Empirical Issues of External Debt in Selected ASEAN Countries

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EMPIRICAL ISSUES OF EXTERNAL DEBT IN SELECTED ASEAN COUNTRIES

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Statement of Originality

The work described in this thesis, entitled

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is to the best of the author’s knowledge that of the author except

where due reference is made.

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ABSTRACT

Empirical Issues of External Debt in Selected ASEAN Countries

By

Alvina Lee Syn Yee

This study seeks to examine three issues of external debt, specifically (1) external debt determination; (2) external debt and economic growth nexus; and (3) external debt sustainability in three ASEAN countries, namely Malaysia, the Philippines and Thailand. Due to certain data availability, the time frames for all the countries are different for each issue. Malaysia, Thailand and the Philippines utilize times series data spanning from 1970-2012, 1977-2012 and 1976-2012, respectively for issue one. As for second and third issues, the time frames are 1970-2012 for Malaysia; 1980-2012 for Thailand and 1985-2012 for the Philippines. In this study, several statistical tests are employed. Firstly, Augmented Dickey-Fuller (ADF) and Kwiatkowski, Phillips, Schmidt and Shin (KPSS) unit root tests are implemented to test the stationarity of the variables. Secondly, Johansen and Juselius (1990) multivariate cointegration analysis is adopted to examine the long run cointegration relationship among the variables. Next, Granger causality in vector error correction model (VECM) is conducted to examine the causality relationship among the variables. Lastly, the dynamic analysis including variance decompositions (VDCs) and impulse response functions (IRFs) are utilized to gauge the relative strength of the variables. The empirical results obtained indicate an existence of unidirectional causation from inflation rate to external debt for both Malaysia and the Philippines. Apart from that, the results of dynamic analysis show that inflation rate is the most endogenous variables for all the countries, while real interest rate, nominal GDP and external debt are the most exogenous variable for Malaysia, Thailand and the Philippines respectively. The second aim is to examine the relationship between external debt and economic growth. The empirical results show that the speed of short run
adjustment appears to have fallen mostly on economic growth, where economic growth is the cause for external debt, exports and budget balances for the three ASEAN countries. In order to test the fiscal reaction function, methodology developed by Bohn (1998) is adopted. This leads to a finding that Thailand has persistent positive fiscal reaction coefficient while Malaysia and the Philippines have negative fiscal reaction coefficient which indicate that the external debt was unsustainable during the sample period in this study.
ABSTRAK

Isu Empirikal Hutang Luar dalam Negara ASEAN Terpilih

Oleh
Alvina Lee Syn Yee

ekonomi, di mana pertumbuhan ekonomi adalah punca bagi hutang luar negeri, eksport dan baki bajet untuk ketiga-tiga negara ASEAN. Untuk menguji fungsi tindak balas fiskal, metodologi yang dibangunkan oleh Bohn (1998) telah diguna pakai. Ini membawa kepada suatu keputusan yang positif Thailand mempunyai pekali reaksi fiskal berterusan sementara Malaysia dan Filipina mempunyai pekali negatif reaksi fiskal yang menunjukkan bahawa hutang luar negeri adalah tidak mapan dalam tempoh sampel dalam kajian ini.
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CHAPTER ONE

INTRODUCTION

1.1. Background of Study

One of the most crucial and controversial challenges in most of the developing countries is the development and accumulation of external debt. Debt crises have become a common phenomenon in most of the developing countries for the past few decades. The issue of external debt persists particularly in relation to the recession and economic crises, where it has brought serious consequences to a country’s long term growth and threatens an economy from economic recovery.

As the world slowly recovers from the Great Recession that began in late 2007 which is triggered by a credit crunch in the United States financial system that spread throughout the global financial system, recovery is once again threatened by the possibility of a sovereign debt crisis which strikes the European countries. The outbreak of the sovereign debt crisis once more has received abundant attention making economist realize that the extensive growth of the external debt levels as well as the external debt to GDP ratios has turned out to be a serious problem in most of the nations.

