A Comparison Study of Indonesia and China: Macroeconomics Performance and Bank Soundness Performance

Maria Christina Liem
clime@president.ac.id
Universitas Presiden, Cikarang, Indonesia

Peng Tze
Accounting Study Program, Faculty of Bussiness
Universitas Presiden, Cikarang, Indonesia

Abstract

The purpose of this study is to analyse the impact of macroeconomics performance towards bank soundness performance of state-owned commercial banks in Indonesia and China during 2014-2015. Indonesia and China are predicted to have crucial roles in global financial leader in the future due to huge population and recent financial performance. This study will compare macroeconomics performance and state-owned commercial banks' soundness performance between Indonesia and China. The findings show that even though China has better macroeconomics performance compared with Indonesia, but state-owned commercial banks in China have worse performance in term of management performance and earnings performance compared with state-owned commercial banks in Indonesia. Furthermore, this study implements data panel GLS regression – random effect by STATA. As Casu et al (2009) mention that macroeconomics performance has positive impacts towards bank soundness performance, therefore this study analyse the impact of macroeconomics performance towards the bank soundness performance with unit analysis of state-owned commercial banks in Indonesia and China. The statistics results show that GDP growth rate has negative impact towards bank soundness performance, and interest rate has positive impact towards bank soundness performance. However, the inflation of consumer price has positive impact towards management performance and earning performance; and it has negative impact towards capital performance, asset performance, and liquidity performance. In short, this study shows that higher macroeconomics performance would not guarantee that state-owned commercial banks will have higher bank soundness performance as well.

Keywords: Macroeconomics Performance, Bank Soundness, CAMEL, China, Indonesia

Introduction

In the past 1997-1998, Asia experienced huge financial damages due to corruption, crynyism, malinvestment and rotten banking systems (Lin, 2002). Indonesia had the worse financial damages and it needs almost 10 years to recover. However, during global financial crisis in 2007-2008, Indonesia has been announced as the third rank country with the higher financial growth rate. Moreover, in August 2017, Indonesia government announced national deflation for the first time since Asia's economic crisis. As it is predicted, Indonesia will gain

bonus demography in 2030, therefore, Indonesia has significant roles in Asia's economics in the future.

On the other hand, global financial crisis in 2007-2008 has significant impact towards China financial condition. Even though, China becomes a country with the highest financial growth rate, hence, seven years later, the global recovery from global financial crisis remains weak (International Monetary Fund, 2015, 2016) and the Chinese growth rate has fallen significantly (Vines, 2016). Furthermore, the global economics emphasis on multipolar world, instead focus on USA and European countries. Consequences, China plays crucial roles in global financial environment (Vines, 2016) and banking sector plays a key role in the state's economic development (Srinivasan and Saminathan, 2016) because of the importance and contribution of banking sector, evaluating and analyzing bank performance have been the important topic that cannot be neglected.

Since Indonesia and China have predicted to play important roles in Asia financial environment and both countries have crucial financial potential through huge population; therefore, the purpose of this study to analyse the impact of macroeconomics performance towards the soundness of state-owned commercial banks in the present. This study will be a comparison study between Indonesia and China during 2014-2015.

Literature Review

Macroeconomics Performance

According to Casu et al (2009) states that macroeconomics performance has positive impact towards bank soundness. Moreover, Kanwal and Nadeem (2013) mention that macroeconomics performance has positive impact towards banks' profitability. Meanwhile, Osamwonyi and Michael (2014) prove that GDP growth has a significant negative impact towards bank performance. In this study, macroeconomics performance will be presented as Gross Domestic Product (GDP) growth rate, inflation of consumer price and interest rate:

- *GDP Growth Rate*
  GDP growth rate is the economic growth rate and is calculated by using the real GDP, and the real GDP is one of the indicators to measure the productivity of a country (Shukor et al, 2016).
- *Inflation of Consumer Price*
  The meaning of inflation of consumer price is the increment of price of goods and services annually (Shiblee, 2009). Inflation of consumer price measures the changes in the price level of market basket of consumer goods and services that are purchased by households.
- *Interest Rate*
  Interest rate is one of macroeconomics performance that crucial for banking industry (Aburime, 2008). The data sources of interest rate for this study from Bank Indonesia and People's Bank of China as regulator bank in Indonesia and China.

