

THE IMPACT OF CONDITIONALITY OF IMF  
PROGRAMS ON INDONESIAN ECONOMIC GROWTH

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## DECLARATION

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- (1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.
- (2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.
- (3) Equal contribution has been made by each group member in completing the research project.
- (4) The word count of this research report is 10,663

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## LIST OF ABBREVIATIONS

2SLS	Two-Stage Least Squares
ADF	Augmented Dickey-Fuller
AFC	Asian Financial Crises
AIC	Akaike Information Criteria
BD	Budget Deficit
CapA	Capital Account
CurA	Current Account
DD	Domestic Debt
ECT <sub>t-1</sub>	Lagged one of Error Correction Term
EFF	Extended Fund Facility
ESAF	Enhanced Structural Adjustment Facility
EX	Real Effective Exchange Rate
GMM	Generalized Method of Moment
IRF	Impulse Response Function
MONA	Monitoring of Fund Arrangement
MS	Money Supply
OLS	Ordinary Least Square Method
PRGF	Poverty Reduction and Growth Facility
SAF	Structural Adjustment Facility
SBA	Stand-By Arrangements
SIC	Schwarz Information Criteria
TR	Total Reserve
VAR	Vector Autoregressive Model
VECM	Vector Error Correction Model

### Abstract

This study examines the influence of conditionality of IMF programs on economic growth in Indonesia before, during and after the Asian financial crisis. The sample period is separated into two sub-periods, January 1, 1980-June 30, 1997 and July 1, 1997-December 31, 2014. Granger causality test, impulse response and variance decomposition are applied. Empirical result provides two findings. First, the conditionality variables are effective in influencing economic growth before the Asian financial crisis. Second, compliance with conditionality in IMF programs shows a relatively small effect on economic growth in during and after the Asian financial crisis in Indonesia. This study suggests that IMF programs did not improve or worsen the economic growth in Indonesia.

## **CHAPTER 1: INTRODUCTION**

### **1.0 Overview**

The content of this chapter includes the background of the International Monetary Fund (IMF), problem statement, research question, research objective, significance of study and finally the chapter layout.

### **1.1 Background of the International Monetary Fund**

In July 1944, the IMF which named as a Fund was conceived at the Bretton Woods conference, New Hampshire, United States. The IMF is a multilateral organization which its initial concern is to stabilize the international monetary system. After 2012, the IMF has updated its responsibility on the overall macroeconomic and the issues of financial sector in order to achieve global stability. The Fund was with a membership of 46 countries since it was formed and it has increased up to 188 members as of 2015. According to the IMF Articles of Agreement, the 6 main aims of the Fund are to “promote the international monetary cooperation, assist in expanding the balanced growth of international trade, facilitate and promote stability in exchange rate, eliminate the restriction towards the international capital flow, make resources of Fund available to the members and adjust the balance of payments difficulties of the members” (Weiss, 2014).

### ***Characteristics of the IMF***

In the IMF, most of the decision making power was delegated by the Board of Governors of the IMF to the Executive Board that includes 24 directors. The largest 8 shareholders that include United States, Japan, Germany, France, United Kingdom, Saudi Arabia, China and Russia have chosen 8 directors whereas the remaining 16 directors are appointed by the remaining countries. A majority voting of 85 per cent is required if there is an important decision to be made. The most important shareholders of the IMF hold a greater voting power in the IMF's decision making. In addition, the United States has contributed in the creation of the IMF and it is the largest financial contributor. Therefore, the IMF is now headquartered in Washington, DC since the voting shares depend on the financial contribution and United States has the veto power in decision making in the IMF. Since the financial crisis in 2008, the congress has increased their interest in the activities of the IMF. The biggest borrowers of the IMF are Greece, Ireland and Portugal. However, the largest precautionary loans are from Mexico, Poland, Colombia, and Morocco (Weiss, 2014).

### ***The IMF's Missions and Objectives***

In order to achieve the IMF's fundamental mission which is to safeguard the international monetary system stability, the IMF used three different effective ways. First, the IMF gives surveillance of financial and monetary conditions which oversee the international monetary system as well as to monitor its members' economic and financial policies. Second, it provides financial assistance in helping those countries which are having problems in the balance of payment. The financial assistance which is to provide loans that enable the

countries to reconstruct their international reserves, helping in the currency stabilization, ability of imports payments, and to encourage the countries in achieving a stronger economic growth. Furthermore, the IMF provides technical assistance to give practical training to its 188 members. Third, the IMF designed an effective economic policy to manage the financial affairs of its member countries in order to develop and strengthen the country's human and institutional capacity (Weiss, 2014).

### ***How the IMF lending work***

Country that faces economic difficulties can seek the IMF for financial aids. This participation displays a joint decision between the IMF and its member countries. However, funds will only be given if the applicant country fulfils the IMF fund's criteria.

### ***Types of IMF programs***

There are two types of IMF programs which are concessional and non-concessional programs. Concessional loans come with zero interest payment and designed only for low income countries whereas non-concessional loans are bounded by the IMF market related interest rate which is known as the charging rate (Oberdabernig, 2013).

Concessional loans include Structural Adjustment Facility (SAF), Enhanced Structural Adjustment Facility (ESAF) and Poverty Reduction and Growth Facility (PRGF). SAF was established in 1986 whereas ESAF was established in 1987. Both SAF and ESAF are long term programs that carry low conditionality. However, SAF program shows a less strict conditionality as compared to the ESAF program. PRGF was designed to replace ESAF in 1999. This program follows the country-owned Poverty Reduction Strategy Papers which are organized by the government of the countries concerned. Recently,

most of the IMF loans were implemented through the PRGF loans (Oberdabernig, 2013).

Non-concessional loans include both the Stand-By Arrangements (SBA) and the Extended Fund Facility (EFF). SBAs are short term agreements which approximately one to two years whereas EFF program last for three years. SBAs required higher conditionality compared to the other types of IMF lending programs. This program is intended to help countries with severe instabilities by reacting faster to their external financial needs. In contrast, EFF was formed to help countries with severe imbalances by solving the medium term balance of payment problems with the conditionality of fundamental economic reforms (Oberdabernig, 2013).

### ***IMF conditionality***

Conditionality is the outcome of bargaining process between the IMF and the program countries (Stone, 2007). It is a policy that is attached with IMF programs to set the fiscal and monetary disciplines in program countries in order to reform the economy of a country (Evrensel, 2002). It is a mechanism to make sure that the program countries are following the policies which is able help them to reach external balance and repay their debts (Bird & Willett, 2004; IMF, 2005). IMF conditionality did not only focus on traditional balance of payments and monetary concern but it also involved a development strategy and growth related policies (Abbott, Andersen & Tarp, 2010). The IMF believes that these conditions are adequate to overcome an overt or smoldering economic crisis. If these measures are effectively planned and implemented, it tends to improve the macroeconomic conditions with IMF program and currency crises are less likely to happen (Dreher & Walter, 2010). The main purpose of this conditionality is to prevent the abuse of the loans so that the loans can be used to improve the economic condition during crisis period. This conditionality can prevent national governments from abusing the funds allocated to secure their political power (Dreher & Gassebner, 2012). The conditionality process is an arrangement where

the funds are being released to the program countries in quarterly installments, subject to the observance by the IMF towards the performance and policy benchmarks accomplished (Barro & Lee, 2005).

## **1.2 Problem statement**

For over the last 70 years existence, the criticisms toward International Monetary never stop. Ideally, the IMF was founded to provide financial assistance to all its member especially developing countries after the debt crisis happened in 1982. However, the IMF has come under serious accusation of its lending practices and programs. This accusation has reduced the economic growth in borrowers' countries (Oberdabering, 2013). IMF programs in particular are frequently criticized as “antigrowth” and “antipoor” (Butkiewicz and Yanikkaya, 2005). Some even argued that its Fund-supporting programs are often ineffective and has created moral hazard in program countries (Evrensel, 2002).

Table 1.1: Key Macroeconomics Variables Performance.



Variables	Thailand		Indonesia		Korea	
	1997	1998	1997	1998	1997	1998
GDP growth (%)	-1.3714	-10.5100	<b>4.7000</b>	<b>-13.1300</b>	5.7667	-5.7139
Inflation rate	5.6258	7.9947	<b>10.3100</b>	<b>77.6300</b>	4.447	7.5121
Exchange rate (THB/USD)	31.07	41.32	<b>4650.00</b>	<b>8025.00</b>	951.29	1401.44
(IDR/USD)					(Won/USD)	
% of appreciation (depreciation)	-22.5158	-32.9900	<b>-95.1300</b>	<b>-72.5800</b>	-18.253	-47.32
Private capital flows (% of GDP)	-9.3445	-14.3930	<b>-102.94</b>	<b>-3996.45</b>	-3.78	-5.63
Unemployment rate (%)	1.5100	4.0000	<b>4.7700</b>	<b>5.4600</b>	2.617	6.95

Source: The IMF and the World Bank

These criticisms were even clearer during the Asian financial crisis (AFC) in Indonesia, where the IMF's "rescue" mission has worsened the crisis further into a disaster (Lane, 2001). Table 1.1 presents the performance key macroeconomics variables of Thailand, Indonesia and Korea during the AFC. As compared to Thailand and Korea, it is observed that the performance of Indonesian GDP growth, Inflation rate, exchange rate, private capital flows and unemployment rate are affected more severely during the AFC.

According to Frontline (n.d.), the AFC started in July 2, 1997 when Thailand decided to float its currency when the country was unable to sustain the massive attack from currency speculators since May 14, 1997. This action was aimed to stimulate Thailand's export growth, but it led to a contagion effect where foreign investors were scared off by dumping the Asian currencies triggered a

massive capital outflows in Asian countries. When the pressure towards Indonesia Rupiah was too strong, the government has to abandon the currency band and let rupiah float freely in August 14, 1997. Despite government's intervention to support the rupiah, Indonesia still seek assistance from the IMF and the World Bank after rupiah has depreciated more than 30 per cent within two months (Goeltom, 2007).

The IMF arrived in Indonesia with a bailout package which is a \$10 billion three-year Stand-By Arrangement to restore investor confidence in Indonesia Rupiah. The main objectives of this program are to control the current account, inflationary and limit the sharp decline in output growth. Hence, the conditionality were imposed to achieve the objectives which included tighten monetary policy, stabilize the exchange rate market, strengthen the fiscal and monetary position and an initial plan to reform the financial market. The actions done were closure of 16 privately-owned banks, modified the food and energy subsidies and raised the interest rate by Indonesian Central Bank (Lane, Ghosh, Hamann, Phillips, Schulze-Ghattas, & Tsikata, 1999).

