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Microprudential Indicators of Financial System Stability: An AHP Approach

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In general there are two indicators of financial system stability, namely microprudential and macroprudential. Among macroprudential indicators are economic growth, balance of payments, inflation rate, interest and exchange rates, crisis contagion effect, and many others. Different from the previous researches concerning financial system stability measurement, this research will use the financial and banking practitioners' perspective regarding the leading indicator in measuring financial system stability so that we can presumably determine the real leading financial stability indicator for the current situation using Analytic Hierarchy Process (AHP) method. This study will look at the indicator of financial system stability from a microprudential perspective in Indonesia. The results show that based on the results of interviews with experts/banking practitioners, the 3 (three) most important aspects are Capital & Asset (0.187), Profitability (0.186) and Asset Quality (0.177). Important indicators of financial system stability from the next microprudential aspect are Liquidity (0.176), Market-based Indicators (0.139) and finally Risk Sensitivity (0.136). The Macroprudential Policy and microprudentials issued by Bank Indonesia as the central bank that has full authority, play an important role in maintaining Financial System Stability (SSK) in Indonesia.

Keywords: Financial Stability, Microprudential, AHP

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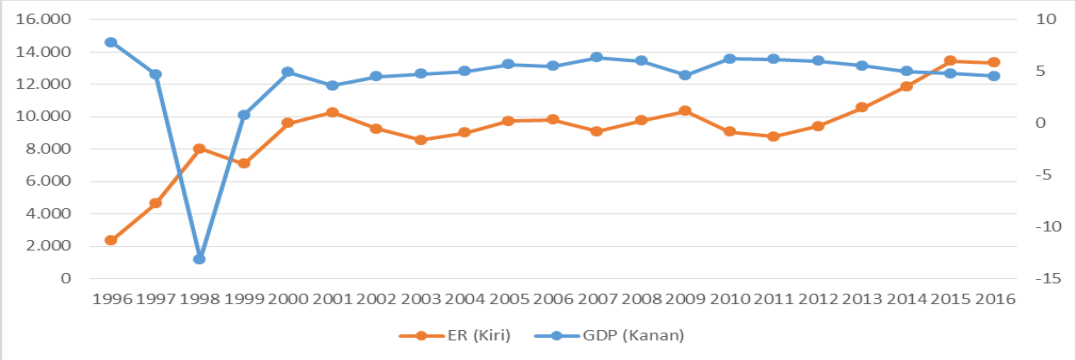
INTRODUCTION

The financial crisis that hit most of Asia, including Indonesia, in 1997-1998 has made the economy fall sharply. It was initially characterized by the weakening of the Thai Bath exchange rate against the United States Dollar (US) reaching -54%. This financial crisis continued to spread to several Asian regions such as South Korea, Malaysia Singapore and Indonesia. In Indonesia the depreciation of the Rupiah/USD exchange rate was in the range of Rp. 2,500 (1997) and during the crisis period the Rupiah exchange rate slumped to a low of Rp. 16,500/USD. (Annual Report on the Indonesian Economy 1998/1999, BI). The exchange rate fell so sharply that Indonesia's economic growth was negative -13.1% in 1998. (World Bank).

After the financial crisis of 1997-1998, the crisis has now struck again at the economic fundamentals of the superpower United States (US). In 2008, the US was hit by a financial crisis caused by high-risk housing loans. This financial crisis is also known as *subprime mortgage* where the distribution of funds in the US increased rapidly, which in 2002 was below USD200 billion and three years later in 2005 the distribution had reached USD500 billion. (Indonesia Economic Outlook 2009-2014, January 2009 edition). The impact of this global financial crisis in the US itself was the bankruptcy of several government and private investment companies such as Lehman Brothers, Fannie Mae and Freddie Mac.



Source: IMF and World Bank, processed by the author

Figure 1. Graph of Rupiah Exchange Rate and Economic Growth 1996 - 2016

The global financial crisis had an impact on the Indonesian economy, which was reflected in the turmoil in the capital and money markets with a decrease in capitalization value, stock trading volume, foreign ownership in stocks, SUN and SBI and the exchange rate of the rupiah against the US dollar. Another impact was that foreign investors moved their funds to safe investments, the decline in export commodity prices had a negative impact on businesses engaged in exports and caused layoffs. The decline in business activity affects the decline in the economy and banking business (Bank Indonesia, 2017).

During the economic crisis, banks as financial institutions were more or less involved in the crisis. It is known that one of the banks in America failed to comply with regulations on capital. Violation of this regulation, according to Norgren (2010), is one of the contributors to a crisis. In addition, the many innovations in financial products that are a reflection of financial liberalization are also a factor, banking and financial crises are closely interrelated after financial liberalization (Kaminsky and Reinhart, 1999).

Then after 2 periods of crisis passed by Indonesia, suddenly the crisis hit again. In 2013 the rupiah exchange rate tended to decline, this was followed by *emerging market* countries. The time span of the current crisis is getting shorter, initially 10 years is now only 5 years. The main reason for the weakening of the exchange rate of some *emerging market* countries is the *Quantitative Easing* (QE) policy where the impact is that the capital investment portfolio is drawn to the US, so that the rupiah currency supply is increasing and the demand for US dollars is increasing. As a result, the value of the rupiah currency is eroded and the value of the US dollar currency dominates again.

Broadly speaking, there are 2 indicators of financial system stability measurement, namely microprudential and macroprudential. Microprudential indicators include: banking capital adequacy ratio, asset quality, sound financial system management, bank income and profits, liquidity aspects, sensitivity to market risk and several market-based indicators. Meanwhile, macroeconomic indicators include: economic growth, *balance of payments,* inflation rate, interest rates and exchange rates, contagion effect, and

other factors. In contrast to previous studies related to the measurement of financial system stability, this study will try to see from the perspective of banking and financial practitioners related to which is the most important indicator (*leading indicator*) in measuring financial system stability so that it is expected that we will be able to know what the main indicators of financial stability are from the reality at hand.