Bank Soundness Performance

This study will implement CAMEL (Capital, Asset, Management, Earnings, and Liquidity) performance measurement to analyse the bank soundness:

- *Capital Performance*
  Capital performance of this study will be represented by Capital Adequacy Ratio (CAR) as one of bank soundness performance measurement (Mishra and Aspal, 2012). According to

Getahun (2015), CAR is the capital ratio that is expected to maintain the balance with the risks that are exposed in the financial institutions like the credit risk, operational risk and market risk in order to absorb those potential losses. Moreover, CAR could be calculated as total of Tier one capital and Tier two capital, divided by Risk Weighted Assets (Getahun, 2015). Mishra and Aspal (2012) explain that CAR is one ration to ensure that the banks can take up the reasonable level of the losses arising from the operational losses. The higher CAR means that the bank has more capital to bear the accidental risk and more protection for the investors.

- *Asset Performance*

Banking industry has specific asset performance measurement that different from others industries, which is loan quality. Poor loan quality means the ratio of Non-Performing Loan (NPL) is higher, and higher NPL rate could lead to the bank's failure (Grier, 2007). Therefore, NPL is one of the crucial measurements of bank's soundness (Mishra and Aspal, 2012). Moreover, NPL rate could be calculated as total NPL divided by total loans (Getahun, 2015). The higher NPL rate indicates the lower asset performance.

- *Management Performance*

Management performance in banking industry means how management could manage operating cost efficiently toward operating income (Getahun, 2015) or Cost to Income Ratio (CIR). Management performance is an essential variable of CAMEL performance (Mishra and Aspal, 2012), and significantly related to the success of the bank (Grier, 2007). According to Getahun (2015), the operational costs to operational income ratio indicated the percentage of the bank's operational costs on the operational income and it could provide the information about the management efficiency that is referred to the costs on the income that is generated by this bank. Furthermore, Olweny et al (2011) also used CIR in his research and he used CIR to measure the operating efficiency for Kenyan commercial banks and that research result is that the poor profitability of the banks is led by the operational costs inefficiency.

- *Earnings Performance*

There are some variables that could be represented an earnings performance in banking industry, such as Return on Assets (ROA), Return on Average Assets (ROAA), Return of Equity (ROE), Return on Average Equity (ROAE), and Net Interest Margin (NIM). Since NIM is specific earnings performance measurement for banking industry and it cannot be implemented to others industries, therefore this study will analyse NIM of state-owned commercial banks as representing of the earnings performance. Earnings performance does not only reflect the earnings quantity but it also reflects earnings' sustainability (Getahun, 2015). According to Srinivasan and Saminathan (2016), NIM could be calculated as interest income earned minus interest expended, then divided by total assets; where higher NIM indicates better bank soundness performance.

- *Liquidity Performance*

Liquidity performance is an expression of bank's ability to fulfil its financial obligations (Mishra and Aspalin, 2012; Getahun, 2016). This study focuses on Loan to Deposit Ratio (LDR) that represents liquidity performance; and LDR could be calculated by divided total loans to total deposits (Khaskhelly, 2015). Furthermore, higher percentage of LDR indicates lower liquidity performance.

Research Method

Data Analysis

This study focuses on state-owned commercial banks in Indonesia and China performance during 2014-2015. Indonesia has 4 state-owned commercial banks with each own specific business expertise. Bank Mandiri and Bank Negara Indonesia (BNI) have an expertise to manage corporations as their customers. Meanwhile, Bank Rakyat Indonesia (BRI) has expertise to manage Micro, Small and Medium Enterprise (MSEM). Among all 3 state-owned commercial banks, Bank Mandiri has the higher total asset as much as USD 66,971 million in 2015.

