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Atmosphere of Market Structure in Islamic Rural Banks of Indonesia

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Abstract: Islamic Rural Banks in Indonesia are well-known for their characteristics of targeting local customers. The purpose of this study is to investigate the determinants of total amount of income and to analyze the degree of competition among Islamic rural banks using Panzar-Rosse model. The results show that total operating income is significantly influenced by price of funds, price of labors, total equity, and non-performing financing while price of capital and total financing give insignificant impact. This study also finds a monopolistic market competition faced by Islamic rural banks in Indonesia with a niche market of micro, small, and medium scaled of enterprises.

JEL Classifications : G21; L10

Keywords: (islamic rural banks in Indonesia, degree of competition, market structure, panzar-rosse)

I. INTRODUCTION

As an inseparable part of Islamic banking industry in Indonesia, Islamic Rural Banks (BPRS) have been growing rapidly for the last few years. The growth can be seen from the increase of several indicators such as total amount of asset, total amount of financing, and total amount of third-party fund which reach up to 219.78%, 242.51%, and 226.83% from 2010 to 2015, respectively (Fig. 1). This vast development shows that BPRS still have much potentials to grow further and thus, to contribute to the economy by providing financial services to less bankable customers in suburbs and remote areas, particularly in the east region of Indonesia which is not supported by as many banks as in the west region.

Given the immense potentials to expand the market, BPRS should balance between the amount of income yielded and the amount of cost invested in order to maintain their position in the market as well as to compete with other BPRS units. It is highly important for BPRS to remain profitable because they are likely to face difficulties in operating their businesses without adequate amount of income. Thus, an analysis

in regards to the determinants influencing BPRS's income is becoming essential to be evaluated. Those determinants come into two forms of variables : input costs and banks-specific factors. Interestingly, the influence of input costs on income also translates to the market structure or level of competition faced by BPRS using Panzar-Rosse (P-R) model.

Shepherd (1990) defines competition as the act of rivalry among economic stakeholders in order to get the same target, within the same duration of time, and at the relatively same standing point or conditions. A competitive banking system is highly important to achieve an effective intermediation between financing customers and funding customers. A competitive banking industry is also a drive to achieve innovation and to improve the quality as well as quantity of financial products (Carbo et al. 2009). In addition, Bikker (2002) opines that competition is crucial for an effective monetary policy transmission which leads to financial wealth of banks, financial stability, and at some points, distribution to micro, small, and medium enterprises (MSME).