The initial response of the program was optimistic, Indonesia rupiah appreciation boosted the market confidence and strengthen the exchange rate. However, the reform program turned into a failure hastily. The closure of 16 privately-owned banks triggered a panic effect on investors where billions of rupiah were withdrawn from Indonesia banks that set off a complete banking crisis. Furthermore, the IMF did not pay serious attention on the spoiled system as known as patronage system by Suharto, the president of Indonesia which is hurting the economy and often challenge the agreement with the IMF. Patronage system was a tool for Suharto to maintain his power, political and financial position by assigning all the powerful government position to his close family and supporters. Moreover, the impact of a serious EL-Nino drought which caused

wildfires and terrible harvest as well as the political uncertainties of the deteriorating health of Suharto also helped to worsen the country's economy (Indonesia Investment, n.d., para. 3).

The second agreement was achieved during the time period from December 1997 to January 1998, after Indonesia rupiah depreciated about half of its currency. The IMF realized that the key to stop the crisis from getting worse is to break down the Suharto's patronage system, but the reluctance of Suharto to end the monopoly of his cronies did not improve the situation (Indonesia Investment, n.d., para. 4). Hence, the market reacted skeptical caused the economic growth even worse and hyperinflation after the first quarterly review. The third agreement with the IMF was signed in April 1998 with the objectives to stop the detonation of output, restore economic growth and protect the exchange rate. However, the IMF learned its lesson and decided to be flexible in its conditionality than before, granted the lower income household a higher subsidies and widen the budget deficit quota. On the other hand, the IMF sought the privatization of government department, a better bank restructuring and a new bankruptcy law to handle the complete bank crisis event (Indonesia Investment, n.d., para. 5).

The fourth agreement was signed in June 1998 with new president Bacharuddin Jusuf Habibie, the previous vice-president after Suharto stepped down. The budget deficit was allowed to be widened again and new funds were approved into the economy. The rupiah began to regain strength back at mid-June 1998 and inflation reduced significantly, but the banking system still fragile toward non-performing loan after the incident. Finally, Indonesia's economy improved steadily due to the improving of international economy environment throughout year 1999 (Lane et al. 1999).

According to Indonesia Investment (n.d.), there are 3 major events which need to be highlighted because they caused chaos in Indonesia. When the government was given time until October 1998 to reduce several subsidies by IMF conditionality, but Suharto did it all at once in early May that caused a large-scale riots to happen in Jakarta, Medan and Solo. The atmosphere was even more intense when 4 university students were shot and killed during the protest and it is suspected that the shootings were done by a special forces called “Trisakti Shootings”. The chaos hit climax when the riots worsen, the ethnic Chinese were hated by the local for their assumed high wealth has caused thousands of Chinese killed, Chinese woman were being brutally raped, and Chinese stores and houses were burned into the ground.

Moreover, there are also 3 major conditions which bring more concessions during IMF programs that need to be highlighted, according to Max Lane who is a chairperson of the group Action in Solidarity with Indonesia and East Timor. The privatization of almost all state’s department into commercials, it turned the subsidized price into fully profitable prices to reduce the budget deficit. The subsidies which are long provided by the Indonesia government to the people especially agriculture inputs were reduced or abolished to reduce the government expenses. The long protection on agriculture production has called to the end when the IMF intervention, causing the local rice farmer in Java, Bali and South Sumatra to abandon their paddy field because they failed to compete with the international rice price. This then caused the net imports to reach a historical highest in year 2001.

The former managing Director of the IMF, Michel Camdessus states before the United Nations Economic and Social Council in Geneva, July 11, 1990, cited in Vreeland (2003) that

“Our primary objective is growth. In my view, there is no longer any ambiguity about this. It is toward growth that our programs and their

conditionality are aimed. It is with a view toward growth that we carry out special responsibility of helping to correct balance of payments disequilibria and, more generally, to eliminate obstructive macroeconomic imbalances” (p. 2).

However, the IMF did not show up as a saviour to aid Indonesia during the AFC, in fact the IMF worsen the financial crisis into a social and political issues with its loans, programs and conditions. It would be unfair to blame solely on the IMF on all the disasters happened in Indonesia based on the public express of opinions and judging through on the key macroeconomic variables performance. Therefore, empirical evidence is required in examining the impact of compliance of the IMF conditionality in Indonesian economic growth during the AFC.

### **1.3 Research Question**

There is only one question that we have to answer in respect to the problem statement.

- What is the influence of compliance with conditionality in IMF bailout programs on Indonesian economic growth before, during and after the Asian financial crisis periods, respectively?

### **1.4 Research Objective**

The objective of this study is to examine the impact of compliance with conditionality in IMF bailout programs on Indonesian economic growth before, during and after the Asian financial crisis periods, respectively. This can be done by using three approaches, namely Granger causality test, impulse response function and variance decomposition.

## **1.5 Significance of study**

The findings from this study are expected to provide contribution to the government of developing countries in making decisions for policy implementation. Furthermore, government can decide whether or not to receive IMF bailout program with conditionality in facing the economic turmoil due to the financial crisis. For example, this study selects conditionality variables, such as money supply, exchange rate, domestic debt, total reserve, current account and capital account.

If these conditionality variables are found to have positive impact on the economic growth in Indonesia after the AFC, the government should not blame the IMF for its incompetence performance, but to implement appropriate policies. However, if these variables are found to have negative or no impact on the economic growth in Indonesia after the AFC, the IMF should reform their conditionality to design a better bailout program in the future to match their primary objective which is to stimulate economic growth in the program country.

## 1.6 Chapter Layout

The four remaining chapters are organized as follow:

- Chapter 2  
This chapter includes the literature review about the effect IMF programs on economic growth and the effect IMF conditionality.
- Chapter 3  
This chapter will present the methodology that will be used to determine the impact of compliance with conditionality in IMF bailout programs on economic growth.
- Chapter 4  
This chapter will present the results the findings of this study. Discussion and analysis of the findings of this study are further discussed in this chapter.
- Chapter 5  
This is the last part of the study where it will present the summary of the analysis and discussions of major findings of this study. Other than that, this chapter will discuss the limitations of this study and recommendations for future research.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.0 Overview**

Theoretically, the overall effect of the IMF on economic growth are subject to its money disbursed, policy conditions and advices that the IMF attaches with its programs. According to Dreher (2006), none of the past studies made attempt to focus on the effect of IMF conditionality on economic growth by setting apart the effect of the IMF's money and policy advice. However, as the economic performance of one country depends on the policies of the program, thus the net effect of IMF programs on economic growth is ambiguous without separating the policies of Fund-supported and the compliance with conditionality (Joyce, 2004).

Hence, Dreher (2006) is the first researcher who examined the impact of IMF conditionality on economic growth by separating the effect of IMF program, loan disbursement and compliance with conditionality. Therefore, the literature review is divided into two sections. The first section is the effect of IMF conditionality and the second section is the effect of the IMF programs on economic growth.

### **2.1 Effects of IMF Conditionality**



Dreher and Vaubel (2004) which analyzed the impact of funds from 1975 to 1997 for 94 countries by using panel data has taken the number of IMF conditions into account. They used Generalized Method of Moments (GMM), Ordinary Least Squares (OLS) and Two-stage Least Squares (2SLS) in their study. Results revealed that the number of conditions did not have significant effects of funds on monetary growth, international reserves, government spending and current account balance.

Mercer-Blackman and Unigovskaya (2004) had examined the countries that transform to market economies between 1994 and 1997, while Nsouli, Atoian, and Mourmoura (2005) focused on longer sample period which is from 1992 to 2000. Both of the studies found different results even though they applied the same data from Monitoring of Fund Arrangement (MONA) Database. The former researchers found that despite there was a positive relationship between growth and the performance of conditions, yet there was no significant relationship between compliance and the structural benchmark. However, Nsouli et al. (2005) found that despite implementation of IMF conditions reduced the inflation and improved the fiscal outcomes, however, the implementation of conditions did not influence the economic growth very much. Dreher (2006) which studied the effect of three different measures of compliance with conditionality, money disbursement, and programs from 1970 to 2000 by using a panel data with 98 countries. The result showed that IMF Standby and EFF programs had weakened the economic growth. However, there was feeble evidence that this negative effect is caused by compliance with conditionality. This result was similar to Dreher and Walter (2009) which revealed that contraction of the currencies' disaster is liberated with the compliance with conditionality.

On the aspect of fiscal and monetary policy, Bulir and Moon (2004) found that compliance on conditionality did not have a significant impact on fiscal adjustment. Besides that, Dreher (2005) concluded that even though there was improvement in economic policy when the country participated in IMF Standby and Extended Fund Facility Arrangements, but there was no evidence to show that

compliance with conditionality and money disbursement did not have efficient effect. Both of the studies showed that at the end of an IMF programs, fiscal structural conditions did not improved the performance of revenue of the country. Moreover, the oversize of structural conditions in a program tend to worsen the post-program results as compared to those programs with lesser conditions.

## **2.2 Effect of IMF Programs on Economic Growth**

There are numerous studies examined the effectiveness of the IMF programs towards the economic growth. However, the results are inconclusive. Some researchers found that the effects of IMF programs on economic growth are positive, negative, and some even get insignificant results. In principle, the researchers employed three methods to estimate the impact of IMF programs on economic growth which are before and after analysis, with-without analysis and regression-based analysis.

### ***Before and After Analysis***

Before and After Analysis is used to measure the economic growth before the implementation of IMF programs as compared to the economic growth after the program period. Connors (1979) investigated the impacts on macroeconomic variables in the post- 1972 period. The result showed no significant difference in the economic growth rates neither before nor after the implementation of IMF programs. Zulu, Nsouli and Saleh (1985), Killick (1986) and Pastor (1987) found that IMF programs had no impact on the economic growth after the implementation of the programs. Pastor (1987) analysed the effects of IMF-

Sponsored stabilization programs in the third world countries where his result suggested there were no effects of IMF programs on economic growth. Besides, he also found that IMF-sponsored stabilization programs hardly improved the current account but significantly improved the balance of payments.

Moreover, Evrensel (2002) examined the effectiveness of the Fund-Supported stabilization programs in developing countries. She found that IMF programs did not have a significant impact towards the economic growth. The result showed the stabilization programs improved the current account and total reserves significantly during the program's year. However, these improvements were not sustainable on the period after the post-programs.

Furthermore, Hardoy (2003) estimated the effect of IMF programs on borrowed countries' economic growth by using the two methods of non-parametric which are matching and difference-in-differences matching to investigate the effect of labour market programs. There were no positive impacts of IMF programs on the per capita GDP growth after the participation of the programs countries.

