THE INDONESIAN BANKING INDUSTRY COMPETITION: FINANCIAL CONGLOMERATION APPROACH

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Abstract. This study was conducted to analyze the existence of economies of scope and competition in the Indonesian banking industry based on the phenomenon of financial conglomerates. By using the New Empirical Industrial Organization method, this study contributed to enrich the literature of banking industry competition in Indonesia. The results of the study showed that conglomeration increased market power and decreased market level competition.

Keywords: conglomeration, financial conglomeration, bank, competition, Panzar Rosse model.

Abstrak. Studi ini bertujuan untuk menganalisis keberadaan *economies of scope* dan bentuk persaingan pada industri perbankan Indonesia dengan memperhatikan adanya fenomena konglomerasi keuangan. Dengan menggunakan metode *New Empirical Industrial Organization*, penelitian ini memberikan kontribusi bagi literatur persaingan industri perbankan di Indonesia. Hasil studi mebuktikan bahwa konglomerasi meningkatkan kekuatan pasar, dan menurunkan tingkat persaingan

Kata kunci: konglomerasi, konglomerasi keuangan, bank, persaingan, panzae Rosse model

INTRODUCTION

Previous studies about bank competition generally measures aggregate competition (eg: Claessens and Laeven, 2004; Casu and Girardone 2009; Bikker, Shaffer, and Spierdijk, 2012), by assuming that the products of each bank produced are homogeneous. In fact, some banks diversify their products by offering a variety of services, whether it is classic bank products (savings, current accounts, deposits, and credit) or non-bank products (insurance, investment banking and other financial services). If a bank offers both types of products, it is called financial conglomeration, but if it also offers non-financial services as well, then it is called universal banking (Vennet, 2002; FSA, 2015).

Some banks conduct financial conglomerates since the high level of diversification product makes them tend to be insensitive to the fluctuation risk compared to the specialist bank (Lin, Jane-roar, *et al.,* 2012). It due to the lack of one business income can be covered from other business income (Herring and Litan, 2003). Investigation of the 226 commercial banks listed on the capital market in 11 emerging economies in 2000-2007 shows that bank diversification which based on interest and non-interest, decreased the risk of insolvency and increased profits (Sanya and Wolfe, 2011). Conglomerates profit also increased since the increasing of bank efficiency, for example in the process of credit, the bank needs information about the customers which is also required by the non-bank activities such as insurance, underwriting, and etc (Chronopoulos, Girardone, and Nankervis (2011). Vennet (2002) empirically proves

that banks which do financial conglomeration practice are more efficient than the specialist bank.

Financial conglomerates allow cross-subsidies that can lower bank lending rates, as there are many activities that can cover the bank expenses. Some commercial banks charge high fees on the other services to have a small interest rate on the loan, so that they win the competition in the credit market (Lepetit, *et al.,* 2008). These cross-subsidies potentially cause systemic risk of the financial conglomeration. When one of subsidiary of the conglomerate bankrupt, it is possible to lead bankruptcy in its conglomerate banks, such as the crisis in 1998 and 2008. On the sales side, conglomerates also allow cross-selling banking products which can increase bank profits through the economies of scale, economies of scope, reputation effects, and market power (Vennet, 2002). Related to the competition, Felton (1971) actually worries that the existence of financial conglomerates can cause not only increasing the economic power concentration which considered dangerous, but also reducing the effectiveness of competition.

There are several countries allow financial conglomerates and universal banking, such as the European Union, the United States, and some countries in Asia including Indonesia, since it is believed to be able to grow up the economic fast. In Indonesia, there are 50 financial conglomerates which control 70.5 percent of the total assets of the financial services industry in Indonesia, where 35 of them are from financial sector entities (FSA, 2015).

However, until now, the government still more focuses on conglomeration impact on the systemic risk potential than banking competition. The major concern on this systemic risk is due to the bad experience on the Indonesia's conglomeration in the past, for example, the existence of corruption, collusion, and nepotism. Thus, the weaken performance of companies in conglomerate banks have the impact to the weaken bank performance such as the increasing of NPLs and even liquidation (Lindblad, 2007). Banks tend to mobilize third-party funds for their subsidiary benefits, so it can increase the crisis vulnerability (Widyastuti and Armanto, 2013).