On the other hand, China has 4 state-owned commercial banks (Li et al, 2001); there are the Agricultural Bank of China (ABC), China Construction Bank (CCB), and Industrial and Commercial Bank of China (ICBC). Unlike, state-owned commercial banks in Indonesia, all state-owned commercial banks in China have similar banking services to all customers.

This study will analyse the impact of macroeconomics performance towards state-owned commercial banks' soundness in Indonesia and China by analyse the highest 3 ranks in total assets of state-owned commercial banks as the unit analysis.

Methodology

The main research question of this study is there a positive impact of macroeconomics performance towards banks' soundness performance? In order to answer that research question, this study proposes 5 hypotheses as follows:

> H_1: There is positive impact of the macroeconomics performance towards CAR
> H_2: There is positive impact of the macroeconomics performance towards NPL
> H_3: There is positive impact of the macroeconomics performance towards CIR
> H_4: There is positive impact of the macroeconomics performance towards NIM
> H_5: There is positive impact of the macroeconomics performance towards LDR

This study is a quantitative study using secondary data from reliable data sources, such as the World Bank, Bank Indonesia, People's Bank of China, and BankScope. Data analysis tool of this study is data panel general least squares (GLS) regression through STATA.

Results and Discussion

A Comparison Study: Macroeconomics Performance

In general, China has better macroeconomics performance compared with Indonesia during 2014-2015, with the detail explanation as follows:

- *GDP Growth Rate*
   According to the graph 1 below, both Indonesia and China have better performance (above 5%) in GDP growth rate compared with the rest of the world (below 3%). However, China has better macroeconomics performance in term of GDP Growth Rate during 2014-2015 (7.08% in average).

Figure 1.
GDP Growth Rate of the World (Annual %)

Source: World Bank Data (2016)

Table 1.
GDP Growth Rate of Indonesia and China (Annual %)

GDP Growth Rate		
Indonesia	2014	5.02%
	2015	4.79%
	Average	**4.91%**
China	2014	7.27%
	2015	6.90%
	Average	**7.08%**

Source: World Bank Data (2016)

- *Inflation of Consumer Price*
  China has better macroeconomics performance compared with Indonesia, in term of the inflation of consumer price rate during 2014-2015. Even though, Indonesia has a slightly better performance in 2015 (6.36%) compared with in 2014 (6.40%); however, China reached 1.44% inflation of consumer price in 2015.

Table 2.
Inflation of Consumer Price of Indonesia and China (Annual %)

Inflation of Consumer Price		
Indonesia	2014	6.40%
	2015	6.36%
	Average	**6.38%**
China	2014	2.00%
	2015	1.44%
	Average	**1.72%**

Source: World Bank Data (2016)

- *Interest Rate*
  Even though both countries show a positive trend of interest rate performance during 2014-2015, but China has a better macroeconomics performance in term of interest rate compared with Indonesia.

Table 3.
Interest Rate of Indonesia and China (Annual %)

Interest Rate		
Indonesia	2014	7.75%
	2015	7.50%
	Average	**7.63%**
China	2014	5.60%
	2015	4.35%
	Average	**4.98%**

Source: Bank Indonesia & People's Bank of China (2016)

A Comparison Study: Bank Soundness Performance
In general, state-owned commercial banks in Indonesia have better bank soundness performance in CAR and NIM compared with state-owned commercial banks in China. Meanwhile, state-owned commercial banks in China have better bank soundness performance in NPL, CIR and LDR compared with state-owned commercial banks in Indonesia.

- *Capital Performance*
  Table 4 shows that all 3 state-owned commercial banks in Indonesia have higher CAR compared with other 3 state-owned commercial banks in China during 2014-2015; even though all the state-owned commercial banks are fulfil the minimum requirement of CAR by the Basel Accord, which is 8%.