In addition, Reichman and Stillson (1987), Schadler, Rozwadowski, Tiwari and Robinson (1993), and Killick, Malik and Manuel (1992) found the same results of positive growth in economy after a country participated in IMF programs. Reichman and Stillson (1987) examined the programs of balance of payments adjustments' experience by testing the result on domestic credit, net foreign assets, economic activity level, credit to public sector, and price level. The programs showed no credit deceleration observed and improvement on the net foreign assets. Killick, Malik and Manuel (1992) applied quantitative tests in order to understand more about the effects of IMF programs and aimed to put a new angle on the impacts of the programs. They found that IMF programs successfully reduced the largest amount in the current account as well as the balance of payment deficits of the program participants. Besides, programs also

increased the volume of exports and stimulated the performance of export activities.

There are 2 limitations in this method. First, it is not reliable and cannot be used as a comparison because it assumed no changes in before and after periods with IMF programs. Second, it assumed a constant counterfactual of policies and the external environment of the programs countries (Dreher, 2006; Evrensel, 2002).

### ***With and Without Approach***

With-without analysis is applied to evaluate the impact of IMF programs on economic growth. This approach describes the differences between the effect on economic growth of IMF programs participants and non-participants (Evrensel, 2002).

In 1981, Donovan studied different identical characteristic between country subgroups. This analysis did not only compare the result with the average growth rate in the world, but it also examined the impact of shock in both long-run and short-run. However, the findings showed that the average growth had improved regardless the comparison period. Furthermore, there was no evidence to prove that the programs were connected with the systematic bias in economic growth. The different results showed that IMF programs did not affect much on

economic growth, but the balance of payment in programs countries were the most affected (Donovan, 1982). In contrast, Gylfason (1987) stated that IMF Standby Arrangements were effective with respect to the balance of payment. By referring to the evidence, the expansion of credit was declined and there was a substantial improvement in the overall balance of payment. Besides, the decreased in the average growth rate in both programs group and individual subgroups were neither statistically significant as compared to the growth in reference group nor significant difference between the growth in the individual program subgroups during or after the program period (Gylfason, 1987).

Moreover, Hardoy (2003) suggested that there was no supporting evidence to show a positive effect on economic growth by IMF programs. Hutchison (2004) who investigated the advantages and disadvantages of participating in IMF-Sponsored stabilization programs when the countries faced economic problems. His result found that those countries participating in IMF programs did not have any reduction in the output growth. The same results found by Loxley (1984), Faini et al. (1991) and Atoyán and Conway (2005) which stated that IMF programs had neither positive nor negative effects on the growth. According to Atoyán and Conway (2005) by using three techniques which are censored-sample, full-sample instrumental-variable, and matching in order to examine the economic performance based on the impact of IMF programs. There was little evidence showed that IMF programs improved the real economic growth in the short-run but stronger evidence if the countries remain in the programs.

However, this method has its drawbacks. By using this analysis, it is important to find an adequate control group as the exogenous shock hit to both program countries and those countries in the control group. Therefore, both program and control group countries should be in line with the same initial position. The program must be chosen by the countries itself with a specific characteristic instead of randomly distributed over member countries (Dreher, 2006).

### ***Regression-based Analysis***

Regression-based Analysis is used in most of the studies. This method is reliable as it includes the endogeneity of IMF-related variables into the analysis (Dreher, 2006). Goldstein and Montiel (1986) used the regression-based analysis to investigate the effect of IMF programs on economic growth. They examined the impact of a program and non-program countries on the economic growth. Their result showed that no difference effect on IMF programs whether the countries involved or absent in IMF programs. The same objective was also examined by Bordo and Schwartz (2000) where they found that IMF programs did not have a significant effect on inflation but insignificant positive effect on the current accounts and the balance of payments. In addition, IMF programs had an insignificant negative effect on real economic growth but became significant and positive after one year. By examining the similar study, Barro and Lee (2005) concluded that most of the countries that joined IMF programs had a negative impact on their economic growth.

Furthermore, Khan (1990) and Doroodian (1993) studied the impact of IMF programs on economic growth on developing countries where they found that the impact of IMF programs by using macroeconomics variables namely current account balance, real gross domestic product and the inflation rate. Khan (1990) concluded that IMF programs had a negative effect on the economic growth. However, Doroodian (1993) found that IMF policies significantly improved the inflation rate and current account balance but did not have significant impact on the economic activities as it did not have the capability in reducing the externals' deficit. The similar result was found by Nsouli,

Mourmouras, and Atoian (2005) and Atoyan and Conway (2005) where their results showed that IMF programs did not have an impact on the economic growth.

Przeworski and Vreeland (2000) examined the effect of IMF programs and the reason why countries enter and leave IMF programs. Their findings showed that the government feels difficult to apply IMF programs either they are critical in foreign reserves, or they need the IMF to reduce their budget deficits. Furthermore, the countries that remain in IMF programs tend to better off than they leave the programs. In addition, they also concluded that countries did not enter IMF programs could perform better in growth than the countries involved in the same situation. Hutchison (2003) measured the output cost of participation in an IMF program and tested whether there are negative effects during the implementation of IMF programs. Hutchison found that programs countries participated in IMF programs reduced the output growth where the reduction in output growth is the cost of an IMF stabilization program.

Moreover, Hutchison and Noy (2003) focused on the effect of IMF programs on economic growth in Latin America. They stated that Latin America was the region of the world with high volatility in the economic situation and most active in IMF programs. They showed that neither Latin America participated nor non-participated in IMF programs, IMF programs failed to help in improving their economic growth.

In additions, Butkiewicz and Yanikkaya (2005) had conducted a study about the growth effect of IMF lending or World Bank on the economic growth. They concluded that IMF lending had a negative impact on the economic growth, while some cases showed that the World Banks fund helped in economic growth. Easterly (2005) studied on the reason why the IMF and the World Bank kept giving new revision on loans to countries even they had bad records on compliance with the conditionality. He found that there was no evidence to show

any improvement in growth per capita even though the IMF and the World Bank kept adjusting the structural of lending.

In contrast, Conway (1994), Bagci and Perraudin (1997), and Dicks-Mireaux, Mecagni, and Schadler (2000) found that IMF programs had positive impact on the economic growth. Conway (1994) studied the impact of IMF programs with four directions. First, he examined the reasons that countries join the IMF program. Second, he also tried to determine the progress of the countries that are involved in IMF programs. Third, he examined the policies choice and lastly the impact of the IMF across the geographic area. He concluded that the progress of an IMF participant country started badly but ends favorably. Moreover, Dicks-Mireaux et al. (2000) evaluated the effect of IMF lending to low-income countries. They summarized that the program countries' output growth increased, debt over service ratio was low, but the inflation was not significantly affected by IMF programs.

Other than the three methods, Butkiewicz and Yanikkaya (2004) examined the effects of the IMF and the World Bank Lending on long-run economic growth. Their study consisted 100 developing countries and measured the result by using basic growth model as five-equation panel and the seemingly unrelated regression technique. They concluded that fund lending had a negative effect on growth but World Bank lending increased growth.

Table 2.1 presents the effect of the IMF on economic growth by three different methods examined by various authors. Despite a huge number of studies that examine the effect of the IMF on economic growth, the results are inconclusive. This is because there were conflicts in the evidence from different countries' coverage, sample period and different methods applied in their research.



Hence, this study aims to provide a better understanding on the effectiveness of IMF conditionality by examining its impact on Indonesian economic growth.

Table 2.1: IMF and economic growth.

<b>Study</b>	<b>No. of countries</b>	<b>Period (year)</b>	<b>No. of programs</b>	<b>Effect on growth</b>
<b><u>Before–after analysis</u></b>				

Reichman and Stillson (1987)	n.a.	1963 – 1972	79	Positive
Connors (1979)	23	1973 – 1977	31	None
Zulu et al. (1985)	22	1980 – 1981	35	Mixed
Killick (1986)	24	1974 – 1979	38	Mixed
Pastor (1987)	18	1965 – 1981	n.a.	None
Killick et al. (1992)	16	1979 – 1985	n.a.	Positive
Schadler et al. (1993)	19	1983 – 1993	55	Positive
Evrensel (2002)	109	1971 – 1997	n.a.	None
Hardoy (2003)	69	1970 – 1990	460	None
<b><u>With-without analysis</u></b>				
Donovan (1981)	12	1970 – 1976	12	Positive
Donovan (1982)	44	1971 – 1980	78	Negative
Loxley (1984)	38	1971 – 1982	38	Mixed
Gylfason (1987)	14	1977 – 1979	32	Mixed
Faini et al. (1991)	93	1978 – 1986	n.a.	None
Hardoy (2003)	69	1970 – 1990	460	None
Hutchison (2004)	22	1975 – 1997	455	None
Atoyán and Conway (2005)	95	1993 – 2002	181	Mixed
<b><u>Regression-based analysis</u></b>				
Goldstein and Montiel (1986)	58	1974 – 1981	68	None
Khan (1990)	69	1973 – 1988	259	Negative
Doroodian (1993)	43	1977 – 1983	27	Mixed
Conway (1994)	73	1976 – 1986	217	Positive
Bagci and Perraudin (1997)	68	1973 – 1992	n.a.	Positive
Bordo and Schwartz (2000)	24	1973 – 1998	n.a.	Mixed
Dicks-Mireaux et al. (2000)	74	1986 – 1991	88	Positive
Przeworski and Vreeland (2000)	135	1970 – 1980	465	Negative
Hutchison (2003)	67	1975 – 1997	461	Negative
Hutchison and Noy (2003)	67	1975 – 1997	764	Negative
Nsouli et al. (2005)	92	1992 – 2000	124	Positive
Butkiewicz and Yanikkaya (2005)	n.a.	1970 – 1999	407	Negative
Easterly (2005)	107	1980 – 1999	107	None
Atoyán and Conway (2005)	95	1993 - 2002	181	None

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## **CHAPTER 3: METHODOLOGY**

### **3.0 Overview**

The methods in this study consists of data collections, sample period, unit root test, cointegration test, Vector Autoregressive (VAR) model, Bi-variate Vector Error Correction Model (VECM), Granger Causality test, Impulse Response Function and Variance Decomposition Analysis.

### **3.1 Data of variables**

The sample period begins from January 1, 1980 to December 31, 2014 and divided into two periods. The pre-crisis period begin from 1980 first quarter to 1997 second quarter whereas during and post-crisis period begin from 1997 third quarter to 2014 fourth quarter with a total observations of 140. Quarterly data is used as it provides a better capturing in dynamic pattern compared to yearly data tends to complicate the analysis and interpretation of the results due to the large contemporaneous effects. In addition, increase in sample size is useful in solving the decrease of degree of freedom problem in VAR model. This study follow the variables from Evrensel (2002) on how she evaluate the effectiveness of IMF programs.

“The premise of program evaluation is what the fund expects program countries to do and whether these objectives are achieved. The fund expects program countries to reduce their domestic credit creation, budget deficit, domestic borrowing, inflation rate, current account, and capital account deficit. The relevant question is whether we observe significant improvement in these variables under IMF program” (Evrensel, 2002, p.576).

