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The Structure of Indonesian Banking and Insurance Industry

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Abstract: As a bank-based country, Indonesia currently has more than 100 banks managing most of country's financial assets. In addition, there is also a large numbers of insurance companies operating in Indonesia. Despite the numbers of bank and insurance companies, market shares are dominated by only few big companies. Meanwhile, a plenty of smaller companies are competing for the remaining market shares. This paper investigates the market structure of banking and insurance industries, using market power and concentration ratio as main indicators. Panzar-Rosse H Statistics was employed to measure the market power and Herfindahl-Hirschmann Index (HHI) to measure market concentration. The result shows there are market power and high competition in Indonesian banking and insurance industry. These findings confirm the 'too-big-to-fail' theory, in which certain companies are so large and interconnected that this interconnection will, as a result, provides kind of 'incentive' for companies to take more risk since there is a possibility to shift the loss from shareholders to taxpayers.

Keywords: bank, insurance, market power, competition

JEL Classification: D42, G21, G22

INTRODUCTION

In the last few years, there has been an issue regarding an indication of cartel practice in the banking and insurance sector in Indonesia. The issue is raised due to the high interest rate charged to customers getting loan from banks that is suspected to be determined by few number of banks and the quotation of premium in the insurance industry set by the insurance association. This practice is said to be disadvantageous for the customers since they need to pay higher costs for the transactions.

As a bank-based country, with more than half of country's financial assets are managed by banks, it is important to ensure that the industry has a fair system for the stakeholders including the customers. Despite the large number of banks, the banking industry is dominated by only few number of banks which might affects their market conduct.

A similar structure is also observed in the insurance industry, where the market share is dominated by few large companies. This large companies have the ability to indirectly set the premium quotation. The premium is set by the insurance association, in which large companies have large power to control. Small companies are prone to experience disadvantages from this market structure. Besides, this situation can be unfavourable to customers because they have to pay higher premiums set by the association instead of paying the market price.

This domination could lead to the issue of market power and concentration in the industry, ranging from perfect competition to monopoly structure of market. Market power is defined as a situation where there are many companies in the industry and they will set the price equal to the cost in order to win the market share. Concentration is defined as a situation where there is only one firm in the industry and has the ability to set the price higher than its cost.

In addition, market power and competition can be related to the theory of 'too-big-to-fail', which explains that big companies will be rescued to prevent systemic failure in the financial system. It will, as a result, provides an incentive for these companies to take more risk since there is a possibility to shift the loss from shareholders to taxpayers.

Evidence shows that countries which provide more subsidies for 'too-big-to-fail' case have led the banking sector to be engaged in more risk-taking activities compared to banking companies in countries with less subsidies (Soedarmono *et al.*, 2012). Another study by Ching et al. (2015) finds that a concentrated banking market could lead the banks to charge higher rates for the customers. This implies that business risk will be higher because the cost is higher for customers to repay.

This highly concentrated market allows for the occurrence of cartels. In the presence of cartels, companies are working together to set the price to the customers. This brings disadvantages for the customers because they are forced to accept the predetermined price instead of the market price.

Customers are one of the most important parts in the banking industry. It is very important to map the concentration, market power, and competition in the Indonesian banking and insurance industry to avoid any disadvantage faced by customers. The mapping is also important for the regulatory bodies as the basis to conduct policies.

This article begins with the introduction explaining the importance of assessing market power and concentration in banking and insurance industry, followed by the literature review in the second part. The third part provides the data and methodology, followed by analyses of the result in the fourth section and conclusion in the fifth section.

LITERATURE REVIEW

The theoretical framework of market power and concentration is based on two different approaches, structure-conduct-performance (SCP) and revenue test (Delis *et al.*, 2008). The former explained that highly concentrated market causes collusive behaviour among the larger banks and creates monopolistic profits, resulting in superior market performance (Ching *et al.*, 2015). On the other hand, there might be another possibility related with the efficiency hypothesis explaining that it is the efficiency of larger banks that enhances their performance.

The basis of the test is that in equilibrium, profit-maximizing firms will choose prices or quantities such that marginal cost equals their perceived marginal revenue, which coincides with the demand price under perfect competition and with the industry's marginal revenue under perfect collusion. In addition, SCP hypothesis assumes that the market concentration will lead to a condition where banks deviate from the social viewpoint (Berger *et al.*, 2004).