This study seeks to provide additional thoughts on how the competition of banking industry in Indonesia with the existence of financial conglomeration. Several studies about banks competition in Indonesia have been conducted (e.g. Athoillah (2010); Widyastuti and Armanto (2013)), but ignored the conglomeration. Barbosa, Rocha, and Salazar (2015) state that if original method is used to measure banking competition which do not pay attention to the conglomeration, the measurement will be bias. By extending Panzar and Rosse (1987) model, which identifies the market structure derived from revenue function and input prices in a homogeneous product, Barbosa, Rocha, and Salazar (2015) analyze the theoretical and empirical behavior of conglomerate banks and get benefit from economies of scope by offering classic and non-classic bank products. Empirical study in Brazil also shows that economies of scope increase market power of conglomerate bank.

Previously, Berg and Kim (1998) have attempted to put multi-product operations on the analysis of banking competition, which has distinguished retail and corporate banking products. As a result, when both of them have been operated simultaneously, the degree of competition has become asymmetric. Barbosa, Rocha, and Salazar (2015) have complemented the analysis of Berg and Kim (1998) on the relationship of multi-product operation and competition by analyzing the form of competition. Operational synergy of multi-product is assumed to reduce the operational

costs to be lower than the specialist bank. Thus, it brings a significant effect on bank competition.

This study aims to fill the gap between the previous Indonesian banking industry competition studies with the phenomenon of financial conglomeration. This study is focus on analyzing the economies of scope in the Indonesian banking industry by the existence of financial conglomerate practice and analyzing the forms of Indonesian banking industry competition by the existence of financial conglomerate practice. Therefore, this article is started by describing the definition of financial conglomerate and its relation to the competition. Then, it discusses the financial conglomerate in Indonesia. After that, it discusses Panzar Rosse model with the financial conglomeration. Next, it discusses the findings and the methods used. The last part of this article discusses the analysis of the existence of economies of scope and the level of competition in the Indonesian banking industry.

THEORETICAL REVIEW

Financial conglomeration and Competition. Jacoby (1970) defines conglomeration as a business which produces goods and services of some unrelated industries (raw materials, product development, production technology, and marketing channels). In the financial sector, if the financial institution offering financial services except classic banking products (e.g. insurance and securities), where the ratio of non-interest income to the total bank income is more than 20%, it is called financial conglomerates (Vennet, 2002). Related to the definition above, Financial Services Authority (FSA) defines a financial conglomerate in POJK No. 17/2014 and POJK 18/2014 as follows:

> "Financial service institutions included banks, insurances, security companies, financing institutions, and other financial services institutions in the same group as the relationship of ownership and / or control".

Conglomeration can make the companies bigger and stronger, so it raises the worrying of increasing industrial concentration, which potentially make collusion and mark-up over marginal cost. There are three possible conglomeration effects on the industrial competition, (Jacoby, 1970). First, conglomeration will not bring any effect on competition. It is happened because conglomerate companies are not related each other. In other words, conglomeration is okay as long as the number of diversification companies is large enough to prevent the collusion between them. Second, conglomeration will strengthen its competitiveness by strengthening the managerial and financial support from the company. The larger the conglomerates, the stronger the managerial and financial support in an industry; thus, it will affect the industrial competition. Third, conglomeration can be a harmful predator to the small companies through the subsidies in one subsidiary. It causes the subsidized competitor is not able to compete in and exit from industry. Cross-subsidies can be a product development and large-scale advertising which smaller competitors cannot afford it. Therefore, it provides a competitive advantage in the market.

Supporting the second effect which mentioned above, there are inconsistency results about the existence of scope economies in banking industry. Some studies found economies of scope across banking output (i.e. Cavallo and Rossi, 2001). It predicts that consolidation such as universal banking universal banking promoted the degree of

scope economies increased. On the other side, some studies found diseconomies of scope for large bank (i.e. Glass and McKillop, 1992).

