# COMPARISON OF EFFICIENCY BETWEEN THAT STATE-OWNED BANKS AND FOREIGN-OWNED BANKS IN INDONESIA

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**Abstract**

This study aimed to analyze the differences in the efficiency of that state-owned banks and foreign-owned banks in Indonesia in 2010 - 2014, based on the theory of asymmetry. This is consistent with the phenomenon of low efficiency of banks in Indonesia which is indicated by the ratio of BOPO (Operations Expenses to Operations Income) and NIM (Net Interest Margin) remains high. This study uses a quantitative approach, which measures the efficiency of the Bank using the Data Envelopment Analysis/DEA, with input- output variables selected by the intermediation approach. The results showed that the level of efficiency of the state-owned is better than the foreign-owned banks. This occurs because the foreign-owned banks in Indonesia in carrying out its operations faced with asymmetric information. The in-depth analysis shows that on the output side, the foreign-owned banks have the opportunity to optimize the entire output variable, while special the state-owned in fee based variable income, as evidence the state-owned are still too focused on traditional banking services compared to products of other banking services. Meanwhile, on the input side, the two types of banks should make savings in the management of third party funds, the use of labour and fixed assets in proportion. However, the state-owned have high inefficiency in the use of fixed assets compared to foreign-owned banks.

**Key Words:** Bank, Information Asymmetry, Input-Output.

**Introduction**

In the banking industry, efficiency is the most important performance issue, because banks as financial institutions should operate efficiently, because banks as financial institutions have a strategic role in the economy, because the banking sector in Indonesia is very dominant in the financial system. Bank Indonesia Regulation No. 14/26 / PBI /2012 concerning Business Activities and Office Networks Based on Core Bank Capital, Article 21 paragraph (2), stated that the achievement of Bank efficiency level is measured, among others, by Operations Expenses to Operations Income (BOPO) and Net Interest Margin (NIM) ratio. So that the commercial bank indicator is efficient operationally based on financial ratios can be seen from the ratio of BOPO and NIM, then the banking performance can be said to be efficient if the ratio of BOPO and NIM is lower.

Based on the ratio of BOPO and NIM of Conventional Commercial Banks (BUK) which provide samovar view of the national banking efficiency condition, it can be displayed during the period 2010-2014 as shown in the following table:

Table 1. Development of BOPO and NIM of Conventional Commercial Banks In Indonesia Year 2010 -2014

| No. | Year | BOPO | NIM |
|---|---|---|---|
| 1 | 2010 | 86.14 | 5,73 |
| 2 | 2011 | 85.42 | 5,91 |
| 3 | 2012 | 80.78 | 5.49 |

| No. | Year | BOPO | NIM |
|---|---|---|---|
| 4 | 2013 | 74.66 | 5.43 |
| 5 | 2014 | 76.29 | 4.23 |
| average | | **80,65** | **5,36** |

Source: BI, SPI Th 2011 and OJK, SPI Th 2015

Based on the above table, the ratio of BOPO and NIM of national banks during 2010-2014 is quite high, namely BOPOaverageof80.65%,and the average NIM ratiois5.36%.

The high ratio of BOPO and NIM in dictates that the high operational cost borne by the banks, resulting in BUK operations is inefficient. The phenomenon of low national banking efficiency based on the ratio of BOPO and NIM is reinforced by the results of research with frontier approach conducted by Barry, et al, (2010) and Javelin (2015). The phenol me non of low bank efficiency is acquits ergo us gap, as opposed to the existence of banks as an efficient financial intermediation. Another phenomenon of bank ownership, in fact foreign national-owned banking is very dominant. According to Norah and Marino, (2013), the share of foreign ownership in the banking sector in June 2008 reached 47.02% steadily increasing until March 2011 reached Rp.1.551 trillion from total banking assets of Rp.3.065 trillion or 50.6%, while The government in 4 state-owned companies only have assets amounting to Rp.691.538 trillion or 22.56% salutary, the remaining 26.84% dominated by domestic investors. Furthermore, Norah and Marino, (2013), proves that foreign ownership in the banking sector does not make the bank's performance better than the banks owned by for feigners. Banking efficiency measurement techniques current lye experiencing the development of one of the widely used measurements with frontier with Data Envelopment Analysis / DEA (Rahman, 2012). The main reason for using DEA techniques in this study is to reduce the weaknesses that exist in other techniques. As Hassan & Basher points out in Said, A. (2012),the weakness of using financial rationally sis(FRA)is the tithe FRA cannot capture all necessary data given the complexity of banking institutions. Likewise the FRA does not produce the cardinal size that sort companies. As a result, sometimes DEA is preferred Dover FRA (Rahman, 2012). DEA's technical capability in calculating several characteristics of banks, using multiple input sand outputs, the use of DEA technique uses widely yes edgiest mating bank efficiency, as Moline, P., and colleagues point out in Alone (2011), that in the frontier analysis,-groups that perform relatively well witch retain standard dares pirated from those who perform poorly. These parathion is done either by apply in gnonpara metric or parametric frontier analysis to firms in the financial services industry. Furthermore, the flexibility of DEA techniques lies naturally in then on-parametric that treats any economic activity yeas production and analysis process that processes on the input-output setting(Rahman,2012).