The impact of the global financial crisis that threatens the stability of the financial system in Indonesia is of great concern to the government of the Republic of Indonesia. The Government of the Republic of Indonesia on March 17, 2016 has passed Law (UU) Number 9 of 2016 concerning Prevention and Handling of Financial System Crisis (PPKSK Law). In order to realize financial system stability. The PPKSK Law aims to establish measures to prevent and handle financial system crisis conditions, especially through the coordination of four institutions that are members of the Financial System Stability Committee (KSSK) consisting of the Minister of Finance as Coordinator, Governor of BI, and Chairman of the OJK Board of Commissioners as Members with voting rights, and Chairman of the Board of Commissioners of the Deposit Insurance Corporation (LPS) as a Member without voting rights (Financial Services Authority, 2017: 6).

According to Kaminsky, Lizondo and Reinhart (2000), crises that hit countries are caused by several indicators including the balance of payments, economic growth, inflation, exchange rates, interest rates and money supply. These indicators can be used as early detection indicators of crisis proneness. The multiple crises that occurred in Indonesia in 1998 were initially caused by the rupiah exchange rate which depreciated sharply against the US dollar. This was coupled with a sharp increase in bank interest rates, resulting in bad debts caused by many borrowers unable to return their loan funds to the bank, in addition there was also a massive *rush* that caused banking liquidity to be disrupted.

Repeated crises that hit every country and its impact is very detrimental to the economy, making researchers want to conduct research on the initial causes of this crisis or early warning indicators (IPD) that cause the crisis. Research conducted by Abimanyu and Imansyah (2008), using the signal model and using the average crisis index plus 2 standard deviations showed that the financial crisis that occurred in Indonesia in the period 1970-1997 resulted in 4 crisis periods, namely in November 1978, April 1983, September 1986 and August 1997.

Kaminsky *et.al* (1997) define a banking crisis as a situation in which an attack on the exchange rate system leads to a sharp depression in the exchange rate, or may also result in a drastic decline in *international reserves* or even a combination of both. According to Frankel and Rose (1996) a financial crisis is a major change in some indicator of the potential or actual value of a currency. For this reason, episodes of massive depreciation must be investigated, when the authorities are able to withstand them and when they are not. Under what circumstances do they arise, and what factors make the situation difficult to control.

There have been many studies related to the indicators of a crisis, especially the banking crisis. Some of these studies include Hadad *et. al* (2003), Ali (2007), Boyd *et. al* (2009), Barrel (2010), and Bucevka (2011).

Barrel, Davis, Karim, and Liadze (2010) in their research in 2007 concluded; (a) banking CAR, Banking Liquidity and Property prices have a significant impact in determining the likelihood of a banking crisis occurring and these variables are more traditional than GDP Growth, Inflation, and Real Interest Rate. Therefore, this model can be used to detect the likelihood of a banking crisis. (b) High CAR accompanied by liquidity ratios are able to indicate the likelihood of a banking crisis, with long-term implications to cover losses from regulatory costs.

While Vesna Bucevska (2011) produced research with the following conclusions; (a) DEBT, LOANS, and DEPOSITS are the three main indicators of the *Early Warning System* in predicting the financial crisis in Croatia, Macedonia, and Turkey. In addition, REER, Current Account Deficit, Fiscal Deficit, and PORTFOLICHANGE are statistically significant in the financial crisis in EU countries. (b) EU countries should reduce foreign debt related to GNP and continuously analyze and monitor more closely the financial processes in their countries to anticipate the occurrence of the same crisis.

Indonesia is currently implementing a dual monetary system with the existence of Islamic banking since 1992. By the end of 2018, the market share of the Islamic banking industry reached 5.6% of the overall banking industry assets in Indonesia. Currently, according to data from the Financial Services Authority (OJK) as of December 2018, based on Islamic banking statistics, the number of Islamic banks has reached 14 Islamic Commercial Banks, 20 Islamic Business Units and 168 Islamic People's Financing Banks with a total office network of 2,215 offices throughout Indonesia.

With this *dual banking system*, it is interesting to see the stability of the financial system in general in Indonesia.

From the description above, it can be concluded that a crisis can be indicated through micro (banking) and macro (macroeconomic) factors. Hadad *at. al* (2003), Boyd *et. al* (2009), and Barrel (2010) mentioned that the GDP growth factor is the most important macroeconomic indicator in indicating the possibility of a crisis. In addition, inflation, exchange rate, interest rate, and investment can also be used as indicators of a possible crisis. While micro indicators are determined by the credit channeled by banks (Hadad, 2003; Ali, 2008; and Bucevka, 2011). Boyd et al (2009) mentioned that the interest rate can cause a banking crisis to become systemic.

From this background, there are several research objectives that will be researched by the author: 1). Knowing the *leading indicators of* the financial crisis in the microprudential aspect from the perspective of *expert* practitioners, 2). Identifying possible differences in financial stability indicators in conventional banking and Islamic banking in Indonesia, which according to Nurfalah etal (2018) is important to know, 3). Knowing the appropriate recommendations that can be offered within the framework of financial system stability.

RESEARCH METHODOLOGY

In this research, the data used is primary data obtained from the results of interviews (*indepth interviews)* with experts and practitioners, who have an understanding of the issues discussed, complemented by data collected from literature studies. Followed by filling out a questionnaire at the second meeting with respondents.

The selection of respondents in the study was carried out by considering the respondents' understanding of financial system stability in Indonesia. The number of respondents in this study consisted of 7 experts who were banking/financial practitioners with competent considerations. The requirement for valid respondents in AHP is that they are people who master or are experts in their fields. Therefore, the respondents selected in this survey were banking/financial practitioners in Indonesia. This research is a qualitative-quantitative analysis research which aims to capture a value or view represented by experts. The analytical tool used is the AHP method and processed using the "*Expert Choice*" software.

AHP uses a procedure to obtain a ratio scale. Although not a feedback method like ANP, AHP requires a large matrix known as a ***supermatrix*** that contains a set of sub-matrices. This supermatrix is expected to capture the influence of elements on other elements in the network. Suppose a cluster is expressed by C_h , h = 1, 2, ..., N, and it is assumed that this cluster has nh elements expressed by $e_{h1}, e_{h2}, \ldots, e_{hn_h}$, Figure 2 shows the supermatrix of the hierarchy as shown below. In its development, the AHP model was developed by Saaty into an ANP model by refining the feedback from the cluster and its elements (Ascarya etal, 2018).