Berg and Kim (1998) explain empirically that the banks which sell their output in two different markets, retail banking and corporations, where those have different behavior, no substitution each other, elasticity, and different levels of competition, still have possibility to transfer funds from one market to another. Thus, the market shock can be direct or indirect influence bank profits.

Financial conglomeration in Indonesia. Concerns about less competitive of national banks to the presence of the giant banks affiliated with large foreign companies encourage Indonesian banks to make conglomeration to other financial companies. In addition, the needs for financing mega projects both nationally and internationally also required them to have a big asset.

Financial Services Authority (FSA) reports that there are 50 financial conglomeration in Indonesia which control more than 70 percent of the total assets of Indonesian financial services in 2015. From those companies, there are 35 of them are from banking sector. In Indonesia, the government has not published any specific rules concerning the financial conglomerate competitions. Herring and Litan (2003) state that if the personal benefits (entrepreneur and customer) taken from financial conglomeration which is regarded as a social benefit, the conglomeration should not be regulated or even banned. United States ever limits the conglomeration since the social cost is bigger than the potential benefits for their power abuse, which increasing monopoly power of conglomeration that can precisely control the product substitution and raise prices to the customers.

Panzar Rosse Model with Financial conglomeration. Panzar Rosse Model included in the New Empirical Industrial Organization (NEIO) is considered to be more capable in measuring competition in banking sector. By deriving the competition from profit maximization functions (Bikker, Shaffer, and Spierdijk, 2012), this model provides an indicator of competition, which value of " H statistic " as the sum of the elasticity of revenues to its input prices based on the reduced-form revenues equations. This model assumes that the industry is perfect competition and maximizing profit. The data used is not based on the industry but the corporate level, so it is easy to be obtained, observed and compared to the price, amount of production and actual cost (Widyastuti and Armanto, 2013).

Measuring the competition by using Panzar-Rosse model has been widely used including in Indonesian banking industry (Claessen and Laeven, 2004; Athoillah 2010; Widyastuti and Armanto, 2013). As a result, the market structure of Indonesian banking industry becomes monopolistic competition. However, those studies assumed that banking industry was a homogeneous product. In fact, there are several financial conglomeration offer different multi products. Each product has a different customer, degree of competition, and demand elasticity (Berg and Kim, 1998). Barbosa, Rocha, and Salazar (2015) extend the Panzar-Rosse model by including the assumption that the bank has multi-products and gain economies of scale and economies of scope by offering classical and non-banking products through conglomeration. Economies of scope reduce marginal costs and increase mark-up of each product, so it will affect the H value. In other words, the financial conglomeration will have a higher mark-up than the specialist bank.

The empirical research findings of Brazilian banks during the period 2001 - 2012 indicated that if the measurement of competition was done by the original method which did not pay attention to the conglomeration, the measurement would be bias. The existence of economies of scale and economies of scope in Indonesian financial conglomeration need to be confirmed, since there are some studies showed the contradictory results of the theories above, (Herring and Litan, 2003). This study adopted Barbosa, Rocha, and Salazar (2015) model to analyze the Indonesian banking industry competition by considering their financial conglomeration. This study used the data of Indonesian banks which was different from Barbosa, Rocha, and Salazar (2015) studies.

Barbosa, Rocha, and Salazar (2015) separate bank products into two categories: classical products q_c (P_c) and non-classical products q_o (P_o), where the demand curve has a negative slope. On the cost side, it is assumed that the input used are capital price w_1, labor price w_2, and the cost function C (q_c, q_o, w_1, w_2, γ) which increasing, convex and twice continuously differentiable function in (q_c, q_o). γ is an economies of scope parameter of classical and non-classical products. The higher qc will lower the marginal cost (MC) qo, and vice versa. Therefore, it is assumed that the banking technology is constant economies of scope. Based on those assumptions, therefore, the bank profit function is:

$$\pi = \pi(\mathrm{qc}, \mathrm{qo}, \mathrm{w1}, \mathrm{w2}, \gamma) = Pc(qc).qc + Po(q0).qo - C\ (\mathrm{qc}, \mathrm{qo}, \mathrm{w1}, \mathrm{w2}, \gamma) \quad (1)$$