AnotherproblemthatisoftendebatedinthebankingindustryisthepositionofThird Party Funds/DPK (deposit) as the main source of bank intermediary function, some argue that DPK(deposit)is the input variable for the production process(such has the in term edition and asset approach), while other opinions suggest that DPK (deposit) as output (such as production approach).In this research choose input and outputs editor mediation approach, with reason according to bank

function as financial in term diary and measure bank efficiency's whole, then DPK(deposit)is treated as input variable. So the input and output variables used in this study, namely input variables: DPK (deposit),Fixed Assets and Labor. While the output variable: Earning Assets (loan and investment), Interest Income, and Fee based in come.

## Literature Review

### The Concept of Information Asymmetry

In the banking industry in general the information asymmetry appears among borrowers and banks, since borrowers generally know more about their projects being funded from banks. It is generally recognized that financial decisions between both parties are often character iced yes symmetric information. In particular, borrowers tend to be better informed about the placement of funds they propose from creditors. This asymmetry is one of minidisc-incentives for direct loans: the borrower knows how to use the funds by making a reasonable assessment of the likelihood of success and the level of return on the project. The borrower may choose to share honest and open information with the lender or may prefer to hide it (Freixas, and Rochet, 2008).

According to ANDRIEŞ, (2009), in formation asymmetry can be of type: extant produces so-call evaders as election issues, and moral hazard; or ex post that leads to the need for verification and auditing even forcible execution. Similarly why are so many households and companies choosing to keep funds in the bank instead of direct loans to the ultimate borrower? One of the main reasons is the presence of asymmetric information, which her is as when everyone partying financial transaction has information that is not owned by another Hose (2010). Accordingly, according to Ferias, and Richet (2008), that monitoring activities clearly, can improve the efficiency of loan contracts with asymmetric information, they can be very well done by individual lenders themselves or rather by specialized companies: rating agencies, analyst's security, or auditor. Fur there more after the bank filters out the debtor candidate, identifying those who are considered credit worthy, and extending the credit, face another problem of information asymmetry. After the funds in the hands of the borrower may deviate from the intended use of the intended funds. For example, once a bank provide slogans toe company that has plan Ned to apply funds for

Relatively low risk projects, the company's financial condition may suffer from a loss shock. In an attempt to recover, the company manager may be temp ted to re-direct borrowed funds for projects that promise greater returns but with high error ability of failure (Hoose, 2010). The problem of information as ymmetry can beaver comes if the raise closes relationship between the bank and the debtor, which means helping to fix the moral hazard

Twin problems and adverse selection, then efficiency can be achieved.

### Banking and Banking Concepts

According to LawNumber10Year1998 concerning the am end mint of Act Number 7 of 1992 concerning banking Article 1 paragraph (1), that Bank is a business entity that collects funds from the public in the form of savings and distributes it to the community in the form of credit and other forms the goal in order to improve the standard of living of many people. Banking system in Indonesia based on Act number 10 years 1998, type of bank can be divided into Commercial Bank and Rural Bank (BPR).

Commercial Banking is one of them sot common and widely found business models of banks in Indonesia as well as in various countries (BI, 2012). Commercial Bank is a business entity that collects funds from the public in the form of savings and distributes it to the community in the form of credit and or other forms. Commercial Bank is a bank conducting conventional business is also called conventional commercial bank (BUK), and based on sharia principles are also called sharia bank (BUS).