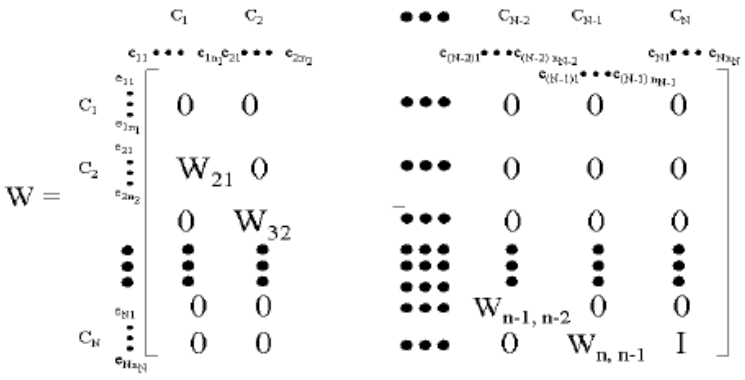


Figure 2. Supermatrix of the Hierarchy

AHP has four axioms that form the basis of the theory, including (Saaty & Vargas, 2006): First **Reciprocity**; this axiom states that if PC(EA,EB) is the pair-wise comparison value of elements A and B, viewed from their parent element C, which indicates how many times more element A has what element B has, then PC(EB,EA) = 1/PC(EA,EB). For example, if A is five times larger than B, then B is 1/5 of the size of A. Second is **Homogeneity**; which states that the elements compared in the AHP framework structure should not have too much difference, which can lead to greater errors in determining the assessment of supporting elements that affect the decision. Third is **Priority**; which is an absolute weighting using an interval scale

[0.1] and as a measure of relative dominance. Finally, the ***Dependence condition*** axiom; where it is assumed that the arrangement can be composed into components that form parts in the form of clusters.

In practice, the use of AHP/ANP methods in research varies greatly in various fields, as stated by Sipahi & Timor (2010), Rusydiana (2016), Lee (2010), Rusydiana & Devi (2013), and Rusydiana and Devi (2018).

RESULTS

Based on the results of AHP analysis, from the perspective of criteria related to the most important indicators of financial system stability in the opinion of banking practitioners, both microprudential and macroprudential criteria are equally considered important and priority. However, from the practitioners' perspective, the microprudential aspect is a more important factor (0.506) than the macroprudential aspect (0.494). This is not without reason. Banking health, which is classified as a microprudential indicator, still has a significant influence on macroprudential stability. As a case in point, how the crisis at Bank Century led to the KSSK or Financial System Stability Committee forcing the state to issue bailout funds, to avoid systemic impacts on macro stability in Indonesia.

The same thing was also proven in a study conducted by Diaconua and Oanea (2015). Diaconua and Oanea (2015) stated that microprudential criteria are the most important criteria affecting financial system stability. Microprudential criteria is a support tool of the financial system. If this support tool is not good, then the stability of the financial system will falter.

In the MICROPRUDENTIAL aspect, based on the results of interviews with banking experts/practitioners, the 3 (three) most important aspects are *Capital & Asset* (0.187), *Profitability* side (0.186) and *Asset Quality* aspect (0.177). The next important indicators of financial system stability from the microprudential aspect are *Liquidity* (0.176), Market-based Indicators (0.139) and finally Risk *Sensitivity* (0.136). The following is the complete eigenvalue weight of microprudential aspects related to the most important indicators of financial system stability in Indonesia.

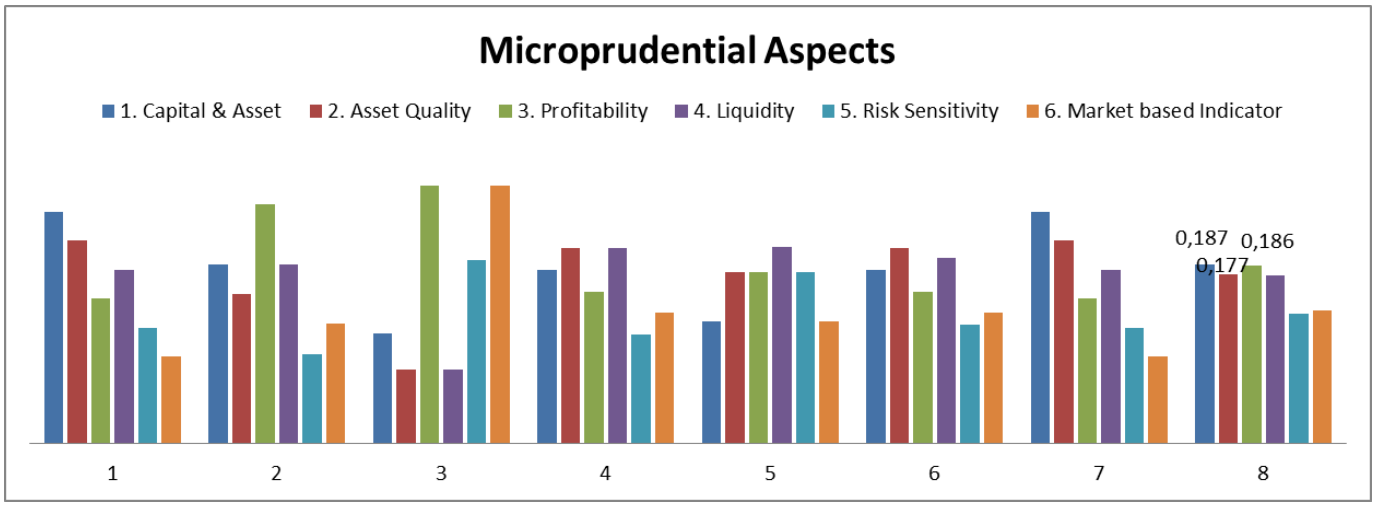


Figure 3: Microprudential Aspects of Financial System Stability

After knowing the weight of the most important indicators of financial system stability in the opinion of banking practitioners, from the microprudential and macroprudential criteria, then the importance of each aspect will be explained. Of the 3 (three) indicators of *CAPITAL & ASSET* relevance in financial system stability, the largest weight results are Aggregate Capital Ratio (0.364) and Financial Assets (0.324). Next is Total Banking Loans (0.312).

