**INDONESIAN BANKING EFFICIENCY TO FACE**

**ASEAN BANKING INTEGRATION FRAMEWORK**

**Nurbetty Herlina Sitorus, University of Lampung, Indonesia**

**Emi Maimunah, University of Lampung, Indonesia**

**Dian Fajarini, University of Lampung, Indonesia**

**ABSTRACT**

The purpose of this research is to analyze Indonesian Banking Technical Efficiency to face ASEAN Banking Integration Framework. The research period was from Q12011 until Q42015 that employed 15 Banks with the biggest asset in ASEAN 5 countries. This research had three steps that was first, technical efficiency of ASEAN 5 country which was measured by Data Envelopment Analysis. Second, the efficiency score of Indonesian banking which was compared to other ASEAN 5 countries and the third, financial ratio of Indonesian banking such as CAR, BOPO, LDR, NPL, and NIM which was compared to other ASEAN 5 country using Independent Sample t-test.

The result of CRTS and VRTS method by DEA showed that banking efficiency in ASEAN 5 countries had a perfect technical efficiency score in some periods. Independent Sample t-test measurement showed that there is a significance difference between Indonesian and ASEAN 5 banks. Indonesian Bank Technical Efficiency was greater than Filipina but lower comparing to Singapore, Malaysia, and Thailand. Moreover Independent Sample t-test measurement showed that there is a significance difference on some financial ratios. Indonesia was greater than Philippine while lower comparing to Singapore, Malaysia, and Thailand. This research concluded that Indonesia is ready to face ABIF.

Keyword: ABIF, Banking Technical Efficiency, Data Envelopment Analysis, Banking Financial Ratios.

1. **Introduction**

ASEAN countries have established a framework called ASEAN Banking Integration Framework (ABIF) which is attached on ASEAN Economic Community 2025. ABIF is an implementation of Financial Integration, Financial Inclusion, and Financial Stability that is led by Indonesia and Malaysia as a function of framework formulation and banking infrastructure affirmation planning as well as integration and financial sector liberalization in South ASEAN countries.

On ABIF, only banking which get Qualified ASEAN Banks statue that have market access and operate expansion in other ASEAN countries and treated as well as domestic banking. Qualified ASEAN Banking statue is given to the bank with strong capital, high-endurance, well managed and comply the prudential regulations in accordance with applicable international standards. The principle in ABIF implementation is reciprocal principle in which market access and operational flexibility must give profit for all parties and accepted by countries which have an agreement.

Financial sector integration on ABIF will be obtained in every country that incorporated in ASEAN. This kind of thing will cause competition among ASEAN countries so every country need to prepare and evaluate their banking performance. Indonesia has agreed to support banking integration on ABIF since December, 31 2014 which was represented by Bank Indonesia.

Nowadays, Indonesia banking market already dominated by foreign banks from other ASEAN countries member while only a few Indonesian banking that have market in other ASEAN countries. Therefore Indonesia need to evaluate how far is Indonesian banking performance comparing to other countries in order to compete on ABIF and get Qualified ASEAN Banks statue. One of which is by comparing Indonesian banking efficiency and ASEAN countries member. On research, countries incorporated in ASEAN were grouped into two side such as ASEAN 5 (as original members) and BCLMV (as newcomers). On this research, the writer focused in countries incorporated on ASEAN 5 in order to compare the efficiency of Indonesian banking.

According to Muazaroh et al (2012) efficiency is capability of organization to maximize output by using some input or using minimum input to get maximum output. Moreover, Siudek (2008) states that the measurement of company efficiency especially banking can be focused on two alternative approach such as technical efficiency and scale, scope efficiency.

Besides banking efficiency, the comparison of banking performance among ASEAN 5 countries can be seen from financial indicator such as CAR, BOPO, LDR, NPL, and NIM. Based on Bank Indonesia report, from profitability aspects ROA, ROE and NIM of Indonesian banking is rated better comparing to other ASEAN 5 countries and supported by NPL ratio which relatively lower. From capital aspect, CAR of Indonesian banking is considered quite balanced comparing to other ASEAN 5 countries although not the highest. From efficiency aspects, CIR of Indonesian banking has lower performances due to Indonesian geographic condition.

Some previous research have discussed about banking efficiency. Astoeti Wahjoe (2015) measured the banking efficiency using DEA with intermediation approach to 108 conventional banks in 2012-2014 period. It employs fixed asset, labor weigh, deposits as input variables and credit, interest income, non interest income as output variables. The result shows not all conventional banks reach the efficiency. Maria Monica (2013) discusses about banking sector integration and investigates the strategy of monetary policy in country. The result shows that by implement the banking regulation standard, ABIF can make ASEAN more conservative. Each country needs to prepare and harmonize the banking regulations. Anggun Wahyuni (2016) measure the comparison of financial performance in Indonesia, Thailand and Philippine. The result shows that there is significant difference on some ratios such as NPL, ROA, LDR and NIM. Financial ratios of Indonesian banking are relative balance.