SCP theory might not work well in the banking industry due to special features embedded in the banking industry compared to other industries, such as information asymmetry in corporate borrowing, switching costs in retail banking, and network externalities in payment systems (Apergis*et al.*, 2015). Panzar and Rosse (1987) proposed a revenue test that relies on the premise that each bank will employ a different pricing strategy in response to a change in input costs, depending on the market structure in which this bank's operation implies that it accounts the condition of industry in calculating the market power in the banking industry.

A highly concentrated market is being defined as the domination of few large banks in the industry, which could lead to a lower competition that implies higher risk exposure from the banks and the reluctance to take any risky projects (Delis *et al.*, 2008; Ching *et al.*, 2015). In addition, the behaviour of concentrated market is different in developed and developing economies. A developed economy has a lower concentrated market, which can be the result of better regulation in financial sector. On the other hand, a higher concentrated market has higher efficiency in rich countries, and this is somewhat in contrary with the previous findings (Claessens and Laeven, 2004). Besides, there is a finding that the concentration of market cannot be correlated with competition since the former might not provide any explanation for the latter (Casu and Girardone, 2006).

Meanwhile, high competition can be affected by the existence of foreign ownerships in banking companies, the establishment of investor protections by the government, low level of safety nets, and limited guidance for bank asset diversification (Anginer *et al.*, 2012). Those activities established by the government could also lead to risk taking behaviour by banks, which is affected by the restriction of activities, deposit insurance level, government ownership of banks, and public policies that restrict competition.

Based on the previous research, high competition leads to better efficiency because banks will try to be as efficient as possible to provide the services in order to be able to compete with other banks in the industry. This leads to higher quality of services and more advanced innovation incurred by the banks (Claessens and Laeven, 2004). Higher competition will lower the average loan rates by each bank because there is no particular bank that dominates the loan distribution resulting in lower banking risk and the probability of default in banking industry (Liu and Wilson, 2013). At the end, high competition will create a stable environment (Apergis*et al.*, 2015).

DATA & METHODOLOGY

This section explains the data and methodology used for analysing the competition in the banking and insurance industries in Indonesia. Banks annual data are collected from Central Bank of Indonesia and Indonesian Financial Service Authority for the period of 2002 until 2015, excluding the Islamic banks. The data being collected is total assets, total equity, total liabilities, interest income, other income, interest expenses, labour costs, overhead costs, total credit, placement in other banks, and deposits.

Regarding should be eliminated the insurance industry, the data is collected from Indonesian Financial Service Authority for period of 2009 up to 2013 by taking the total assets of the insurance companies.

To calculate market concentration in both industries, this study applies Four-firm Concentration Ratio (CR4), Eight-firm Concentration Ratio (CR8), and Herfindahl-Hirschmann Index (HHI). Panzar-Rosse H Statistics is used to measure the market power.

CR4 is measured by combining four companies that have the highest market shares, in which a ration of more than 50% indicates that the structure is oligopoly. On the other hand, if the ratio is less than 20%, it implies that the industry is very competitive. Considering that should be eliminated four companies is quite small, CR8 provides the possibility to combine eight companies with the highest market shares with the interpretation that a ratio higher than 75% indicates an oligopoly structure in the market.

The disadvantage of using the concentration ratio is that it does not take into account the degree of bigger companies, for instance four companies with 20% of market share each will have 80% of market power in total. However, the industry can also have 80% of concentration ratio when the distribution of market share is 65%, 5%, 5% and 5%, implying that the latter distribution is less competitive because there is only one company that dominates the industry compared to the former distribution of 20% each. HHI calculates the market power by taking the square form of the market share of each company and sum all the companies' values. When the value of HHI is higher than 1,800, it indicates that the industry has oligopoly structure while shuld be eliminated the value is lower than 1,000 implies that the industry is competitive.