As an intermediary, the *capital & asset* aspect of banking reflects the amount of funds (both included as capital and assets) available to be managed and distributed by the bank. The running of the money circulation that occurs in the bank can be seen from the *capital & asset* indicators. One of the proxies of this indicator is by looking at the capital adequacy of the bank or which is usually calculated using the aggregate capital ratio. Banks need to strengthen capital and financial assets to be able to expand further in running a business and at the same time as a backup for financing distribution. If the capital and financial assets are more stable, the bank's efforts to expand its business and financing will be more flexible. Thus, the quality of financing will also improve along with the increase in the quantity and quality of the financing. This is where the importance of capital support and financial assets to be

able to maintain the stability of the financial system and the circulation of money in society. Reduced aggregate capital ratios in banks may occur. Some of the causes that are often a factor, among others: bank credit growth that is not followed by an increase in DPK and the availability of internal bank capital and the increasing value of BOPO and NPL (Basse and Mulazid, 2017; Dewi and Yadnya, 2018).

Furthermore, the amount of bank loans affects the value of capital and assets in the bank. The more the amount of credit provided by the bank will cause the bank to be more risky, so that it will affect the stability of the financial system. This is also evidenced in research conducted by Diaconua and Oanea (2015) and Koong et al. (2017). Koong et al. (2017) examined two types of credit expansion in the banking sector, namely: expansion of the amount of credit for businesses and households. From the study, Koong et al. (2017) proved that the expansion of business credit triggers instability in the financial system because the level of risk that must be borne by banks due to fluctuations in the business sector will be greater. As a result, the effort to expand business credit will be difficult. On the other hand, there is not enough evidence to prove that the higher expansion of household credit has a negative impact on financial stability.

Of the 3 (three) indicators of CAPITAL & ASSET relevance in financial system stability, the largest weight results are Aggregate Capital Ratio (0.364), and Financial Assets (0.324). Next is Total Banking Loans (0.312).

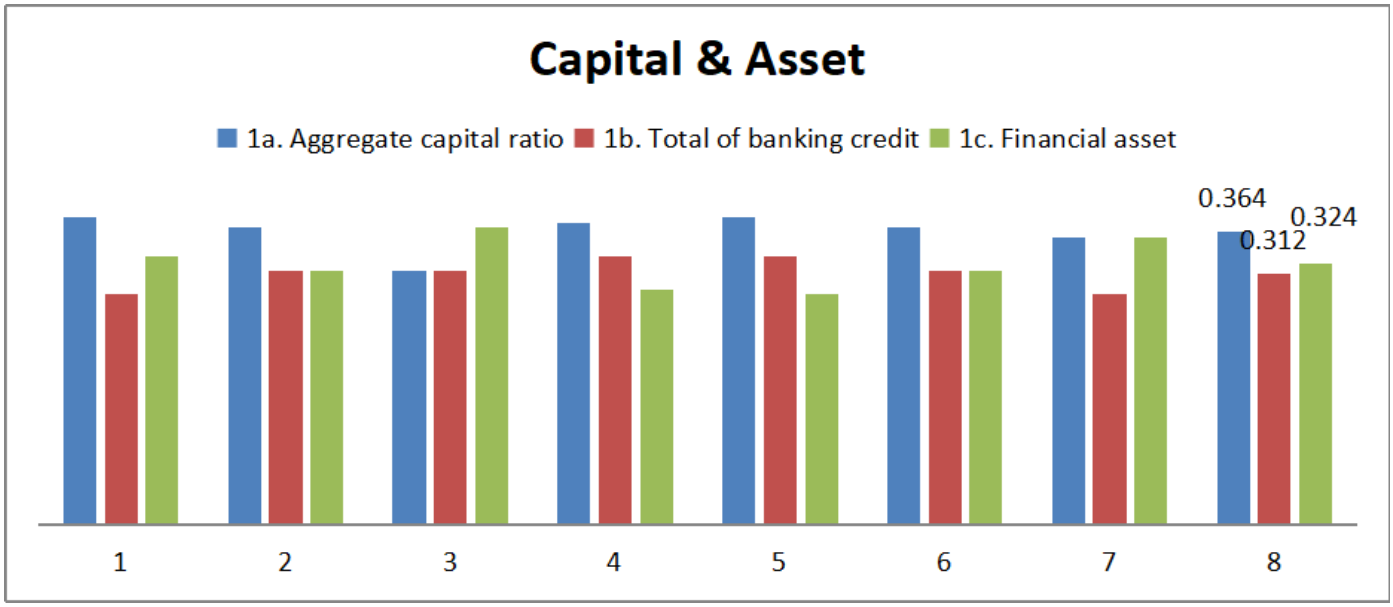


Figure 4. Capital & Asset indicators

Asset quality in financial institutions, especially the banking sector is one of the important factors in the stability of the financial system in Indonesia. The high level of assets in a bank cannot be used as an indicator that the bank is in a healthy and stable condition, nor can it be used as a guarantee that a country with high total assets in its banking sector is not vulnerable to *financial fragility* (Nimmo and Tarassow, 2016). The quality of these assets is the main assessment. Of the 3 (three) *Asset Quality* indicators relevant to financial system stability in Indonesia, the largest weight result is the value of NPL or Non Performing Loan (0.377). Next are *Debt Equity Ratio* or DER (0.345) and Loans in Foreign Exchange (0.278).

NPL (Non Performing Loan) shows the total non-performing loans in banks. The high value of NPLs at a bank indicates that the distribution of loans made by the bank is not running smoothly and this is a bad assessment for the bank because the bank is unable to analyze properly the credit application by prospective creditors. If the NPL value continues to increase, the financial stability of the bank sector and other financial institutions will be disrupted because they cannot return the debtors' funds channeled to creditors. In addition, the stability of the banking subsector will be disrupted and will further affect the stability of the financial system in Indonesia. In addition, economic conditions and interest rates can also indirectly affect the position of banking NPLs.

Based on data compiled from the Financial Services Authority (OJK), as of May 2018, the position of banking NPLs was at the level of 2.79%. This position

is relatively stable compared to April 2018, but is considered to have increased when compared to the end of March 2018, which amounted to 2.75%. The increase in NPLs in May 2018 mostly came from property projects, namely: non-subsidized mortgage loans and apartment loans. There are several things that can be used as a solution to reduce the value of NPLs, including recalculating and restructuring problematic debtors, simplifying terms, extending tenors, lowering the maturity interest rate, and so on. Another important thing that banks need to pay attention to is to apply the principle of vigilance and caution when extending credit to the public.