The sovereign debt crisis began when the global economy experienced slow growth since the global financial crisis 2008-2009, which has exposed the unsustainable fiscal policies of countries in EU. The sovereign debt crisis first surfaced in 2009
when PIGS economies slipped into recession with exceedingly high budget deficits. The crisis deepened further in 2010 with credit rating agencies downgrading the sovereigns and banks in the peripheral Europe. This significantly dented confidence, even threatening the very existence of the euro. Consequently, the risks to the global economy rose. At the same time, the sovereign rating of the government of Greece was downgraded four notches to Ba1 from A3 (Moody’s Investor Service, 2010), the first level of junk status in 2010 signifying a dangerous possibility of insolvency and bankruptcy caused by its excessive debt to GDP level and fiscal deficits (Sibert, 2010). It soon spreads to other EU members especially Portugal, Ireland and Spain that had similarly higher than average debt level and fiscal deficits.

The sovereign debt crisis in the European countries also raised the possibility of such crisis spreading to other parts of the world. The debate on whether the external debt level of the developing countries is on a sustainable path also comes into question as most of the developing countries have considerably high external debt and fiscal balance ratios. The uncertainty faced by the European countries has raise thoughts and attention on fiscal sustainability of countries in other regions all over the world.

Before we go further, an overview of economy should be helpful to take us closer to our findings. According to the World Bank 2014, Malaysia is an upper-middle income, with the GDP per capita of USD10500 in the year of 2013. Malaysia recorded on average growth rate of more than 7 percent per year for past 25 (Commission on Growth and Development, 2008). On the other hand, the World Bank (2011) has upgraded Thailand from a lower-middle income economy to an
upper-middle income economy with a GDP per capita USD 4,210 in 2011. In contrast, the Philippines is classified as lower-middle income economy with the GNI per capita range between USD 1,036 to USD 4,085. As this study is interested to assess the external debt burden in the three ASEAN countries; namely, Malaysia, Thailand and the Philippines, we will first look into the external debt position for these ASEAN economies.

In most of the literatures over of the past years, one of the most important and common fiscal indicators to evaluate the external debt level is the debt-to-GDP ratio (INTOSAI, 2010). This indicator measures the indebtedness level related to the country’s economic activity. It implicitly assumes that all GDP resources are available to finance the debt burden. This indicator is recognized as the most vital one to measure the indebtedness degree, stressing the government’s solvency capability. Here, we want to see the indebtedness level of Malaysia, Thailand and the Philippines.

Figure 1.1 illustrates the external debt of Malaysia as a percentage of GDP from 1970 to 2012; the external debt level had been increasing steadily from 1970 to 1984 when economic growth averaged at 6 percent throughout the period. It then continues to rise in 1985 when fiscal measures were implemented to mitigate the economy out of the Commodity Shock 1985-86 (Athukorala, 2010). The Malaysia’s external debt as a percentage of GDP then reached the highest peak at around 77 percent of GDP 1986 following Plaza Accord and the appreciation of Yen as a large
portion of foreign debt was denominated in Yen\(^1\). The external debt level began to decrease from 1988 to 1997 when Malaysia experienced a period of strong and stable growth. However, Malaysia plunged into a recession following the Asian Financial crisis in 1997 and since then the external debt level has been on a steady increase until present. Besides that, Malaysia runs fiscal deficit for two decades from 1970 to 1992; before the government fiscal account is in surpluses in 1993 until 1997, where Malaysia had highest fiscal deficit in 1981 and 1982 during the oil price slumped where the government heavily expended to alleviate the recession.

![Figure 1.1: Malaysia’s external debt (% GDP)](source)

On the other hand, it is observed that from Figure 1.2, the GDP growth and external debt as a percentage of GDP seems to have inverse relationship. In 1986, Malaysia

