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EFFICIENCY ANALYSIS OF REGIONAL DEVELOPMENT BANKS IN INDONESIA

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Abstract

The Regional Development Bank is one of the sectors that contributes to the economic progress of the region in Indonesia. As an into contributed is bridging between those who have surplus funds as a store with those who need the funds as borrower, the role of banks is needed in contributed to the economic growth of a country. The Bank efficiency can be measured using the ratio Biaya Operasional Pendapatan Operasional (BOPO) or Cost to Income Ratio (CIR). The use of CIR felt more accurately measure the performance of internally because without the inclusion of external influences such as inflation, Bank Indonesia (BI) rate, Lembaga Penjamin Simpanan (LPS) rate and so on. Efficient Bank will be able to face competition in the banking industry more healthy and quality. Measurement of efficiency in this study using the IR, and competition used to concentration ratio (CR-4) and Panzar-Rosse index is calculated by Bikker Model. Nationally banks of efficiency still need to be improved. While in group and individual banks there are some banks that are efficient, particularly some of the foreign banks. Meanwhile to the level of competition in the group is still in a monopolistic market position and national banking competition in this study is still in a monopolistic market.

Keywords: Efficiency, Cost to Income Ratio (CIR), Regional Development Bank, Panzar-Rosse Index.

INTRODUCTION

The banking industry is one of the sectors that contributes to encouraging economic growth. Indonesia's rating as an *investment country grade* brings optimism that the pace of economic growth will remain high in the coming years. Indonesia's economic outlook as well as the ability of the Indonesian economy to absorb the pressures of the global crisis have increased Indonesia's sovereign rating. Two *international credit rating agencies*, Fitch and Moody's, have granted investment grade (IG) status and upgraded Indonesia's *sovereign* rating (Bank Indonesia, KSK No. 18 March 2012, p. 3).

As an institution that bridges between parties who have excess funds as depositors with those who need funds as borrowers. Such functions are called intermediate functions. If the banking industry experiences problems, it will cause a problem, for example, between the owner of funds and those who need funds. As a result, it can lead to inefficiencies in the intermediation function.

Based on Roni (2011), there are two kinds of efficiency in economics, first production efficiency: second allocation efficiency. Production efficiency is the company's ability to produce quality products at competitive prices. While the efficiency of allocation when products in the form of goods or services produced are charged to buyers following market prices, in accordance with marketing costs including the acquisition of normal profits (normal *profit*) to suppliers. Posner defines efficiency as the condition that resources are allocated so

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that their value is maximized. In economic analysis, efficiency is focused on ethical criteria in the framework of making social *decisions that* concern the regulation of public welfare.

In addition to Posner, there are also efficiency standards created by Italian social economist Vilfredo Federico Damaso Pareto. If the resources allocated make at least one party feel benefited and neither party feels disadvantaged then this condition is called "Pareto Superiority" or Pareto Efficiency, after the name of the inventor. If there is a change in policy/law, one party feels profitable but neither party feels disadvantaged, that condition is called Pareto Superiority. In addition, in economics it is also known as pareto optimum. A condition in which resources are distributed in a certain way that makes at least one party feel disadvantaged then. It is this latter condition which often happens in real life. Where it is almost impossible for no party not to be harmed in a policy or legal change.

Different perspectives of Nicholas Kaldor and John Hicks in efficiency analysis. According to Kaldor-Hicks in "*Kaldor-Hicks Efficiency*" that what was conveyed by Pareto was one party who felt benefited to provide balanced compensation to the party who felt disadvantaged, as a result of the policy / law change. The Kaldor-Hicks method is usually used as a test of Pareto efficiency. This method is not made as a standard of efficiency on its own. This method is used to determine whether an economic activity is moving in the direction of Pareto Efficiency. Any change generally makes some people feel better while making others worse. Using this test can identify what will happen if the winners compensate the losers and the amount of profit obtained is greater than the compensation paid.