Apart from NPLs, other factors that have an impact on the level of asset quality are the level of DER and the amount of loans in foreign exchange. DER (*Debt to Equity Ratio*) DER shows how much the company's debt dependents and how much of the company's capital is financed by debt (Kasmir, 2013: 158). The higher the DER value indicates that the company's debt is greater than its capital value or in other words, almost most of the company's capital is debt. Financial institutions (in this case the banking industry) with a high DER value indicate that the bank is very risky. Furthermore, this will have an impact on the public's assessment of the bank and also on public demand for banking products (Nimmo and Tarassow, 2016; Diaconua and Oanea, 2015).

Borrowing at foreign exchange rates is closely related to currency exchange rate risk. The most dangerous thing for the stability of the financial system is when the exchange rate of the domestic currency against foreign currencies depreciates. When the exchange rate of the domestic currency depreciates, the bank must repay the loan at a value greater than the total loan initially or in other words the value of the loan becomes higher. If this happens not only to one bank and occurs continuously, it can cause the domestic currency exchange rate to devalue and will then have an impact on other economic variables, such as inflation rates, interest rates, income levels, NPLs, and fragility in the monetary sector. Of the 3 (three) Asset Quality indicators relevant to financial system stability in Indonesia, the largest weight result is the value of NPL or Non Performing Loan (0.377). Next are Debt Equity Ratio or DER (0.345) and Loans in Foreign Exchange (0.278).

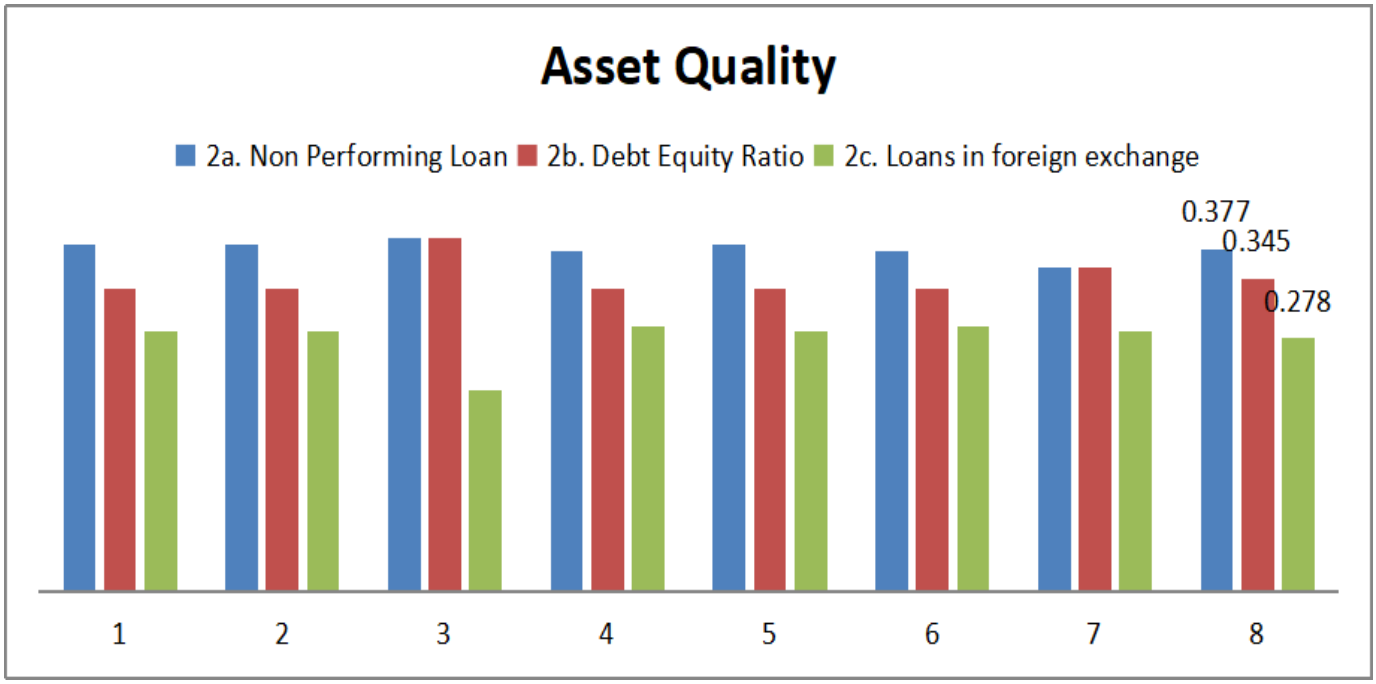


Figure 5. Asset Quality Indicator

The level of profitability of the banking system is reflected in several ratios, some of which are ROE, ROA, and BOPO. The increase in profitability indicates that the bank is able to generate profits on its capital or assets. An increase in bank profitability (ROE and ROA increase) indicates a good assessment of the health of the bank because by increasing the level of profitability, this helps the bank to increase the foundation or strength of the bank to face external economic pressures and reduce government intervention in banking (Tagkalakis, 2013). In addition, a banking system that is easier to generate profits will increase revenue for the country and will

directly impact the country's debt ratio and budget deficit. The level of profitability affects the level of debt and further impacts the stability of the financial system. High levels of ROA and ROE can reduce the likelihood of future fiscal and monetary problems, thereby reducing the likelihood of future debt. Thus, the possibility of *fragility and instability of the* financial system can be reduced.

ROE is a critical ratio for assessing the financial performance and efficiency of a bank. It indicates how well a bank is using its equity capital to generate profits. A higher ROE is generally considered favorable, as it suggests that the bank is effectively using its equity to generate earnings for shareholders. However, it's important to consider other financial metrics and industry benchmarks when evaluating a bank's overall performance.

In addition, BOPO has the next biggest impact on the level of profitability in the financial system in Indonesia, one of which is the banking industry. This relates to the expenses and income received by the bank. The higher the BOPO value indicates that the expenses or costs faced by the bank are greater than the level of income received. Furthermore, this can reduce the profit of the bank. If this happens, the stability of the banking industry and financial system will be disrupted. The same results have been proven in research conducted by Diaconua and Oanea (2015), where an increase in a bank's operating expenses will reduce its profitability and stability. Of the 3 (three) Profitability indicators relevant to financial system stability in Indonesia, the largest weight result is the value of ROE or Return on Equity (0.349). Next is the value of BOPO (0.345) and the value of ROA or Return on Asset (0.306).