The variables employed in the study are shown in table 3.1 along with its sources and definition.

Table 3.1: Description of Variables.

<b>Variable</b>	<b>Source</b>	<b>Definition</b>
Real GDP per capita	Oxford Economics	Gross domestic products (GDP) divided by midyear population and exclude inflation.
Money Supply	Bank Indonesia	The total of currency outside banks, savings, demand deposits and foreign currency deposits of resident sectors other than the central government.
Real Effective Exchange Rate	Main Economic Indicator, Copyright OEDC	Real effective exchange rate is the nominal effective exchange rate divided by price deflator or index of costs.
Capital Account (%of GDP)	Oxford Economics	The net result of public and private international investments flow whether in or out of a country or net changes in asset of the ownership in a nation.
Total Reserve (%of GDP)	IMF- International Financial Statistics	Total of all deposits in depository institution which it allowed to take into account as a part of its legal reserve requirements. (cash in vault, adjusted for cash in transit to or from the central bank, and current reserve account balance with the central bank)
Budget Deficit (%ofGDP)	Departamen Keuangan Republik Indonesia	A total amount of a government, company or individual's expenditure more than its revenue over a specific period of time.
Current Account (%of GDP)	Oxford Economics	The total amount of net exports of goods and services plus net primary income and secondary income.
Domestic Debt (%of GDP)	Oxford Economics	The part of total debt in a country that owed by government to lender within the same country as the debtor.

### 3.2 Unit root test

Augmented Dickey-Fuller (ADF) unit root test is used to check the integrated orders of a series. The null hypothesis of a unit root (non-stationary) is rejected if the test statistic value lower than lower bound of critical value from a non-standard normal distribution. The stationary of the model is important to keep the standard assumption of asymptotic analysis to be valid. The Augmented Dickey-Fuller Unit Root test are based on the following two regression forms:

Model with constant and without trend:

$$\Delta Y_t = \mu + \delta Y_{t-1} + \sum_{i=1}^k \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (1)$$

Model with constant and with trend:

$$\Delta Y_t = \mu + \beta_t + \delta Y_{t-1} + \sum_{i=1}^k \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (2)$$

The null hypothesis  $H_0: \delta=0$  (Unit Root) is rejected if coefficient of  $\delta$  is significantly less than zero. If the null hypothesis of a unit root is not reject at level form, the non-stationary variables will go through first difference and be tested again. This process will continue until all variables are found to be stationary.

### 3.3 Cointegration Test

Given that the number of integrated order of a series is examined by unit root test, cointegration test is used to detect the existence of cointegration relationship between the same integrated order variables. The appropriate lag length is determined by information criterions or likelihood ratio test with minimum Akaike information criterion (AIC) and Schwarz information criterion (SIC) before proceed to Johansen and Juselius cointegration test. Under Johansen and Juselius (JJ) procedure, there are two likelihood ratio test statistics as below:

Trace Statistic:

$$\lambda_{trace(r)} = -T \sum_{i=r+1}^m \ln(1 - \hat{\lambda}_i) \quad (3)$$

Maximum Eigenvalue Statistic:

$$\lambda_{max(r)} = -T \ln(1 - \hat{\lambda}_{r+1}) \quad (4)$$

Where,  $T$  = number of observation

$\hat{\lambda}_i$  = estimated eigenvalues

Trace statistic is a log-likelihood ratio joint test where the null hypothesis is the cointegrating vectors ( $r$ ) less than or equal to  $r$ , whereby maximum eigenvalue statistic test on individual eigenvalues which is equal to ( $r$ ) against the alternate ( $r+1$ ). Both null hypotheses for trace and maximum eigenvalue statistic are tested sequentially until the null is accepted, implying the existence of

cointegrating vector between the series. If the variables are found cointegrated, VECM model is used to provide the short-run relationship and adjustment toward the long-run equilibrium.

### **3.4 Vector Autoregressive (VAR) Model**

VAR model is a vector (system) autoregressive model, an economic model for analysis of linear interdependencies among multiple time series. All variables are treated as endogenous in VAR model instead of exogenous. In addition, VAR model able to use Ordinary Least Square method (OLS) to estimate each equation separately whereby the order is not important. VAR is useful in making macroeconomic forecast because it can obtain better forecast than other complex simultaneous model. Moreover, VAR model is suitable in describing the macroeconomic data to quantify the true structure of macro-economy. This study employs Unrestricted or reduced form VAR, separates 7 variables into different models and divided into two periods, before the AFC and during and after the AFC with a total of 14 models. Unrestricted VAR model for non-cointegrated variables consists of 9 models whereas another 5 models which are cointegrated employs VECM. Unrestricted VAR expressed each variable as a linear function of the past values of all variables being considered and a serially uncorrelated error term. The lag length for each variables is the same, determined by the minimum AIC and SIC in the system. A general Unrestricted VAR model version can be characterized as

VAR model at level form:

$$Y_t = \beta_{1,1} + \sum_{i=1}^{k=p} \alpha_i Y_{t-k} + \sum_{i=1}^{k=q} \theta_i X_{t-k} + V_{1t} \quad (5)$$

$$X_t = \beta_{2,1} + \sum_{i=1}^{k=p} \lambda_i Y_{t-k} + \sum_{i=1}^{k=q} W_i X_{t-k} + V_{2t} \quad (6)$$

VAR model at first difference:

$$\Delta Y_t = \beta_{1,1} + \sum_{i=1}^{k=p} \alpha_i \Delta Y_{t-k} + \sum_{i=1}^{k=q} \theta_i \Delta X_{t-k} + V_{1t} \quad (7)$$

$$\Delta X_t = \beta_{2,1} + \sum_{i=1}^{k=p} \lambda_i \Delta Y_{t-k} + \sum_{i=1}^{k=q} W_i \Delta X_{t-k} + V_{2t} \quad (8)$$

Where,  $\beta_{1,1}, \beta_{2,1}$  = intercept

$V_{1t}, V_{2t}$  = residual

$\alpha_i, \lambda_i$  = estimated parameter of  $Y_t$ ,  $i = 1, 2, \dots, p$

$\theta_i, W_i$  = estimated parameter of  $X_t$ ,  $i = 1, 2, \dots, p$

$Y_t$  = the real GDP per capita

$X_t$  represents 7 different variables in before, during and after the AFC as

MS = Money supply

EX = Real Effective Exchange Rate

CapA = Capital Account (% of GDP)



TR = Total Reserve (% of GDP)

BD = Budget Deficit (% of GDP)

CurA = Current Account (% of GDP)

DD = Domestic Debt (% of GDP)

### 3.5 Vector Error Correction Model (VECM)

The VECM is a special form of the VAR for the non-stationary series have the same integrated order I(1). VECM is formed to capture and provide the short-run relationship adjustment towards the long-run equilibrium. Lagged one of error correction term ( $ECT_{t-1}$ ) is included in VECM model in order to provide an estimation of the speed of adjustment towards the long-run equilibrium from the changes of the independent variables. Thus, VECM allows us to adjust and correct the deviations of the model in order to achieve the long-run equilibrium. A general restricted VAR model version can be characterized as equation (5) and (6):

$$\Delta Y_t = \beta_{1,1} + \sum_{i=1}^{k=p} \alpha_i \Delta Y_{t-k} + \sum_{i=1}^{k=q} \theta_i \Delta X_{t-k} + \mu_i ECT_{t-1} + V_{1t} \quad (9)$$

$$\Delta X_t = \beta_{2,1} + \sum_{i=1}^{k=p} \lambda_i \Delta Y_{t-k} + \sum_{i=1}^{k=q} W_i \Delta X_{t-k} + \mu_i ECT_{t-1} + V_{2t} \quad (10)$$

Where,  $ECT_{t-1} = Y_{t-1} - \beta_1 - \beta_2 X_{t-1}$

$\beta_{1,1}, \beta_{2,1}$  = intercept

$V_{1t}, V_{2t}$  = residual

$\mu_i$  = error correction coefficient

### 3.6 Granger Causality Test

Granger causality test developed by Granger (1969) to test the direction of causality between two time series variable. It is useful to forecast another in the short-run while other terms are remaining constant. There are three possible types of Granger causality under different conditions. If both null hypotheses testing are rejected, this indicates that the series has bi-directional casual effect. In contrast, if either one of the null hypothesis testing is rejected, the series has a unidirectional causal effect. Meanwhile, if both of the null hypotheses are not rejected, two series variable are independent. The null hypothesis of causality test is formed by stating set of interested coefficients ( $\alpha_k, \theta_k, \lambda_k$  and  $W_k$ ) are insignificantly different from zero.

However, Granger causality test provides only the direction of causality but does not represent the direct impact on the dependent variables. As a result,

the impact of compliance with conditionality on economic growth remain unclear. Furthermore, Granger causality test does not show the sign of the effect, whether positive or negative and how long the effects of compliance with IMF conditionality on economic growth in Indonesia will last. Hence, to obtain a more accurate and reliable result, impulse response function and variance decomposition are conducted to improve the finding of this study.

### **3.7 Impulse Response Function**

Since Granger causality test unable to provide the complete interaction in the series of our study, thus impulse response is used to study the reaction among the variables due to each other's shock. Impulse response function (IRF) also show the effects of shock from a variable on the adjustment path of another variable in our model. Hence, IRF is able to track out the effect of an exogenous shock or innovation from one of the variables on all the variables in the series. For example, in order to study the influence of compliance with conditionality in IMF bailout programs on economic growth, IRF is used to study the response of GDP due to the shock from all the conditionality variables.

### **3.8 Variance Decomposition Analysis**

Variance decomposition shows the adjustment of variable towards the shock of other variable. The shock affects other variables and also other shocks in the same system because VAR model treat every variable as endogenous and error terms (shocks) will be correlated. Hence, it is used to investigate how much the forecast error variance for any variable can be explained by innovations to each explanatory variable including its own in the system over a series of time horizons. Furthermore, it can determine which variables in the model has the short or long-term impact towards another variable of interest. In this study, variance decomposition analysis is used to measure the forecast error variance of the conditionality variables spillover to GDP in two different periods.

## **CHAPTER 4: RESULTS AND INTERPRETATIONS**

### **4.0 Overview**

In this chapter, the empirical results of augmented Dickey-Fuller test, cointegration test were shown. VAR is used for non-cointegrated variables whereas VECM is used for cointegrated variables. The impact of compliance with conditionality of IMF programs is shown by the result of Granger causality test, impulse response function and variance decomposition analysis.

