Inflation Targeting

A Reconsideration

INFLATION

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Master Thesis
By
Yugi Sukriana

MSc Program Engineering and Policy Analysis
Faculty of Technology, Policy and Management
Delft University of Technology, the Netherlands

TUDelft

Technische Universiteit Delft

Inflation Targeting: A Reconsideration

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Author: Yugi Sukriana
Student Number: 1531891
Email: yugi@wanakalapa.com

Graduation date:
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Graduation Committee:
Chairman: Prof.dr. A.H. Kleinknecht
Full Professor, Head of Section Economic of Innovation

First Supervisor: Dr. S.T.H. Storm
Section Economic of Innovation

Second Supervisor: Prof.dr. W.M de Jong
Section Policy Organization Law and Gaming

MSc Program Engineering and Policy Analysis
Faculty of Technology, Policy and Management
Delft University of Technology, the Netherlands

TUDelft
Technische Universiteit Delft

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Abstract

In response to the abandonment of monetary targeting, Inflation targeting (IT) has emerged as a dominant monetary policy framework in both industrializing and industrialized countries. The framework was aimed to provide a new anchor for conducting monetary policy, and the theoretical underpinnings of this framework are based on two things: First, the IT model provides a core mechanism where the interest rate is being used as a policy instrument to achieve a low and stable inflation. Second, institutional aspect of this policy provides guidance towards an independent central bank that is argued as a way to gain a central bank's credibility. However, the claim is not free from criticisms; some economists view this policy is implemented at the cost of low economic growth and high unemployment. This research is aimed to provide a deeper analysis on Inflation Targeting framework by addressing its two theoretical foundations: First, the standard IT model is being assessed by considering a missing variable namely *labor productivity*. Second, the institutional analysis is employed to explain the implementation of IT in a — typically developing — country (i.e. Indonesia), and since the IT policy follows a type of transplanted policy (from International Financial Institution to Countries), the adoption of IT policy is evaluated under the institutional transplantation perspective. As a conclusion, IT policy is not costless, the cost is not only in term of losing output but also in term of losing labor productivity, and the institutional analysis showed that the adoption of IT by a country does not increase the credibility of a central bank.

Keywords: *Inflation Targeting, Monetary Policy, Macroeconomic Model, Institutional Analysis*

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Executive Summary

This research is triggered by the economists' debate on the Inflation Targeting (IT) issue, a dominant monetary policy framework that was introduced after the collapse of monetary targeting. On the one hand, the proponents of IT based their belief that the inflation is the only macroeconomic variable that can be influenced by the central bank's monetary policy in the long-run, therefore, the low and stable inflation need to be placed as a sole objective of monetary policy. On the other hand, some economists criticize IT framework as an impediment for economic growth and jobs creation. Since the economists' views on the desirability and effectiveness of IT are not unanimous, while the dissemination of IT policy across the globe is still continuing (currently there are 24 central banks adopting IT policy, and the numbers still continue to increase), this research attempts to provide a deeper and thorough analysis on IT controversy.

Theoretically, the framework has two underpinning arguments: First, the core mechanism of IT is supported by the so-called New Consensus of Macroeconomics (NCM) Model; according to this model, the central bank's nominal interest rate is an effective instrument to target the inflation rate at a low and stable level, the interest rate will lower the inflation rate through the output gap and rational expectation mechanism. Second, the institutional aspect of IT by setting up the central bank independent from any political interventions will enhance the credibility of the central bank in conducting monetary policy.

To address those arguments, two methods were employed in this research: First, the model study, the model underlying inflation targeting mechanism was evaluated, all the model's assumptions and parameters were challenged, and an important missing and yet relevant variable (i.e. productivity growth) was considered. Second, the case study on IT implementation in Indonesia by using institutional analysis, and since the IT policy has spread and disseminated all around the world through the International Financial Institutions (IFI), the policy transplantation perspective was used to deepen our understanding on how this policy was transplanted into a country. Indonesia's case is chosen as a representative case study to understand the IT adoption phenomena because of the following reasons: (1) Indonesia has experienced hyperinflation in the 1960s and this traumatic experience influenced the people's perception on inflation. (2) Indonesia is a developing country which is following the path of industrialization, the process in which innovation and technological change play an important role. In this developing-country context, to the major/overarching aims of economic policy are to achieve welfare, reduce unemployment and eventually, alleviate poverty. The appropriateness of IT policy to such development agendas was under a big question. (3) Since 2005, Indonesia is a formal adopter of IT policy and therefore it is an interesting to know how the IT exactly implemented.