According to Kaldor-Hicks, changes towards improvement can be obtained by redistributing revenues in the economy using *lump sum taxes* or subsidies. So that compensation does not need to be paid, and a change can be said to bring progress, if economic actors who feel disadvantaged must be willing to accept compensation from economic actors who benefit. If viewed positively, the party who will receive the loss cannot bribe the beneficiary so that changes cannot occur.

On the other hand, internal efficiency measurement can also use the *cost to income ratio* (CIR). In calculation, CIR comes from operating expenses plus additional income (*fee-based income*). The difference between BOPO and CIR is in the numerator number, so the value of BOPO is usually greater than CIR. The expense and revenue ratio (CIR) reflects the amount of *overhead* costs incurred by the bank. Banks can internally control, so CIR can be used to generate revenue. Therefore, this ratio truly reflects the operational efficiency of the bank (source: www.ojk.go.id).

The level of efficiency of banks is influenced by many factors. Internally, among others, the bank's business activities and activities. While externally, among others, the level of competition and economic conditions. In any industry, competition is one of the positive factors influencing efficiency, productivity, and innovation, as well as in the banking industry. Several studies have shown that competition between banks can affect bank performance, one of which has a positive impact on efficiency (Casu and Girardone, 2007, Schaeck and Čihák, 2008).

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In 2012, the ASEAN Summit in Phnom Penh Indonesia was appointed as the driving force, along with Singapore and Thailand, integrating Southeast Asian powers globally. Indonesia has actually become a pioneer country in the ASEAN region in opening markets, for example in the banking industry. Some foreign banks can operate in Indonesia, the mining industry also brings in many foreign companies. Therefore, Indonesia has started economic openness for quite a long time.

From the results of research conducted by Bikker et al. published in 2012 from 63 countries from 1994-2004, using the Panzar-Rosse model produced the H-statitstic index in general gives an idea that almost all countries, especially for the banking industry, are in monopolistic markets. The United States with 9,505 banks yielded a Panzar-Rosse index of 0.692. Germany using 2,298 banks produced an H-statistic index of 0.719. Indonesia by using 105 banks yielded 0.74. Malaysia has a value of 0.866 using 43 banks. Meanwhile, the Dominican Republic, which has 29 banks, produced a P-R index of 1.005. Especially for the Dominican Republic it is in a perfectly competitive market, while from various other countries banking is still in a monopolistic market.

Therefore, the research in this paper: First, calculating and analyzing efficiency is measured internally so that bank management can control the implementation of bank operations with the aim of participating in encouraging economic progress. Second, calculating and analyzing banking competition using the concentration ratio (CR-4) method of product magnitude, and measuring national competition using the Panzar-Rosse model (H-stat).

RESEARCH METHODS

This research is a study using quantitative measures to compare the efficiency between one bank and another, both grouping and nationally. Meanwhile, to calculate competition using the concentration ratio of the 4 largest banks (CR-4) credit products nationally and using the Panzar-Rosse Model.

To measure efficiency, the Cost *to Income Ratio* (CIR) formula is used:

$$\mathbf{CIR} = \frac{\text{Overhead Cost}}{\text{Net Interest Income+Non Interest Rates Revenue}} \times 100\% \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \mathbf{(1)}$$

And to calculate the concentration ratio used model from Gwin:

CR-k= [total output (Credit) K-bank/Total national disbursed credit] x 100%... (2)

As for the competition of the Panzar-Rosse model as follows:

$$\text{Log}\left(\frac{Interest\ Revenue}{Total\ Asset}\right) = \propto + \sum_{n=1}^{3} \beta_n \ logW_n + \sum_{m=1}^{3} Log\ CF_m + \in \ldots\ldots\ldots\ldots\ldots\ldots \quad \mathbf{(3)}$$

In summary, the operationalization of equations and variables used in measuring efficiency ratios and concentration ratios (CR-4) and Panzar-Rosse models can be seen in the table below.