## 4.1 Unit Root Test

Table 4.1 presents the result using augmented Dickey-Fuller test (ADF). In Panel A, it is observed that all variables are non-stationary at level form except capital account and current account while all variables are non-stationary at level form except real effective exchange rate, capital account, total reserve and domestic debt in Panel B. First difference is used for all non-stationary series. All variables are found to be stationary after taking the first difference under the ADF test.

## 4.1 Unit Root Test

Table 4.1: Augmented Dickey-Fuller test

Variables	Panel A		Panel B	
	ADF stat. drift & without trend	ADF stat. drift & with trend	ADF stat. drift & without trend	ADF stat. drift & with trend
<u>Level</u>				
GDP	2.1675	-1.9798	0.1306	-3.5549**
Money supply	0.3649	-1.4004	-0.2171	-5.5208***
Real effective exchange rate	-1.5283	-1.1783	-10.8699***	-10.9776***
Capital account	-6.3924***	-6.3933***	-5.1716***	-7.3002***
Total reserve	-2.0551	-3.0435	-3.1795**	-5.3360***
Budget deficit	-2.1941	-3.1208	-2.6160	-2.8264
Current account	-4.8368***	-4.7299***	-1.8099	-5.8908***
Domestic debt	-1.9563	-0.8344	-3.5840***	-2.5666
<u>First Difference</u>				
GDP	-15.0011***	-15.7875***	-6.0242***	-5.5212***
Money supply	-8.4729***	-8.5166***	-8.3667***	-8.2327***
Real effective exchange rate	-7.8577***	-7.9575***	-	-
Capital account	-	-	-	-
Total reserve	-8.8175***	-8.8583***	-	-
Budget deficit	-5.6466***	-5.5930***	-5.6804***	-5.3654***
Current account	-	-	-8.0014***	-7.9567***
Domestic debt	-11.2805***	-11.7186***	-	-

Notes: \*\*\*, and \*\* denotes as significant at 1%, and 5% levels, respectively. The symbol “-” denotes that the variables are stationary at their level form. Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

## 4.2 Cointegration Test

Variable	Panel A		Panel B	
	Trace statistics ( $H_0: r \leq 0$ )	Maximum Eigenvalue statistics ( $H_0: r=1$ )	Trace statistics ( $H_0: r \leq 0$ )	Maximum Eigenvalue statistics ( $H_0: r=1$ )

Table 4.2: Johansen and Juselius cointegration test

Table 5: Johansen and Juselius cointegration test



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GDP – Money supply	18.3137** (15.4947)	14.8250** (14.2646)	12.9721 (15.4947)	11.1387 (14.2646)
GDP – Real effective exchange rate	18.6279** (15.4947)	18.56606*** (14.2646)	-	-
GDP – Total reserve	21.9650*** (15.4947)	20.7021*** (14.2646)	-	-
GDP – Budget deficit	14.3378 (15.4947)	11.8402 (14.2646)	19.6715** (15.4947)	19.5118*** (14.2646)
GDP – Domestic debt	7.9619 (15.4947)	7.7058 (14.2646)	-	-
GDP – Current account	-	-	12.8082 (15.4947)	9.8910 (14.2646)

---

Notes: \*\*\*, and \*\* denotes as significant at the 1%, and 5% levels, respectively. Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

Table 4.2 presents result of Johansen and Juselius cointegration test in Panel A and B. In Panel A, it is observed that real GDP per capita with money supply, real effective exchange rate and total reserve reject the null hypothesis of trace and maximum eigenvalue test statistics at 5 per cent. This indicates that they are exhibiting the long-run equilibrium in Panel A. However, budget deficit and domestic debt do not reject the null hypothesis of trace and maximum eigenvalue test statistics. This indicates that they do not have long-run relationship with real GDP per capita.

In Panel B, both trace and maximum eigenvalue test statistics of real GDP per capita with budget deficit reject the null hypothesis at 5 per cent. This suggests that they exhibit long-run equilibrium during and after the AFC. In contrast, real GDP per capita with money supply and current account fail to reject the null hypothesis of no cointegrating vector. This concludes that there is no long-run relationship even they have comovement during and after the AFC.

Variables	Error Correction Term (ECT <sub>t-1</sub> )	
	Coefficient	T-statistics
<b><u>Panel A</u></b>		
Money supply adjusts to GDP	0.8764***	3.8358
GDP adjusts to real effective exchange rate	-0.0016***	-3.2612
GDP adjusts to total reserve	0.0429**	2.5456
<b><u>Panel B</u></b>		
GDP adjusts to budget deficit	0.0168***	3.1909

### 4.3 Error Correction Model

Table 4.3: Error Correction Model

Table 4.3: Error Correction Model

Notes: \*\* and \*\*\* denotes as significant at the 5%, and 1% levels, respectively. Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

Results from Johansen and Juselius cointegration test suggests that there are 4 pairs of variable are cointegrated. Hence, Vector Error Correction Model (VECM) is used instead of VAR to capture and provide the short-run relationship and adjustment toward the long-run equilibrium. Table 4.3 presents that the coefficient of 0.876378 for lagged one of error correction term (ECT<sub>t-1</sub>) money supply in Panel A significant at 1 per cent indicates the money supply adjust significantly in eliminating disequilibrium in the short-run in order to have the long-run relationship with GDP. The result presents that money supply adjust by 87.64 per cent per quarter toward the equilibrium level.

Variables	<b>Panel A</b>		<b>Panel B</b>	
	F-Statistic	Lag Length	F-statistic	Lag Length
GDP – Money Supply	4.4885***	4	6.8993***	6
Money Supply – GDP	6.1376***		1.3797	

## 4.4 Granger Causality Test

Table 4.4: Granger causality test

Table 7: Granger causality test

GDP – Real Effective Exchange rate	4.2026***	6	1.8304	4
Real Effective Exchange rate– GDP	3.6426***		17.4802***	
GDP – Capital Account	0.8837	3	1.4274	4
Capital Account – GDP	1.0106		2.8678**	
GDP – Total Reserve	10.9711***	3	3.5931***	6
Total Reserve – GDP	16.7591***		2.6685**	
GDP – Budget Deficit	1.4382	4	1.1977	6
Budget Deficit – GDP	1.4234		0.5986	
GDP – Current Account	4.1856***	4	0.8844	4
Current Account – GDP	0.7295		3.0791**	
GDP – Domestic Debt	2.0352	3	3.6589**	4
Domestic Debt – GDP	0.2259		10.6771***	

Notes: \*\*\*, and \*\* denotes as significant at the 1%, and 5% levels, respectively. The lag length is based on the minimum Schwarz's information criterion. Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

Table 4.4 presents the result of the Granger Causality Test for all of the variables in Panel A and Panel B. In Panel A, it is observed that there are bi-directional causal relationship between GDP with money supply, real effective exchange rate and total reserve. In addition, the result suggests unidirectional casual direction which is from GDP to current account. Moreover, there is no Granger causality exists between GDP with capital account, budget deficit and domestic debt, indicates that they are independent before the AFC.

In Panel B, estimated result shows a bi-directional causal relationship between GDP and domestic debt. Unidirectional causal effects are found from GDP to money supply as well as from real effective exchange rate, capital and

current account to GDP. Lastly, GDP and budget deficit are independent during and after the AFC.

To compare the results of Granger causality between Panel A and B, this study focus only the existence of casual effect from conditionality variables to GDP in both periods. Granger causality is found from the variables capital account, domestic debt and current account to GDP during and after the AFC compared to before the AFC. The result also indicates that GDP and budget deficit are independent in both periods.

## 4.5 Analysis of Impulse Response Function

Figure 1. Impulse response functions

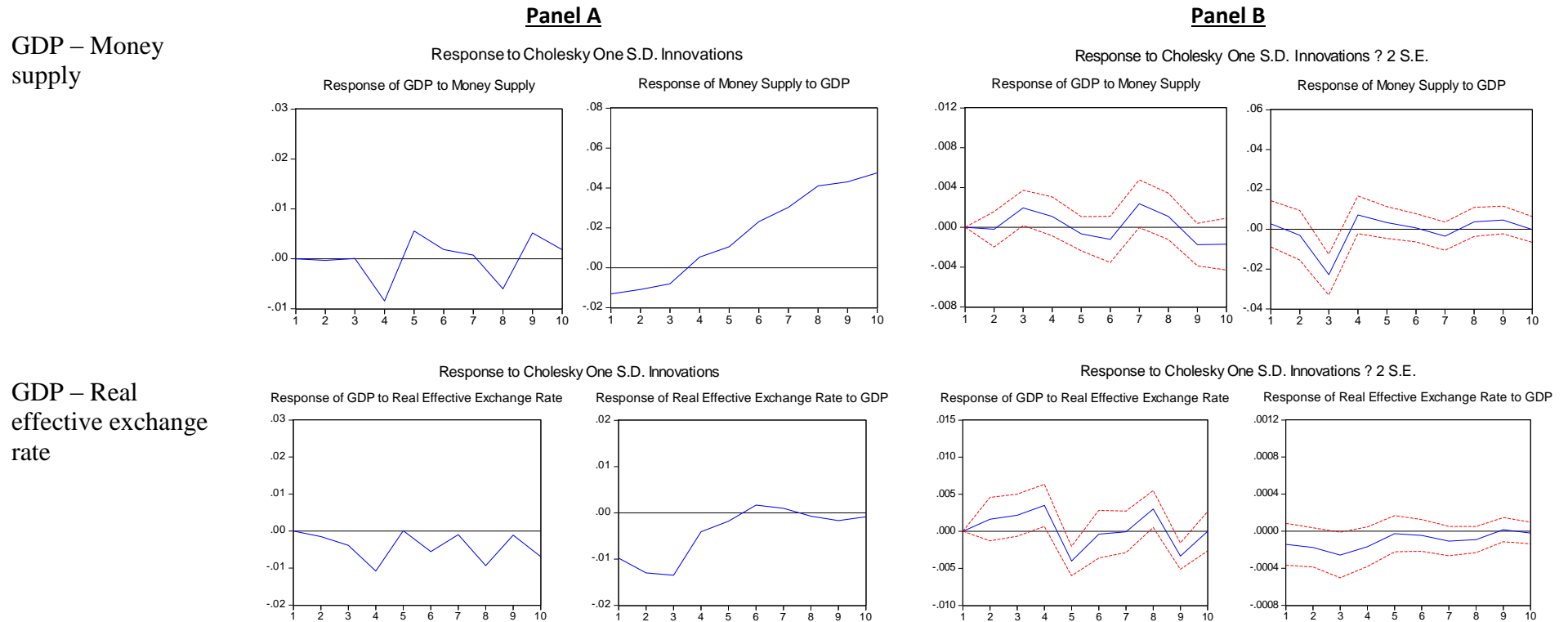


Figure 4.1: (continued)