The model study shows that, although IT policy is effective to stabilize the inflation rate at a low level, the costs of conducting the policy are even larger, it is appeared not only in term of lower output growth but also in term of lower labor productivity, this new hidden cost is found when the standard model revised by 'endogenizing' labor productivity variable. This research argues that labor productivity is an important factor for development and poverty alleviation. And from the perspective of institutional analysis, it is found that IT policy is failed to be fully implemented in Indonesia due to inappropriateness of the policy with the structural characteristic of Indonesia's economy and its new democratic political culture.

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Chapter 1
Introduction

"Stabilize, privatize, and liberalize" became the mantra of a generation of technocrats who cut their teeth in the developing world and of the political leaders they counseled.
—Dani Rodrik

1.1 Background: Inflation Targeting as a Mainstream Macroeconomic Policy

Since the early 1990s, Inflation Targeting (IT) has been introduced as a new framework for monetary policy. The basic principle of conducting monetary policy within this framework is to keep the inflation rate at a low and stable level by using the interest rate as an instrument. Under this framework, the central bank has to openly declare its ⸺ mostly sole⸺ mission to keep the inflation low. A low rate of inflation is important, it is argued, because it is a necessary condition for achieving economic growth and employment. And vice versa, 'high' inflation — often defined as more than 6%⸺ is perceived as a damaging factor for the economy in the future (Bernanke et al., 1999a, p16, Epstein and Yeldan, 2008).

The original trigger for initiating this policy was based on the change in the global economic climate that became more prone to market openness right after the fall of Soviet Union as a symbol of the state-led economy. The new way of approaching economic policy needs to be established based on the consensus of free-market where the markets and the private enterprises are the best means to achieve growth and prosperity, and therefore, the work of government should be focused on empowering the market to perform their maximum capacity (Bernanke et al., 1999a, p3).

Furthermore, IT suits the requirements of free-market philosophy with respect to its ability to provide macroeconomic stability. Inflation itself is arguably an important macroeconomic indicator that needs to be "tamed" (and inflation-related uncertainty needs to be reduced) in order to achieve market-led growth and monetary (central bank) policy is the best means to target that variable. Other policy instruments to keep inflation in check, including fiscal policy, exchange rate peg, and aggregate money supply growth (as an intermediate target) are argued to be beset with difficulties and therefore ineffective (Bernanke et al., 1999a, p3, Masson et al., 1997).

One could argue that the important prerequisite for IT to be successfully implemented is the independent position of a country and its central bank from any intervention including the one from international financial institution's (IFI). Therefore, there is apparently no room for the IFI to influence the IT adoption process by a country (Rose, 2007). However, besides from many mainstream economists, the call toward IT was also strongly promoted by International Monetary Fund (IMF). The Fund has played an important role in disseminating the policy. It was and it is an active agent⸺ through their various programs (i.e. starting from surveillance,

technical assistance, and even embedding IT as conditionality) — in promoting the framework all over the world (Battini et al., 2006, Mario et al., 2001). In this sense, the IT framework can also be conceived as a transplanted policy regime, generated and developed at international institutional level and transferred into countries.