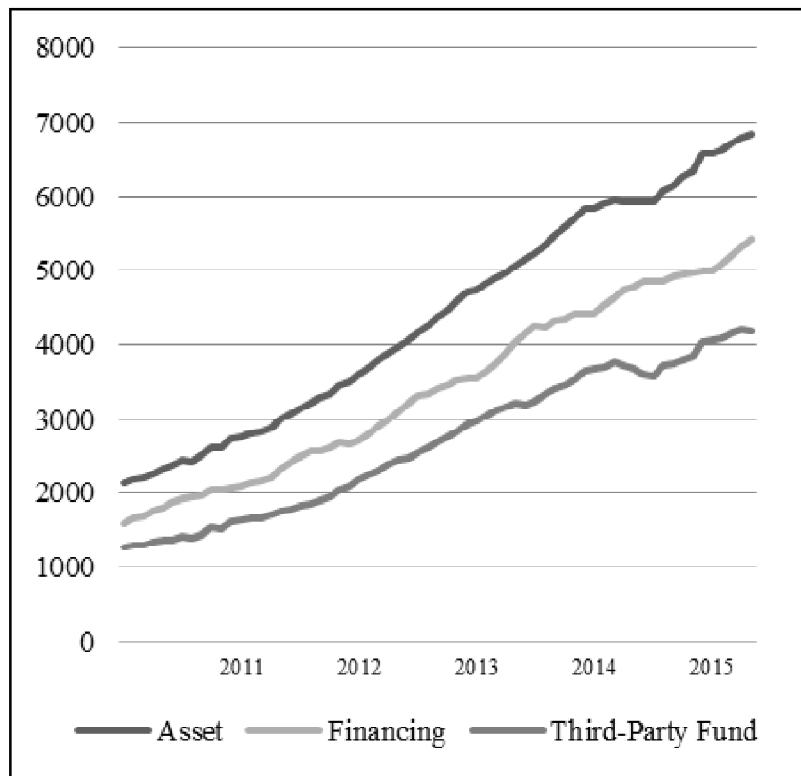


Figure I: The Development of BPRS in Indonesia (in Billion)

Source: Sharia Banking Statistics October 2011-2015

Therefore, the purpose of this study is to examine : (1) The determinants which influence total amount of income yielded by BPRS, and (2) The market structure encountered by BPRS industry in Indonesia aggregately. The results of this paper are expected to amplify the roles of BPRS in providing services to unreachable customers in remote or suburbs areas by expanding their businesses while maintaining the competition stability among BPRS units.

This paper is structured as follows : Section 1 introduces the research background. Section 2 provides an overview of previous literature while section 3 describes the data and empirical model used in this study. The results are shown and discussed in section 4. Finally, the concluding remarks are provided in section 5.

II. LITERATURE REVIEW

A growing body of literature has investigated the degree of banks competition using non-structural approach, P-R model, in numerous countries and emerging economies. Using data of 18 banks over a span of 2009-2014, Abel and Roux (2016) finds a monopolistic competition in Zimbabwe. Their findings indicate that the competition has been increasing over the years. The results also show that control-regulation has been effective to limit the level of competition in a highly-liberalised market.

Barros and Mendes (2016) consider competition as a very crucial element of banking industry. Utilizing 15 banks from 2005-2014 in Angola, they discover a monopolistic competition among banks. Since a bootstrap procedure is used, the small data span can be overcome. However, there is an inconsistency among the equation models which they use to calculate the value of H-stat.

Apergis (2015) assesses a competition across the banking systems in 21 emerging economies for a total of 436 banks during the period of 2000-2012. The empirical findings are not only robust, but are also consistent with previous studies which discover a monopolistic competition in all countries under investigation. However, the paper build only one estimation P-R model for all of the countries investigated, resulting in a generalization of H-stat value. The use of this method can be fatal since some economies operate in different level of competition compared to some others.

Didenko and Bohma (2016) analyse the competition in deposit market of Ukraine, spanning from 2005 to 2015. The paper highlights a monopolistic competition in every years except for 2009. The value of H-stat index has a negative sign in 2009 due to a major financial crisis. The negative index shows not only a monopoly competition in the market, but also conjuncture changes in the market structure which resulted in an imbalance market.

Kuzucu (2015) examines the concentration and the competition of banking industry in Turkey for the period of 2002-2012. Using Herfindahl-Hirschman Index (HHI) as an indicator, the result shows an increasing level of concentration from 2000 to 2005 yet it remains stable until 2012. Moreover, the competition level measured by P-R model indicate a monopolistic competition from 2000 to 2011, yet it reaches a perfect market competition in 2012. The entry of some foreign banks into the market might be a driven factor to this situation.

Barbosa, Rocha, and Salazar (2014) analyze the competitive aspects of multi-products and services of Brazilian banking institutions. The result proves that banks with only classic products have substantially a weaker market power than banks with both classic products as well as other banking products.

Syofyan and Usman (2016) examine a foreign penetration in ASEAN banking sector and an impact toward the competition from 2002-2014. The P-R statistics display a monopolistic for all countries, despite the different levels of H-stat. Malaysia and Vietnam are recorded as the most competitive compared to other countries. Meanwhile, Thailand is shown as a country within ASEAN region with the least competitive banking industry. The research also finds a negative relationship between penetration of foreign banks and banking competition in ASEAN.