Based on the introduction above, to see the readiness of Indonesia to face ASEAN Banking Integration Framework, we need to examine deeply about banking efficiency in Indonesia, banking efficiency in ASEAN 5 countries, comparing Indonesian banking efficiency and ASEAN 5 countries banking, comparing banking performance through financial ratio such as CAR, BOPO, LDR, NPL, NIM.

The problem formulations of this research are first, how is efficiency rate of Indonesian banking and ASEAN 5 countries. Second, is there any significant difference between Indonesian banking efficiency rate and ASEAN 5 banking efficiency rate. Third, is there any significant difference between financial ratio performance of Indonesian banking and ASEAN 5 countries banking?

The hypothesis appear on this research are first, assumed that efficiency rate of Indonesian banking and ASEAN 5 countries are perfectly efficient or equal to one. Second, assumed that there is significant difference between Indonesian banking efficiency and ASEAN 5 countries banking efficiency. Third, assumed that there is significant difference between Indonesia banking financial ratio and ASEAN 5 countries banking financial ratio**.**

1. **Literature Review**
	1. ***Efficiency***

Efficiency is the capability of a company on producing by using production factor that agreed by the company or In other words, using the input to produce some output on production process. Basically, according to Kurnia (2004) in Dadang Mulyawan dkk (2014), efficiency can be differed into some types such as scale efficiency, scope efficiency, technical efficiency and allocation efficiency. Then, economic theory has outlined three types of efficiency in a company such as allocation efficiency, technical efficiency, and economic efficiency.

***2.2 Banking Technical Efficiency***

Banking efficiency measured by scale efficiency is when bank can operate on constant return to scale. Banking efficiency measured by allocation efficiency will be reached when bank can decide some output to maximize output, while technical efficiency state the relationship between input and output on production process. Production process is considered efficient if in the use of a certain number of inputs can produce maximum output or to produce a certain number of outputs is used minimum input. (Dadang Mulyawan, 2014)

According to Kurnia (2004), there are two approach to measure bank efficiency such as production approach and intermediation approach. On production approach, bank is placed as a unit of economic activity that conducts business to produce output in the form of deposit services to depositors as well as loan services to borrowers by using all the proper inputs. While on intermediation approach, bank is placed as a unit of economic community that transforms the various forms of funds collected into various forms of loans.

On production approach, deposits are treated as output because deposits are services generated through bank activity. While on intermediation approach, deposits are treated as input because from funds collected, bank will transforms into various profitable assets especially deposits. Moreover Berger and Humphrey (1997) state that intermediation approach is a proper approach to evaluate banking financial performance generally because of the financial organization characteristic as financial intermediation.

The measurement of banking efficiency can be conducted into two methods such as parametric and non-parametric method. Parametric method consists of three types such as Stochastic Frontier Analysis (SFA), Think Frontier Approach (TFA) and Distribution Free Approach (DFA). Non-parametric approach with linear program uses a method that not stochastic and almost combine the error and inefficiency. This kind of thing is conducted based on invention and observation from population and relative efficiency evaluation to observation unit. This approach is known as Data Envelopment Analysis (DEA). (Monetary Economic and Banking Bulletin, Vol 18 no 2, Oct 2015).

Molyneux and Iqbal, n.d on Tadele (2016) state that efficiency analysis methods of bank is divided into two approaches such as parametric and non-parametric. The parametric approach needs assumption about a special form of cost function or profit estimation and efficiency distribution while non-parametric approach doesn’t need a specification of functional form.

The measurement of banking technical efficiency on this research uses Data Envelopment Analysis that involve input and output variables by using intermediation approach such as (1) fixed assets, (2) operational cost, (3) deposits as the input variables and (1) loan, (2) interest income, (3) non-interest income as the output variables.

* 1. ***Financial Banking Ratio***

Bachtiar Usman in Prasnanugraha (2007) states that the financial ratio analysis is done to obtains the representation of financial expansion and company financial position. Financial ratio analysis is beneficial as an internal analysis for company management to know the financial results that have been achieved to be a reference for future planning and as internal analysis for creditor and investor to decide credit policy and capital investment in a company. On this research, writer employs CAR, BOPO/CIR, LDR, NPL and NIM as the financial banking ratio that will be evaluated by comparing among ASEAN 5 countries banking.

* 1. ***Data Envelopment Analysis***

Data Envelopment Analysis is introduced by Charnes, Cooper and Rhodes, 1978 known as CCR model. On their research, Charnes, Cooper and Rhodes describe DEA is a mathematics program model that is applied to observe data for measuring the relationship on production process involving input and output in such company. The data will be processed to show the efficiency rate in such company in managing input to produce some output.

Basically, the principle of DEA is comparinginput and output data in such data organization or Decision Making Unit (DMU). In CCR model is assumed Constant Return to Scale. Then CCR model is developed by Banker (1984) become Banker, Charnes, Cooper model (BCC). On this model, the CCR model assumption is developed by characterize DMU become Variable Return to Scale (VRS) for efficiency measurement. DEA measures technical efficiency for all units. The score result is a relative value for all units that is measured, depends on the efficiency rate from other units on the sample. The efficiency rate is considered not negative and the score between 0 until 1, where 1 shows the perfectly efficient rate. Then DMU that has score 1 or perfectly efficient is used to make envelope for efficiency frontier. Other DMU in the envelope shows inefficiency rate.