Table 4.
CAR of Indonesia & China (Annual %)

CAR					
	2014			2014	
	Bank Mandiri	16.19%		ICBC	14.53%
	BNI	16.33%		ABC	12.82%
	BRI	18.31%		CCB	14.68%
Indonesia	**Average**	**16.94%**	China	**Average**	**14.01%**
	2015			2015	
	Bank Mandiri	17.99%		ICBC	15.22%
	BNI	19.34%		ABC	13.40%
	BRI	20.59%		CCB	15.39%
	Average	**19.31%**		**Average**	**14.67%**

Source: BankScope (2016)

- *Asset Performance*
  According to Circulation Letter of Bank Indonesia Regulation No: 6/23/DPNP year 2004, the maximum NPL rate is less than 2% in order to reach first rank in asset quality performance of bank soundness performance. As it shown on table 5, all state-owned commercial banks in Indonesia were fail to fulfil ≤ 2% on NPL during 2014-2015. Meanwhile, NPL performance of state-owed commercial banks in China was below 2% in average during 2014-2015. Therefore, state-owned commercial banks in China has better performance in term of asset quality because has less NPL.

Table 5.
NPL of Indonesia & China (Annual %)

NPL					
	2014			2014	
	Bank Mandiri	3.42%		ICBC	1.13%
	BNI	2.51%		ABC	1.54%
	BRI	3.17%		CCB	1.19%
Indonesia	**Average**	**3.03%**	China	**Average**	**1.29%**
	2015			2015	
	Bank Mandiri	3.86%		ICBC	1.50%
	BNI	3.69%		ABC	2.39%
	BRI	3.01%		CCB	1.58%
	Average	**3.52%**		**Average**	**1.82%**

Source: BankScope (2016)

- *Management Performance*

Table 6 shows that state-owned commercial banks in China have less CIR compared with state-owned commercial banks in Indonesia during 2014-2015. It means the management of state-owned commercial banks in China could manage operational cost more efficiently and there are a possibility to gain more profitability compared with state-owned commercial banks in Indonesia.

Table 6.
CIR of Indonesia & China (Annual %)

CIR						
Indonesia	2014		China		2014	
	Bank Mandiri	42.43%		ICBC		27.93%
	BNI	49.20%		ABC		34.56%
	BRI	42.65%		CCB		28.92%
	Average	**44.76%**		**Average**		**30.47%**
	2015			2015		
	Bank Mandiri	41.02%		ICBC		26.69%
	BNI	49.04%		ABC		33.28%
	BRI	44.24%		CCB		27.02%
	Average	**44.77%**		**Average**		**29.00%**

Source: BankScope (2016)

- *Earnings Performance*
  Table 6 shows the NIM of state-owned commercial banks in Indonesia is more twice higher than in China during 2014-2015. Moreover, the trend of state-owned commercial banks' NIM in Indonesia is increasing; while in China, the trend is decreasing.

Table 7.
NIM of Indonesia & China (Annual %)

NIM						
Indonesia	2014		China		2014	
	Bank Mandiri	5.59%		ICBC		2.66%
	BNI	6.32%		ABC		2.92%
	BRI	7.94%		CCB		2.80%
	Average	**6.62%**		**Average**		**2.79%**
	2015			2015		
	Bank Mandiri	6.06%		ICBC		2.47%
	BNI	6.57%		ABC		2.66%
	BRI	7.96%		CCB		2.63%
	Average	**6.86%**		**Average**		**2.59%**

Source: BankScope (2016)

- *Liquidity Performance*
  Table 8 shows that state-owned commercial banks in China have better liquidity performance because they have lower LDR, compared with state-owned commercial banks in Indonesia.

Table 8.
LDR of Indonesia & China (Annual %)

LDR						
Indonesia	2014		China		2014	
	Bank Mandiri	76.56%		ICBC		69.22%
	BNI	74.03%		ABC		61.75%
	BRI	81.55%		CCB		71.50%
	Average	**77.38%**		**Average**		**67.49%**
	2015			2015		
	Bank Mandiri	81.55%		ICBC		71.57%
	BNI	80.16%		ABC		62.83%
	BRI	78.36%		CCB		74.88%
	Average	**80.02%**		**Average**		**69.76%**

Source: BankScope (2016)

After presenting the recent data of macroeconomics performance and bank soundness performance of state-owned commercial banks in Indonesia and China based on literature study, then, this study will continue to analyse the impact of macroeconomics performance towards banks performance.