As for banking sector in Indonesia, Cupian and Abduh (2017) comes into conclusion that Islamic banks operate under monopolistic competition during the period of 2006–2013. Despite the high concentration rate of several largest banks, the study finds no significant relationship between concentration and competition. Thus, the research proves that the market power of few largest Islamic banks is gradually decreasing.

In another research, Cupian and Abduh (2016) investigate the competitive environment and the market power of 27 Islamic commercial banks and 106 conventional commercial banks in Indonesia. The result shows that banking industry in Indonesia earned income in a monopolistic competition market. Yet Islamic banks face a relatively less competitive condition compared to conventional banks. In other words, market power is relatively higher in conventional banks rather than Islamic banks.

III. METHODOLOGY

For the empirical analysis, a time-series data of BPRS from June 2010 to May 2015 would be used in this study. The data are obtained from Sharia Banking Statistic reports that are published monthly on the official website of both BI as well as Financial Service Authority (Otoritas Jasa Keuangan or OJK).

The literatures on the competitive environment are divided into two main approaches: the structural approach and the non-structural approach. The non-structural approach is formerly a reaction to flaws recognised on structural approach. This approach is developed into several models, i.e. the Iwata model, Bresnahan model, Monti-Klein model, Modesto-Barros model, and Panzar-Rosse model.

Abduh (2017) classifies two prepositions of banks in the past literature about financial institutions, namely the production approach and the intermediation approach. While the production approach considers bank as a producer of financial services and products, the intermediation approach finds bank as an intermediary between funding customers and financing customers. The latter approach has been used more frequently compared to the former one since it is considered to be more suitable for bank institutions.

According to Hamza (2011), P-R model is by far the most used and the most effective method to determine market structure in banking industry. The main concept of P-R model is that firms will employ different pricing strategies due to changes in input prices which depends on competitive environment in the market. Hence, the degree of competition can be identified by analysing how income responds to changes of input prices. In reality, measuring the most accurate indicators for these input prices may be difficult (Bikker *et al.* 2012).

Claessens (2009) identifies three ways in measuring competition : market structure, regulatory, and formal competition indicators. The market structure or structure-conduct-performance (SCP) links between the market structure and performance of bank through a change of business conducts. Traditional hypothesis (TH) and efficiency hypothesis (EH) are the results of this SCP model. The regulatory system relies on how regulator create requirements such as barrier entry, foreign penetration, and activity restrictions among others to gauge the degree of contestability. Meanwhile, the formal approach measures a competition by substituting the reaction of output to input prices i.e. P-R model.

In this paper, a P-R model will be used to examine the level of competition among BPRS. Shaffer (1982) is the first scholar to apply P-R model in banking industry. He finds a monopolistic competition

using American banks as the objects. There are basically three assumptions of P-R model : single-output firms, a homogeneous cost structure, and a price of elasticity demand greater than one.

According to Bikker and Haaf (2002), the P-R model is derived from a general banking model with purpose to maximize profits for each bank units and banking industry in order to determine the equilibrium output and the equilibrium number of banks. Thus, the implication is that bank i and the banking industry at the market level will maximize its profits under the equations as follow :

$$R'_i(x_i, n, z_i) - C'_i(x_i, w, t_i) = 0 \tag{1}$$

$$R^*_i(x^*, n^*, z) - C^*_i(x^*, w, t) = 0 \tag{2}$$

The first equation refers to profit maximization at bank level while the second one to market level in equilibrium. R_i means revenue and C_i means costs of bank i (the prime denoting marginal), n_i is the number of banks, x_i is the output variable, z_i is the vector from exogenous variables shifting the revenue function of bank i , and t_i is the vector from exogenous variables shifting the cost function of bank i . Variables with asterisk (*) in the second equation indicate equilibrium values.

$$H = \sum_{k=1}^m \frac{\partial R_i^*}{\partial w_{k_i}} \frac{w_{k_i}}{R_i^*} \tag{3}$$

Based on the third equation above, the market power can be measured to the degree where a change of input prices influences a change of the equilibrium revenues yielded by bank. Thus, Panzar and Rosse give a definition for the degree of competition H as the sum of elasticities of the reduced-form revenues relative to input prices factors.