According to Freixas and Rochet, that banking operations may vary and complex, but a simple definition of bank operations: banks are institutions whose business activities currently consist in lending and receiving deposits from the public. Contemporary banking theory classifies banking functions into four main categories: 1) Provision of liquidity and payment of services, 2) Asset transformation, 3) Managing risks, and 4) Information processing and credit monitoring.

Based on the description above, the banking function is very important in modern economy, so that banks are demanded efficiently to be able to play a role, according to Somas he kart (2009), banking occupies one of the most important positions in the world of modern economy. It is necessary for trade and industry. A commercial bank is a profit- making business, dealing with money and credit. In line with the above banks have the ability to improve the information asymmetry between borrowers and lenders and their ability to manage risk is at the core of banking production (Hughes and Mester, 2008).

Furthermore, those banks have the ability to efficiently serve as financial intermediaries as stated by Hughes and Master, (2008), what determines which bank so per ate efficiently? The literature on financial in term edition shows that commercial banks, with screen in gland monitoring of borrowers, can solve the potential for oral hazard and adverse selection problems caused by imperfect information between the borrower and the lender. Successful banks have mainly two character rustics: First, they operate with higher technical efficiency than their com petit or sand are able to transfer the cost advantages gained in high ermarg in and ultimo ate lysuperi or to their competitors; Second, the strategic environment and in this case the structure and concentration of the banking sector have a consider able impact on the financial performance of the bank (Werner and Moorman n, 2009). Owner ship of banks based on the control of shares seen in the deed of establishment, according to Kashmir (2008) distinguish types of banks based on their ownership, namely: a) State-Owned Banks; b) National private-owned banks; c) Banks owned by cooperatives') Banks owned by cooperatives; e) Foreign-owned banks; and f) Mixed Banks. The State- Owned Banks is the type of bank in which the deed of establishment and the capital of the bank is owned by the government so that all profits derived from its operations will be owned by the government.

While foreign-owned banks is a Bank of this type is a branch of an existing bank abroad, both the government foreign-owned and private foreign-owned, ownership is owned by foreign parties. On the other hand, according to Havrylchyk, (2006),that the literature on the existence of foreign banks shows number of benefits and costs. Foreign banks have the advantage of better output quality; they have no bad credit burden and have more advanced screening and monitoring technology, especially to markets in developing countries.

**Concept of Bank Efficiency**

Efficiency in the current economy is very important in achieving the welfare of society, because economic efficiency occurs when society gets the possibility of more output (goods and services) than limited inputs or resources. Efficiency is important to measure the performance of a unit of

economic activity, including banking in providing access to financial services for the community. Efficiency is an important aspect of the banking industry that allows us to differentiate banks that have the ability to survive and thrive from banks that may have problems with competitiveness Paul et al. (2009). In the increasingly competitive business environment of the banking industry, banks are forced to check their performance to maintain survival that depends on their operational efficiency.

The efficiency level can illustrate a process of using a minimum number of inputs to create maximum output, according to Kablan, (2010), the efficiency associated with the ability to produce output with minimal effort or resources. In determining the input and output variables in the banking efficiency is difficult, since there is no agreement among economists on the choice of inputs and outputs that banks need to estimate the efficiency, in fact, the choice of input and output variables for the bank in sector is still controversial(Paul, et al., 2009 ).

In the bank efficiency study, the determination of broad input-output variables used is the intermediation approach, according to Hughes and Mester, (2008), the intermediation approach focuses on the production of intermediary services banks and the total cost of

production, including interest and operational costs, various categories measured by dollar volume, then treating deposits as inputs, there has been some discussion in the literature on whether deposits should be treated as outputs because banks provide transaction services to depositors.


**Previous Research**

Havrylchyk, (2006), with the DEA method and the Polish banking regress between 1998-2000. Output: loans and government bonds, and inputs: capital, labor and deposits. The result is Efficiency on average 44.62% and 69.70% for domestic and Foreign-owned banks.

Akin, teal. (2009), research with DEA and rages, Turkish bank in samples during 2002-2007. Variable number of employees, interest expense, non-interest expense and total deposit as input; Amount of credit, interest income and non-interest as output. As a result the efficiency level did not change much during 2002-2007, foreign-owned banks operate more efficiently than domestic ones. In addition, state-owned banks are less efficient than non-BUMN banks.