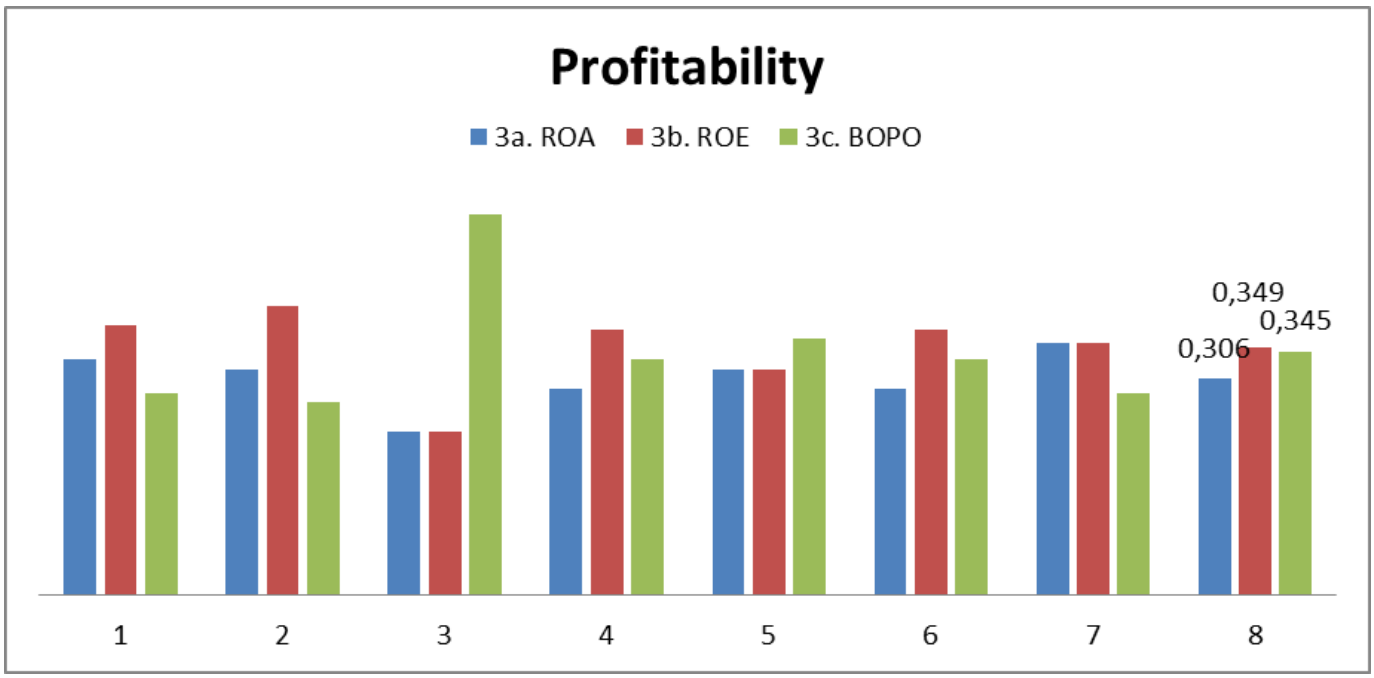


Figure 6. Profitability Indicator

Liquid liability is an important indicator for the financial system, supported by research by Hassan et al. (2011) which states that developing country banks as efficient *intermediaries* have a tendency to maximize their credit by increasing *liquid* liability in the banking system. The highest banking liquidity obligation is in the form of Third Party Funds in the form of deposits, namely deposits, deposits and demand deposits. The ratio that can measure the level of liquid liability of banks, one of which is FDR (*Financing to Deposit Ratio*). According to King and Levine (1993) the higher the level of banking liquidity ratio indicates that the higher the intensity of the banking system. The higher the intensity of the banking system indicates that banks are increasingly increasing their function as financial intermediaries starting from increasing Third Party Funds continuously and continuing with increasing lending. Of the 4 (four) Liquidity indicators relevant to the stability of the financial system in Indonesia, the largest weight results are Liquid Liability (0.279), and LDR or Loan to Deposit Ratio (0.251). Next is Total Third Party Funds (0.249) and finally Total Central Bank Loans to Financial Institutions (0.222).