The existence of γ affects bank profits through cost function, since the banks are more efficient when they produce multi products. From the equation (1) can be derived H statistic of Panzar and Rosse model defined from the sum of revenue elasticity toward input prices as follow:

$$H = \frac{w_1}{R(w_1, w_2)} \frac{\partial R(w_1, w_2)}{\partial w_1} + \frac{w_2}{R(w_1, w_2)} \frac{\partial R(w_1, w_2)}{\partial w_2} \quad (2)$$

Where $\delta R(w_1, w_2, \gamma) = P_c q_c + P_o q_o$ is the total revenue (TR) of multi product bank which $q_c(w_1, w_2, \gamma)$ dan $q_o(w_1, w_2, \gamma)$ are classical and non-classical offering products, thus:

$$H = \theta H_c + (1 - \theta) H_o \quad (3)$$

Where $\theta = \frac{P_c q_c}{P_c q_c + P_o q_o}$ is a part of the bank revenue obtained from classical product (Hc). Therefore, H statistic of multi product bank is the sum of H statistic of every product which is weighted share of TR bank:

$$H_c = \frac{\partial R_c(.)}{\partial q_c}\left[\frac{w_1}{R_c}\frac{\partial q_c(.)}{\partial w_1} + \frac{w_2}{R_c}\frac{\partial q_c(.)}{\partial w_2}\right] \quad (4)$$

This study examined two hypotheses: (1) there were economies of scope obtained by financial conglomerates compared to the specialist bank; (2) there was a different competition form in Indonesian banking industry with or without financial conglomeration.

METHOD

There were two outputs used in this study, they were the classical products (credit), and non-classical products. The income of these outputs come from the interest income (classical product) and non-interest income (non-classical product) which both of the products were measured by the natural logarithm.

There were three variable costs used in this study. First, cost of capital (Ln (COC)) is natural logarithm of total non-interest expenses ratio which is the bank expenses except paying the interest of third-party deposits, minus direct labor costs, then divided by the total equity. Second, direct labor cost (Ln (Wage)) is the natural logarithm of wage total ratio divided by shareholders' equity. Third, fixed cost of capital (Ln (COFC) is the natural logarithm of the fixed assets ratio and inventory to the total equity.

As control variables, there were four variables used. First, dummy variable to distinguish which banks are financial conglomeration (= 1) and specialist (= 0). Second, profitability variable as measured by Return on Equity (ROE). Third, market share variable based on total assets. The last, Herfindahl-Hirschman Index variable which is calculated based on the total assets.

This study was conducted to 103 samples from 120 banks of banking industry in Indonesia in 2010-2014. To determine the existence of economies of scope, it is necessary to make estimation of the production function. Barbosa, Rocha, and Salazar (2015) used the equation translog cost function estimation as follows:

$$LnTC_{bt}(q_{cbt}, q_{obt}, w_{1bt}, w_{2bt}) = \alpha_0 + \sum_{i=c,o} \alpha_i \ln(q_{ibt}) + \sum_{i=1,2} \delta_i \ln(w_{ibt}) + \frac{1}{2} \sum_{i=c,o} \sum_{j=c,o} \alpha_{ij} \ln(q_{ibt}) + \frac{1}{2} \sum_{i=1,2} \sum_{j=1,2} \delta_{ij} \ln(w_{ibt}) \ln(w_{jbt}) + \frac{1}{2} \sum_{i=c,o} \sum_{j=1,2} \rho_{ij} \ln(q_{ibt}) \ln(w_{jbt}) + \varepsilon \quad (5)$$

Where $TC_{bt}(.)$ is the total cost of bank b in period t. So, that we can get economies of scope as:

$$Scope_{bt} = \left[\frac{TC_{bt}(q_{cbt},0,w_{1bt},w_{2bt}) + TC_{bt}(0,q_{obt},w_{1bt},w_{2bt}) - TC_{bt}(q_{cbt},q_{obt},w_{1bt},w_{2bt})}{TC_{bt}(q_{cbt},q_{obt},w_{1bt},w_{2bt})}\right] \quad (6)$$

To find out the competition of banking industry, the equation used is as follows:

$$\ln(RT_{bt}) = \alpha + \ln(w_{bt})' \beta + \ln(w_{bt})\, x\, conglomerate'_b \tau + Z_{bt}\pi + \varepsilon \quad (7)$$

Where: $ln(RT_{bt})$ is total revenues of bank b in period t, w_{bt} is as input price of bank, $conglomerate'b$ as dummy variable, and Z_{bt} is as control variable.