DEA conducts production limit as “Best Practice” form of analysis units that is observed. The beneficial of using DEA approach is that point-point identified as “placed at production limit” that accommodate the real relationship of input-output combination used by industry. To identify the production limit is done by identify all combination of input and output that is feasible based on initial set of data combination or known as “production technology”. This production limit is conducted as minimum “envelopment” from point-point that is feasible and can be said “best practice”industry. DEA not explicitly conducts “envelopment” but DEA creates optimization problem by moving the system on how far is efficiency can be enhanced to production limit purpose without leave the feasible set (the group of input-output that is feasible).

* 1. ***ASEAN Banking Integration Framework***

ASEAN Banking Integration Framework is a framework from ASEAN Economic Community that will be implemented in 2020 as a form of financial sector integration that is banking in all ASEAN member countries. ABIF is an ASEAN initiative that aims to create integration mechanism and accelerate banking integration through give market access and operational flexibility in ASEAN member countries and still pay attention to the prudential requirements that prevail in each ASEAN member countries.

ABIF guidelines have been agreed at the end of 2014. The documents become the guide for all ASEAN member countries to do bilateral agreement toward bank that will attend on ASEAN banking market. In ABIF guidelines is arranged about integration principle that must be followed and about the step that will be passed in integration process. (Indonesian Banking Booklet 2016). Banks which can open their market in other ASEAN member countries are banks that have Qualified ASEAN Banks statue, where the criteria as follows:

1. Banks which have good track record that is showed through a big market share.
2. Banks which have enough capital and healthy financial.
3. Banks which have well management
4. Banks which is supported by home country authority to be QAB
5. **Research Method**
	1. ***Types and Source of Data***

The type of data that is used on this research is quantitative secondary data in a form of panel data or cross sectional time series. Involving banks in Indonesia, Singapore, Malaysia, Thailand and Philippine, the data is taken from each bank official website, Booklet of Bank Indonesia and OJK, Indonesia banking statistic in 2011 – 2015 period using quarterly data.

* 1. ***Population and Sample Technique***

The population on this research is conventional banks in Indonesia, Singapore, Malaysia, Thailand, and Philippine or known as ASEAN 5 that is listed in each country stock exchange with observation period is 2011-2015. The sample technique is purposive sampling with the criteria of sample techniques as follows:

1. Conventional Bank that is listed in Indonesia Stock Exchange, Singapore Stock Exchange, Malaysia Stock Exchange, Thailand Stock Exchange, Philippine Stock Exchange.
2. Conventional Bank from Indonesia, Singapore, Malaysia, Thailand, and Philippine that is stated have the biggest assets according to ASEAN Development Bank that include three banks from each country.
3. Conventional Bank from Indonesia, Singapore, Malaysia, Thailand, and Philippine that publish financial report from first quarterly of 2011 until forth quarterly of 2015.

Table 1

Data of Banks in Indonesia, Singapore, Malaysia, Thailand, and Philippine based on the total assets according to ASEAN Development Bank.

|  |  |  |
| --- | --- | --- |
| **No** | **Bank** | **Negara** |
| 123456789101112131415 | [DBS Bank](https://en.wikipedia.org/wiki/DBS_Bank)[OCBC Bank](https://en.wikipedia.org/wiki/OCBC_Bank)[United Overseas Bank](https://en.wikipedia.org/wiki/United_Overseas_Bank)[Maybank](https://en.wikipedia.org/wiki/Maybank)[CIMB](https://en.wikipedia.org/wiki/CIMB)[Public Bank Berhad](https://en.wikipedia.org/wiki/Public_Bank_Berhad)[Bangkok Bank](https://en.wikipedia.org/wiki/Bangkok_Bank)[Siam Commercial Bank](https://en.wikipedia.org/wiki/Siam_Commercial_Bank)[Krung Thai Bank](https://en.wikipedia.org/wiki/Krung_Thai_Bank)[Bank Mandiri](https://en.wikipedia.org/wiki/Bank_Mandiri)[Bank Rakyat Indonesia](https://en.wikipedia.org/wiki/Bank_Rakyat_Indonesia)[Bank Central Asia](https://en.wikipedia.org/wiki/Bank_Central_Asia)[Metropolitan Bank and Trust Company](https://en.wikipedia.org/wiki/Metropolitan_Bank_and_Trust_Company)[Bank of the Philippine Islands](https://en.wikipedia.org/wiki/Bank_of_the_Philippine_Islands)Bdo Unibank Inc | SingapuraSingapuraSingapura[Malaysia](https://en.wikipedia.org/wiki/Malaysia)[Malaysia](https://en.wikipedia.org/wiki/Malaysia)[Malaysia](https://en.wikipedia.org/wiki/Malaysia)[Thailand](https://en.wikipedia.org/wiki/Thailand)[Thailand](https://en.wikipedia.org/wiki/Thailand)[Thailand](https://en.wikipedia.org/wiki/Thailand)[Indonesia](https://en.wikipedia.org/wiki/Indonesia)[Indonesia](https://en.wikipedia.org/wiki/Indonesia)[Indonesia](https://en.wikipedia.org/wiki/Indonesia)PhilipinaPhilipinaPhilipina |

Source. *Asian Development Bank, 44th IAFEI World Congress; Global Recovery Amidst Reforms,* 2014.