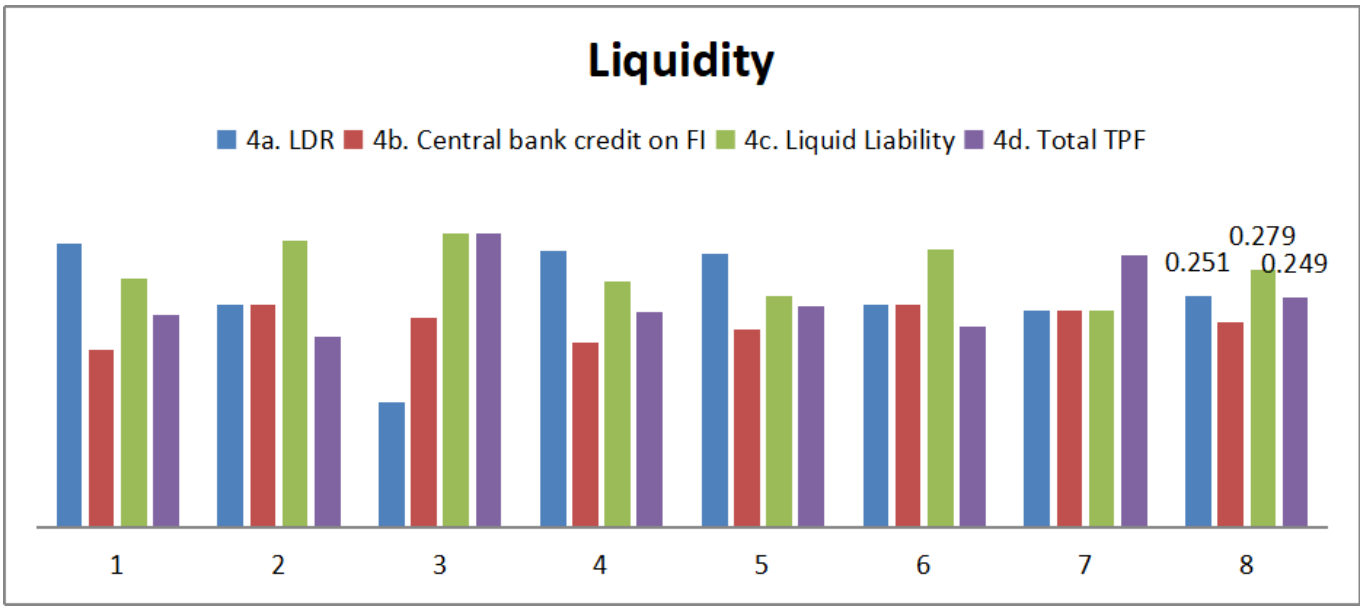


Figure 7: Liquidity Indicator

Although the economic and financial system is in a normal condition, there are several risks that need to be watched out for because they can disrupt the stability of the financial system. Of the 3 (three) Risk Sensitivity indicators related to financial system stability in Indonesia, the largest weight result is Exchange Rate Risk (0.358). Next are Interest Rate Risk (0.328) and Stock Price Risk (0.314).

Exchange rate risk greatly affects investment selection for investors. Abdrakhmanova et al., (2016) examined the risk of Kazakhstan's currency exchange rate on the banking industry. The KZT currency devaluation event that occurred in previous years affected the demand for currency by investors in the current year, namely more investors investing their money in foreign currencies. If this continued, the situation on the money market would worsen and the value of the domestic currency would deteriorate further. To stabilize the condition, the government took a policy to combine monetary and fiscal instruments. Policies taken by a country with regard to these three indicators can create new problems in several other countries. Therefore, each country should take the right policy to maintain the stability of the national financial system where the policy should be combined with the right regulatory supervisory structure in controlling the level of liquidity in the banking system. Kunitsyna and Sitnikova (2016) proposed a currency risk hedging mechanism to help banks develop finance and improve the quality of their loan portfolio.

In Indonesia, the monetary authority in charge of maintaining exchange rate stability is Bank Indonesia. The task of Bank Indonesia is to maintain the stability of the exchange rate of the rupiah against other foreign currencies and to maintain the stability of the exchange rate which is directly related to the price of domestic goods and services against foreign goods and services (Simorangkir and Suseno, 2014).

Exchange rate risk, also known as currency risk or foreign exchange risk, refers to the potential for financial loss or gain due to fluctuations in exchange rates. This risk arises when an individual or a business engages in financial transactions denominated in a currency other than their domestic currency. Exchange rate risk is particularly relevant in the context of international trade, investments, and financial activities.

In addition, another task of Bank Indonesia is to maintain monetary stability through the interest instrument. Bank Indonesia has the authority to set the benchmark interest rate which will then be followed by interest rate adjustments at commercial banks. The risks arising from the setting of interest rates can disrupt the stability of the financial system in Indonesia. Monetary policy through the application of interest rates that are too tight, will have an impact on the cessation of economic activity (*stagnation)*, money circulation tends to decrease, so that economic and financial stability will be disrupted.

Apart from that, another risk that must be watched out for because it can disrupt the stability of the financial system is stock price risk. The risk of ups and downs in stock prices is an accumulation of the previous two risks. Fluctuations in stock prices followed by interest rates and changes in currency exchange rates are things that investors consider when making investment decisions. Funds from investors channeled through the

purchase of shares will then affect the value of additional capital obtained by the company. Of course, this will also have an impact on the stability of the company. Of the 3 (three) Risk Sensitivity indicators related to financial system stability in Indonesia, the largest weight result is Exchange Rate Risk (0.358). Next are Interest Rate Risk (0.328) and Stock Price Risk (0.314).

