愛知工業大学研究報告
第 52 号　平成 29 年

＜査読付論文＞

The Impact of Basel Standard on Macroeconomic: Case of Japan and Malaysia

マクロ経済に対するバーゼル規制の影響：日本とマレーシアの場合

シティ ノルバヤ　ヤハヤ[†], ヌサイバ　マンスル[†], 岡崎一浩[††]
Siti Norbaya Yahaya[†], Nusaibah Mansor[†], Kazuhiro Okazaki[††]

Abstract *Bank of International Settlement (BIS) has introduced a new framework in order to strengthen the regulation in term of risk coverage and security of lending activity held by financial institution. However, the framework is seen to give a massive impact to some macroeconomic indicators. Therefore, this study aims to analyze the trend and impact of macroeconomic performance during the introduction of Basel Standard. Since the impact of macroeconomic performance of some countries reflects in different ways to the standard, hence this study focused on comparative study between developed and developing country represent by Japan and Malaysia. Study period covered from 2000 to 2015. Gross domestic product (GDP), inflation rate (IR) and annual exchange rate (AER) are among the macroeconomic indicators considered into this study, all data are gained from world bank's website.*

1. Introduction

Basel Committee on Banking Supervision (BCBS) was found in 1974 and suggested best practice for banking standards. This practice essentially focuses on capital measurement system. It has been introduced to guide financial institution and improving required level of capital, hence firming the capacity to mitigate any uncalculated risk that may occur in future.

Basel committee until now succeeds in introducing three standards known as Basel I, Basel II and Basel III. It first was introduced in 1988. These three rules are initially focused on credit risk before extended to a combination of risk that is expected to define risk extensively. Basel II was announced in 2004 with better upgrading to improve the regulatory system in monitoring capital requirement. Basel Committee introduces third Basel in 2010; Basel III is more strict and comprehensive in defining and covering the credit risk, liquidity and capital adequacy of financial institution. It aims to improve banking sector's ability to absorb financial and economic shock, thus plummeting the risk of spillover from the financial sector to the real economy (Financial Stability and payment System Report, 2010). This rule is established to react on the financial crisis occurred around 2008. Since Basel III is prepared closely to manage financial crisis, thus it is nearly to have a significant macroeconomic impact.

Currently the solvency ratio was retained at 8% of risk weighted asset (RWA), while Tier 1 capital base was fully retained at 6% in 2015, the percentage was increased from 4% of RWA which had secured by financial institution start from the introduction of Basel I (Shearman & Sterling LLP, 2011).

Bank security is always connected to the percentage of capital retained by bank in order to face with any possibility that bring to financial collapse, other than that bank may use that capacity to get advantage on accessing to credit market. The percentage of retained capital should be more than required by regulator. This is agreed by

[†] Universiti Teknikal Malaysia Melaka, Malaysia

[††] Faculty of Business Administration, Aichi Institute of Technology

Slovik & Cournede ,(2011), they found that adequate capital need to be secured especially by small and medium sized bank and for banks operating in developing or emerging markets.

Few studies have been done to verify the relationship between Basel III and certain macroeconomic indicators. Most of them are using gross domestic product (GDP) to represent the macroeconomic indicator.

In order to contribute and add more literature and reference to future study, this paper focuses on analyzing trend of implementation of Basel Standard and its relation with macroeconomic indicator. Besides that comparative study between Japan and Malaysia is conducted to measure between developed and developing countries` economic performance.

How Does Basel Standard Affect the Macroeconomic?

Basic objectives of Basel Standard

- Securing the adequate capital
- Extending risk coverage
- Prevention of unnecessary leverage
- Strong liquidity
- Sound management and supervision of risk

Figure 1: Basic Objectives of Basel Standard

By referring to the basic objectives of Basel Standard in Figure 1, securing adequate capital is very critical to financial institution. It acts as a hard shield to protect and absorb from any unexpected financial risk that may occur due to loose in tightening the holding capital.

Major financial crisis in 1997 and 2008 set the new standard for Basel Committee. Currency crisis and subprime issue has lingered around the finance department as it affects the main economic indicator such as GDP, exchange rate and inflation rate.

These indicators are closely monitored as it portrays the overall country performance. Previous study proven that by securing more capital, the GDP is slightly affected. This is because, in order to secure more capital and liquidity, financial institutions try to reduce the percentage of loan and in the same time issue more equity and revise the percentage of retained earnings by reducing dividend payment. Company with high demand for loan may affect trough these policies. It intruded the business growth and new investment.