	Inflation Targeting Adoption Date	Inflation Rate at Start (%)	Inflation Target (2007) (%)
Emerging Market Countries			
Israel	1997Q2	8.5	1-3
Czech Rep.	1998Q1	13.1	3(+/- 1)
Poland	1998Q4	9.9	2.5(+/- 1)
Brazil	1999Q2	3.3	4.5(+/- 2)
Chile	1999Q3	2.9	2-4
Colombia	1999Q3	9.3	5(+/- 0.5)
South Africa	2000Q1	2.9	3-6
Thailand	2000Q2	1.7	0-3.5
Korea	2001Q1	3.2	2.5-3.5
Mexico	2001Q1	8.1	3(+/- 1)
Hungary	2001Q2	10.5	3.5(+/- 1)
Peru	2002Q1	-0.8	2.5(+/- 1)
Philippines	2002Q1	3.8	5-6
Slovak Rep.	2005Q1	3.2	3.5(+/- 1)
Indonesia	2005Q3	7.8	5.5(+/- 1)
Romania	2005Q3	8.8	7.5(+/- 1)
Turkey[a]	2006Q1	7.8	5(+/-2)
Turkey[b]	2001Q2	82.0	n.a
Industrial Countries			
New Zealand	1990Q1	7.0	1-3
Canada	1991Q1	6.2	1-3
United Kingdom	1992Q4	3.6	2
Sweden	1993Q1	4.8	2(+/- 1)
Australia	1993Q2	1.9	2-3
Iceland	2001Q1	3.9	2.5
Norway	2001Q1	3.7	2.5
Candidate countries			
Costa Rica, Egypt, Ukraine	Near term (1-2 years)		
Albania, Armenia, Botswana, Dominican Republic, Guatemala, Mauritius, Uganda, Angola, Azerbaijan, Georgia, Moldova, Serbia, Sri Lanka, Vietnam, Zambia	Medium term (3-5 years)		
Belarus, China, Kenya, Kyrgyz Republic, Moldova, Bolivia, Honduras, Nigeria, Papua New Guinea, Sudan, Tunisia, Uruguay, Venezuela	Long term > 5 years		

[a]Official adoption date of Turkey, [b]Turkish CB declared 'disguised inflation targeting', n.a., not available,
Summarized from Battini, et al., (2006) and Epstein and Yeldan(2008)
Table 1 – Inflation Targeting Countries

Recorded until today, there are 24 Central Banks from both industrialized and industrializing countries adopted the IT framework. Pioneered exclusively by industrialized countries like New Zeeland, Canada, United Kingdom, and Sweden in the early 1990s, the adoption of IT

framework was a response to the collapse of monetarism (the previous monetary policy regime). As IT became the mainstream monetary policy, there are twenty-four countries that adopted IT framework, seven are industrial countries and the others seventeen are emerging market countries. These numbers may continue to increase, currently, there are countries on the list which intend to implement the framework (see Table 1).

However, economists' views on the desirability and effectiveness of IT are not unanimous. Critical economists argue that IT is not an appropriate monetary policy approach due to the cost of its implementation, which can be expressed primarily in terms of avoidable unemployment and loss of growth. Therefore, more researches are needed to touch two things: On the one hand, the existing model underlies the IT-policy need to be re-assessed. The question is whether the model is capable in explaining inflation and economic growth or whether there has been something missing? On the other hand, the IT approach assumes that IT can be implemented everywhere (a one-size-fits-all approach) and needs not to be adapted to the specific institutional conditions in each economy. We will investigate this claim and evaluate IT implementation in one specific institutional context, the case of Indonesia, to assess whether or not the uniform IT policy framework "fits" the structural conditions of typical developing countries which implemented this policy framework.

1.2 Research Problem: Inflation and Inflation-Targeting Controversy

Since Phillips (1958) discovered the tradeoff between inflation and unemployment in his famous Phillips Curve, economists became divided into two major groups. One group advocates the needs of maintaining low inflation by sacrificing unemployment, while another emphasizes the importance of pursuing a policy of low unemployment at the cost of high inflation. The debate on both views has been encompassed at least two aspects: Firstly, it is theoretical debate which was armed by models, calculations, analyses and many other economic reasoning tools. It could be esoteric, where the theory is developed within a space of mind that is isolated from reality, or, it could be exoteric where the judgment of a theory is based on its usefulness and influence on the reality. Secondly, the debate is also ideological, as also politicians and policy makers have strong views on unemployment-versus-inflation. With respect to the second one, there was a constant interplay between the tendency toward market liberalization and the tendency toward regulation. It somehow resembles the old-fashioned debate between capitalism and socialism, whether the prosperity is achieved through liberalization (de-regulation) or through regulation.

However, in this research, I will focus largely on the first aspect of the debate. In order to do so, there are two places where the controversies need to be addressed: First is the ambiguous concept of inflation and second is because of that ambiguous concept, how could the derived policy, namely inflation targeting, is also become problematic.

1.2.1 The Debate on Inflation

Inflation is probably the most complicated macroeconomic indicator. Mostly, the complexity comes from the ambiguity in its measurement and public perception.

First of all, technically speaking, there are two ways of defining inflation: Inflation could be defined as an increase in average price level or it could also be a decline in the value of money,

each definition implies a different inflation indicator. The first definition requires a price index measurement while the second one pays more attention to the excessive level of money supply (McLeod, 1997). Those two definitions of inflation lead to different policy framework in dealing with inflation.