Before analysing the degree of competition among BPRS, many studies also incorporate an equilibrium test. In this case, a P-R model will only be valid if the market is in equilibrium. The proporsition of this test is that risk-adjusted rates of return in competitive market will be adjusted equally across banks. In order to do that, a value of H-statistic in P-R model is calculated by replacing the income as dependent variable with profitability level or return on asset (ROA) using the same exact composition of independent variables. The equilibrium of H-statistic is defined as $a_1 + a_2 + a_3$ (Eq 4). The result of equilibrium statistic (E-stat) must not denote a statistically significant different value than zero to prove the existence of long-run equilibrium. However, the result of equilibrium test might be meaningless to this research since Indonesia is still considered as a developing country (Fahmi 2012).

The following models of P-R are used as follow:

$$\text{Log ROA}_t = a_0 + a_1 \log PL_t + a_2 \log PK_t + a_3 \log PF_t + a_4 \log EQ_t + a_5 \log F_t + a_6 \log NPF_t + e_t \tag{4}$$

$$\text{Log TINC}_t = b_0 + b_1 \log PL_t + b_2 \log PK_t + b_3 \log PF_t + b_4 \log EQ_t + b_5 \log F_t + b_6 \log NPF_t + e_t \tag{5}$$

where, TINC is total amount of operating income and other operating income, PL is price of labors which is calculated from cost of training and education for employees, PK is price of capital which is calculated from subtraction between operational cost and cost of labors, PF is price of funds which is calculated from profit sharing for unrestricted investment, EQ is total amount of equity, F is total amount of financing, NPF is total amount of non-performing financing, and e is a stocastic term. Total amount of assets (TA) are used as scaling factor for all variables in the model. The decision to consider dividing variables by total asset is to account for size differences.

There are considerable adjustments made in the equation model due to characteristics of BPRS. While some studies use total interest revenue as dependent variable (Bikker and Haaf 2002), this study uses total amount of operating income instead because of the low fee-based income at BPRS. In October 2016, only 1.76% of total income generated by BPRS comes from fee-based products (Financial Service Authority 2016). This study also neglects an equilibrium test which is suggested by Shaffer (1982) since the result would be less useful for developing countries like Indonesia.

The P-R model defines a measure of competition H (H-stat) as the sum of the elasticities of the reduced-form income with respect to several input prices. These input prices consist of price of funds (PF), price of labours (PL), and price of capitals (PK) which jointly generate a value of H-stat. Subsequently, this value of H-stat will determine competitive environment that BPRS are facing (see Table 1). As previously noted, a perfect market competition and monopoly equilibrium are rarely seen and almost hypothetical. Thus, BPRS are estimated to face a monopolistically competitive market. Nevertheless, the size difference of H-stat value is still important to discuss because a higher H-stat indicates a lower market power while a lower H-stat tends to show a more concentrated market.

Table I
Discriminatory Power of H-stat and E-stat

<i>Values of H-stat</i>	<i>Degree of Competition</i>
$H \leq 0$	Monopoly equilibrium and oligopoly competition.
$0 < H < 1$	Monopolistic competition.
$H = 1$	Perfect competition.
<i>Values of E-stat</i>	Equilibrium Situation
$E < 0$	Disequilibrium
$E = 0$	<i>Equilibrium</i>

IV. RESULTS AND DISCUSSION

In the section of this paper, the estimated models generate H-statistic which calculates the sum of elasticities of total operating income and ROA at BPRS with respect to their input prices.