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\(^1\) The historic 1985 Plaza Accord, signed at the Plaza Hotel in New York City, was a pro-growth agreement signed by the G-5 nations to force the United States to devalue its currency due to a current account deficit approaching an estimated 3 percent of GDP according to the accords. See Twomey (2009) at http://www.investopedia.com/articles/forex/09/plaza-accord.asp
recorded the highest external debt level at 77 percent as a percentage of GDP, where it directly pulls down the GDP growth rate. Similarly, during the Asian Financial Crisis in 1997-1998, the external debt reached around 59 percent and the GDP growth in 1998 while GDP growth rate drop to negative 7 percent. As global economic uncertainties continued to persist, the 1999-2003 budgets maintained an expansionary stance, with the authorities’ conscious of the need to maintain debt sustainability. The countercyclical fiscal policy, implemented largely through discretionary measures, was effective in supporting economic recovery and sustaining domestic demand. In particular, when external demand contracted significantly in 2001, Malaysia was still able to record a positive growth rate. The effectiveness of fiscal policy was also supported by other strategies and policies that continue to build on Malaysia’s strong economic fundamentals.

**Figure 1.2:** Malaysia’s external debt as percentage of GDP and GDP growth rates

*Source:* World Development Indicators (WDI), 2013.
Figure 1.3 illustrates Thailand fiscal balances and external debt level during 1980 to 2012. Thailand experienced long fiscal surplus compare to Malaysia in 1988 to 1996. Government expenditure increased from 15.94 percent of GDP in 1994 to 18.52 percent 1997 causing an increase of total debt in the economy. This caused the external debt reached around 94 percent of GDP in 1998 while the fiscal balance turned into deficit from 1997 to 1999. Prior to the economic and financial crisis in 1997, the fiscal position of Thailand was in surplus for nine consecutive years. As a result, the external debt was bottomed during the consecutive years. However, the government absorbed substantial financial sector losses coupled with conducting an expansionary fiscal policy during the crisis in 1997. This has resulted in a large increase in external debt to a peak at 93 percent as a percentage of GDP in 1998.

Figure 1.3: Thailand external debt (% GDP)

Source: World Development Indicators (WDI), 2013.
In a glance, GDP growth rates and external debt for Thailand were negatively related. As we can see in Figure 1.4, the GDP growth recorded 13 percent in 1988 while the external debt dropped to 35 percent as a percentage of GDP from 40 percent in 1987. Starting from the year 1995, Thailand’s economic growth became much slow down due to contraction in real estate sector, the emergence of China as an intimidating competitor in international trade. Thailand has one of the best external debt ratios in Asia. Since the 1998 Asian crisis, the external debt as a percentage of GDP declined and it then bounced back in 2009 to 2010. During the Asian Financial Crisis in 1997, the external debt recorded the peak at around 94 percent as a percentage of GDP while the GDP growth rate was dragged and slumped drastically in 1998. These can be seen clearly that there is a negative impact of external debt in economic growth in Thailand.

**Figure 1.4:** Thailand external debt as percentage of GDP and GDP growth rates

![Figure 1.4: Thailand external debt as percentage of GDP and GDP growth rates](image)

*Source:* Ministry of Finance Thailand and World Development Indicators (WDI), 2013.
Indifferent to Malaysia and Thailand, the Philippines government runs deficit financing most of the years, from 1985 to 1993. Figure 1.5 illustrates that the deficits of the Philippines range around 1 to 5 percent annually. At the onset of the crisis in 1997, actual revenue collections slipped below target because of shortfalls in income tax and import tax collections. Nonetheless, the government was able to achieve a 1.6 million Peso surplus. However, the fiscal performance had worsened in 1998. The cumulative deficit reached almost 50 million Peso. However, Philippines recorded the highest deficit in 2002 with around 5.3 percent of GDP as a result of the recession after the 911 tragedy in 2001.

Figure 1.5: Philippines external debt (% GDP)

Source: World Development Indicators (WDI), 2013.

The GDP growth in the Philippines declined sharply starting from 1982 to 1984 because of the oil price slump. The GDP growth rate was apparently influenced by the external debt. As illustrated in Figure 1.6, the external debt showed an increasing
trend and recorded the highest figure at about 94 percent as a proportion of GDP in 1986. As we can see in 1991, the growth rate slumped where it was appears directly pull down by the external debt. On the contrary, in 1996, the external debt declined and the GDP growth had rose to 5.8 percent. These illustrate the negative relationship between external debt and economic growth in the Philippines. On the other hand, there were few events that show different relationships. In 2009, the Philippines had external debt is 33 percent as a percentage of GDP while the GDP growth dropped to 1.1 percent from 6.6 percent in 2007.