Barry, etal. (2010), bank efficiency studies from 6count ries(Hong Kong, Indonesia, South Korea, Malaysia, Philippines and Thailand). Input variables: personnel expenses, interest expense and other operating expenses; output: net loans, and productive assets. The result is a high efficiency score of South Korea, and low in Thailand and the Philippines. Indonesia and Philipp in as pure average lo west technical efficiency score. Foreign-owned banks have a higher level of efficiency. Higher efficiency scores for banks owned by private minority shareholders and foreign-owned banks. Raman, (2012), with DEA, uses deposits and loans as input sand outputs. Sample of 42 commercial banks of Bangladesh end of 2008. Input variables: Operating expenses, capital, Interest expenses, and Output: Deposits, Loans, borrowings. Found 6 banks reached a score of 100% in the first stagehand 7 banks in the second stage. The most efficient banks belong to foreign banks, outperforming local banks. Pančurová and Lycos, (2013), an efficiency study of 11CEEC banks for the period

2005-2008, with DEA. Intermediation approach, Input: total fixed assets, timed epos sits, and short-term funding; Output: total credits, total other earning assets, and other earning assets. The result is higher average cost efficiency for the Baltic states and the Czech Republic. Lower value

for Romania and Hungary. Found evidence: foreign banks are more efficient than domestic banks, showing different banking behavior between foreign and domestic banks.

**Research Model Framework**

The theoretical framework and conceptual framework describe variables and interrelationships between variables that are considered to integrally integrate the dynamics of the situations under investigation (Silalahi, 2012). The framework for this research is as follows:
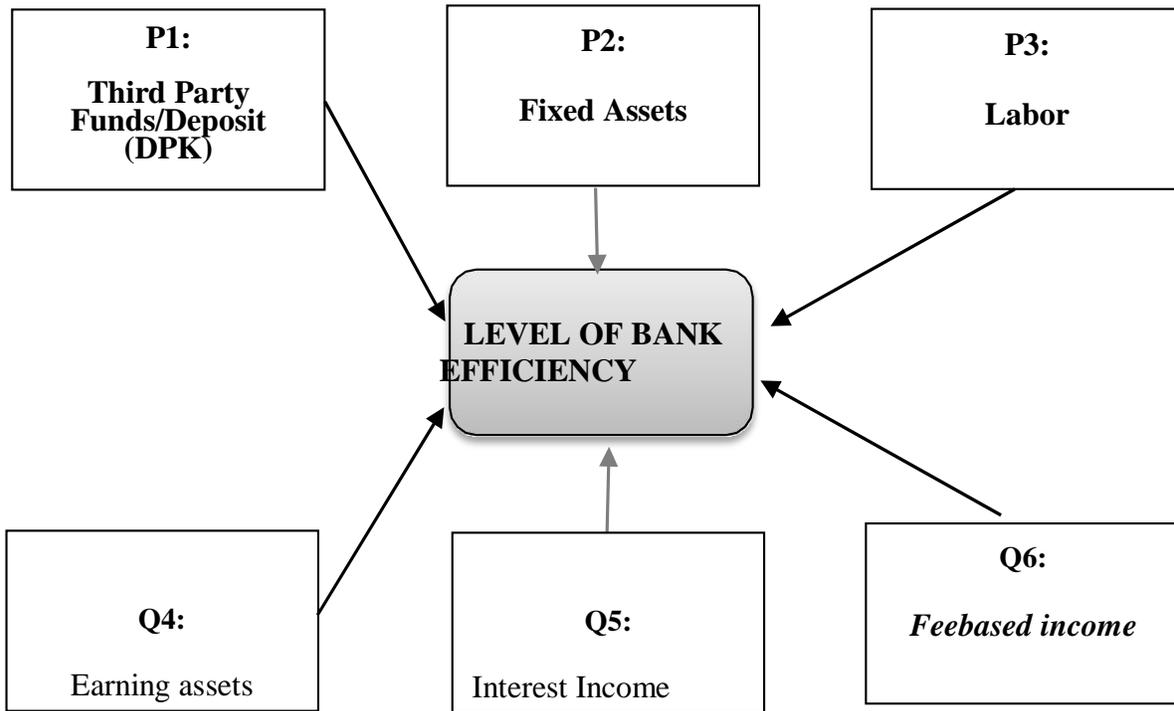


Figure 1. frame work of research model

**Research Methods**

In this study population and sample are all that state-owned banks and foreign-owned banks registered with Bank Indonesia, and listed in the Publication Financial Statements of Commercial Banks on the website of Bank Indonesia (http://www.bi.go.id). Based on the above criteria, then the sample (full sampling) during the study period 2010-2014 as the following table:

Table 2. Number of Samples

| Bank Group | Sample |
|---|---|
| 1. the state-owned banks | 4 |
| 2. the foreign-owned banks | 10 |
| Amount | 14 |

Source: BI, SPI Th 2011 and OJK, SPI Th 2015, processed

The state-owned banks are:1)PT Bank Negara Indonesia (Persero) Tbk;2) PT Bank Tabungan Negara (Persero); 3) PT Bank Rakyat Indonesia (Persero), Tbk; and 4) PT. Bank Mandiri (Persero), Tbk. While the foreign-owned banks are: 1) Bank of America; 2) Bank of Tokyo Mitsubishi UFJ; 3) Bank Of China Limited 4) The Bangkok Bank Comp.; 5) Citibank NA; 6) Deutsche Bank AG; 7) JP. Morgan Chase Bank, N.A.; 8) The Hongkong Shanghai Banking Corp.;9) Standard Chartered Bank;and10)The Royal Bank Of Scotland N.V.

In this study using secondary data, data collection is done by using the documentation method, obtained from the source of Indonesian Banking Statistics (SPI), and financial state ments of public Bank publications published by BI. In summary, the operation alization of input-output variables is presented in the following gtable:

Table 3. Operationalization of Input-Output Variables

| No. | Variable | Variable Concept | Indicator |
|---|---|---|---|
| 1. | Third Party Funds/DPK/deposit (P1) | Sources of funds from the public are conducted in the form of: demand deposits, savings, time deposits (Kasmir, 2012) | Total demand deposits, savings deposits, timedeposits and term certificates |
| 2. | Fixed assets (P2) | Akiva tangible obtained in the form of ready-to-use or formerly used in bank operations, is not intended to not be sold in the framework of the normal activities of the bank and has a useful life of more than one year (Rivai, et al., 2013) | Total fixed assets between others in the form of land, buildings, and equipment |
| 3. | Labor (P3) | Costs incurred by banks to finance their employees (Rivai, et al., 2013) | Total salary, overtime, health care, honorarium commissioner, natura, expenses for employees |
| 4. | Earning Assets (Q4) | Placement of funds to related parties and unrelated parties (Rivai, et al., 2013) | Total loans to third parties, investments (letters of worth), and participation |
| 5. | Interest Income (Q5) | Interest income either from the loan, or from the cultivation by the bank (Rivai, et al., 2013) | Total interest income |
| 6. | feebased income (Q6) | Gains arising from transactions provided in other bank services (Cashmere, 2012) | Total fees/ commissions /fees and administration fees |

Data analysis in research: measuring the technical efficiency of Conventional Banks owned by that state-owned banks and foreign-owned banks during the period 2010-2014 in Indonesia is used Data Envelopment Analysis (DEA) technique. Kamala and Salem,(2008), a DEA model with variable return to scale (VRS) may be derived, which may result in different levels of

output duet or educed performance or economies of scale. In other words, if the added input of x times will not cause the output to increase by x times, it can be smaller or greater than x times. VRS formula:

Max

$\mu_k v_i$

$$\sum_{k=1}^{p} \mu_k y_{k0} - u_0$$

Subject to

$$\sum_{i=1}^{m} v_i x_{i0} = 1$$

$$\sum_{k=1}^{p} \mu_k y_{kj} - \sum_{i=1}^{m} v_i x_{ij} - u_0 \leq 0 \qquad j = 1, \dots, n$$

$$\mu_k \geq \varepsilon, v_i \geq \varepsilon \qquad k = 1, \dots, p$$
$$i = 1, \dots, m$$

Where:

Xijisthenumberofi-th inputs of the j-th DMU, and yrj is the sum of ther-th type output of the j-th DMU. The value of efficiency is always less than or equal to 1. DMU whose efficiency value is less than 1 means inefficiency whereas DMU whose value is equal to 1 means the DMU is efficient. DMU namely that state-owned banks and foreign-owned banks.