Before measuring the degree of competition among BPRS, this study runs a test in order to ensure that the model is in long-run equilibrium. Table 2 displays the value of equilibrium statistic (E-stat) at -0.13. Even though the index is not shown to be an exact zero, the result of equilibrium test does not affect much in a developing economy like Indonesia. To strengthen the argument, Shaffer (2004) highlights that the rejection of equilibrium test means that the industry still develops dynamically. Thus, the result can be neglected as long as the value of H-stat is positive.

Table 3 displays the results of P-R estimation model at BPRS in Indonesia. The H-statistic of 0.93 is obtained from coefficients calculation of price of funds and price of labor while price of capital is excluded due to insignificant probability at the 5% level. The coefficient indicates that an increase of total income by 1% generally followed by 0.93% increase of total cost. The small difference between total income and total cost suggests that it is very costly for BPRS to increase their income. To overcome this problem, merger and acquisition could be the solution for commercial banks. However, this solution is highly unlikely for smaller

Table II
Regression Result (Y = ROA)

<i>Key Variables</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>P-Value</i>
<i>Constants</i>	-5.41	-10.33*	0.00*
<i>Price of Funds</i>	-0.39	-4.44*	0.00*
<i>Price of Labour</i>	0.26	2.36*	0.02*
<i>Price of Capital</i>	0.08	1.18	0.24
<i>Total Equity</i>	4.29	9.88*	0.00*
<i>Total Amount of Financing</i>	3.59	3.20*	0.00*
<i>Total Amount of NPF</i>	-1.20	-4.93*	0.00*
<i>E-Statistic</i>		-0.13*	
<i>F-test</i>		0.00*	
<i>R-Squared</i>		0.92*	

Note: *5% of level significance

banks like BPRS. Thus, BPRS need to find a way to increase their level of efficiency. The strategy to discontinue borrowing money from Islamic commercial banks (Bank Umum Syariah or BUS) and Islamic Business Units (Unit Usaha Syariah or UUS) which is relatively most expensive could be the solution to this issue.

The result of H-statistic can also explain the degree of competition faced by the firms in the industry. If the H-statistic falls between 0 and 1 of the scale, the market face a monopolistic competition. In this case, a monopolistic competition is suggested as the best description of competitive environment encountered by BPRS. This finding comes as no surprise considering that BPRS are scattered across Indonesia while the size of each are relatively small. The reason of this scattered pattern is that central bank of Indonesia (Bank Indonesia or BI) is highly selective in allowing the establishment of new BPRS due to the different market situation in every district areas. This action is taken to avoid the existence of abandoned

Table III
Regression Result (Y = Total Income)

<i>Key Variables</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>P-Value</i>
<i>Constants</i>	1.92	6.30*	0.00*
<i>Price of Funds</i>	0.16	2.91*	0.01*
<i>Price of Labour</i>	0.77	11.72*	0.00*
<i>Price of Capital</i>	0.05	1.33	0.19
<i>Total Equity</i>	1.23	5.01*	0.00*
<i>Total Amount of Financing</i>	0.73	1.08	0.29
<i>Total Amount of NPF</i>	-0.53	-3.60*	0.00*
<i>H-Statistic</i>		0.93*	
<i>F-test</i>		0.00*	
<i>R-Squared</i>		0.98*	

Note: *5% of level significance

banks which might lead to financial instability. Abel and Roux (2016), Gutiérrez de Rozas (2007), and Bikker and Haaf (2002) support the result of this study by arguing that monopolistic is the most ideal type of competition in the banking sector due to products differentiation.

In competing with each other, BPRS face two types of competitions i.e. price war and non-price competition. The price war is the most common type of competition in the banking industry where BPRS offer competitive rate of returns for deposit and loan products. On the contrary, non-price competition stresses on the service excellence. As rural banks, BPRS need the latter aspect to make a strategy based on local approach. Yet when it comes to tangible assets or technology to support service excellence, BPRS are still far away from commercial banks like BUS and UUS.