* 1. ***Analysis Method***

This research employed descriptive and comparative analysis. First, descriptive analysis used Data Envelopment Analysis to see the efficiency rate in each bank. Second, comparative analysis used independent-Sample T test to show is there any significant different of efficiency rate in each bank. Comparative analysis with Independent-Sample T test also used to show is there any significant different among financial ratio of Indonesian banking and ASEAN 5 countries banking including CAR, BOPO/CIR, LDR, NPL, and NIM. This research used software to analyze including software computer program such as Data Envelopment Analysis and SPSS 22.

***3.3.1 Data Envelopment Analysis Method***

Data Envelopment Analysis was used to do descriptive analysis for the first problem formulation that was to see the efficiency rate of bank in ASEAN 5 countries. DEA is a non-parametric approach that almost used to measure banking efficiency rate. DEA use two models such as Charnes, Cooper, Rhodes (CCR) model – Constant Return to Scale (CRTS) and Banker, Charnes, Cooper (BCC) model – Variable Return to Scale (VRTS). BCC model is developed to handle problem that appear on the first model where company not always operate in optimal condition. The efficiency score on DEA is 0-1 where 1 shows perfectly efficient.

In Emi Maemunah (2012), the technical efficiency measured by DEA is divided into four criteria as follows:

TE = 1 = Perfectly Efficiency

0, 8 ≤ TE ≤ 1 = Efficient

0, 4992 ≤ TE ≤ 1 = Enough Efficiency

TE ≤ 0, 4992 = Low Efficiency

Bank is an intermediation organization so input and output variables determining based on intermediation approach. Input variables consist of fixed asset, operational cost, and deposits. Output variables consist of loan, interest income, and non-interest income.

***3.3.2 Independent-Sample T test.***

Independent-Sample T test is used to examine the average between two independent groups. The hypothesis formulation as follows:

1. Ho : µ1 - µ2 ≤ 0

Ha : µ1 - µ2 > 0 (any different, µ1 > µ2)

1. Ho : µ1 - µ2 ≥ 0

Ha : µ1 - µ2 < 0 (any different, µ1 < µ2)

1. Ho : µ1 - µ2 = 0

Ha : µ1 - µ2 ≠ 0 (µ1 not equal to µ2, or µ1 different to µ2)

The criteria of testing as follows:

If -t table ≤ t statistic ≤ t table then Ho is accepted

If -t statistic < -t table or t statistic > t table then Ho is rejected.

Before done the Independent-Sample T test, F testing (Homogeneity test/Laverne’s test) was applied first. It means if the variance is same then T test uses “Equal Variance Assumed” value (assumed the variance is same) and if the variance is different then T test uses “Equal Variance Not Assumed” (assumed the variance is different).

Homogeneity Test Hypothesis as follows:

Ho : Data of Independent-Sample have the same variance

Ha : Data of Independent-Sample have the different variance

Testing criteria based on significance as follows:

If significance> 0.05 then Ho is accepted

If significance < 0.05 then Ho is rejected

1. **Results and Discussion**

***4.1 Indonesian Banking Efficiency and ASEAN 5 member countries Banking Efficiency***

Based on DEA measurement using CRTS and VRTS model with input orientation shows a different efficiency rate. In Emi Maemunah (2012) technical efficiency rate measured by DEA was divided into four criteria. Efficiency rate using CRTS model was considered relative lower than efficiency rate using VRTS model. On CRTS model that was shown in table 2, not all banking efficiency rate have best practice score (perfectly efficient) or equal to one, at most 11 banks reached best practice score and at least 8 banks as long as five years. From that 15 banks, Singapore, Malaysia and Thailand banking almost had best practice score in all observation period and never in enough efficiency position. Indonesia and Philippine banking had best practice score in some observation period and ever in enough efficiency position.

Table 2.

The Characteristic of Banking Efficiency with CRTS model.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Period** | **Perfectly Efficient** | **Efficient** | **Enough Efficiency** | **Low Efficiency** |
| Q12011Q22011Q32011Q42011Q12012Q22012Q32012Q42012Q12013Q22013Q32013Q42013Q12014Q22014Q32014Q42014Q12015Q22015Q32015Q42015 | 1110101010891010101010101111101010118 | 33334465454433334546 | 11221111101121121001 |  |

Source. Data processed

Efficiency banking rate using VRTS model shows better results than CRTS model. This kind of thing was shown on table 3. Decision Making Unit that represents 15 banks had best practice score or perfectly efficiency at most 14 banks and at least 12 banks as long as observation period. Other banking had the efficient score while the enough efficient score only happen in the first quarterly of 2011 and 2013.