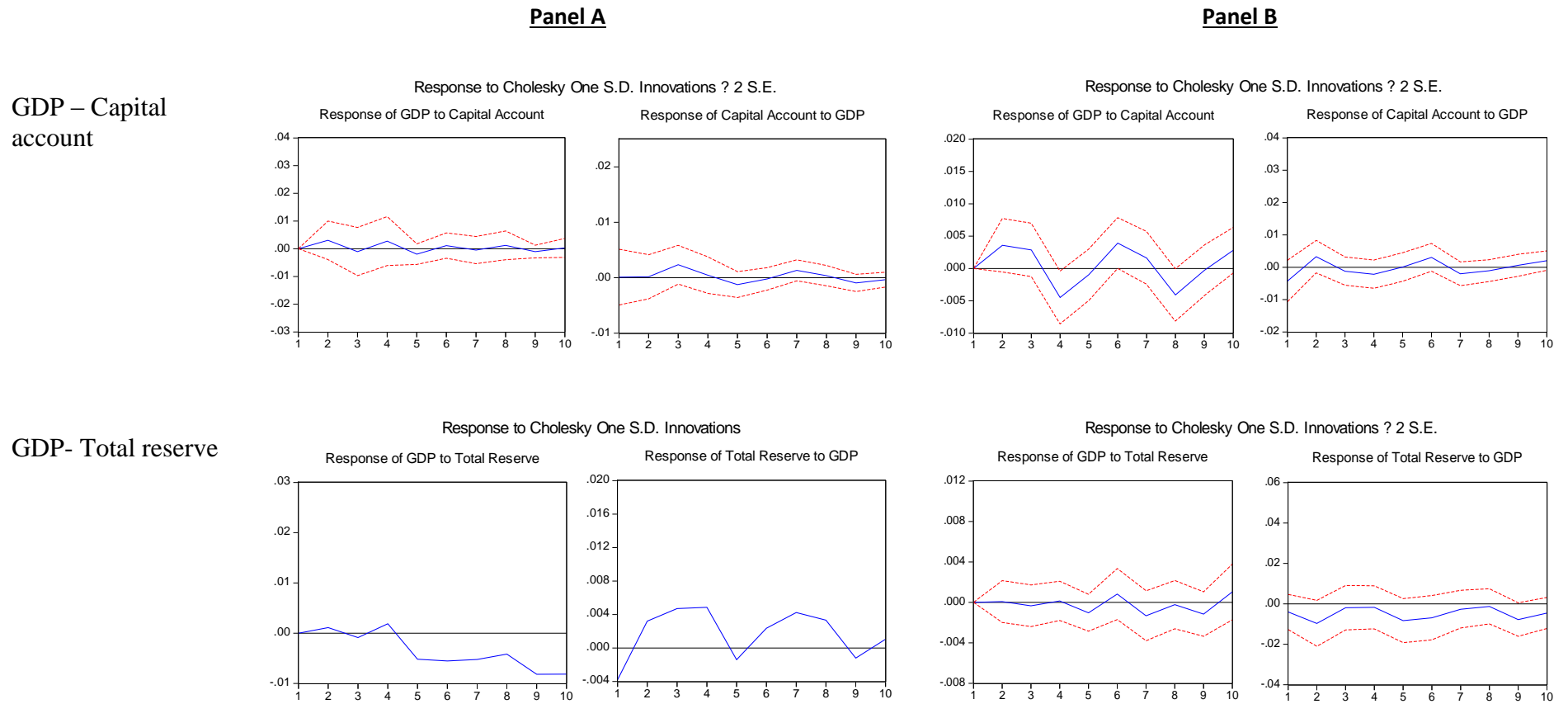




Figure 4.1: (continued)

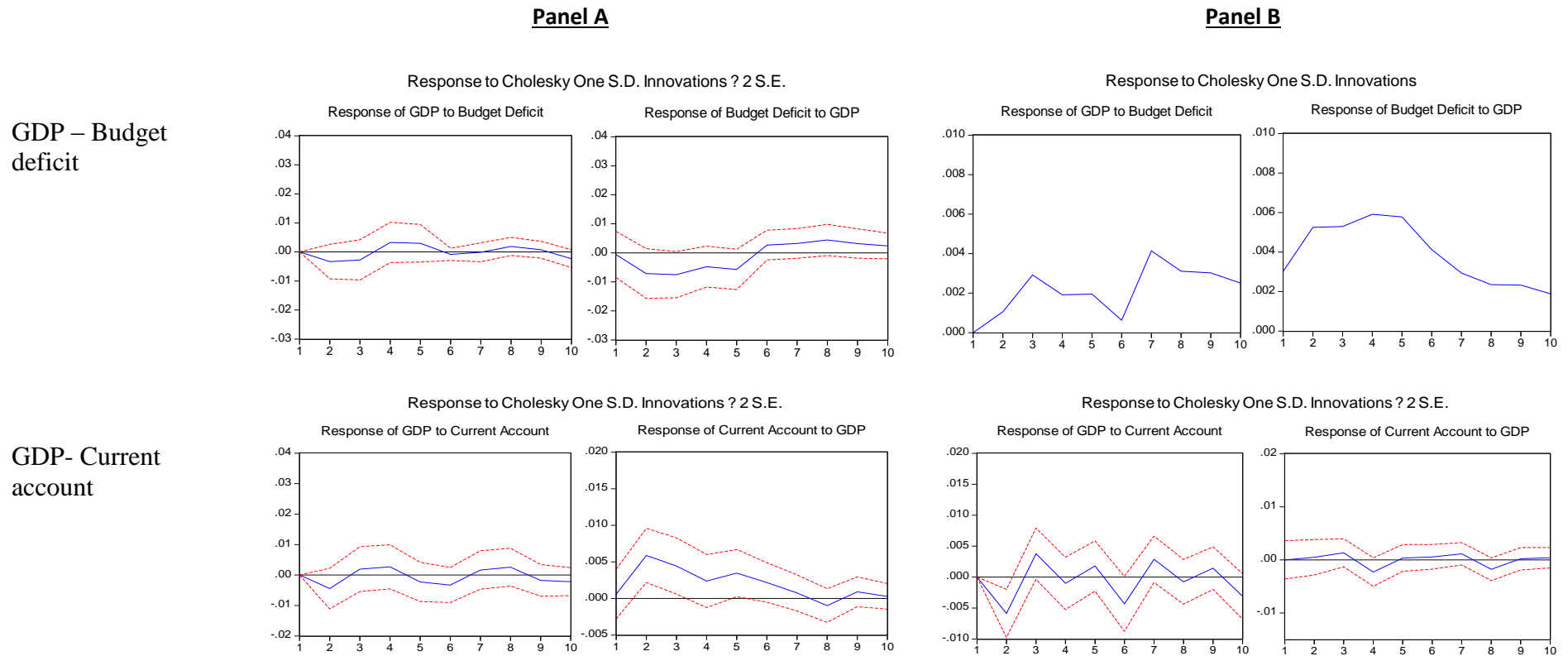
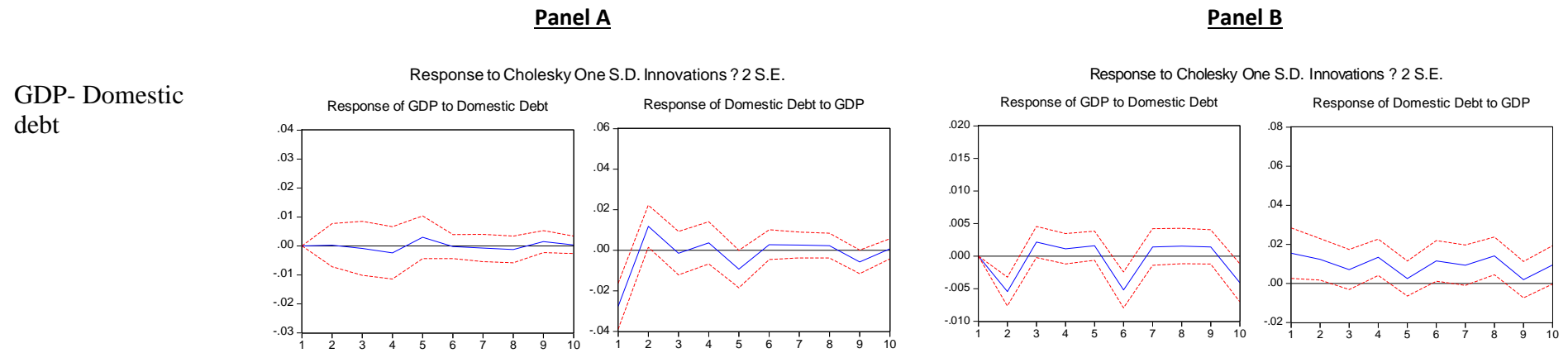


Figure 4.1: (continued)



Notes: Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

Figure 4.1 presents the result of impulse response function of the time series variables for Panel A and Panel B. However, this study only focus on the response of the GDP in Indonesia due to the shock of other conditionality variables in two periods.

The response of GDP due to the shock of capital account, budget deficit, current account and domestic debt in Panel A are weak towards the end of the time period. Subsequently, the response of GDP due to the shock of capital account, current account and domestic debt fluctuates highly in Panel B. Besides, the high and positive response of GDP due to the shock of budget deficit is observed in Panel B.

The response of GDP due to the shock of money supply in Panel A is fluctuating continuously towards the time period but turns to fluctuate lesser as compared in Panel B. On the other hand, GDP has a high negative response due to the shock of real effective exchange rate in Panel A compared to a high fluctuating response in Panel B.

The response of GDP due to the shock of total reserve in Panel A begin with a low effect but turns to high negative response and persists towards the end of the time period. However, in Panel B, the response of GDP becomes insignificant compared to Panel A. This indicates that total reserve has no significant impact on economic growth in Indonesia after compliance with conditionality in IMF bailout programs.

Impulse response function only provides the causality linkage between the variables without estimate the impact on economic growth accurately. Hence, variance decomposition analysis is conducted to examine the percentage of the impact on economic growth in Indonesia after compliance with conditionality in IMF bailout programs.