**Figure 1.6**: Philippines external debt as percentage of GDP and GDP growth rates

![Graph](image)

*Source*: Bureau of Treasury Philippines and World Development Indicators (WDI), 2013.

### 1.2. Problem Statement

The subject of external debt accumulation has earned a lot of concern and has been discussed in the field of academia and policy makers over the past decades. It is still
a critical and crucial subject around the globe. The background and graphical observations in the previous section only provide us certain understanding on the external debt burden and the macroeconomic performance. Therefore, it is vital to test the effects of the macroeconomic indicators on the external debt empirically in order to examine factors that constitute to the external debt burden because countries with large external debt accumulation are prone to the crisis. The accumulation of external debt is a common phenomenon of most of the developing countries and it has become a common feature of the fiscal sectors of most of the economies\(^2\).

The outbreak of the Euro area debt crisis made societies realize once more that the immense growth of public debt levels as well as the debt to GDP ratios has in many parts of the world turned out to be severe problem. In recent years, there are numerous studies and research done to investigate and validate the debt accumulation dynamics and the implications as a result of debt accumulation (see Ebi et al. 2013; Kemal, 2001; Rangarajan and Srivastava, 2013). However, there are no studies conducted to examine the macroeconomic determinants of external debt in the ASEAN-3 countries.

Most of the studies also conducted to examine the relationship between economic growth and external debt. These results show that there is no consensus on the role of external debt on growth. In addition, most of the studies are interested on testing the relationship between growth and external debt in OECD countries (Missale and Blanchard, 1991); low-income countries (Qayyum and Haider, 2012); China (Tasos,

\(^2\) See Ali and Mustafa (2013) stated that country with lower saving rate needs to borrow more to finance the given rate of economic growth. Therefore, external debt is obtained to sustain the growth rate of an economy, which is otherwise not feasible with the given domestic resources.
Essentially, it is interesting to study on the external debt-economic growth relationship in Malaysia, Thailand and the Philippines because these countries consisted with different level of economic performances countries within the South East Asia region. Malaysia, Philippines and Thailand faced significant rising indebtedness arising from substantial exposure in short-term loans during the last two decades. Therefore, indisputably require a concrete analysis to examine the economic growth and external debt relationship in Malaysia, Thailand and the Philippines.

Furthermore, the main component of maintaining the economy of a country is the fiscal policy which is designed by the government. A well-structured and dynamic fiscal policy might be an influential and significant instrument for macroeconomic stabilization. Therefore, it is crucial to study how the primary surplus reacts to the external debt of a country in order to see whether a given external debt is sustainable.

### 1.3. Objectives of Study

The objective of this study is to examine the relationship between external debt burden and the macroeconomic determinants for ASEAN-3 namely Malaysia, the Philippines and Thailand.

Based on the general objective laid down above, there are three specific objectives that aim to achieve in this research:
1. To model the macroeconomic determinants of external debt in ASEAN-3 countries.

2. To investigate the interrelationship between external debt and economic growth in ASEAN-3 countries.

3. To test the fiscal reaction functions for Malaysia, the Philippines and Thailand.

1.4. **Significance of Study**

This study aims to examine the implications of the macroeconomic determinants towards the external debt. Apart from that, this study also examines the relationship between external debt and growth in the three ASEAN countries. The empirical findings of this research will help to answer several problems mentioned in this study. In addition, the policymakers will have a better understanding of the issues relating to external debt burden; therefore assist them in reformulate and implementing economic policies to lower the external debt in a desirable level.

Besides that, this study focused on examining the relationship between external debt and economic performance in three ASEAN countries. The empirical results are to answer these questions in this study and provide a reference for the policymakers on the indicators of the external debt and relationship between the external debt and growth. Also, the findings of this research allow the policymakers to identify the most significant factors that influencing the external debt for the three ASEAN countries.