Table 3.

The Characteristic of Banking Efficiency with VRTS model.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Period** | **Perfectly Efficient** | **Efficient** | **Enough Efficiency** | **Low Efficiency** |
| Q12011Q22011Q32011Q42011Q12012Q22012Q32012Q42012Q12013Q22013Q32013Q42013Q12014Q22014Q32014Q42014Q12015Q22015Q32015Q42015 | 1214141413131312121313131213141212131410 | 21112223222232133215 | 10000000100000000000 |  |

Source. Data processed

VRTS model shows better results with most of banks had perfectly efficiency rate. This result was supported by research from Emi Maemunah (2012) that efficiency rate on VRTS model was higher than CRTS model. This was due to the model indicating conformity with the actual condition of the unit in observation that not all business units operate at the optimum scale but on an increasing and decreasing scale due to the limitations of each unit. Tadele (2016) stated that there were some reasons why banks not operate at the optimum scale such as imperfectly competition, financial limitations, banking regulations and supervision, concentration and market structure. The measurement of banking efficiency in ASEAN 5 member countries was toward to the implementation of ASEAN Banking Integration Framework in 2020. The differences of banking efficiency rate in those five countries indicating that each bank had different performances.

Kose, Prasad and Taylor (2009) stated that countries which had reached the successful condition will be easier to get the benefit of financial integration. The successful condition meaning in this part was well-developed financial market, high quality financial institutions, good governance, good macroeconomic policies and trade integration. The research found that some countries in ASEAN had not reach the successful condition yet but it does not mean that the countries must delay their participation in financial integration because basically the successful condition is part of integration process that is based on the successful in building institution, developing financial efficiency, and stabilizing financial.

To reach those conditions for supporting the participation in financial integration, the same regulation in each country is needed. Study about The Road to ASEAN Financial Integration by ASEAN Development Bank and ASEAN state about ASEAN wide integration of the banking market require a substantial degree of regulatory harmonization among the member states which the harmonization was done on six parts such as (1) access and permission, (2) capital strengthening, (3) supervision, (4) empowerment of supervisors to take rapid and appropriate corrective steps, (5) restriction on crisis management procedure, (6) transparency.

***4.2 Indonesian Banking Efficiency to Face ASEAN Banking Integration Framework***

To evaluate the efficiency of Indonesian banking to face ABIF, this study conducted a measurement using Independent-Sample t test in order to see how far is Indonesian banking efficiency compared with banking of ASEAN 5 countries. The differences of banking efficiency rate in ASEAN 5 member countries that was grouped between Indonesia and non-Indonesia also between Indonesia and each country of ASEAN 5 countries become a guide to see the readiness of Indonesian banking compared to others. Indonesian banking efficiency rate was considered lower that non-Indonesia banking efficiency.

When Indonesian banking efficiency rate was compared to each of those ASEAN 5 countries using CRTS assumption, Indonesian banking had greater efficiency rate only to Philippine banking while still lower if compared to Singapore, Malaysia and Thailand. Moreover by using VRTS assumption, Indonesian banking have lower efficiency rate if compared to all of those four countries including Philippine.

In the efficiency measurement using DEA produce DMU which will be used as benchmark in the research that consist of banking in which perfectly efficiency scores. The benchmark banking becomes the reference for other banking in deciding the combination of their input and output. This is showed by the results of DEA. The results of DEA not only show the score of efficiency but also show the number of target for each input and output that can be followed by banking in order to get the perfectly efficiency scores. Ikatan Bankir Indonesia stated that to face ABIF, Indonesian banking should enhance the efficiency and good governance because it indicates the resilience of banks to face the competition in the domestic market and the ability to enter ASEAN market.

Besides enhancing the efficiency rate, Indonesian banking needs to prepare another aspect to face ABIF. Financial integration has challenge and risk so the mitigation of negative impact from financial integration and global financial crisis is needed then it will not give a systemic impact to Indonesian economic. The number of foreign banks operating in Indonesia requires Indonesian banking to enhance the banking competitiveness in financial sector and banking expansion access in public sector financing. The banking expansion access will enhance the economic activities and society trust in domestic market.

Moreover Financial Services Authority of Indonesia stated that ready to face financial integration by determining some policies to strengthening financial service sector supervision, deepening financial markets and widening society financial access that follows with such strategies:

* Strengthening regulatory and supervisory aspects as a whole with an emphasis on risk-based approach, enhancing organization capacity and industry competitiveness to support financial system stability.
* Strengthening and developing market and financial services industry for deepening market and widening access of financial product and services through widening distribution channels and synergies between sectors in financial services industry.
* Developing more optimal ecosystem in order to support financing in economic strategy sector, developing efficiency quality, and Islamic finance competitiveness.
* Strengthening the level of society literacy and improving the supporting infrastructure for consumer protection, transparency, and good governance.
	1. ***Indonesian Financial Ratio Performance to Face ABIF***

To evaluate the readiness of Indonesian banking to face ABIF, this research also conducted the evaluation of Indonesian banking financial ratio by comparing CAR, BOPO/CIR, LDR, NPL and NIM using Independent-Sample T test. The measurement was grouped between Indonesia and non-Indonesia also between Indonesia and each country of ASEAN 5 member. On the table 4 is showed the results of Independent-Sample T test about the differences between Indonesian banking financial ratio compared to others.