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Table 1: Operational Variable

	Variable	Description	Data Sources
Cost toIncome Ratio	Overhead costs	Routine Bank expenses in the form of employee salaries, depreciation	Balance
	Total net income	All income earned both in terms of credit interest and fee based income	Balance
Competition	CR4= Total Credit 4 Banks/Total Credit Nationally	Products in the form of credit scores distributed from 4 banks, the most	Neraca
Independent Variable	interest= revenue	Interest of income/total assets	L/R; Balance
harga input	w1	Interest expense/Third Party Funds	L/R; Balance
	w2	Employee Expenses/Total Assets	L/R; Balance
	w3	Physical capital/total assets	Balance
Control Variable	CF1	Credit/Total Assets	Balance
	CF2	Third Party Funds/total assets	Balance
	CF3	Equity/total aset	Balance

Source: Bank; Gwin, 2000; Bikker *et al*., 2009, 2012

The results of this level of efficiency are measured using the ratio between the nominal amounts of use of operational funds divided by the acquisition of operating funds. If the value of the amount as a percentage is lower, it means that internally a bank is efficient in operating its performance. Meanwhile, if the greater the calculation value, it means that a bank is less efficient. Likewise, to measure the group of banks, as well as for the size of the banking market nationally.

In the second method, the measurement of banking market competition uses a ratio concentration model and the most widely used CR-4. For competition using concentration ratio models do not use hypothesis tests statistically. However, for the next bank competition model in this study using regression panel data will use a hypothesis test.

In the panel data processing method, the unbalanced panel method is selected. This method was chosen to anticipate interrelationships between bank groups, at targets that could be the same or almost the same. The next stage in estimation is to choose the *Fixed Effect (*MET) Method and the *Random Effect* (MER) Method. Therefore, this study tries to use one method that should be used.

The MET option is to examine the differences in *individual intercepts* and timing. While the use of MER differences between individuals studied are accommodated through *error terms*. Both options use the consideration of the number of individuals who exceeded the study period. The Haussman test is used to support the use of *random effects* (Nachrowi and Usman, 2006).

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RESULTS AND DISCUSSION

Until now, even though the number of provinces in Indonesia is 33, it turns out that the number of banks remains 26. The bank owned by the provincial local government is named the Regional Development Bank abbreviated as BPD. In the beginning, every province had BPD. BPD only has a scope of work based on each province as the name implies. For example, Bank DKI only operates in the Greater Jakarta area, Bank Jabar only operates in the West Java province area. BPD's limited working area makes it difficult to get bigger and expand its operational area. However, in subsequent developments, BPD was allowed to make proposals to open branches outside the province, even some BPDs are allowed *to go* public or sell shares to the public. Next is the efficient BPD bank table based on processed 26 BPD data taken from the balance sheet using CIR as shown in table 2.

The next table is a continuation of the BPD bank efficiency performance up to the last order of efficiency using CIR for bank groups as listed in table 3.

Table 2: Cost to Income Ratio (CIR) BPD Efficiency

No	Bank Name	Component	2014	2013	2012
7	Jambi	Overhead Costs	79,614	67,113	47,954
		Net Interest Income	180,300	161,189	106,387
		Cost to Income Ratio	0.441562673	0.417413935	0.450750054
10	Riau Kepri	Biaya Overhead	340,856	309,730	247,756
		Net Interest Income	734,842	698,659	535,279
		Cost to Income Ratio	0.463849372	0.443320201	0.46285419
11	Sumbar	Biaya Overhead	269,284	235,962	224,051
		Pendapatan Bunga bersih	550,791	546,992	480,186
		Cost to Income Ratio	0.488904207	0.431381254	0.466591522
12	Jabar dan Banten	Biaya Overhead	1,277,837	1,194,079	950,579
		Pendapatan Bunga bersih	2,270,236	2,490,562	1,940,584
		Cost to Income Ratio	0.562865397	0.47944177	0.489841503
13	Maluku	Biaya Overhead	117,252	100,310	86,639
		Pendapatan Bunga bersih	264,353	229,271	175,633
		Cost to Income Ratio	0.443541681	0.437516038	0.493293073
16	Jatim	Biaya Overhead	639,530	535,732	434,058
		Pendapatan Bunga bersih	1,549,705	1,266,170	1,049,796
		Cost to Income Ratio	0.412678599	0.423111939	0.413469009
18	NTB	Biaya Overhead	116,682	106,825	107,156
		Pendapatan Bunga bersih	243,976	229,771	209,831
		Cost to Income Ratio	0.478252657	0.464918644	0.510675866
20	Sulteng	Biaya Overhead	56,692	40,603	35,762
		Pendapatan Bunga bersih	121,781	64,407	46,552
		Cost to Income Ratio	0.465525087	0.630423391	0.768212893
22	Bali	Biaya Overhead	295,224	241,129	228,397
		Pendapatan Bunga bersih	604,980	528,121	446,264
		Cost to Income Ratio	0.487990442	0.456579052	0.511798405
		CIR_BPD Group Total	**0.550522028**	**0.533994972**	**0.57902091**