H statistic produced in this study is:

$$Adj\ H = \sum_{k=1}^{m} \beta_k + \sum_{k=1}^{m} \varphi_k \quad (8)$$

H indicates the level of competition. If H value is less than 0, it means that the market structure is a monopoly or monopolistic competition, since companies will always operate on elastic demand curve. Perfect competition equilibrium occurs at H = 1, where every increasing input prices will increase MC and the income of the sector. H value between 0 and 1 indicates the monopolistic competition (Barbosa, Rocha, and Salazar, 2015).

The cost function is estimated to analyze the existence of global economies of Indonesian banking industry scope. The findings indicated that there were economies of scope, proved the theories of this study. Furthermore, the level of individual banking measured the economies of scope by using Panzar and Rosse (1987) model. The findings supported the theories which saying the economies of scope can increase its market power of financial conglomeration.

FINDING AND RESULT

Economies of Scope of Indonesian Banking Industry. Economies of Scope occur if bank's average cost decreased when offering classical and non-classical products at the same time. In this study, the existence of economies of scope can be indicated from the amount of product cost savings on the financial conglomeration comparing to specialist bank. Cost function estimation is done by using three scenarios: first, counting the total cost by considering classical and non-classical products revenues; second, counting the classical product revenues only; third, counting the non-classical product revenues only. The results are listed in Table 1 below:

Table 1. Estimation of Bank Cost Function

Independent Variable	(1)	(2)	(3)
Ln (TR interest)	0.520121 (2.955)***		0.563558 (5.362)***
Ln (TR non interest)	0.131584 (1.038)	-0.247606 (-1.338)	
Ln (wage)	-0.987227 (-3.777)***	-1.727842 (-2.875)***	-1.150057 (-4.882)***
Ln (Cost of Capital)	0.689355 (2.855)***	1.792120 (3.088)***	0.945386 (4.452)***
Ln (Cost of Fixed Capital)	-0.054002 (-0.400)	0.136308 (0.447)	-0.162529 (-1.199)
LN (TR interest)^2	0.028775 (2.416)**		0.015712 (4.839)***
Ln (TR interest) * (Ln TR non-interest)	-0.034109 (-1.876)*		

Ln (wage) * Ln (TR interest)	0.052458 (2.056)**		0.050310 (3.190)***
Ln (COC) * Ln (TR interest)	-0.054401 (-2.397)**		-0.047794 (-3.342)***
Ln (COFC) * Ln (TR interest)	0.010561 (0.812)		0.015989 (1.683)*
Ln (TR non interest)^2	0.017800 (2.265)*	0.040586 (6.316)***	
Ln (wage) * Ln (TR non interest)	-0.011042 (-0.447)	0.149137 (3.127)***	
Ln (COC) * Ln (TR non interest)	0.023838 (1.044)	-0.152632 (-3.415)***	
Ln (COFC) * Ln (TR non interest)	-0.003558 (-0.287)	-0.029000 (-1.159)	
Ln (wage)^2	-0.018204 (-0.598)	0.084212 (1.164)	0.007908 (0.359)
Ln (wage) * Ln (COC)	-0.164909 (-2.769)***	-0.221634 (-1.639)	-0.255281 (-7.902)***
Ln (wage) * Ln (COFC)	0.019079 (0.821)	-0.160007 (-2.742)***	0.041341 (2.086)**
Ln (COC) * Ln (COFC)	-0.000758 (-0.032)	0.179223 (2.871)***	-0.033954 (-2.097)**
Ln (COC)^2	0.109873 (3.258)***	0.038149 (0.491)	0.182944 (11.236)***
Ln (COFC)^2	0.001688 (0.227)	-0.013168 (-0.624)	0.005272 (0.703)
R-squared	0.987469	0.883411	0.986433
F-statistic	1942.487***	270.0705***	2591.511***

Source: Data processed
Dependent variable : Ln TC
* p<0.1; ** p<0.05; *** p<0.01

The first column in the Table 1 shows the results of cost function bank estimation by inserting classical products revenues variable as the natural logarithm of interest income, and non-classical products revenues as the natural logarithm of non-interest income. The results showed that the bank's total cost is significantly and directly influenced by the interest income, the level of wages, and the additional cost of capital. However, the non-interest income would bring significant influence only through the interest income.