Discussion

Through GLS regression by using STATA – random effect, here the econometrics equation for the following hypothesis:

- ***The impact of macroeconomics performance towards CAR***
  H1: There is positive impact of the macroeconomics performance towards CAR

$$Y_1 = 140.8781 - 23.67095X_1 - 18.60493X_2 + 14.70537X_3$$

Where:
Y1: CAR
X1: GDP Growth Rate
X2: Inflation of Consumer Price
X3: Interest Rate
From the econometric equation above, it shows that only interest rate has positive impact towards CAR. This statistics result also shows that GDP growth rate has negative impact towards CAR and it is consistent with Osamwonyi and Michael (2014).

- ***The impact of macroeconomics performance towards NPL***
  H2: There is positive impact of the macroeconomics performance towards NPL

$$Y_2 = 22.4249 - 3.523272X_1 - 2.170073X_2 + 1.572513X_3$$

Where:
Y2: NPL
X1: GDP Growth Rate
X2: Inflation of Consumer Price
X3: Interest Rate
From the econometric equation above, it shows that only interest rate has positive impact towards NPL. This statistics result shows that GDP growth rate has negative impact towards NPL and it is consistent with Osamwonyi and Michael (2014).

- ***The impact of macroeconomics performance towards CIR***
  H3: There is positive impact of the macroeconomics performance towards CIR

$$Y_3 = 27.39548 - 0.3591388X_1 + 3.11213X_2 - 0.0946117X_3$$

Where:
Y3: CIR
X1: GDP Growth Rate
X2: Inflation of Consumer Price
X3: Interest Rate

From the econometric equation above, it shows that only inflation of consumer price has positive impact towards CIR. This statistics result shows that GDP growth rate has negative impact towards CIR and it is consistent with Osamwonyi and Michael (2014).

- ***The impact of macroeconomics performance towards NIM***
  H4: There is positive impact of the macroeconomics performance towards NIM

$$Y_4=14.39252-2.310109X_1+0.9243534X_2+1.256951X_3$$

Where:
Y4: NIM
X1: GDP Growth Rate
X2: Inflation of Consumer Price
X3: Interest Rate
From the econometric equation above, it shows that inflation of consumer price and interest rate has positive impact towards NIM, and this is consistent with previous study that has been done by Gizychi (2001). Moreover, this statistics result shows that GDP growth rate has negative impact towards NIM and it is consistent with Osamwonyi and Michael (2014).

- ***The impact of macroeconomics performance towards LDR***
  H5: There is positive impact of the macroeconomics performance towards LDR

$$Y_5=182.3881-19.72425X_1-12.45679X_2+9.527449X_3$$

Where:
Y5: LDR
X1: GDP Growth Rate
X2: Inflation of Consumer Price
X3: Interest Rate
From the econometric equation above, it shows that only interest rate has positive impact towards LDR. This statistics result shows that GDP growth rate has negative impact towards LDR and it is consistent with Osamwonyi and Michael (2014).

Through this GLS regression – random effect shows that interest rate as one variable of macroeconomics performance has positive impact towards all variables of bank soundness performance. Then, inflation of consumer price has positive impact towards CIS and NIM; and negative impact towards CAR, NPL, and LDR. Meanwhile, GDP growth rate has negative impact towards all variables of bank soundness performance and this statistics result consistent with Osamwonyi and Michael (2014).