Source: CIR BPD Group Total

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Based on the value of the CIR calculation of BPD banks above, the most stable is maintaining the efficiency of East Java BPD. Based on the display of the calculation results, it can be seen that Bank Jatim has the best level of efficiency. During the period of three years from 2012-2014 the efficiency of Bank Jatim was stable at 41%. This means that the use of consumables can be saved internally. Meanwhile, Central Java bank is one of the BPD banks that is relatively less efficient in using overhead costs. This can be seen from the CIR value of 61%.

Table 3: CIR BPD is Less Efficient

No	Bank Name	Component	2014	2013	2012
2	Yogyakarta	Overhead Costs	215,389	183,971	153,075
		Net Interest Income	289,364	235,545	206,344
		Cost to Income Ratio	0.744353709	0.778157984	0.741844108
15	Jateng	Overhead Costs	775,852	688,862	605,631
		Net Interest Income	1,196,183	1,124,535	923,961
		Cost to Income Ratio	0.648606648	0.612575066	0.655472736
17	Kalbar	Overhead Costs	284,976	246,706	214,879
		Net Interest Income	475,454	446,005	389,501
		Cost to Income Ratio	0.599376245	0.552248834	0.551677497
24	Papua	Overhead Costs	444,233	395,152	327,101
		Net Interest Income	821,095	703,460	525,220
		Cost to Income Ratio	0.541025437	0.562436689	0.62278815
25	Sumsel dan Babel	Overhead Costs	609,765	528,126	472,170
		Net Interest Income	650,417	675,294	573,395
		Cost to Income Ratio	0.937499079	0.783252087	0.823463892
26	Sumut	Overhead Costs	601,871	549,167	484,265
		Net Interest Income	970,255	960,991	774,754
		Cost to Income Ratio	0.620322718	0.572083451	0.625056779
		CIR BPD Group Total	**0.550522028**	**0.533994972**	**0.57902091**

Source: Balance sheet of each BPD

CONCLUSIONS AND SUGGESTIONS

Bank efficiency in Indonesia nationally is around 70%. This means that the use of bank labor costs is still quite large. Therefore, the encouragement of increasing skills in terms of communication, analysis, as well as fighting power and high morale for bank workers must be increased.

Bali Province as the number one tourist destination in Indonesia, BPD Bali bank has the most stable level of efficiency with only overhead costs below 50% of its revenue. Meanwhile, BPD South Sumatra and Babel banks are among the largest in overhead.

In terms of grouping, it turns out that almost all BPDs when using their average value are relatively efficient in using overhead costs. In general, and on average, it only costs overhead under 60%. Even in 2014 only 55% of overhead costs sucked up operational gains.

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Nationally, the level of competition in the banking market in Indonesia is still in a monopolistic market. This can be seen both using the concentration ratio (CR-4) measure of the product in the form of credit and the Panzar-Rosse index (H-Statistics index).

Suggestions to the next researcher that a study model can be combined or formed that connects efficiency and competition, especially the banking industry, for example using the DEA (*Data Envelopment Analysis)* or SFA (*Stochastic Frontier Analysis*) methods by including CIR variables.

The banking industry as part of giving impetus to economic growth, should be given provisions that credit for small industries be given leeway in credit application requirements accompanied by supervision procedures in the field. So that for borrower customers in the Small and Medium Enterprises (SME) sector, the process of obtaining credit will be simpler accompanied by supervision of the implementation of credit use.

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