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Influence of External Forces on Bank Recapitalization: An Evidence of Banks in IMT-GT Economic Region

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ABSTRACT

Purpose: This paper provides evidence of the influence of selected external forces during the banking crises on the recapitalized performance of banks in Indonesia, Malaysia and Thailand in the IMT-GT economic region.

Methodology: The study covers a period of 19 years from 1997 to 2015 across 45 commercial banks. The data was collected from the World Bank database and the global economy website.

Results: Although the strategy of capital injection used to strengthen the capital position of the banks proved positively significant, the results showed GDP, Inflation and Political Stability Index had different impact on the recapitalized banks' performance in these three countries. The overall results appears to indicate that external forces have higher impact on Indonesia banks compared to Thailand and Malaysian banks over the study period.

Implications: This study recommend recapitalize banks to efficiently utilize their enlarged capital base to expand their lending activities and investment to real sectors in order to generate higher economic growth for the IMT-GT region.

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1. Introduction

Over the 1997-2008 period, the three countries in the IMT-GT region Indonesia, Malaysia and Thailand experienced two major financial and banking crises (AFC 1997-1998 and GFC 2007-2008). The banking sector in these three countries suffered adversely in terms of currency depreciation, loan quality deterioration, and capital erosion.

The severity of the financial crises had weakened the capital position of the bank industry in IMT-GT region. In 1997 Asian Financial Crisis (AFC), Indonesia, Malaysia and Thailand faced serious volatilities in their economic and financial factors which impacted their financial performance. Thailand was faced with currency risk due to serious deterioration in the value of Baht which affected Thailand banks and

consequently, the Malaysian banks due to contagion effects from cross border transactions and international business. Malaysian banks similar to Thailand bank experienced high credit risk and liquidity risk from the credit crunch, which eventually drained the capitals of the banks in these two countries. The risks were systemic and spread to the Indonesian banking system.

A substantial reduction in equity capital or even losses experienced by these banks were due to bad loans, default risk, currency risk and liquidity risk. Berger and Bouwman (2009) argue that the importance of bank capital to banking and also other financial institutions is elevated during the banking crises. This is because during the crises, banks need to have fresh or additional capital being injected in order to absorb their losses and continue their lending operation. However, capital injections do not take place in the banking crises only, but also in the normal situation where banks need these capital injections to expand their lending, investment and other asset acquisition activities. The argument of Berger and Bouwman (2009) is supported by Nicolo (2015). The common strategy used by the governments in these three countries was recapitalization of their banks through capital injections and bank consolidation.

It is undeniable that external factors such as gross domestic product (GDP) (Yahaya, Mansor and Okazaki, 2016) and inflation (Mat Nor and Ahmad, 2015) have significant effect on bank performance. Nonetheless, their impacts often produce conflicting results on bank fragility in different economic regions. In recent times, political stability emerges as a significant force influencing economic and financial performance (Tamadonnejad et al, 2013). However, the three external forces which notably affected the banks' performance of the IMT-GT region have not been empirically investigated in relation to their effects on banks which had been given a new lease of life through recapitalization. Therefore, it is the objective paper to provide empirical evidence on how the external forces had influenced the fragility of recapitalized banks in the IMT-GT countries. The remaining of the paper is outlined as follows: Section 2 review the empirical literature. Section 3 discusses the methodology of the study. Section 4 shows the model estimation analysis and result interpretation. Final section concludes the study and provides the policy recommendation.

2. Literature review

2.1 Theoretical Background

The Basel Standard imposes a rule that banks should maintain adequate level of capital ratio to cushion against capital erosion due to changes in risk sensitive factors. The minimum capital requirement is 8% of its risk weighted assets. This capital ratio also must reflect the banks' capital risk management towards the impact of a combination of credit risk, market risk and operational risk.