## 4.6 Variance Decomposition Analysis

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Variables	Horizon	Panel A	Panel B
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### Table 4.5: Variance decomposition

*Table 8: Variance decomposition*

		By innovations in			
		GDP	Money supply	GDP	Money supply
		Total reserve	Total reserve	Total reserve	Total reserve
GDP	2	99.9687	60.1457	90.8250	0.0541
	4	99.8380	0.4080	99.9908	0.0092
	6	99.3047	0.6953	94.7648	0.7392
	8	94.7555	5.2444	99.8137	0.1363
	10	95.4624	4.5375	94.8226	5.1773
	10	95.8056	6.1965	98.4908	9.5092
Money supply	2	94.5082	7.3790	90.8168	2.1837
	4	87.8352	12.1649	89.4717	10.6962
	6	4.7575	95.2424	0.7784	99.2215
	8	4.4836	96.7065	5.8948	94.1758
	10	4.4507	95.3557	11.1878	88.8121
	10	10.2336	89.7683	11.2349	88.7459
GDP	2	99.6332	0.3667	98.2733	1.7267
	4	83.4781	16.5218	89.7414	10.2586
	6	86.7469	13.2530	88.4362	11.5638
	8	81.3964	18.6035	86.4459	13.5540
	10	82.5417	17.4582	86.3376	13.6624
	Real effective exchange rate	2	34.7229	65.2770	3.8652
4		35.5142	64.4857	6.9891	93.0108
6		29.5361	70.4638	6.6665	93.3334
8		25.8310	74.1690	7.2161	92.7838
10		24.3486	75.6513	7.1459	92.8541
GDP		2	99.2828	0.7171	95.4472
	4	98.6744	1.3255	86.9633	13.0367
	6	98.7120	1.2879	87.8777	12.1223
	8	98.6689	1.3311	84.5389	15.4611
	10	98.7245	1.2754	85.4214	14.5786
	Capital account	2	0.0083	99.9917	3.8922
4		1.1948	98.8051	4.1205	95.8795
6		1.5133	98.4867	4.7747	95.2253
8		1.8884	98.1115	4.9743	95.0257
10		2.0955	97.9045	5.3029	94.6971

Total reserve	6	7.4362	92.5638	5.7088	94.2912
	8	9.8308	90.1692	5.1745	94.8255
	10	10.0365	89.9635	6.2247	93.7753
		<b>GDP</b>	<b>Budget deficit</b>	<b>GDP</b>	<b>Budget deficit</b>
GDP	2	98.7229	1.2771	98.2504	1.7496
	4	96.8118	3.1882	91.6467	8.3533
	6	97.2508	2.7492	92.8294	7.1706
	8	97.0796	2.9204	86.9478	13.0522
	10	97.1910	2.8090	86.0488	13.9512
Budget deficit	2	4.2481	95.7519	19.7831	80.2169
	4	9.5154	90.4846	16.7018	83.2982
	6	10.1851	89.8149	16.1098	83.8902
	8	10.7866	89.2134	15.4200	84.5799
	10	11.4010	88.5990	15.2585	84.7415

Table 4.5: (continued)

Notes: Panel A denotes as before the AFC. Panel B denotes as during and after the AFC.

		<b>GDP</b>	<b>Current account</b>	<b>GDP</b>	<b>Current account</b>
GDP	2	97.7272	2.2728	88.1991	11.8009
	4	96.7595	3.2405	84.2833	15.7166
	6	96.8207	3.1792	84.5405	15.4594
	8	96.3191	3.6809	83.1894	16.8106
	10	96.5022	3.4978	83.4686	16.5314
Current account	2	14.1412	85.8588	0.0849	99.9151
	4	20.7708	79.2292	2.5126	97.4874
	6	24.9659	75.0341	2.6207	97.3793
	8	25.3199	74.6801	4.0605	95.9394
	10	25.5180	74.4819	4.1157	95.8843
		<b>GDP</b>	<b>Domestic debt</b>	<b>GDP</b>	<b>Domestic debt</b>
GDP	2	99.9952	0.0048	87.3247	12.6753
	4	99.5314	0.4686	85.6095	14.3905
	6	99.1400	0.8599	83.7058	16.2941
	8	99.0644	0.9355	83.3017	16.6983
	10	99.0234	0.9765	82.4492	17.5508
Domestic debt	2	32.4801	67.5198	10.9632	89.0368
	4	32.2984	67.7016	14.3477	85.6523
	6	34.3182	65.6819	13.4680	86.5319
	8	34.5681	65.4319	15.6746	84.3254
	10	35.2965	64.7035	14.9556	85.0445

Table 4.5 presents the variance decomposition analysis result for Panel A and Panel B. However, this study focus only on the side of the contribution of all

conditionality variables to the variability of GDP in order to study the impact of compliance with conditionality of IMF programs on Indonesian economic growth.

In Panel A, GDP explained a large percentage of the money supply forecast error variance whereby the linkage between become weaker to about 11 per cent in Panel B. This indicates that money supply become less related to GDP after compliance with conditionality.

Exchange rate, current account and domestic debt share the same result where their role in explaining the variability of GDP is relatively high in Panel A about 20-35 per cent but drop substantially to approximately 3-14 per cent in Panel B. The result shows that exchange rate, current account and domestic debt have less impact on economic growth in Panel B after compliance with IMF conditionality.

In contrast, there are only two conditionality variables, capital account and budget deficit explained a higher percentage in Panel B compared to Panel A, but the percentage still remains low. The percentage of budget deficit explains the variability of GDP increases gradually from average 10 per cent to average 17 per cent whereas capital account increases from average 1 per cent to average 4 per cent and persists over the time period in explaining the variability of GDP in Panel B.

Lastly, the role of total reserve in explaining the variability of GDP decreases from average 8 per cent in Panel A to average 5 per cent in Panel B. In addition, the magnitude of the explained variability of GDP by capital account remains almost the same at 6 per cent towards the end of the time period. It is suggested that the dynamic interaction of GDP and total reserve is limited in Panel B.

As a result, all the conditionality variables show almost no role in explaining the variability of GDP in Panel B. This indicates that linkage between all the conditionality variables and GDP are generally weak. In conclusion, compliance with conditionality of IMF bailout programs in Indonesia does not bring significant impact on economic growth during and after the Asian financial crisis.



## **CHAPTER 5: CONCLUSION**

### **5.0 Overview**

This chapter concludes the major findings of this study, policy implication, limitation of study and lastly recommendation for future research.

### **5.1 Major findings**

This study examines the effectiveness of IMF conditionality with IMF bailout programs in Indonesia during the Asian financial crisis (AFC). Given that Granger causality test and impulse response function provide an inconclusive result of the influence of conditionality variables on economic growth in Indonesia, variance decomposition analysis indicates that the percentage of the impact on the economic growth is relatively high before the AFC but low during and after the AFC. Hence the results provide two findings.

First, the conditionality variables are effective in influencing economic growth before the AFC. As an interpretation of this result, most of the conditionality variables are important in affecting economic growth before the AFC can be easily explained. For example, fluctuation on exchange rate has a direct impact on international trade and thus significantly affect the economic growth in Indonesia. However, this finding only serves as a comparison to second

finding because the main concern is on the impact of conditionality during and after the AFC.

Second, compliance with conditionality of IMF bailout programs in Indonesia during and after the AFC shows relatively small effect on economic growth in Indonesia. This finding is similar to the findings of Dreher (2005), where he showed that the effect of compliance with conditionality is quantitatively small as compared to the overall reduction in economic growth. This finding can be interpreted as compliance with conditionality of IMF bailout programs in Indonesia did not show positive impact nor worsen the economic growth during and after the AFC. There are 5 justifications to this finding.

First, in principle, the objective of IMF bailout programs is to provide financial assistance and boost economic growth in the program countries. However, the financial aids from the IMF and the conditionality imposed was solely to bailout the multinational companies in Indonesia by saving the big banks. It is to ensure that the outstanding debts to the corporations can be paid during the AFC (Lane, 2001). The action of the IMF to save its own cronies can be done by the expenses of impoverished workers and farmer's living conditions. Hence, while the conditionality was implemented to help the IMF's local partners and multinational institutions, it shows almost no contribution in affecting the Indonesia's economic growth.

Second, IMF conditionality is a mechanism to help program countries in reaching external balance to repay their debts (Bird & Willett, 2004). In the case of Indonesia, approximately 50% of the revenues of the government had been allocated to the loan repayments. In addition, Lane (2001) found that a portion of the new loans received in Indonesia was used to pay the old loans. Furthermore,

Bird and Mandilaras (2009) also stated that country who entered IMF programs will require to keep a certain amount of foreign reserve in their balance of payment. Hence, compliance with conditionality bring small impact on economic growth because the amount of financial loans to develop and boost the economy has been reduced substantially in Indonesia.

Third, the impact of compliance with conditionality of stabilizing the exchange rate market of Indonesia is weak due to shock from the Asian financial crisis. Ideally, IMF bailout programs in Indonesia came with conditionality to stabilize the exchange rate and restore the market confidence to limit the sharp decline in economic growth. However, the shock from Thailand decided to float their currency created a contagion effect where it scared off all foreign investors and triggered a massive capital outflow in Indonesia. Hence, compliance with the condition to stabilize the exchange rate market bring less effect on economic growth due to the shock from the AFC was too strong.

Fourth, Boorman and Hume (2003) stated that one of the conditionality come with IMF bailout programs was tighten monetary policy by reducing money supply and increase interest rates to avoid the sharp decline in real growth. However, the high equity ratio, systematic and structural problems in corporate sectors made them vulnerable to the rapid increase of interest rates. Hence, a high nominal interest rate during the AFC provides a false interpretation of tight monetary policy was to limit the decline in the economic growth, instead it signalled loss in market confidence and Indonesia's credit-worthiness. Therefore, the conditionality come with IMF bailout programs of tightening monetary policy has small effect on economic growth in Indonesia.

Finally the weak impact of compliance of conditionality after the AFC can be interpreted as most of the economic structure of Asian economies could be different after the crisis (The economist, 2007). Indonesia learned from its

mistakes and now has a substantial current account surpluses as well as large foreign reserves account to protect them against the speculative attack in future. Furthermore, despite Indonesia successfully reduced its financial and macroeconomic vulnerabilities, investors are failed to be convinced to return thus the level of investment rate is still lower than pre-crisis period. Hence the conditionality variables have less influence in affecting economic growth after the AFC.

## **5.2 Policy Implication**

Our findings contribute to a single policy implication for the IMF. The conditionality of IMF bailout programs failed to achieve its primary objective which is to boost the economic growth in Indonesia, and therefore a reform on its conditionality is necessary. The IMF needs to identify the factors that lead to the failure of its conditionality before reform. The factors of poor communications between the IMF and government policies, political uncertainties and absence of administrative capacity need to be considered in order to reform the conditionality effectively. Conditionality act as the outcome from the bargaining process between the IMF and government is vital for IMF programs and loans to success. Hence, IMF conditionality should be well customized for each program country according to the economic condition, political concerns, as well as the fundamental weaknesses that drive them to receive IMF programs in the first place.

## **5.3 Limitation of the study**

This study emphasizes in studying the impact of IMF conditionality on economic growth in Indonesia. However, the IMF does not have full authority over Indonesia, which means Indonesia government may not fully comply with the conditionality proposed by the IMF during the AFC. There is a reason to study the impact of conditionality on economic growth but not the implementation rate of conditionality in Indonesia to evaluate the effectiveness of IMF conditionality. Since Indonesia received a total of 4 bailout programs during the AFC, the existence of conditionality should be justified because the ability to impose the content of conditionality is expected to demonstrate by the IMF.