Table 4.

Comparison of Financial Ratios of Indonesian and ASEAN 5 banking.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ASEAN****Indonesia** | **Non Indonesia** | **Singapore** | **Malaysia** | **Thailand** | **Philippine** |
| CAR | Any Different(Non Indonesia is better) | No Different | Any Different(Indonesia is better) | Any Different(Indonesia is better) | Any Different(Indonesia is better) |
| BOPO/CIR | No different | No different | Any Different(Indonesia is better) | Any Different(Thailand is better) | Any Different(Indonesia is better) |
| LDR | Any Different(Non Indonesia is better) | Any Different (Singapore is better) | Any Different(Malaysia is better) | Any Different(Thailand is better) | Any Different(Indonesia is better) |
| NPL | Any Different(Indonesia is better) | Any Different (Indonesia is better) | Any Different(Indonesia is better) | Any Different(Indonesia is better) | Any Different(Indonesia is better) |
| NIM | Any Different(Indonesia is better) | Any Different (Indonesia is better) | Any Different(Indonesia is better) | Any Different(Indonesia is better) | Any Different(Indonesia is better) |

Source. Data processed

Based on table 4, it could be said that financial ratios of Indonesian banking as a whole only greater compared to Philippine. While to others, Indonesian banking had low ratio on LDR but CAR, NPL, NIM and BOPO/CIR relative balance. This kind of thing shows that with the high CAR compared to other countries, Indonesia should use the capital and allocate to loans in order to enhance LDR ratio that will enhance the intermediation function of bank as well as banking of ASEAN 5 member countries for facing ASEAN Banking Integration Framework. This is in line with the NPL ratio which less than one percent indicating that the loan distribution is still not optimal so that Indonesian banking can increase the risk by increasing the total credit.

The significant difference on some financial ratios is due to some factors such as economic conditions, credit growth, and total assets growth in each country. Indonesia is under Singapore, Malaysia and Thailand for the credit growth and assets. Although in such conditions, Indonesia still can be said to be ready to face ASEAN Banking Integration Framework because those differences still relative balance and Indonesia is able to compete in ABIF by enhancing the intermediation function.

1. **Conclusion and Recommendations**

Based on the result of banking technical efficiency measurement using DEA that employed 15 banks with the biggest asset in Singapore, Malaysia, Thailand, Indonesia, and Philippine on the observation period was 2011-2015, can be concluded that not all efficiency rate of Indonesian banking and ASEAN 5 countries banking reach perfect efficiency or equal to one. Based on Independent-Sample T test could be concluded that there was a significant difference between Indonesian banking efficiency and Non-Indonesian banking efficiency both in the efficiency of CRTS and VRTS methods. There was no significant different of Indonesian banking efficiency compared to Philippine by using CRTS method. Those results showed that Indonesia has a lower readiness to face ABIF compared to other country except Philippine.

Based on Independent-Sample T test measurement on financial ratios of Indonesian banking and ASEAN 5 countries banking could be concluded that Indonesian banking had relative balance ratios of CAR, BOPO/CIR, NPL and NIM compared to other ASEAN 5 banking. While Indonesia banking had a lower LDR compared to other countries excepted Philippine. This kind of thing showed that the strong capital of Indonesian banking and good risk management can become an indicator that Indonesia is ready to face ASEAN Banking Integration Framework.

The recommendations conducted on this research are first, to face ASEAN Banking Integration Framework that will be implemented in 2020, Indonesian banking and ASEAN 5 banking should maintain and enhance the efficiency by determining the appropriate input and output. Second, because there was significant difference between Indonesian banking efficiency and ASEAN 5 banking indicating that Indonesia should prepare to be better for increasing banking efficiency rate so that can compete and get Qualified ASEAN Banks statue. Indonesia can make ASEAN 5 banking as a reference in determining input and output to improve the efficiency. Third, the significant difference on CAR, BOPO, LDR, NPL and NIM where Indonesian banking had better CAR and NPL but a lower LDR indicating that Indonesian banking is ready to face ABIF with the good ability of capital to absorb risk. Moreover Indonesia needs to be more optimal in using capital to improve the intermediation function in order to compete with other countries and Indonesia can increase the risk by increasing the total of credit.

**References**

Ajith and Ranasinghe. 2011. “*Use of DEA for Measure Efficiency of Human Capital Formation Evidence From a Public University in Sri Langka”*. *First Postgraduate Symposium.*

Andries, Marius Ali. 2010. “*The Determinants of Bank Efficiency and Productivity Growth in the Central and Eastern European Banking System”*. Alexandra Ioan University of Lasi, Romania.