**Findings and Discussions**

The results of this study show the level of efficiency of that state-owned banks and foreign-owned banks annually to provide a complete explanation of the variations in efficiency levels over time in building an annual frontier. Summary of Estimated Results of the Efficiency Level of that state-owned banks and foreign-owned banks annually for 2010- 2014 as follows:

Table 4. Estimated Efficiency Level of that state-owned banks and foreign-owned banks in Indonesia 2010-2014

| No. | Year | the state-owned banks | foreign-owned banks | Commercial bank |
|---|---|---|---|---|
| 1 | 2010 | 95,47 | 82,62 | 86,29 |
| 2 | 2011 | 92,12 | 79,75 | 83,28 |
| 3 | 2012 | 94,43 | 75,47 | 80,89 |
| 4 | 2013 | 93,98 | 76,94 | 81,81 |

| 5 | 2014 | 95,81 | 83,43 | 86,97 |
|---|---|---|---|---|
| | Average | **94,36** | **79,64** | **83,85** |

Source: DEA results, processed

Based on Table4. Above shows that the combined average efficiency of the two types of banks (that state-owned banks and foreign-owned banks) achieved a score of 83.85% higher than the combined national banking efficiency estimate of only 48.19% based on research by Jaelani (2015).

The distribution of the results of the estimation score efficiency level of that state- owned banks and foreign-owned banks in 2010-2014, that the level of efficiency of the that state-owned banks achieved a score of 94.36%, while the foreign-owned banks achieved a score of only 79.64%, this finding in accordance with the identification on the background that the performance foreign-owned banks are no better than national banking performance. DEA techniques produce Return-to-Scale (RTS), which indicates that banks can operate in constant returns-to-scale (CRS) zones meaning increased output of proportional

Inputs in increased output; in the Increasing Return to Scale (IRS) zone means increased input yields in higher increases in output; and / or in the Decreasing return to Scale (DRS) zone means an increase in input yield in a lower increase in output to survive in a competitive market (Ahmad and Mohammad, 2011). The result of DEA technique approach resulted RTS of that state-owned banks and foreign-owned banks in Indonesia as the following table:

Table 5. Summary of Return-To-Scale (RTS) of that state-owned banks and foreign-owned banks in Indonesia in 2010 –2014

| No. | Return-to-Scale (RTS) Characteristics | the state-owned banks | foreign-owned banks |
|---|---|---|---|
| 1 | Constant Returns-to-scale (CRS) | 2 | 5 |
| 2 | Increasing Return to Scale (IRS) | 2 | 4 |
| 3 | Decreasing Return to Scale (DRS) | 0 | 1 |
| | Total Banks | 4 | 10 |

Source: DEA results, processed

The analysis of RTS, the state-owned banks and foreign-owned banks results as shown in the table above shows that RTS 2 of the state-owned banks and 5 efficient foreign- owned banks mean operating on productive scale and experiencing CRS condition, meaning that the bank has reached the optimum size scale. Furthermore, 2 foreign-owned banks and 4 foreign-owned banks operating under their optimum size scale and thus, experiencing IRS conditions, the policy implications of these findings are that the bank can increase output. The remaining 1 foreign-owned banks is operating under DRS conditions, so downsizing appears to be the bank's strategic choice for reducing inputs.

The guidelines for improving the efficiency of banks in the future resulting from DEA techniques can be used for potential improvement, ie areas of increased input-output activity required to place the bank inefficiently to the efficient frontier (KUMAR, S. and GULATI, R., 2008) . Total potential improvements as a reference to improve the efficiency of the state-owned banks with the management of input-output variables, as shown in the table below:

Table 6. Potential Improvement of the state-owned banks Efficiency Level In Indonesia Year 2010 – 2014

| No. | Potential Improvement | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
|---|---|---|---|---|---|---|---|
| 1 | DPK/Deposit (P1) | 0 | 0 | 0 | -3,43 | 0 | -0,69 |
| 2 | Fixed Assets (P2) | -24,3 | -21,85 | -16,9 | -23,2 | -21,5 | -21,54 |
| 3 | Labor (P3) | -11,2 | -9,7 | -7,6 | -6,38 | -3,2 | -7,62 |
| 4 | Earning Assets (Q4) | 5 | 9,63 | 6,43 | 7,2 | 4,58 | 6,57 |
| 5 | Interest Income (Q5) | 5 | 9,63 | 6,43 | 7,2 | 4,7 | 6,59 |
| 6 | Fee based income (Q6) | 6167,9 | 2003,03 | 1685,9 | 1452,4 | 4205 | 3102,74 |