Owusu-Antwi and Antwi (2013) believe that larger banks encounter a relatively more competitive environment compared to smaller banks. In Islamic banking industry of Indonesia where BUS and UUS are considered as larger banks and BPRS are smaller banks, there is no significant distinction of H-stat among BUS, UUS, and BPRS. For instance, Iman (2009) who analyses BUS-UUS in 2003-2008 and Fahmi (2012) who examines BUS-UUS in 2005-2010 find H-statistics at 0.997 and 0.91, respectively. The values of H-statistic from both studies are almost equal to BPRS' in this study (H-stat = 0.93). These evidences reveal that size of banks is not necessarily related to the competitive behaviour of each types of banks .

The high value of H-statistic at 0.93 reflects a non-collusive market situation faced by BPRS. It also suggests that the generated income is highly sensitive towards changes of input prices. However, it is noteworthy that a perfect market competition is very unlikely to occur in financial industry, in particular for domestic market (Rahardja and Manurung 2004). Thus, a value of H-statistic at 1 is rarely to be found in studies about competition among banks.

According to previous researchers, there are two different views on how the degree of competition and market structure are related to each other. AL-Qaisi (2016) is convinced that a high value of H-statistic is associated with a low concentration level. Conversely, Claessens and Laeven (2004) believe that level of competition does not necessarily related to the market structure. As for BPRS in Indonesia, the concentration rate of six largest bank (CR6) only reaches up to 29% with the H-statistic value of all BPRS agregately at 0.93. This pattern supports the former view which states that the relationship between the degree of competition and concentration rate is reversed.

Even though BPRS, BUS, and UUS are competing each other and are facing monopolistic market competition, BPRS enjoy the advantage over niche market in a form of micro, small, and medium enterprises, especially in remote areas or suburbs. Despite the advantages of having a niche market, the market remains highly competitive due to several major factors such as unregulated market boundary among BPRS in each districts and competition characteristics in Islamic banks.

By far, there has been no regulation which arrange to balance the numbers of BPRS operating in each districts. The absence of regulator in this particular issue opens up the possibility of a greater concentrated BPRS in some districts while some others are lacking of rural bank's support. A highly competitive market is formed as a result of too many competitors within the same region. On the contrary, some other districts in east region of Indonesia e.g. Papua, Nusa Tenggara, and Maluku have very few BPRS. To overcome this situation, the role of government is extremely needed to control the numbers of BPRS operating in every regions.

Since big cities have already been occupied by BUS and UUS, the government can offer incentive of lower capital requirement for BPRS to be established in remote areas, especially in east region of Indonesia. The procedure of opening new offices should also be eased in order to expand financing service to unreachable districts. In addition to the regions which have already been concentrated by BPRS, a system to determine capital floor and capital ceilings is encouraged to be incorporated into the regulation. The purpose of this system is to avoid any kinds of domination by few largest BPRS in one area and to maintain a less heterogenous market. Furthermore, too many BPRS in some certain regions will make it more difficult for regulator to control the market (Iman 2009).

Unlike conventional banking, Islamic banking has a different concept in which the competition among banks is not merely about maximising profit level. The ultimate objective of conventional banking is to reach a maximum profit without any moral boundaries. A maximum profit will be achieved when marginal revenue equals to marginal cost ($MR=MC$). In Islamic banking, including BPRS, the competition should not harm other parties like competitors and customers. Having said that, Islamic banking does not prohibit competition for seeking profit. Profitability should be earned while maintaining the market justice.

As displayed in Table 3, price of funds variable has a significant coefficient at 0.16 with probability value at 0.01. The coefficient illustrates that a higher investment on funding customers leads to an increased of income yielded by BPRS. Since the coefficient value is less than 1, the influence given by price of funds is rather inelastic. In other words, the income growth will not be as high as the boost for price of funds in percentage. A positive significant influence of price of funds on total income has also been found in the majority of past studies, both Islamic banks as well as conventional banks (Le 2014 ; AL-Qaisi 2016). The reason behind these similar results is most likely because third-party funds hold the primary key to attract more customers, thus increasing the income yielded by banks.