2. Methodology

This study aims to analyze the trend of macroeconomic indicators when Basel Standard has been introduced. The analysis covered the trend for years 2000 to 2015. Macroeconomic indicators are represented by GDP, inflation rate and annual exchange rate. Bank capital to asset ratio is used to represent the Basel Standard indicator. Data is gathered from World Bank website.

Since the introduction of Basel Standard in 1988, most countries have accepted to implement these Standards; however, some of them are not fully adopt it since every country still regulated by their own policy. In addition, Basel III considering multi-dimensional approach by concentrating on the level of capital and liquidity secure by financial institution to face with any possibility of financial crisis. Financial crisis occurred around 2008 slightly affect countries around the world. This study aims to compare the economic performance of developed and developing country by taking Japan and Malaysia to represent each category.

Study on impact of Basel standard on emerging economies has caught the attention of many researchers, this study is very crucial in measuring how these standard connecting to the non-members of BCBS and developing countries in Asia. Besides that, this study contributes to the answer on whether Basel Standards is needed in well-capitalized banking sector.

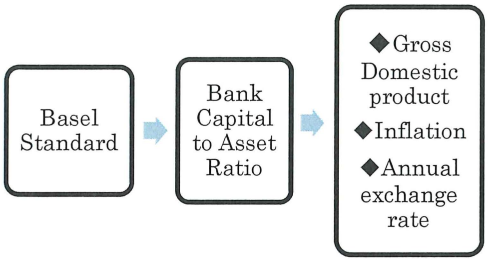

Figure 2: Research Framework

Bank capital to assets ratio (BCAR) in japan and Malaysia were last measured at 5.82% and 10% respectively in 2015. BCAR by definition is the ratio of bank capital and reserves to total assets. Capital and reserves include funds contributed by owners, retained earnings, general and special reserves.

In order to measure the effectiveness of Basel standard, the Gross Domestic Product (GDP) should be closely monitored as GDP represent a budgetary value of all the finished goods and services manufactured within a country in a specific time period. In Japan GDP was measured at 4123.26 billion US dollars in 2015. Meanwhile in Malaysia GDP was recorded at 296.22 billion US dollars in 2015. According to Lacarno (2011), GDP loss becomes more significant due to greater capital requirements cause not only higher lending rates, but also limits in the supply of credit.

Inflation rate by definition is a level of consumer price index. Inflation rate in Japan plummeted by 0.4 percent in July of 2016, it continuous for two months due to decline in cost of housing and transport. While in Malaysia, the consumer price index increased 1.1 percent year-on-year in July of 2016, compared to a 1.6 percent gain in June (The Department of Statistics Malaysia).

The third measurement of the impact of Basel standard is annual exchange rate. This study used annual or yearly rate to compare with the other economic indicator. Exchange rate is also known as a foreign exchange rate between two currencies. Beside that it also known as the measurement rate at which one currency will be exchanged for another.

3 Discussions

Previous studies have proven that Basel III is among the most affected standard to macroeconomic indicator. Since the introduction of Basel III in December 2010, the increment of capital by banking institution create an earnings shortfall and drive up the cost of securitization and structured financing (Eufrocinio & Jami'ah, 2013). According to International Institute of Finance (IIF) stated that the implementation of Basel III probably cut the economic advancement for the next five years by 3 percent, the study has been done on United States, The Euro Zone and Japan (IIF, 2011).

Table 1: Summary of previous literature

Countries covered	Author	Impact of one Percentage point in capital requirement on GDP during Basel III implementation period.	Estimation Model.
United States, Euro Area, Japan	Slovik and Cournede (2011)	Decrease in GDP by 0.20%	DSGE
Italy	Locarno (2011)	Decrease in GDP by 0.33%	Structural
Unites States	Angelini et al (2011)	Decrease in GDP by 0.09%	DSGE
Unites States, Euro Area, Japan, UK and Switzerland	International Institute of Finance (2011)	Decrease in GDP by 3.2%	Not Available
France	Sy (2011)	Decrease in GDP by 0.3%	Not Available
Philippines	Santos and Bernabe (2012)	Increase in GDP by 0.01%	Structural (panel least square, VAR)

Source: Eufrocinio and Jami'ah (2013)

From Table 1, it can be analyzed that most literature used to investigate the relationship between Basel Standard and GDP performance, the result shows that, study conducted by Santos and Bernabe (2012) found the increment of GDP by 0.01% of one percent point in capital requirement during Basel III implementation period. Unlike other studies which showed a slight reduction of GDP performance. Macroeconomic indicators in Japan and United States are less affected by others area compared to euro area, this is generally due to high percentage of bank credit intermediation is demanded in euro area economy (Slovik & Cournede, 2011). After the completion of implementation of Basel III, GDP growth is expected to be slightly quicker than the current trend. This trend is projected by Hazel& Eufrocinio (2012).