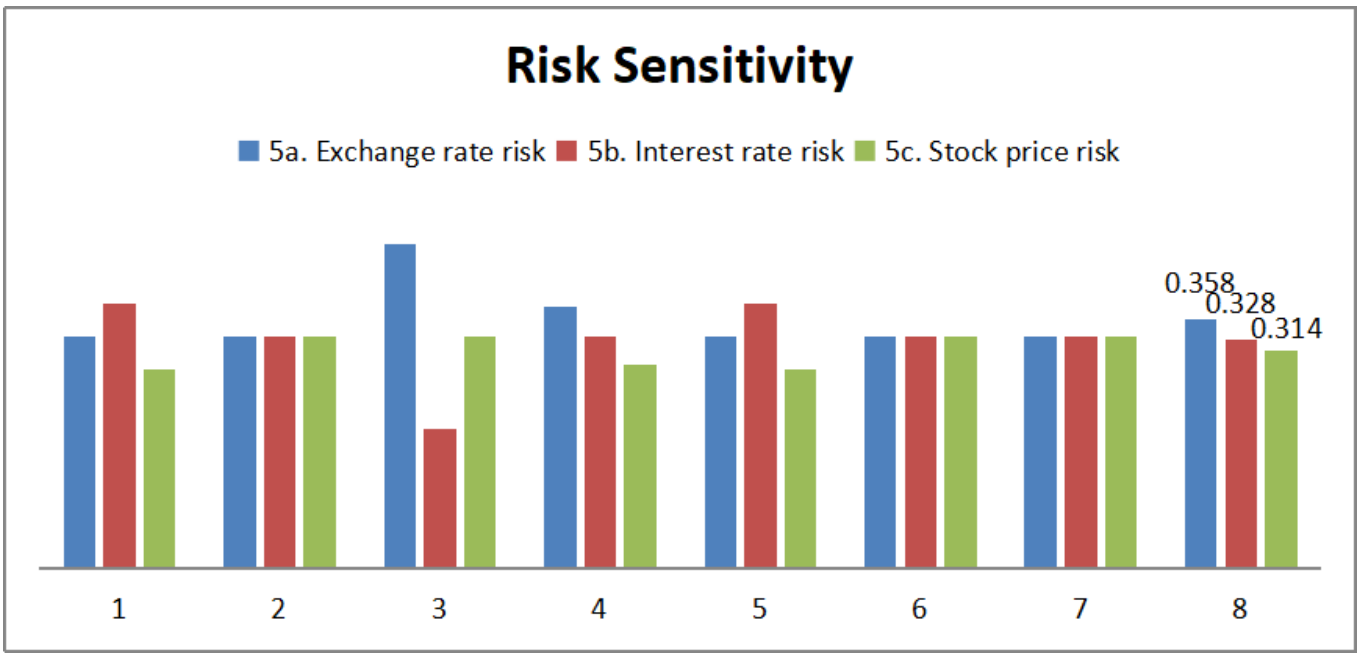


Figure 8. Risk Sensitivity Indicator

The market price of financial instruments affects the attractiveness of the public in choosing financial instruments to invest their funds. The market price of financial instruments is usually influenced by the performance *of the* issuing company and at the same time represents the value of the issuing company (Pakpahan, 2010). Comparison of financial instruments usually occurs by comparing the price of financial instruments such as stocks to the interest rate on bank deposits. This is related to the level of risk that will be borne by the public as investors. The imbalance between the level of profit and the level of investment risk will keep investors away from buying these financial instruments (Abdrakhmanova et al., 2016).

Interest rate risk refers to the potential for financial loss or gain due to changes in interest rates. This risk is particularly relevant to individuals, businesses, and financial institutions that are exposed to interest rate fluctuations. To manage interest rate risk, individuals and businesses may employ various strategies, including: Interest Rate Hedging using financial instruments, Asset-Liability Management (ALM), and Floating and Fixed Rates.

Interest rate risk is a fundamental aspect of the financial landscape, and its impact can vary depending on economic conditions, central bank policies, and other factors. Understanding and managing interest rate risk is crucial for financial decision-making and risk management.

Credit rating is a standardized assessment of the ability of a country or company to pay its debts (Pertiwi, 2014). *Ratings are* issued by rating companies and usually to become a rating company must obtain an official license from the government. *Rating* is one of the variables considered by investors when deciding to invest in a company (Manurung, 2008). The information contained in the rating will show the extent of a company's ability to pay its obligations for the funds invested by investors.

Companies that have a high rating are usually preferred by investors compared to companies that have a very low rating. Furthermore, this will be a consideration for potential investors to invest their funds. The higher the investment funds that enter the company, the higher the amount of additional capital for the company. Company activities will be better and economic stability will be maintained. Of the 3 (three) market-based indicators related to financial system stability in Indonesia, the largest weight result is the value of Sovereign Yield Spread (0.345). Next are the Market Price of Financial Instruments (0.334) and Credit Rating (0.321).

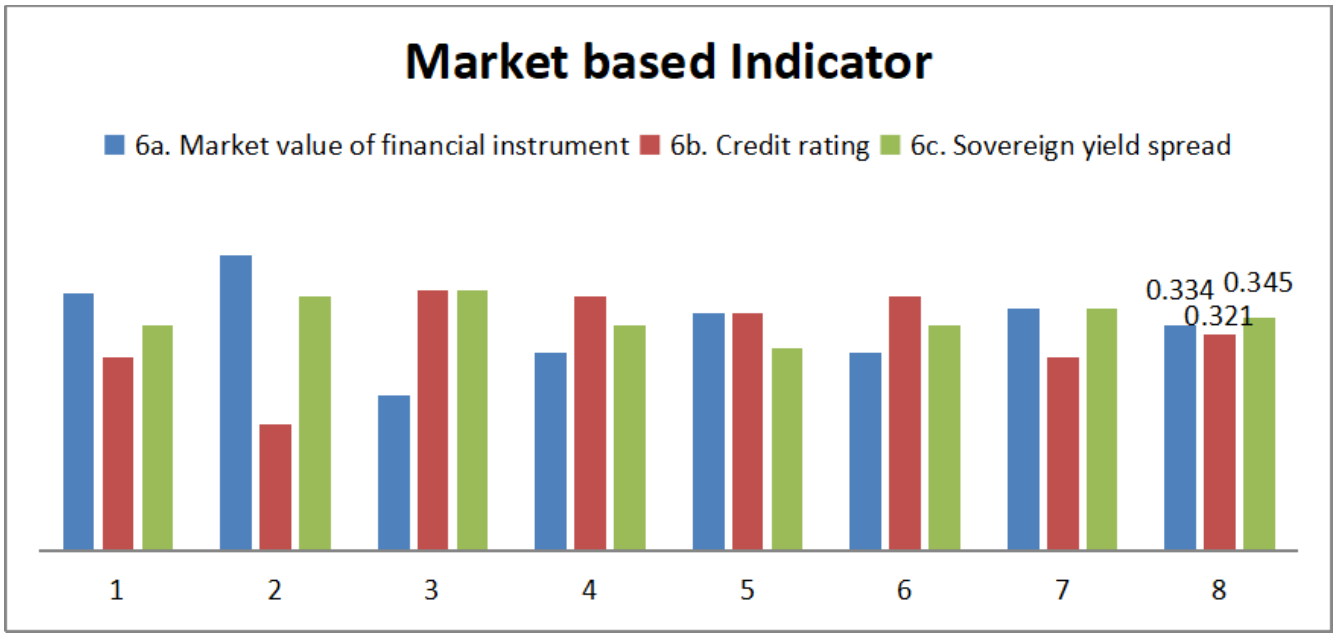


Figure 9: Market-based Indicators.

CONCLUSION

Based on the results of interviews with banking experts/practitioners, regarding the most important indicators of financial system stability in Indonesia, both microprudential and macroprudential criteria, both aspects are equally considered important and priority. In the Microprudential aspect, based on the results of interviews with banking experts/practitioners, the 3 (three) most important aspects are Capital & Asset (0.187), Profitability side (0.186) and Asset Quality aspect (0.177). The next important indicators of financial system stability from the microprudential aspect are Liquidity (0.176), Market-based Indicators (0.139) and finally Risk Sensitivity (0.136).

From each sub-criteria, some important indicators of the Microprudential aspect are: Aggregate capital ratio, Non Performing Loan (NPL) ratio, Return on Equity (ROE), Liquid liability, Exchange rate risk and Sovereign yield spread. From the research findings, interested parties, both Bank Indonesia, the Financial Services Authority and the Deposit Insurance Corporation, need to pay close attention to the indicators that are considered the most important from the perspective of banking and financial practitioners in general. Thus, policies to be taken in the future can be appropriately and quickly executed.

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