## **5.4 Recommendation for Future Research**

From our findings, the conditionality of IMF programs show almost no contribution in affecting economic growth in Indonesia, thus the real reason behind the disaster in Indonesia remains unknown. It would be in the interest for future researchers to examine other possible aspects, such as the impact of IMF advice, money disbursed and moral hazard on economic growth.

First, the way of IMF programs can influence economic growth is its policy advice. A country growth is highly depend on the policy implemented. Therefore, IMF advice to policymaker might bring significant impact on the country long-run growth.

Second, IMF programs is obviously associated with money disbursed into the economic for development purpose. Hence, how the loans is put to use to develop can bring significant impact on the country growth during inter-program period.

Lastly, the availability of the IMF loans may act as a financial insurance fund for government to follow riskier policy. Government will tend to lower down its precautions against any unexpected shock induces moral hazard. Thus, a risker and bad economic policy will bring significant impact on economic growth.

## **REFERENCES**

- Abbott, P. C., Andersen, T. B., & Tarp, F. (2010). IMF and Economic Reform in Developing Countries. *The Quarterly Review of Economics and Finance* 02/2010.
- Atoyan, R., & Conway, P. (2005). Evaluating the impact of IMF programs: A comparison of matching and instrumental-variable estimators. *Review of International Organizations*, 1(2), forthcoming.
- Bagci, P., & Perraudin, W., (1997). The impact of IMF programmes. The Institute For Financial Research Working Paper 35, Birkbeck College, University of London.
- Barro, R. J., & Lee, J. W. (2005). IMF-programs: Who is chosen and what are the effects? *Journal of Monetary Economics*, 52, 1245–1269.

- Bird, G., & Mandilaras, A. (2009). Once Bitten: The Effect of IMF Programs on Subsequent Reserve Behaviour. No 0509, School of Economics Discussion Papers, School of Economics, University of Surrey.
- Bird, G., & Willett, T. D. (2004). IMF Conditionality, Implementation and the New Political Economy of Ownership. *Comparative Economic Studies*, 46(3): 423-450.
- Boorman, J., & Hume, A. R. (2003). Life with the IMF: Indonesia's Choices for the Future. Retrieved from <https://www.imf.org/external/np/speeches/2003/071503.htm>
- Bordo, M., & Schwartz, A. J. (2000). Measuring real economic effects of bailouts: Historical perspectives on how countries in financial distress fared with and without bailouts. In *Carnegie-Rochester conference series on public policy*, vol. 53, pp. 81–168.
- Bulir, A., & Moon, S. (2004). Is fiscal adjustment more durable when the IMF is involved? *Comparative Economic Studies*, 46, 373-399.
- Butkiewicz, J. L., & Yanikkaya, H. (2005). The effects of IMF and World Bank lending on long-run economic growth: An empirical analysis. *World Development*, 33(3), 371–391.
- Connors, T. A. (1979). The apparent effects of recent IMF stabilization programs. *International Finance Discussion Papers 135*, Board of Governors of the Federal Reserve System.
- Conway, P. (1994). IMF lending programs: Participation and impact. *Journal of Development Economics*, 45, 365–391.
- Dicks-Mireaux, L., Mecagni, M., & Schadler, S. (2000). Evaluating the effect of IMF lending to low-income countries. *Journal of Development Economics*, 62, 495–526.
- Donovan, D. J. (1981). Real responses associated with exchange rate action in selected upper credit tranche stabilization programs. *IMF Staff Papers*, 28, 698–727.

- Donovan, D. J. (1982). Macroeconomic performance under fund-supported programs: The experience of the seventies. *IMF Staff Papers*, 29, 171–203.
- Doroodian, K. (1993). Macroeconomic performance and adjustment under policies commonly supported by the International Monetary Fund. *Economic Development and Cultural Change*, 41(4), 849–864.
- Dreher, A. (2005). Does the IMF influence fiscal and monetary policy? *Journal of Policy Reform*, 8(3), 225-238.
- Dreher, A. (2006). IMF and economic growth: the effects of programs, loans, and compliance with conditionality. *World Development*, 34(5), 769-788.
- Dreher, A., & Gassebner, M. (2012). Do IMF and World Bank Programs Induce Government Crises? An Empirical Analysis. *International Organization*, 66(2), 329-358.
- Dreher, A., & Vaubel, R. (2004a). Do IMF and IBRD Cause Moral Hazard and Political Business Cycles? Evidence from Panel Data. *Open Economies Review*, 15(1), 5-22.
- Dreher, A., & Walter, S. (2009). Does the IMF help or hurt? The effect of IMF programs on the likelihood and outcome of currency crises. *World Development*.
- Easterly, W. (2005). What did structural adjustment adjust? The association of policies and growth with repeated IMF and World Bank adjustment loans. *Journal of Development Economics*, 76(1), 1–22.
- Evrensel, A. (2002). Effectiveness of IMF-supported stabilization programs in developing countries. *Journal of International Money and Finance*, 21(5), 565–587.
- Faini, R., de Melo, J., Senhadji-Semlali, A., & Stanton, J. (1991). Macro performance under adjustment lending. In V. Thomas, A. Chibber, M. Dailami, & J. de Melo (Eds.), *Restructuring economies in distress* (pp. 222–242). Oxford University Press.



- Frontline. (n.d.). Timeline Of The Crash. Retrieved from <http://www.pbs.org/wgbh/pages/frontline/shows/crash/etc/cron.html>
- Goeltom, M. S. (2007). Essays in macroeconomic policy: the Indonesian experience. Jakarta.
- Goldstein, M., & Montiel, P. (1986). Evaluating fund stabilization programs with multicountry data. *IMF Staff Papers*, 33, 304–344.
- Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods. *Econometrica*, 37(3), pp.424-438.
- Gylfason, T. (1987). Credit policy and economic activity in developing countries with IMF stabilization programs, International Finance Section, Princeton Studies in International Finance 60.
- Hardoy, I. (2003). Effect of IMF programmes on growth: A reappraisal using the method of matching. Paper presented at the European Economic Association, Stockholm, 20–24 August 2003.
- Hutchison, M. M. (2003). A cure worse than the disease? Currency Crises and the Output Costs of IMF-Supported Stabilisation Programs. In M. Dooley, & J. A. Frankel (Eds.), *Managing Currency Crises in Emerging Markets*, Chicago (chapter 10).
- Hutchison, M. M. (2004). Selection bias and the output costs of IMF programs. Mimeo, University of California, Santa Cruz.
- Hutchison, M. M., & Noy, I. (2003). Macroeconomic effects of IMF-sponsored programs in Latin America: Output costs, program recidivism and the vicious cycle of failed stabilization. *Journal of International Money and Finance*, 22(7), 991–1014.
- Indonesia - Asian Financial Crisis - Effects and Causes | Indonesia Investments. (n.d.). Retrieved from <http://www.indonesia-investments.com/culture/economy/asian-financial-crisis/item246>

- International Monetary Fund. (2005). World Economic Outlook. Retrieved from <http://www.imf.org/external/pubs/ft/weo/2005/01/>
- Joyce, J. P. (2004). The adoption, implementation and impact of IMF programs: A review of the issues and evidence. *Comparative Economics Studies*, 46(3), 451–467.
- Khan, M. S. (1990). The macroeconomic effects of fund supported adjustment programs. *IMF Staff Papers*, 37, 195–231.
- Killick, T. (1986). The impact of fund stabilization programmes. In T. Killick (Ed.), *The quest for economic stabilization: The IMF and the Third World* (pp. 227–269). New York: St. Martin's.
- Killick, T., Malik, M., & Manuel, M. (1992). What can we know about the effects of IMF programmes? *The World Economy*, 15(5), 575–597.
- Lane, T., Hamann, A. J., Phillips, S., Schulze-Gattas, M., Tsikata, T. M., & Ghosh, A. (1999). IMF-Supported Programs in Indonesia, Korea and Thailand.
- Loxley, J. (1984). The IMF and the poorest countries: The Performance of the least developed countries under IMF stand-by arrangements. The North-South Institute, Ottawa.
- Lane, M. (2001). How the IMF gang wrecked Indonesia. Retrieved from [http://socialistworker.org/2001/377/377\\_08\\_Indonesia.shtml](http://socialistworker.org/2001/377/377_08_Indonesia.shtml)
- Mercer-Blackman, V., & Unigovskaya, A. (2004). Compliance with IMF Program Indicators and Growth in Transition Economies. *Emerging Markets Finance and Trade*, 40(3), 55-83.
- Nsouli, S., Mourmouras, A., & Atoian, R. (2005). Institutions, program implementation, and macroeconomic performance. In A. Mody, & A. Rebucci (Eds.), *IMF-supported programs: assessing program design, implementation, and effectiveness*, IMF, forthcoming.

- Oberdabernig, D. A. (2013). Revisiting the effects of IMF programs on Poverty and Inequality. *World Development*, 46, 113-142.
- Pastor, M. Jr., (1987). The effects of IMF programs in the Third World: Debate and evidence from Latin America. *World Development*, 15(2), 249–262.
- Przeworski, A., & Vreeland, J. R. (2000). The effect of IMF programs on economic growth. *Journal of Development Economics*, 62, 385–421.
- Reichman, T. M., & Stillson, T. (1987). Experience with programs of balance of payments adjustment in the higher tranches, 1963–72. *IMF Staff Papers*, 25, 293–309.
- Ritholtz, B. (2010). How Often Should We Expect a Financial Crisis? Retrieved from [www.ritholtz.com/blog/2010/02/how-often-should-we-expect-a-financial-crisis/](http://www.ritholtz.com/blog/2010/02/how-often-should-we-expect-a-financial-crisis/)
- Schadler, S., Rozwadowski, F., Tiwari, S., & Robinson, D. O. (1993). Economic adjustment in lowincome countries: experience under the enhanced structural adjustment facility. *IMF Occasional Paper*, 106.
- Stone, R. W. (2007). The Scope of IMF Conditionality. Retrieved from [https://www.princeton.edu/~pcglobal/conferences/institutions/papers/stone\\_S100.pdf](https://www.princeton.edu/~pcglobal/conferences/institutions/papers/stone_S100.pdf)
- The Economist. (2007). Ten years on. Retrieved from <http://www.economist.com/node/9432495>
- Vreeland, J. R. (2003). *The IMF and economic development*. New York: Cambridge University Press.
- Weiss, M. A. (2014). *International Monetary Fund: Background and Issues for Congress*.
- Zulu, J. B., Nsouli, S., & Saleh, M. N. (1985). Adjustment programs in Africa: The recent experience. *IMF Occasional Papers* 34, Washington, DC.



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