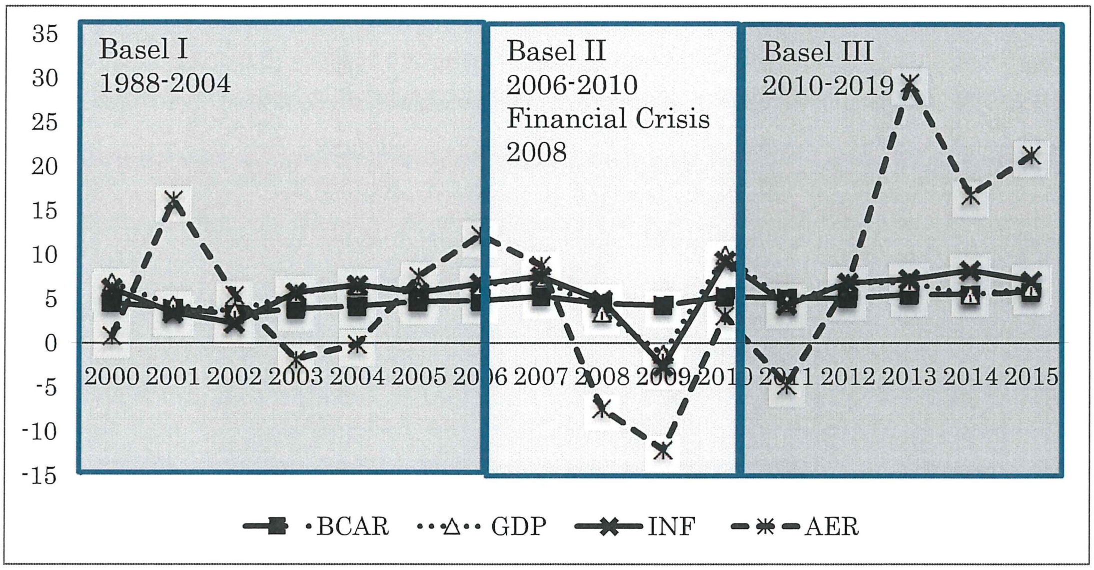

Figure 3: Trend Analysis of BCAR and Macroeconomic Indicator of Japan

Figure 3 shows the trend of Japan economic performance along the implementation of Basel standard from year 2000 to 2015. Bank capital to asset ratio is slightly increase every year, while GDP growth is fluctuated before slightly decrease after the introduction of Basel III in 2010 onward. Previous study has proven that, implementation of Basel III has distracted the GDP performance. Not only GDP but Annual Exchange Rate (AER) and inflation rate (INF) are also affected marginally during the financial crisis occurred in 2008 and 2009, while the BCAR is increase due to revision of Basel II to Basel III. Unlike other macroeconomic indicator, AER is remarkably hike in 2011 before fluctuated in 2013 onward, compare to GDP and INF which moving steadily with the BCAR trend.