The market power indicator, Panzar-Rosse H Statistics, calculates the sensitivity of interest income of banking institutions towards the change in input price. The competitive attitude from the company can be seen from the degree where change in input price is transmitted into output price and change in the output volume. Equation 1 and 2 provide the model for calculating Panzar-Rosse H Statistics:

$$lnINTR = \alpha + (\beta lnAFR + \gamma lnPPE + \delta lnPCE) + \theta lnBSF + \varphi lnOI + e \quad (1)$$

$$H - \text{statistics} = \beta + \gamma + \delta \quad (2)$$

where *INTR* is ratio of interest income to total assets, *AFR* is the ratio of interest income to customer deposits, *EQ* is the ratio of total equity to total assets, *LO* is the ratio total loans to total assets, *PPE* is the ratio of personnel expenses to total assets, *PCE* is the ratio of capital expenditure and other expenses to total assets, *BDEP* is the ratio of interbank placement to total liabilities, *OI* is the ratio of other income to total assets, and *DDC* is ratio of customer deposits to total liabilities.

If the value of H-statistics is less than or equal to zero, the industry has a monopoly or perfect cartel; if the value is between zero and one, it has monopolistic competition or oligopoly structure; and if the value of H is equal to 1, the industry is characterised by a perfect competition.

Analysis

This section provides the result of market power in Indonesian banking industry from 2003 until 2015 using different types of calculation method. It employs the calculation using Concentration Ratio of 4 companies (CR4), 8 companies (CR8), Herfindahl-Hirschmann Index (HHI), and Panzar-Rosse (PR) H Statistics. There are approximately 130 banks in 2003, in which the number decreases from year to year resulting in 106 banks in 2015.

Table 1
Market Power of Banking Industry in Indonesia

Year	*HHI*	*CR4*	*CR8*	*PR H-Stats*	*Obs*
2003	4,818	0.5251	0.6489	0.4600	130
2004	4,556	0.5044	0.6293	0.5839	125
2005	4,217	0.4678	0.6001	0.5165	122
2006	4,245	0.4689	0.6017	0.4307	103
2007	4,164	0.4719	0.5987	0.2897	107
2008	4,120	0.4609	0.5913	0.5734	110
2009	4,538	0.4870	0.6248	0.6101	110
2010	4,439	0.4672	0.6163	0.6542	111
2011	4,305	0.4577	0.6027	0.5910	109
2012	4,296	0.4539	0.5988	0.7237	109
2013		0.4667	0.6175	0.8908	107
2014		0.4841	0.6280	0.6914	106
2015		0.4723	0.6138	0.6665	106

Table 1 shows the result of market power in the banking industry in Indonesia, consisting the value of HHI, CR4, CR8 and Panzar-Rosse H Statistics (PR H-Stat). It shows that Indonesian banking industry consistently has HHI values higher than 4,000 from 2003 to 2012, indicating that the industry is very much concentrated and going towards a monopoly market. It is supported by the result from CR4 calculation presented that the concentration ratio is between 40% and 55% implying that around 60% of the market share is distributed into 100 other banks.

When there are eight companies included in the calculation, there is additional 15% of market share from other four banks, indicating that the remaining 30% to 40% is distributed among other 100 banks. Therefore, we can say that the market structure for banking industry in Indonesia is oligopoly.

The calculation of Panzar-Rosse H Statistics shows quite similar conclusion, the value of H-Stat is ranging from 0.2 – 0.8, indicating that the industry has a monopolic structure. Considering the results from the four different measurements, the banking industry in Indonesia is quite concentrated being dominated by four to eight banks, which are Bank Mandiri, Bank BCA, Bank BNI, Bank BRI, Bank Danamon, CIMB Niaga, Permata Bank, Bank Danamon, and Panin Bank. Those are listed bank in Indonesia Stock Exchange, categorized as the large capitalization stock.

Table 2 shows the result of calculation for insurance industry as follows:

Table 2
Market Power of Insurance Industry in Indonesia

Year	*HHI*	*CR4*	*CR8*	*Obsv.*
2009	3,006	0.3172	0.4837	136
2010	3,171	0.3245	0.4956	137
2011	3,409	0.3186	0.5175	134
2012	3,017	0.3028	0.4899	130
2013	2,969	0.2980	0.4733	131

The result for HHI shows that it is higher than 2,900, indicating that the industry is quite concentrated and leans towards an oligopoly structure. It is quite supported by the results from CR4 and CR8, showing that their values are higher than 29% and 40% respectively. This indicates that the industry is close to monopoly structure indicating that around 60% – 70% of the market share is distributed among 130 insurance companies. The eight big insurance companies from 2009 to 2013 are Prudential, Manulife, AIA, Bumiputera, Allianz, Asuransi Sinarmas, Jiwasraya, and AXA Mandiri.