In the second column, the estimation is done by ignoring the interest income. The estimation results indicated that wages and additional cost of capital significantly directly influenced the total cost. However, the non-interest income did not have any direct be through wages or additional cost of capital.

On the other hand, by ignoring the non-interest income, the estimation result is the same as the column (1). The different is, the cost of capital does not bring any influence to the total cost in the column (1), but in column (3), the cost of capital indirectly influence the total cost through three variables, i.e. interest income, wages, and additional cost of capital, which directly influence the total cost. These findings are different from Barbosa, Rocha, and Salazar (2015). They found that in Brazil, the non-interest income had a direct and significance influence, while the interest income had no direct influence to the total cost. It was happened because as a whole, only 27

percent of all observations had a total non-interest income for more than 20 percent, which as financial conglomerates indicator (Vennet, 2002). Thus, the intermediation funds are still to be the main business of the banking industry in Indonesia. By using the estimation results in the Table 1, economies of scope values can be obtained based on the equation (6), below:

Table 2. Economies of Scope

Bank	Average	Minimum	Maximum
Total	1.001874	0.899784	1.169977
State owned	0.977494	0.922531	1.008856
Forex	0.997462	0.899784	1.111801
Non-forex	1.010875	0.908448	1.169976
Regional	0.991959	0.924929	1.104759
Foreign	1.019965	0.919259	1.131143
Joint Venture	1.008852	0.932035	1.074457
Core Capital < 1 T	1.010466	0.908448	1.169977
Core Capital 1 T -5T	0.995716	0.899784	1.081321
Core Capital >30 T	0.991571	0.919193	1.131143

Source: Data processed

In general, there were economies of scope found to the bank which offering classical and non-classical product at once, since the scope economies value more than one. Based on the ownership categories, it could be seen in detail that economies of scope obtained by non-foreign exchange, foreign exchange, and joint venture banks were greater than the other banks. Meanwhile, if it was seen based on the core capital categories, the economies of scope were only enjoyed by Core Capital less than one trillion Rupiah banks. Therefore, the first hypothesis proved by the economies of scope obtained by financial conglomeration which offering classical and non-classical products at once.

This result in line with Cavallo and Rossi (2001) which found scope economies in six countries in the European banking on period 1992 – 1997. It means, there were tendency in the European banking systems to move toward consolidation to be financial conglomeration or universal banking model. This result also supported by Sanya & Wolfe (2011) which found revenue diversification bank can create value.

Indonesian Banking Industry Competition. I compared between banking system that with or without separated their income to be interest and non-interest income. Estimates of equation (7) can be shown in table 3. There were three estimation scenarios: (1) the first column used the total income from both interest and non-interest income as dependent variable; (2) the second column used interest income only as dependent variable; and (3) the third column used non-interest income as dependent variable.

This study estimated equation (7) by panel regression with fixed effect approach, which independent variable used was the input prices, in the form of ln (wage), ln (COC), ln (COFC) as well as those variables interaction with dummy variable with financial conglomeration bank or focus bank. The dummy variable assumes a value of 1 if financial conglomeration bank, and a value of 0 otherwise.