The stability of capital position might be affected by external factors. Harley (2011) discovered that inflation rate, political instability and return on investment among others, are significant predictors of capital adequacy. Against the backdrop of developing economy, the study found that inflation erodes bank capital. As inflation increases, the value of money drops and depreciates the bank capital. A later study in 2012 by Samson and Harley also established the finding that political stability may reduce bank financial distress and instability as political stability evokes investors' confidence and long term investments. In reverse, political instability affects bank financial strength and instability, which in a long term, requires capital injection to enable the bank to continue operation as an-going entity.

Basically, strong economic growth has benefit for banks. When GDP growth become strong, it means that the economy of the countries is in healthy condition. It is essentially important why the economic growth need to be strong to the banking industry. This is because the economic growth can lead to increase lending by banks, improved access to funding for banks (that is investors' confidence is growing so their willingness to invest becomes stronger).

2.2 Past Studies

Failure of financial institutions can produce shocks to the economy. This is evident from the Global Financial Crisis (GFC) of 2008. A financial crisis imposes shocks on major sectors of the economy, which result in reduction in income, uplift of currency crises and shrinkage of wealth in the real economy. These findings have been supported by studies carried out by Levine & Zervos, (1998); Hoggarth, Reis, & Saporta, (2002); Čolaković, (2014); Varotto & Zhao, (2014); and Ayadi et al., (2015). The studies show there is no standard discrimination for financial crisis between developed and developing countries. Both categories of countries have to face boom and bust of financial cycles. The result from the region of European Union countries shows that GDP decreased by an average of 4.3% due to GFC (Karanikolos et al., 2013). Similarly, the regions of Organization of Economic Co-operation and Development Countries (OECD) and Central and East European countries (CEE) were badly affected by the financial crisis which decreased their economic growth, on average by 3% to 4% (Kapp & Vega, 2014; Corovei, 2015; Romer & Romer, 2015).

Moreover, macroeconomic factors play an important role in a financial crisis. D. P. Louzis, Vouldis, and Metaxas (2012) and Chaibi and Ftiti (2015) highlighted that lower GDP growth, higher unemployment rate, higher interest and inflation rate are favorable to banking crisis.

The impact of macroeconomic variables on the effectiveness of capital injection are studied by Kanwal and Nadeem (2013). They found that the real GDP has insignificant positive effect on the profitability of Pakistan banks. Ramadhan, Kilani and Kaddumi (2011) found similar result where the real gross domestic product has positive insignificant impact on ROA and ROE. Although insignificant, the positive estimates indicate that a better economy helps banks to record high profit, thus increases the capital position of the banks.

The study of Zeitun (2012) used macroeconomics factors for the banking sector of Gulf Cooperation Council Countries (GCC). The results from cross sectional time series panel data indicated that ROA and ROE individually has a positive relationship with GDP whereas inflation has a negative relationship with ROA, ROE and a positive relationship with insolvency risk. On the other hand, the research of Khan et al. (2013) carried on the banking sector of Pakistan revealed that consumer price index (CPI) and GDP growth rate have significant positive relationships with ROE and ROA. The finding of Khan et al. is similar to Gul, Irshad, and Zaman (2011), who analysed 15 top commercial banks profitability. They found strong positive relationships between external variables (GDP and Inflation) and bank profitability.

Zhang et al. (2016) and Tan and Floros (2012) examine the relationship between profitability of banks and efficiency of cost, development of banking sector and inflation for Chinese banks. Inflation is found to be negatively related to profitability (Maudos, 2017). This result for China banks is in contrast to the findings of Khan et al. (2013) for banks in Pakistan. The results of Khan et al. (2013) and Gul, Irshad and Zaman (2011) appears to suggest that higher inflation necessitates banks to have higher capital ratio. On the other hand, the result of Zeitun (2012) in GCC region suggests that banks in GCC countries tend to record higher profit on lower inflation.

There is still an ambiguous impact of the effectiveness of capital injection on the banking performance related to the macroeconomic factors namely GDP and Inflation. From the previous studies Berger and Bouwman (2013), Takashi and Montgomery (2011), GDP has not been discussed in terms of its influence on the effectiveness of capital injection. Both studies concentrate on analyzing the relationships between bank specific factors and capital adequacy. This gap in the literature is intended to be investigated in this paper for banks in the IMT-GT region which have undergone recapitalization exercise.