Source: DEA results, processed

Based on table 6 above, the improvement of the efficiency level of the state-owned banks is done by approaching from the side of input management: making savings on the use of DPK (deposit) by 0.69%, Fixed Assets savings of 21.54%, and Labor of 7.62%. Meanwhile, from the output side of the state-owned banks optimized the management of Earning Assets ie Credit and Investment of 6.57%, Increase Interest Income of 6.59%, and increase Feebased Income of 3102.74%. While the total potential improvements of Foreign Banks with, as the following table:

Table 7. Potential Improvement of foreign-owned banks Efficiency Level in Indonesia Year 2010 –2014

| No. | Potential Improvement | 2010 | 2011 | 2012 | 2013 | 2014 | Average |
|---|---|---|---|---|---|---|---|
| 1 | DPK/Deposit (P1) | -3,53 | 0 | -1,74 | -1,62 | -7,4 | -2,86 |
| 2 | Fixed Assets (P2) | -1,59 | -1,09 | -0,1 | 0 | -2,54 | -1,06 |
| 3 | Labor (P3) | -3,26 | -4,94 | -9,17 | -22,9 | -2,79 | -8,62 |
| 4 | Earning Assets (Q4) | 36,51 | 47,58 | 67,18 | 44,11 | 34,93 | 46,06 |
| 5 | Interest Income (Q5) | 61,57 | 47,59 | 85,72 | 76,42 | 64,85 | 67,23 |
| 6 | Feebased income (Q6) | 36,51 | 58,68 | 67,18 | 44,11 | 43,72 | 50,04 |

Source: DEA results, processed

Based on table 7 above, the improvement of the level of efficiency of foreign-owned banks is done with approach from the side of the input management: to save the use of DPK of 2.86%, Fixed Assets savings of 1.06%, and Labor of 8.62%. Mean while, from the output side of foreign-owned banks optimize the management of Earning Assets ie Credit and Investment of 46.06%, Increase of Interest Income of 67.23%, and increase of Fee based Income of50.04%.

Based on the analysis of the findings of the comparative results of the level of efficiency of the state-owned banks and foreign-owned banks, and the efficiency improvement solution, that Foreign Bank has a big enough opportunity to optimize all output variables, but the Government Bank has a big enough opportunity to optimize specially Fee based income variable This indicates the state-owned banks is still concerned with its tradional products compared to other banking services. While both types of banks have to make savings on the use of the input side, namely the management of third party funds, the use of labor and fixed assets proportional, but the state-owned banks has a high in efficiency in the use of fixed assets than the foreign-owned banks.

**Conclusions and Recommendations Conclusion**

Analysis of variation in efficiency level of the state-owned banks is more efficient than the foreign-owned banks, it turns out the foreign-owned banks is unable to exploit its comparative advantage, on the contrary the foreign-owned banks faces the problem of information asymmetry.

The dominant form of in-efficiency of both the state-owned banks and the foreign-owned banks in Indonesia, ie under conditions of Increasing Return to Scale (IRS) or operating under the optimum size scale, so that the foreign-owned banks have a substantial opportunity to optimize all output variables (Earning Assets, Interest Income, and Fee based Income), while the state-owned banks has a significant opportunity to optimize Fee based income variable.


**Recommendation**

The low level of efficiency of the foreign-owned banks rather than the state-owned banks in this study provide evidence of a gap between asymmetric information theory. The foreign-owned banks have the potential to cause problems of information asymmetry, bank injections can be inefficiency. In improving the level of efficiency of the foreign-owned banks, optimally the foreign-owned banks Bank must address the problem of information asymmetry.

This study has several limitations, namely: the methodology of focusing on the efficiency of commercial banks in Indonesia is certainly different from the benchmarks of ASEAN or internationally, in order to facilitate the direction for the competitiveness

Of the banking industry in the future, expand this research with cross-ASEAN or international study.

In order to improve the level of efficiency of the foreign-owned banks in Indonesia as a practical implication the results of this study can be suggested to: For inefficient management of the foreign-owned banks, to make policy and management of output side by increasing the volume and quality of credit; For the Financial Services Authority (OJK), spurring bank of the state-owned banks and the foreign-owned banks to be efficient, by giving awards (Award) for efficient bank and being the best practice bank for in efficient bank; For Bank Indonesia (BI), which handles prudential banking macros, to maintain the inflation rate and economic growth that enable the state-owned banks and the foreign-owned banks to run their operations efficiently in a conducive environment.


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