The results indicates the possibility of cartel practice in banking and insurance industry. Considering that the industry is dominated by four to eight largest players, it is possible for them to set and manage the level of interest rate and the quotation premium charged for the customers. For the industries to perform better in the future, previous empirical researches have presented that there is a need to be highly competitive so that the industries will be more efficient and stable.

CONCLUSIONS

This study aims to map the market power and concentration in banking and insurance industry in Indonesia. The results show that both industries are highly concentrated and lean towards oligopoly structure, indicating that it is dominated by certain number of players in the industries. The result is robust since Concentration Ratio for four companies (CR4), for eight companies (CR8), Herfindahl-Hirschmann Index (HHI), and Panzar-Rosse (PR) H Statistics provide the similar conclusion regarding the market power in banking and insurance industries.

This can be correlated with the issues of cartel suspected by the Indonesian Financial Service Authority and Indonesian Commission of Business Competition in the banking and insurance industries. Considering this fact, regulator can take action by setting a new regulation to provide equal opportunities for all companies to capture the market share. As a result, customers will be able to choose the preferred service with the best value provided by the industries.

REFERENCES

Anginer, D., Demirguc-Kunt, A., & Zhu, M. (2014), How does competition affect bank systemic risk?. *Journal Of Financial Intermediation*, *23*(1), 1-26. *http://dx.doi.org/10.1016/j.jfi.2013.11.001*

Apergis, N., Fafaliou, I., &Polemis, M. (2016), New evidence on assessing the level of competition in the European Union banking sector: A panel data approach. *International Business Review*, *25*(1), 395-407. *http://dx.doi.org/10.1016/j.ibusrev.2015.07.003*

Berger, A., Demirguc-Kunt, A., Levine, R., &Haubrich, J. (2004), Bank Concentration and Competition: An Evolution in the Making. *Journal of Money, Credit, And Banking*, *36*(3b), 433-451. *http://dx.doi.org/10.1353/mcb.2004.0040*

Casu, B., & Girardone, C. (2006), Bank Competition, Concentration and Efficiency in the Single European Market*. *The Manchester School*, *74*(4), 441-468. *http://dx.doi.org/10.1111/j.1467-9957.2006.00503.x*

Claessens, S., & Laeven, L. (2004), What Drives Bank Competition? Some International Evidence. *Journal of Money, Credit, And Banking*, *36*(3b), 563-583. *http://dx.doi.org/10.1353/mcb.2004.0044*

Delis, M., Kokas, S., & Ongena, S. (2016), Bank Market Power and Firm Performance. *Review of Finance*, rfw004. *http://dx.doi.org/10.1093/rof/rfw004*

Delis, M., Staikouras, K., & Varlagas, P. (2008), On the Measurement of Market Power in the Banking Industry. *Journal of Business Finance & Accounting*, *35*(7-8), 1023-1047. *http://dx.doi.org/10.1111/j.1468-5957.2008.02098.x*

Lin, C., Yang, S., & Lee, H. (2015), Bank Concentration and Enterprise Borrowing Cost Risk: Evidence from Asian Markets. *Asian Economic and Financial Review*, *5*(2), 194-201. *http://dx.doi.org/10.18488/journal.aefr/2015.5.2/102.2.194.201*

Liu, H., & Wilson, J. (2013), Competition and risk in Japanese banking. *The European Journal of Finance*, *19*(1), 1-18. *http://dx.doi.org/10.1080/1351847x.2011.633614*

Panzar, J., & Rosse, J. (1987), Testing for "Monopoly" Equilibrium. *The Journal of Industrial Economics*, *35*(4), 443. *http://dx.doi.org/10.2307/2098582*

Soedarmono, W., Machrouh, F., & Tarazi, A. (2013), Bank competition, crisis and risk taking: Evidence from emerging markets in Asia. *Journal of International Financial Markets, Institutions and Money*, *23*, 196-221. *http://dx.doi.org/10.1016/j.intfin.2012.09.009*.