Compared to price of funds, price of labours shows a greater coefficient value at 0.77 and p-value at 0.00. This result indicates that a higher distribution on training and education for employees will boost the total income. There is an explanation to this relationship in which providing employees with better education and training program translates to an enhanced of labour productivity. An increasing productivity of labour eventually contributes to a rise of total income. Despite the significant impact, price of labours resembles similiar characteristic as price of funds e.g. inelastic influence. For this reason, a percentage increase of cost on labours will still be higher than a percentage increase of income at BPRS.

Interestingly, price of labours has the highest value of coefficient as well as the most significant probability compared to the other two input prices at 0.77 and 0.00, respectively. Numerous research find the opposite result such as Fahmi (2012), Kuzucu (2015), and Apergis (2015), in which the price of funds tend to dominate the changes on total income. The difference can easily be interpreted by characteristic of BPRS which is very locally driven. In order to understand the local approach, BPRS heavily rely on their workers to make a strategy out of it. The high coefficient value from price of labours can also be explained by multitasking practice as a working culture at BPRS. On the contrary, previous research often focus on commercial and saving banks which mostly are located in urban areas. Commercial and saving banks also have a more precise job division compared to rural banks like BPRS.

Among all input prices, price of capital is the only variable with a non-significant influence on total income. There are two main causes of this insignificant relationship: low level of capital and less tangible

assets. Being rural banks, one of the most well-known feature of BPRS is their low level of capital. Hence, an improvement on capital will not increase total amount of income significantly. Lack of tangible assets such as automatic teller machines (ATM) and new office buildings is also another form of weakness faced by BPRS. Since an investment on tangible asset is barely executed, changes on capital cost gives insignificant impact on the income growth. These two factors are actually characteristics of niche market which is locally driven in typical rural banks like BPRS.

In order to get a strong model representation, some control variables including total amount of equity are incorporated into the model. Of all independent variables, total equity demonstrates the biggest influence on total income which is shown by a coefficient value at 1.23 and p-value at 0.00. Being rural banks, the requirement of minimum capital to establish BPRS is much lower than larger banks like BUS and UUS. A problem arises when this situation is followed by a high-priced yet short-term source of funds which come from time-deposits and loans from other banks. To overcome the situation, BPRS opt to distribute a greater amount of financing by utilising their own equity. The decision to make use of total amount of equity for financing purpose is what induces an elastic relationship between equity and income of BPRS.

Total amount of financing is another independent variable with an insignificant influence on total income due to probability value higher than 5%. Even though the p-value is not satisfying enough, the positive sign of coefficient value has already been consistent with the theory where a higher distribution of financing leads to a rising income. However, at some points BPRS often allocate credit to non-worthy customers which often cause non-performing financing (NPF) issues.

According to Table 4, NPF is shown to be negatively significant with a coefficient value at -0.53 and p-value at 0.00. The result indicates that an increased of NPF reduces total amount of income earned by BPRS. Being a second layer industry, BPRS often receive financing application from non-worthy customers who are unbankable or formerly been rejected by BUS and UUS. When these type of customers are failing to meet their responsibility, the process of collecting loan payment will not proceed smoothly. These circumstances lead to a higher financing risk which is followed by a decreased of total income. This negative relationship between bad loans and total income is supported by Iman (2009) who analyses BUS and UUS in Indonesia during 2003-2008.