Samuel (2015) examined recapitalized banks in Nigeria and their relationship to GDP, bank total assets (BTA) and bank total credit (BTC) to recapitalization. The study found that GDP, BTA and BTC is each significant but negatively related to recapitalization. This study provides evidence that bank recapitalization is needed during bad economy to stimulate efficient utilization of bank credit and total assets. This study is supported by Yakubu and Affoi (2014) and Korkmaz (2015).

The above literature reviews shows conflicting results on the effect of GDP and inflation on bank recapitalization for Nigerian banks (Samuel, 2015). It would be interesting to find out the effect of GDP and inflation on recapitalization for banks in the IMT-GT region since these three countries were most affected during the AFC by the two external forces as shown in Table 1.

Table 1: Percentage of GDP and Inflation rate in IMT-GT countries

Country	1996		1997		1998	
	GDP (%)	INFLATION	GDP	INFLATION	GDP	INFLATION
Indonesia	7.6	8.0	4.7	6.2	-13.1	58.4
Malaysia	10	3.5	7.3	2.7	-7.4	20.5
Thailand	5.9	5.8	-1.4	5.6	-10.5	3.7

Source: The World Bank, Data Statistic.

3. Methodology

This study was designed to investigate the effect of external forces (GDP, Inflation and political stability index) on the recapitalized banks' capital ratio. This is driven by the motivation to see whether the recapitalization has brought about improved performance of the banks from adverse effects of the banking crises (AFC and GFC). Secondary data comprising of financial ratios were collected from the annual reports published in Bankscope database and while the economic data was extracted from the World Bank database. The analysis period was from the year 1997 to 2013. This study used panel data statistics and employed Fixed Effect model on Generalised Least Square (GLS) estimation technique.

The conceptual model expressed in a linear form is stated below:

$$\text{CAPR}_t = F(\text{GDP}, \text{INF}, \text{PSI}) \dots \text{eq. 1}$$

The above function can be written in a linear econometric form as follows:

$$\text{CAPR}_t = \alpha_0 + \beta_1 \text{GDP}_{it} + \beta_2 \text{PSI}_{it} + \beta_3 \text{INF}_{it} + \varepsilon_{it} \dots \text{eq. 2}$$

Where:

α	=	constant
i	=	bank
t	=	time period
ε_{it}	=	Error term of bank i on time t
CAPR_t	=	Recapitalization of banks (measured by capital ratio)
GDP	=	Gross Domestic Product
PSI	=	Political Stability Index
INF	=	Inflation
$\beta_1, \beta_2, \beta_3$	=	Regression Coefficients

The a-priori expectation shows the relationship which exist between the explanatory variable (independent and dependent variables). The a-priori expectation is thus $\beta_1, \beta_2, \beta_3 > 0$.

4. Analysis and Results Interpretation

Figure 1 and Figure 2 illustrates the GDP and Inflation of the three countries from 1997 (the AFC period) to 2016 (during and after GFC). GDP took a deep downturn with negative growth in 1998 from the effects of the AFC in 1997. Indonesia and Thailand recorded the lowest GDP growth of -13.10 and -

10.50 percent respectively. In 2009, GDP again took a dive after the GFC 2008. However, the decline in GDP was not as severe as in 1998. Inflation rate was found to increase sharply in 1997 and 1998, opposite to GDP trend. The highest inflation rate was recorded by Thailand and Indonesia. As GDP of the three countries improved, inflation rate declined from double digit to single digit. In 2016, Thailand and Indonesia recorded 3.53 percent and 0.90 percent respectively. Malaysia achieved good economic indicators with GDP of 4.22 percent and inflation rate of 2.15 percent in 2016.

Figure 1: GDP Performances of Indonesia, Malaysia and Thailand

Figure 2: Inflation Performances of Indonesia, Malaysia and Thailand

The result from the GLS estimation using Fixed Effect Model based on Indonesia, Malaysia and Thailand are presented in Table 2.