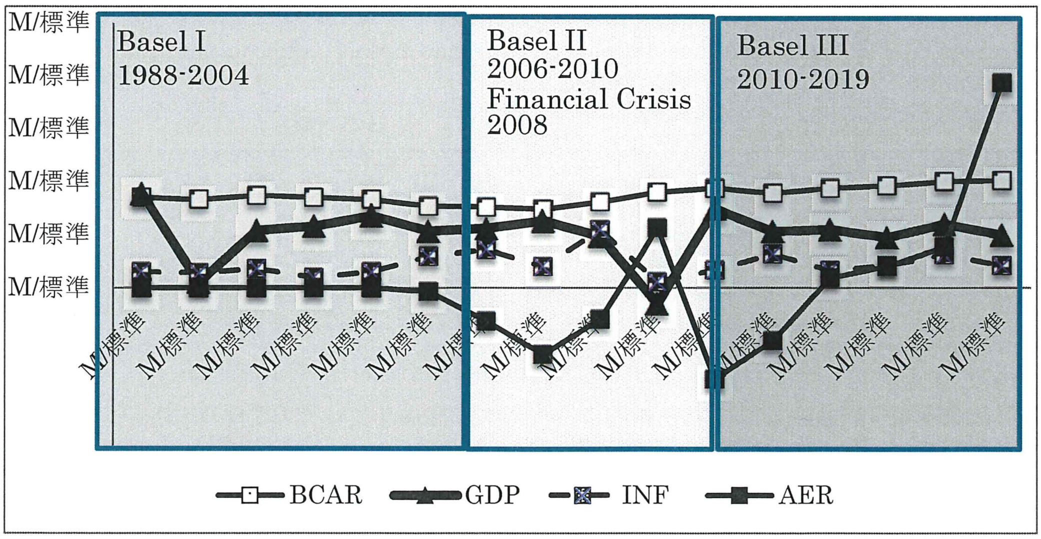

Figure 4: Trend Analysis of BCAR and Macroeconomic Indicator of Malaysia

Figure 4 indicates the Malaysia economic performance along the introduction of Basel Standard. GDP and BCAR performance are inverse relation. Strict rules in Basel III give a slight decreased in GDP performance from 2010 onward, on the other hand, Basel I, which was introduced in 1988 until 2004 is more loose in tightening the capital and liquidity which resulting to more spending by financial institution and eventually contribute to increase in GDP.

In Malaysia, banking institutions are well operated at large capital adequacy and leverage levels, this is consistent with the requirements and targets set under Basel III, hence the impact of the new capital standards on the real economy is moderate (Financial Stability and payment System Report, 2010).

Political issue in Malaysia raised global attention especially from economic analyst who rated the Malaysia economy to slightly decrease from 2013 onward; hence Ringgit traded low against USD and expected to continuously decline for coming five years. The GDP performance is fluctuated caused from this issue.

4 Conclusions and Recommendation

This study attempts to analyze the trend of macroeconomic performance during the implementation of Basel Standard. Secondary data are gained from World Bank data. Bank capital to asset ratio (BCAR) is used to represent the Basel Standard indicator, while three variables include GDP, INF and AER are used represent the macroeconomic indicator. The study focused on Japan and Malaysia that represent the developed and developing country respectively.

From the analysis, the study concludes that, the same trend of macroeconomic performance can be seen in both countries. Besides that, this study contributes to the answer on weather Basel Standards is needed in well-capitalized banking sector in developed and developing countries.

Country with stable financial regulation, sufficient accounting standards and sound provisioning practices can employ effective and positive risk based capital requirement, (Maria et al, 2001).

In order to get the full view about the economic performance during the implementation of Basel Standard, future study should consider analysis from more economic indicators; hence the wider view of a country's economic performance can be analyzed precisely. The statistical analysis should be conducted in order to analyze the significant variable other than GDP, Inflation rate and AER.

5 References

[1] Eufrocinio M.Bernabe Jr & Jami`ah Jaffar, (2013), Gauging the Macroeconomic Impact of Basel III on Malaysia, The SEACEN Centre.

[2] Franz R.hahn, (2003), The New Basel Capital Accord (Basel II) From a Macroeconomic Point of view, Austrian Economic Quarterly 2/2003

[3] Macroeconomic Assessment Group, (2010) Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements.

[4] Financial Stability and Payment System Report, (2010), Basel III and its Potential Implication on Malaysia and the Financial System, Regulatory and Supervisory Framework.

[5] Shearman & Stearling LLP, (2011), The New Basel III Framework: implication for banking Organizations, Financial Institution Advisory & Financial Regulatory.

[6] Institute of International Finance, (2011), the Cumulative Impact on the Global Economy of Changes in the Financial Regulatory Framework.

[7] Maria Concette Chiuri, Giovanni Ferri and Giovanni Majnoni, (2001), The Macroeconomic Impact of Bank Capital Requirement in Emerging Economies: past Evidence to Assess the Future, World Bank Group. DOI: http://dx.doi.org/10.1596/1813-9450-2605

[8] Patrick Slovik and Boris Cournede, (2011), Macroeconomic Impact of Basel III, OECD Economics Department Working Papers No 844, Doi http://dx.doi.org/10.1787/5kghwnhkkjs8-en

[9] Locarno, A. (2011). The macroeconomic impact of Basel III on the Italian economy. Bank of Italy Occasional Paper (88).

[10] http://dx.doi.org/10.2139/ssrn.1849870
[11] Santos, H., & Bernabe Jr, E. M. (2012). The Macroeconomic Effects of Basel III Implementation in the Philippines: A Preliminary Assessment (No. 17). BSP Working Paper Series.
[12] Angelini, P., Clerc, L., Cúrdia, V., Gambacorta, L., Gerali, A., Locarno, A., & Vlček, J. (2015). Basel III: Long - term Impact on Economic Performance and Fluctuations. The Manchester School, 83(2), 217-251.
[13] Siti Norbaya Yahaya, Nusaibah Mansor & Kazuhiro Okazaki, (2016), Financial Performance and Economic Impact on Capital Adequacy Ratio in Japan, International Journal of Business and Management, DOI: http://dx.doi.org/10.5539/ijbm.v11n4p14

（受理 平成 29 年 3 月 10 日）