Table 3. Estimation of Panzar Rosse Model

Independent Variable	(1)	(2)	(3)
Ln (wage)	-0.806606 (-4.052)***	0.013191 (0.121)	-0.816019 (-6.480)***
Ln (COC)	0.280052 (1.504)	0.936667 (9.179)***	1.924150 (16.337)***
Ln (COFC)	0.293162 (2.798)***	-0.237709 (-4.139)***	-0.153819 (-2.320)**
Ln (wage)* Dummy	0.436829 (1.397)	-0.039967 (-0.233)	-0.141107 (-0.713)
Ln (COC)* Dummy	-0.163643 (-0.567)	-0.659568 (-4.169)***	-0.714885 (-3.915)***
Ln (COFC)* Dummy	-0.374394 (-2.176)**	0.149591 (1.586)	0.005954 (0.055)
ROE	0.006209 (0.862)	0.035157 (8.902)***	0.035486 (7.784)***
MS	0.019457 (0.509)	0.291765 (13.948)***	0.279130 (11.561)***
HHI	-0.011102 (-1.736)*	-0.002337 (-0.667)	-0.001955 (-0.483)
R-squared	0.057066	0.692932	0.769784
F-statistic	3.274808***	122.1076***	180.9334***

Source: Data processed

* p<0.1; ** p<0.05; *** p<0.01

Without separated income to be interest income and non-interest income, this study found that wage rate, cost of fixed capital and market share based on asset size (HHI) were directly and significantly influenced to total revenue of bank. Conglomeration only influenced to total revenue through cost of fixed capital. In the second column, which we ignored non-interest income, wage rate had not significant influenced to bank's total revenue, but cost of capital and cost of fixed capital. Conglomeration were influenced through cost of capital. Equity was matter here. Wage rate, cost of capital and cost of fixed capital had directly and significantly influenced to total revenue of bank, if we ignored interest income. The coefficient values of this estimation used to calculate the value of H statistic of Panzar-Rosse Model on equation (8).

Table 4. The Level of Indonesian Banking Industry Competition

Competition	(1)	(2)	(3)
Standard H	(0.233)	0.712	0.954
Delta H	-0.101	-0.55	-0.85
Adjusted H	(0.335)	0.162	0.104

Source: Data processed

Different with H standard, which calculates original Panzar Rosse model competition, Adjusted H calculates multiproduct bank which offering classical bank product and non-classical product bank at once. Adjusted H value is lower than Standard H. These findings are supported by Barbosa, Rocha, and Salazar studies

(2015), which showed that the Delta H values from all the estimations were negative. It indicated that when banks offering classical and non-classical product at once, its market power would increase and its market structure would tend to be monopolistic with a low-level competition. Therefore, the result of this study proved the second hypothesis that the market power increased by the existing of financial conglomeration.

The table 4. above also shows that the differences in assuming and measuring bank income can produce different results. In column (1), the bank income used is the natural logarithm of the total assets, which is the sum of interest and non-interest income, the result showed that market structure of the Indonesian banking industry was a monopoly or oligopoly which lead the dominant firm. H-statistic under 0.5 also indicated less competition and fragmented banking market (Claessens, 2009). However, when it used interest income only or non-interest income only (column (2) and (3)), the result was monopolistic competition, since the higher H-statistic means higher competition. These findings are supported by the studies from Athoilah (2010), Widyastuti and Armanto (2013) and Claessen and Leaven (2004).

Consistent with Claessens and Laeven (2004), and Claessens (2009), this competitiveness measure no relates to the number of banks in the market. This study agree that market structure cannot reflect the competition. On same number of banks, there are possibility to offer another product that give banks opportunity to enjoy scope economies. In other word, contestability determines the competition.

CONCLUSION

This study aimed to analyze the existence of economies of scope and form of banking industry competition in Indonesia. The results of the data analysis of 103 banks in 2010-2014 showed that there were economies of scope obtained by financial conglomeration banks which offering classic and non-classic products, especially in non-foreign exchange banks, foreign exchange banks, and joint venture banks. By inserting the financial conglomeration into the Panzar-Rosse model, it can be concluded that conglomeration increased the market power, and decreased the levels of competition. Moreover, this study also found that the economies of scope also increased the market power. Therefore, the trend of financial conglomerates as the bank competition strategy will decrease the level of competition.

This study suggests that further on this issue could extend this study by investigating the relationship of less competition impacted by financial conglomeration with financial stability. This would complete the consideration of bank managers to choose offer classical bank product only, or also non-classical product, without endangering the financial stability of bank.

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