Table 2: The effect of External factors on Recapitalization of IMT-GT banks

Variable	Indonesia		Malaysia		Thailand	
	β -coefficient	t-statistic	β -coefficient	t-statistic	β -coefficient	t-statistic
GDP	0.6162**	2.1900	0.0736*	1.8218	0.0369	0.5847
PSI	-0.0417***	-7.9523	-0.0105	-0.8049	-0.0175***	-5.8806
INF	0.1221	1.1993	-0.0802	-0.9087	-0.2075	-1.5931
C	0.1812***	7.2084	0.1423***	35.6127	0.1316***	24.2871
Obs	506		145		171	
R ²	0.5267		0.3206		0.4145	
Adjusted R ²	0.4969		0.2699		0.3740	
F-statistic	17.6231		6.3225		10.2337	
Sig F Value	0.0000		0.0000		0.0000	

Based on Table 2 an estimation of the regression result showed that 52.67 percent of the variation in the dependent variable (CAPRt) has been explained by the independent variables consisting of the external factors (GDP, INF and PSI) in the case of Indonesia. This model appears to suggest that the remaining 47.33 percent will be explained by the error term. For Malaysia, the R-square is 32.06 percent, leaving 67.94 percent of the error term. On the other hand, the model showed that the three external variables explained 41.45 percent of the variation in the recapitalization of banks' capital ratio for Thailand. Based on the result, the model for Indonesia has the highest R-squared of 52.67%, it indicates the external forces have higher impact on Indonesian banks.

GDP had positive and significant influence on the recapitalization of bank capital ratio in Indonesia ($\beta=0.6162$, t-value=2.1900) and Malaysia ($\beta=0.0736$, t-value=1.8218) at 5% and 10% significant level respectively. However, GDP is not significant but positive related to capital ratio of banks in Thailand. The results for Indonesia and Malaysia showed that bank recapitalization has significantly affected by economic growth of the countries. The significant results stipulate that banks survive better during good economy. In other word, during good economy banks are able to generate more profit, thereby strengthen their total equity capital. The stronger capital could later be used to survive for the effects of the banking crises. Although, Thailand is not significant, but the positive coefficient estimate of GDP seemed to suggest that good economy can improved the financial strength and stability of banks in Thailand.

PSI (Political Stability Index) is negatively related to recapitalization of banks in the three countries of IMT-GT region. However, only in Indonesia and Thailand that PSI is significant at 0.01% significant level. This results indicates that the more stable the political system in Indonesia and Thailand the more effective will be the recapitalization of bank ratio to the economic system. A surprising result is shown by inflation. It does not have significant influence on capital ratio of banks in the three countries. Notwithstanding that, inflation has positive influence on capital ratio of banks in Indonesia. However, it is negatively related to bank capital ratio in Malaysia and Thailand. It suggest that when inflation increase as shown during 1997 and 2009 after the financial crises, the strategy taken by the Malaysian and Thailand government to recapitalize the ailing banks was effective to re-energize the banking system. This is because as inflation increase, cost of funds also increases. This result in tight liquidity position and causes difficulties for banks to increase their lending activities. Therefore, fresh capital injection to recapitalize the banks had helped the banks to be on sound footing and thus able to continue their banking operations

and lending activities.

5. Conclusion and Recommendation

The study on IMT-GT banks has provide an empirical evidence in appraising external forces on banks recapitalization towards improving banks fragility. The results highlight that economic growth (GDP) had impacted significantly and positively on the recapitalization of banks, which led to the banking sector stability and economic prosperity in Indonesia, Malaysia and Thailand (IMT-GT). Political stability index was found to be a significant external factors to bank recapitalization. Its negative relationship to bank capital ratio indicates that the countries with political instability tend to contribute to banks incurring losses and their need for recapitalization. It is expected that with proper regulation and political stability, the banks will be financially stronger and become important catalysts to financial development and economic growth. We recommend recapitalize banks to efficiently utilize their enlarged capital base to expand their lending activities and investment to real sectors in order to generate higher economic growth for the IMT-GT region.

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