Secondly, the general public often perceives inflation in a negative sense since most of the people tend to personalize the concept as a weakening of purchasing power. A study showed that public's perception of inflation is less rational, in the sense that given the information they have on actual inflation, people tend to estimate the inflation wrongly (Jonung and Laidler, 1988). In Indonesia, the object country of this research, and many other countries that experienced hyperinflation in the past, inflation is often portrayed as a horrible thing that needs to be controlled tightly or pressed immediately if it is appeared to increase. People are quite sensitive to inflation and often associate it with the memory of suffering and political unrest during the hyperinflation in 1960s. However, only few know that inflation could also be an intrinsic feature of economic growth as showed by Chowdhury and Siregar (2004). It means that inflation is inevitable in a development process. The problem then lies on what level of inflation is tolerable? Of course, views on tolerable can vary (between analysts and also over time, depending on historical circumstances), but the IT approach invariably sticks to a (relatively) low inflation target.

1.2.2 Inflation Targeting Debate

As we discussed in previous section, the controversy in the concept of inflation leads to different approaches in dealing with it and — in general — with conducting macroeconomic policy. The most popular approach which has taken the mainstream position up until today is Inflation targeting. The leading figures of Inflation targeting policy might be attributed to two leading economists, Ben Bernanke, currently the Federal Reserve's governor and Frederic Mishkin who is also a former member of board of governors of the Fed. Both of them have been actively initiating the idea of this framework through various publications. The framework is based on some underlying arguments: Firstly, inflation is the only feasible macroeconomic variable that can be targeted in the long run. Secondly, low inflation is necessary for healthy economic growth and even moderate level of inflation could be harmful for the economy. Thirdly, after the era of monetarism monetary policy now needs a new and credible anchor of conducting monetary policy which is inherently available in IT framework. The credibility of IT framework can be seen by its accountability and discipline of central bank and the government in communicating their intention to the public (Bernanke et al., 1999a, p10).

All of those arguments are then translated into practical rule of conduct of the framework. The announcement by the Central Bank that the level of inflation in the future will be stuck at or near some numerically specified level, which is most often 'low', is an important element of credibility in IT framework. This announcement of inflation target usually becomes a set point to which the current inflation rate will be moved gradually. The announced level of inflation should be set in such a way that the price level reaches a given steady-state condition and it is not necessarily to be set as zero but something closer to a 2 percent (Bernanke and Mishkin, 1997).

The next important task of the central bank is forecasting the level of inflation in the coming period, and then adjusting the monetary policy setting under which the central bank has a

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control on it to achieve the targeted inflation. And finally adjust the monetary policy setting in line with revised inflation forecast as a new data being updated (Alamsyah et al., 2001).

Observably, there are some positive results in the countries which have adopted this framework. The most obvious are those countries which experienced both a low rate of inflation and a low expected inflation, in comparison with the pre-IT period and in comparison with countries which are not implementing IT (Bernanke et al., 1999a). The study by Corbo (2001) showed that the inflation level of developing countries adopting IT policy decreased to a low level similar to what we can find in developed countries. Those countries also enjoyed the low nominal rate of interest and finally reduced the variability in both inflation and output, which in turn enhanced the credibility of Central Banks (Cecchetti and Ehrmann, 1999). To summarize, the IT claimed as a monetary policy approach that can achieve: 1. Low rate of inflation, 2. High credibility of central bank's monetary policy, 3. Low sacrifice ratio. the ratio associated with the cost of slower output rate per percentage change in inflation rate, the low sacrifice ration is associated with contractionary monetary policy and lastly, an entry point for foreign investment (Bernanke and Gertler, 2001, Epstein, 2003)

On the other hand, other economists have doubt that the IT framework will help improve a country's economic performance. A prominent example is the series of works that have been conducted by Gerald Epstein and Erinc Yeldan (2008) who argue that IT policy is not only less beneficial but also an impediment for pursuing economic growth which is crucially necessary for developing country.

Epstein and Yeldan refute the claims of IT advocates on the ground that there is no supporting evidence for those claims. It is true that countries that adopt inflation targeting could achieve lower inflation rates, but they did so at the cost of losing output. These authors emphasize that low inflation did not necessarily lead to the increase in output and employment —contrary to the expectations of IT proponents. It has also not been effective in increasing the central banks' credibility and therefore also does not work for reducing sacrifice ratio. The instrument used by central banks to reduce the inflation rate is increases in the rate of interest, and therefore this way of adjusting can lead to slow growth and additional unemployment which is another new problem for the society. Moreover, there is no evidence that IT policy can attract investment (Epstein, 2003).