Conclusion

The purpose of this study is to analyse the impact of macroeconomics performance towards bank soundness performance of state-owned commercial banks in Indonesia and China during 2014-2015. Previous study that has been done by Casu et al (2009) mention that macroeconomics performance has positive impacts towards bank soundness performance in general. Therefore, the originality of this study is to analyse the impact of macroeconomics performance towards bank soundness performance in detail through CAMEL performance analysis. Then, this study finds that each variable of CAMEL performance which represents

bank soundness performance has been influenced differently by macroeconomics performance. It means that higher macroeconomics performance would not able to guarantee that state-owned commercial banks will generate better performance of bank soundness.

Finally, this study would like to recommend further study about the other external impacts of bank soundness performance. Since CAMEL or CAMELS has been declared to be the best measurement to analyse bank soundness, then, the future study should be focused on other external impacts that influence CAMEL/S performance. This study suspects human capital and behaviour will play crucial roles to generate better CAMEL/S performance, and highly recommendation topic for future study.

References

Aburime, T. (2008). Determinants of Bank Profitability: Company-Level Evidence from Nigeria. *SSRN Electronic Journal*

Casu, B., & Girardone, C. (2009). Testing the Relationship between Competition and Efficiency in Banking: A Panel Data Analysis. *Economics Letters*, 105(1), 134-137.

Getahun, M. (2015). *Analyzing Financial Performance of Commercial Banks in Ethiopia: CAMEL Approach* (Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Gizycki, M. C., & Gizycki, M. (2001). The Effect of Macroeconomic Conditions on Banks' Risk and Profitability. *Research Discussion Paper, Reserve Bank of Australia*.

Grier., W.A. (2007). *Credit Analysis of Financial Institutions*. 2nd ed. Euromoney Institution Investor PLC.

International Monetary Fund (2015, October). World economic outlook. Washington: International Monetary Fund. Retrieved from: http://www.imf.org/external/pubs/ft/weo/2015/02/.

International Monetary Fund (2016, January). World economic outlook. Washington: International Monetary Fund January Update. Retrieved from: https://www.imf.org/external/pubs/

Kanwal, S., & Nadeem, M. (2013). The impact of macroeconomic variables on the profitability of listed commercial banks in Pakistan. *European Journal of Business and Social Sciences*, 2(9), 186-201.

Khaskhelly., A.Z. (2015). Comparative Analysis of performance of Islamic Vis a Vis Conventional Banking of Pakistan during Global Financial Crisis 2007-2010. International Journal of Case Studies, 4(1), 37-39.

Li, S., Liu., F. Liu., S. & Whitmore., G.A. (2001). Comparative Performance of Chinese Commercial Banks: Analysis, Findings and Policy Implications. *Review of Quantitative Finance and Accounting,* 16(2), 149-170.

Lin, J. H. (2002). Asia's Financial Futures. *Foresight*, 4(2), 25-32.

Misra, S. K., & Aspal, P. K. (2013). A Camel Model Analysis of State Bank Group. *World Journal of Social Sciences,* 3(4), 36-55.

Olweny, T., & Shipho, T. M. (2011). Effects of Banking Sectoral Factors on the Profitability of Commercial Banks in Kenya. *Economics and Finance Review*, 1(5), 1-30.

Osamwonyi, I. O., & Michael, C. I. (2014). The Impact of Macroeconomic Variables on the Profitability of Listed Commercial Banks in Nigeria. *European Journal of Accounting Auditing and Finance Research*, 2(10), 85-95.

Shiblee, L. (2009). The Impact of Inflation. GDP, Unemployment, and Money Supply on Stock Prices. *SSRN Electronic Journal*

Shukor, N. B. B. M., Said, R. B., & Majid, R. B. A. (2016). The Relationship between Housing Finance and Macroeconomics Variables in Malaysia. *MATEC Web of Conferences,* 66, 1-6.

Srinivasan and Saminathan., Y.P. (2016). A Camel Model Analysis of Public, Private and Foreign Sector Banks in India. *Pacific Business Review International,* 8(9), 45-50.

Vines, D. (2016). Chinese Leadership of Macroeconomic Policymaking in a Multipolar World. *China Economic Review*, 40, 286-296.