Wahyuni, Anggun. 2016. “Analisis Perbandingan Kinerja Keuangan Perbankan ASEAN (Studi Pada Bank Umum Indonesia, Thailand dan Filipina tahun 2011-2014)”. *Skripsi. Program Studi Akuntansi. Fakultas Ekonomi Universitas Negeri Jakarta*.

Amadou, Thierno Barry; Santos Jose; Dacanay; Laetitia Lapetit; Amine Tarazi. 2013. “*Ownership Structure and Bank Efficiency in the Asia Pacific Region”.*

*A Blueprint for Growth, Asean Economic Community.* 2015.*” Progress and Key Achievements”.* Diakses melalui [www.asean.org](http://www.asean.org)

*Asian Development Bank.* 2014*. 44th IAFEI World Congress.”Global Recovery Amidst Reforms”.* Diakses melalui [www.adb.org](http://www.adb.org)

*ASEAN Economic Blueprint Final* .2025. Diakses melalui [www.asean.org](http://www.asean.org)

*ASEAN Economic Community Blueprint*.2015. Diakses melalui [www.asean.org](http://www.asean.org)

Bank Indonesia. 2015. Laporan Perekonomian Indonesia. “Perekonomian Domestik2015*”.*

Banker, R.D., A. Charnes, and W.W Cooper. 1984. “*Some models for Estimating Technical and Scale Inefficient in Data Envelopment Analysis. Management Science”.*Vol 30 No.9 1984.

Berger, A De Young and Udell, GF. 2000. *Globalization of Financial Institutions. “Evidence from Cross Border Banking Performance. Working Paper Series”.* WP 99 25*. Federal Reserve Bank of Chicago.*

Charnes, A., W.W. Cooper, E. Rhodes. 1978. “*Measuring The Efficiency of Decision Making Units”. European Journal of Operational Research 2* (1978) 429 – 444.

Departemen Pengembanan UMKM Bank Indonesia. 2016. “Pemetaan dan Strategi Peningkatan Daya Saing UMKM dalam Menghadapi MEA 2015 dan Pasca MEA 2025”.

Dewi, Krisna Ayu Kadek *et al*. 2014. “Pengaruh CAR, LDR, dan BOPO terhadap ROA pada Bank Umum yang Terdaftar di BEI tahun 2008 – 2012”. Jurnal S1 Ak Universitas Pendidikan Ganesha. Vol 2 No.1 thn 2014.

Fathony, Moch. 2012*. “*Estimasi dan Faktor-Faktor yang Memengaruhi Efisiensi Bank Domestik dan Asing di Indonesia”. Jurnal Keuangan dan Perbankan, Vol.16, No.2 Mei 2012. hlm 223 – 237.

Ghazali, Imam. 2014. “*An Efficiency Determinant of Banking Industry in Indonesia”*. ISSN Vol 5. No.3 thn 2014

Gujarati, Damodar. 2011.”*Econometrics by Example*”. UK. Palgrave Macmillan.

Hadad, Muliaman D., WimbohSantoso., Dwiyapoetra S Bosar., ItaRulina., Wini Purwanti., Ricky Satria (2004). “Fungsi Intermediasi Bank Asing dalam Mendorong Pemulihan Sektor Riil di Indonesia”.

Hafidz, Januar.,Rieska Indah Astuti. 2013. “Tingkat Persaingan dan Efisiensi Intermediasi Perbankan Indonesia”.

*History of ASEAN and ASEAN Overview*diakses melalui [www.asean.org](http://www.asean.org)

Suvita, Jha; Xiaofeng, Hui. (2012).”*A Comparison of Financial Performance of Commercial Bank: A Case Study of Nepal”. African Journal of Business Management* Vol. 6 (25), pp. 7601 – 7611.

Kementrian Keuangan Indonesia. 2014. “Laporan Dampak Asean Economic Community terhadap Sektor Industri dan Jasa serta Tenaga Kerja di Indonesia”.

Kumar, Nand; Archana Singh. 2015. IOSR . *Journal of Business and Management.“Measuring Technical and Scale Efficiency of Banks in India Using DEA”.*

*Macro prudential Policy Department.* Bank Indonesia. 2016. “*Advances and Challenges in Regional Integration”.*

Maimunah, Emi. 2012. “Determinan Efisiensi Teknis Pada Industri Keripik Pisang di Kota Bandar Lampung”. *Tesis. Magister Ilmu Ekonomi. Universitas Padjajaran.*

Murthy, Rama Sree. 2013.”*Logit Research Approach to Rating Banks Using Financial Ratios: A study of Gulf Cooperation Council Banks”*. *International Journal and Research*. Vol, 4, No. 4 thn 2013.

Muljawan, Dadang.,JanuarHafidz., Rieska Indah Astuti., Rini Oktapiani. 2014. “Faktor-Faktor Penentu Efisiensi Perbankan Indonesia serta Dampaknya Terhadap Perhitungan Suku Bunga Kredit”.

Mawardi, Wisnu. 2004. “Analisis Faktor-Faktor yang Mempengaruhi Kinerja Keuangan Bank Umum di Indonesia”. *Tesis.* Program Studi Magister Manajemen. Universitas Diponegoro.