Throughout the years, BPRS have demonstrated a poorly performed of NPF ratio compared to BUS and UUS. BPRS and BUS-UUS reached NPF ratios at 9.98% and 4.43% per February 2017, respectively. Despite the large disparity, there is a different standard of measure between BPRS and BUS-UUS. In accordance with codification of Islamic banking regulation, NPF ratio at 9.94% is still classified as “good” for BPRS, but “poor” for BUS and UUS. Without any proper treatment to control their financing risk, a repeatedly increasing NPF will be dangerous for performance of BPRS in the future.

Since BPRS and BUS-UUS are placed in a diverse geographical conditions, a visible distinction of NPF appears between eastern and western region in Indonesia (Fig. 2). It can be seen that both types of bank tend to have a slightly lower NPF rate in the eastern region. Meanwhile, banks of the western region struggle more due to fiercer competition among high number of banks, creating a less efficient market. This situation reveals that a highly competitive market will force banks to offer more appealing rate of return for desposit customers, but also high-priced financing for loan customers at the same time. As a

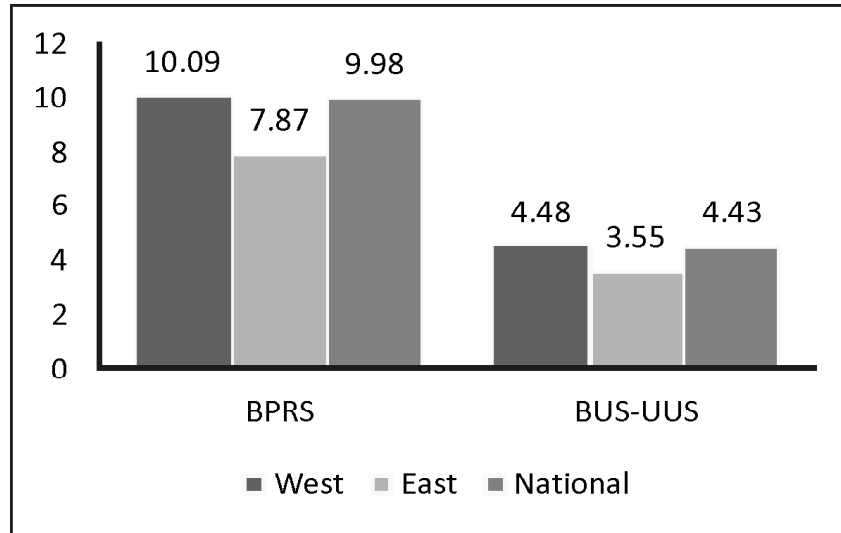


Figure II: Comparison of NPF ratio (In Percentage)

Source: Sharia Banking Statistic February 2017

result, a relatively higher NPF rate is yielded. On the contrary, the eastern region is occupied by fewer banks, resulting in a less competitive market yet more efficient banks. Consequently, banks operating in the eastern region face a lower financing risk. Muhari and Hosen (2015) who investigate the efficiency level of BPRS in eastern and western regions of Indonesia also find similar results.

V. CONCLUSION

The operating income gained by BPRS is influenced by several factors which consist of price of funds, price of labours, total amount of equity, and non-performing financing. Meanwhile, price of capitals and total amount of financing give insignificant impact on income of BPRS. The results show that price of labours have a bigger influence on total income among any other price variables. The dependency of BPRS in their employees is due to characteristic of BPRS which is very locally driven. Thus, a certain strategies are required to approach the local customers where BPRS rely upon on the employees. Moreover, total amount of equity is an independent variable with the biggest influence on income of BPRS. Being a second layer industry, BPRS depends heavily on the amount of financing distributed to customers in order to increase the income which lead to the use of equity for financing purpose.

This study also demonstrates a monopolistic market competition among BPRS. Despite the niche market owned by BPRS, the competition remains highly competitive. The scattering numbers of BPRS across Indonesia, while the size of them are relatively small, are the best explanation to this finding. The result also implies that BPRS do not practice any collusive behaviours due to two major factors which are an unregulated market boundary among BPRS and characteristic of Islamic banks which emphasises on market justice.

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