse (2007), Fungachova and Poghosyan (2011), Trinugroho et al. (2014), Almarzoqi and Naceur (2015). The higher the risk level of a bank, the lower the bank's performance because the greater the risk that will be borne so that banks are more careful in investing their funds and have an impact on bank income.

The liquidity risk variable shows positive and significant results, this is in line with research from Azad, et. al. (2019), Trinugroho et al. (2014), Islam & Nishiyama (2016). The higher the level of liquidity risk, the better the bank's performance will be. This is because the funds owned by banks are mostly invested in interest-based and non-interest-based funding activities which will ultimately increase the bank's income.

The banking efficiency variable shows positive and significant results, this shows that the more efficient the bank's operational activities, the more efficient the bank's performance will be. This is in accordance with research from Abduh and Idrees (2013), Abduh and Issa (2018), Khan, et.al. (2014), Azad, et. al. (2019), Entrop et al. (2014), Maudos & Solis (2009), Hawtrey and Liang (2008).

The variable size of the bank or size shows positive and significant results, the larger the size of the bank's assets, the greater the performance of the bank. This study is in accordance with previous research from Maudos and Solis (2009) and Almarzoqi and Naceur (2015). However, the results of this study are in accordance with the results of previous studies such as Trinugroho et al. (2014) and research from Islam and Nishiyama (2016). The direction of this positive relationship is because banks with

large assets or banks with large bank sizes will have the ability to provide larger loans compared to banks with smaller assets. The bigger the loan given to the customer, the interest income will also increase. In addition, banks with larger bank sizes also have larger transaction values, the size of these transactions will result in higher risk so that banks set higher margins (Maudos and Solis, 2009).

The non-interest income variable in this test shows positive and significant results. This explains that the greater the non-interest based income, the more the bank's income will increase and in the end it will have an impact on the bank's profitability performance. The results of this study are in accordance with previous research from Sufian, et. al. (2012), Ho and Saunders (1981), Sufian, et. al. (2012), Hawtrey and Liang (2008), Maudos & Solis (2009), Lin et. al. (2011).

The specific industry variable, namely market concentration, showed positive but not significant results. The results of this positive direction are in line with previous studies by Demirgüc-Kunt and Huizinga (1999), Saunders and Schumacher (2000), Maudos and Guevara (2004), Williams (2007), Hawtrey and Liang (2008), Abduh and Idrees (2013). The more concentrated an industry is, the higher the bank's performance will be.

The specific macroeconomic variables showed significant results. Inflation shows a positive direction in accordance with previous research from Abduh and Idrees (2013), Wahidudin, et. al. (2018), Phan, et.al. (2019), Sufian, et. al. (2012), Almarzoqi and Naceur (2015), Entrop et al. (2014), Lopez-Espinosa et al. (2011), Maudos & Solis (2009). The higher the inflation, the bank's performance will also increase. This is because the increase in inflation is one indicator of the increasing economy of a country.

The variables GDP growth and GDP per capita showed significant results but in different directions. GDP Growth shows a negative direction, if the country in general experiences an increase in the economy, it will reduce bank performance. However, if GDP per capita has increased, the bank's performance will also increase. Based on the results of this test, it can be seen that if there is an improvement in the general economy, many customers will use their funds to invest instead of saving their funds in the bank.

The consumer price index variable shows positive and significant results. The results of this study are in accordance with previous research from Ali, et.al. (2011). The higher the price index in a country, the higher the performance of a bank. The higher the CPI of a country can be an indicator of the improvement in the country's economy, this has an impact on industries, one of which is the banking industry.

The interest rate variable shows positive and significant results. These results are in accordance with the research of Lin et. al. (2011), Lopez-Espinosa et al. (2011), Entrop et al. (2014), Islam & Nishiyama (2016). The higher the interest rate, the higher the bank's income, which in turn will improve the bank's performance.

The corruption variable shows negative and significant results. The results of this study indicate that the higher the level of corruption in a country, the higher the performance of the bank. The results of this study are in accordance with several previous studies from Arshad (2013), Mongid, et. al. (2011), Ayaydın and Hayaloglu (2014). This result can be explained that banks operating in a corrupt environment may enjoy excessive pricing capacity in terms of lending rates and deposit rates (Mongid, 2011). Some others argue that corruption in a system distorts the economic and financial environment, and reduces the efficiency of government and business by allowing people to take advantage of their position, the most common form of corruption that businesses directly encounter is financial corruption in the form of bribes (Khedhiri, 2009).

CONCLUSION

This study provides several conclusions, namely variables at specific banks consistently show significant results such as liquidity risk, risk aversion, banking efficiency, bank size and non-interest income variables. Only the credit risk variable that shows negative results is not significant for all test models. Industry-specific variables show different results for different test models. When the test only involves specific banks and specific industries, the market concentration results are significantly positive. However, if it has been tested with macroeconomic variables, this variable becomes insignificant. The macroeconomic variables in this test show significant results. However, several variables did not pass the robustness test, such as the GDP Growth and GDP per capita variables. The corruption variable in this test shows a significant negative result. This

shows that banks in environments with high levels of corruption will actually show better performance. This is in accordance with several previous studies in several countries in ASEAN.

The results of this study imply that bank performance in ASEAN is generally still influenced by specific banks, but when macroeconomic variables and country governance indicators are also tested, the market concentration variable can be insignificant. The variables that dominate the performance of banks in the conventional banking industry in ASEAN are specific banks and macroeconomics. The macroeconomic variables and the level of corruption that show consistent and significant results indicate that the banking industry in ASEAN is more influenced by state and regional level policies. When viewed from the country of origin and banking ownership in ASEAN, it can still be seen that the banking industry in ASEAN is related to each other in terms of ownership. Many banks in several countries in ASEAN are owned by one large bank. This of course shows that the policies of a bank in one country can affect banks in other countries. The implications of the results of this research for the government as the party authorized to regulate and maintain the stability of the banking system are expected to create regulations so that the banking competition system in both Indonesia and the ASEAN region can be healthier and safer. Considering that macroeconomic variables and corruption variables have a consistent effect and banking ownership in ASEAN which is still centralized can create unfavorable banking competition. For banking management, these results are expected to be the basis for internal bank policies to improve the performance of specific bank variables. It is also hoped that bank management can prepare the bank's internal conditions if there are shocks from macroeconomic factors such as inflation, GDP, CPI and the level of corruption. For researchers, the results of this test can provide an updated picture of the banking industry in ASEAN. It is also hoped that it can open up the development of banking industry research in ASEAN more specifically, such as specifically for macroeconomics and ownership structure.

This study has several limitations, some countries in ASEAN have not been able to be the sample of this study due to limited data. In addition to the lack of information about the financial industry of several countries, many bank data are empty even though the research period is quite long. The variable proxy used in this study is still limited, especially for the corruption variable. It is hoped that further research can use several methods to calculate the level of corruption. This study also includes the ownership structure variable but only as a control variable and has not become the main subject of the research idea. In further research, the ownership structure variable can be used as one of the main variables to test the performance of banking in ASEAN. Testing in this study using only the GLS is expected in future research can be tested using several regression methods

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