Masita, Gracia. “Determinan Efisiensi Perbankan di Indonesia berdasarkan *Data Envelopment Analysis*”.

McDonald, J. 2009. “*Using Least Squares and Tobit in Second Stage DEA Efficiency Analysis”. European Journal of Operational Research.* 197,792-798

Noor, Mohamad Akbar; Achmad, Hayati Noor. 2012. “*The Determinants of World Islamic Banks Efficiency: Does Country Income Level have an Impact?”. Journal of Islamic Economics, Banking and Finance*, Vol 8 No 2, Apr – Jun 2012.

Perwaningtyas, Gloria Anindya. 2014. “Faktor – Faktor yang Mempengaruhi Efisiensi Bank di Indonesia periode 2008-2012”. *Skripsi*. Program Sarjana Fakultas Ekonomika dan Bisnis Universitas Diponegoro.

Prasnanugraha, Ponttie. 2007. “Analisis Pengaruh Rasio-Rasio Keuangan Terhadap Kinerja Bank Umum di Indonesia”. *Tesis*. Program studi Magister Sains Akuntansi. Universitas Diponegoro.

Priyatno, Dwi. 2012. *Cara Kilat Analisis Data dengan SPSS 20*. Yogyakarta. C.V Andi Offset.

Pujianti, Ria. 2016. “Analisis Struktur Pasar Perbankan dan Stabilitas Perbankan di Indonesia*”. Skripsi.* Jurusan Ekonomi Pembangunan. Universitas Lampung

Purwoko, Didik; Sudiyatdo, Bambang.2013. “Faktor-Faktor yang Mempengaruhi Kinerja Bank (Studi Empiris Pada Industri Perbankan di BEI”. Jurnal Bisnis dan Ekonomi. Vol.2 No.1. pp 25-39.

Rahmawati, Yeni; Zulian Dalimunthe. 2013. “Perbandingan Rasio Profitabilitas, Efisiensi, Likuiditas, dan Risiko pada Bank Syariah dan Bank Konvensional di Indonesia”.

Rindhatmono, Ferdi. 2005. “Analisis Faktor-Faktor yang Memengaruhi Profitabilitas Bank Pasca Merger di Indonesia”. *Tesis*. Program Studi Magister Manajemen. Universitas Diponegoro.

Rismawati. “Menghadapi *Qualified ASEAN Bank,* Indonesia: Berekspansi atau Bertahan di dalam Negeri”.

Sasongko, Danang Sigit. 2011. “Pengaruh CAR, BOPO, NIM, NPL, dan LDR terhadap Kinerja Perusahaan Perbankan”*. Skripsi*. Jurusan Akuntansi Universitas Sebelas Maret.

Sholeh. 2013. “Persiapan Indonesia dalam Menghadapi AEC (*Asean Economic Community* 2015)”.

Siaran Pers Bank Indonesia dan OJK (2014). “Indonesia Sepakat Mendukung Integrasi Perbankan ASEAN”.

Soetanto, Vanina Tessa; Ricky. 2011.”*Technical Efficiency of Indonesian Commercial Banks: An Application of Two-Stage DEA”.* Jurnal Manajemen dan Kewirusahaan Vol.13 No 2, September 2011. Pp 107-116

Staub, Roberta B. 2009. “*Evolution of Bank Efficiency in Brazil: A DEA Approach”*

Tesfay, Tadele. 2016. “*Determinants of Commercial Banks Efficiency: Evidence from Selected Bank of Ethiopia”*. *International Journal of Scientific Research Publication*. *Vol 6, Issue5, May 2016*.

Tlemsani, Issam; Huda Al Suwaidi. 2016. “*Comparative Analysis of Islamic and Conventional Banks in the UAE during the Financial Crisis*”. *Asian Economic and Financial Review*, 2016. 6(6): 298-309.

Widarjono, Agus. 2013. *Ekonometrika Pengantar dan Aplikasinya*. Yogyakarta. UPP STIM YKPN

Widiarti, Astoeti Wahjoe; Hermanto Siregar; TriasAndati. 2015. “*The Determinants of Bank’s Efficiency in Indonesia”.* Buletin Ekonomi Moneter dan Perbankan, Volume 18, Nomor 2, Oktober 2015.

Wahab.2015. “Analisis Faktor-Faktor yang Mempengaruhi Efisiensi Bank Umum Syariah di Indonesia dengan Pendekatan Two Stage Frontier Approach”. Vol VI Ed 2, Oktober 2015.

Wihardja, Maria Monica. 2013. “*Financial Integration Challenges in ASEAN beyond* 2015”. *Eria Discussion Paper Series*. ERIA-DP-013-27

Xue, M.Harker P. 1999. “*Overcoming the Inherent Dependency of DEA Efficiency Scores: A Bootstrap Approach”. Working Paper. Financial Institution Center. The Wharton School, University of Pennsylvania*.

Yusri. 2013. *StatistikaSosialAplikasidanInterpretasi*. Yogyakarta: Graha Ilmu