There is one fundamental question that needs to be answered by IT advocates regarding the choice to focus solely on fighting inflation while excluding other economic variables from policy makers' attention. Is inflation so harmful for the economy? A research conducted by Bruno and Easterly (1996) explains that moderate level of inflation is not only tolerable but also has **no** predictable negative consequences on the real economy: moderate inflation (<15%) is NOT associated with slower growth, nor with reduced investment, nor with any other decline in important real economic variables.

Furthermore, Epstein (2003) puts his suspicion on the practice of this policy by raising the following question. If a fair/moderate rate of inflation has no economic costs, then why are the central banks so obsessive in fighting (even moderate) inflation, by promoting it tirelessly through IFI such as IMF and World Bank? One likely explanation is because such policy is benefiting the financial market. According to his calculation, if this kind of policy is enacted, then the profit share of the financial institutions will increase by enjoying the high rate of interest (Epstein and Yeldan, 2008). Yet, the controversies surrounding this issue are complex

and need to be clarified. This research is aimed to do so by taking the theoretical macroeconomic model and its implementation in Indonesia as a case study.

1.3 Research: Objectives and Questions

The description above elaborates two contrasting views on Inflation Targeting as a mainstream monetary policy approach. It gives us a rough estimate on how diverse are the opinions in this subject, on the one side the proponents of this policy consider the need of anchor in monetary policy, above another economic indicators, is important. And therefore, the anti-inflation framework and approach need to be developed. On the other side, as a consequence, the obsession of having an anchor for monetary policy undermines the other economic variables which are also crucial if we want to see the economic system as a whole. It is therefore clear that the inflation targeting paradigm has some problems. It is narrowing the wide spectrum of economic reality and therefore a country should be aware and cautious when there is an attempt to adopt this framework without understanding the deep and fundamental criticism by the skeptics (such as Epstein and Yeldan).

Therefore, since those two contrasting views provide only a rough analysis, this research is aimed to provide a more thorough and deep analysis on two bases. **First,** the macroeconomic model of inflation targeting will be evaluated under a critical modeling study, all the underlying assumption on the model and its parameters will be challenged, and an important missing and yet relevant variable (i.e. productivity growth) should be considered. **Secondly,** since the IT policy has spread and disseminated across the countries all around the world through the IFIs, further institutional analysis is necessary to enrich our understanding on how this policy was transplanted into a country, here, the IT adoption in Indonesia will be taken as a case study. Therefore, I offer the following central question and a number of sub-questions to be elaborated by the whole research activities:

> *"What is the effect of adopting Inflation-Targeting policy framework for macroeconomic performance according to the model as well as the evidence of its implementation in Indonesia?"*

In order to help answering the question, I derive sub-questions and divide them into two groups: First, the questions regarding to the Model study, and second, the questions regarding to the case study of Indonesia

I. **Model Study:**
   a. What is the standard/official macroeconomic model for IT policy?
   b. Is the model realistic enough to explain the whole phenomena of inflation and growth? If not what is missing from the standard model?
   c. Is there any possibility to have a more realistic the model? If yes, what is relevant variable to be included or omitted?
   d. What is the effect of adjusting the rate of interest for GDP, Productivity and Inflation?

II. **Case Study on IT implementation in Indonesia:**
   a. Was IT policy imposed on Indonesia, or it was adopted voluntarily by Indonesia's Central Bank?

b. What is the empirical evidence of implementing IT policy for Indonesia's economic growth?
c. Is the (prescribed) IT policy suitable for the host-countries like Indonesia?
d. How do actually inflation and growth relate to each other?

1.4 The Relevance of Indonesia's Case

The choice of Indonesia as an object of case study is based on some good reasons. **Firstly**, it is, as discussed before, a country that has experienced hyperinflation in 1960s, so that the fight against inflation is considered crucial by the Indonesian economists. Severely, the hyperinflation brought not only the damage on the economy but it also turns into the bloody socio-political unrest that killed hundreds of thousands of Indonesian people, hence, due to the bitter memory in the past, the people itself are prone to accept the anti-inflation idea. **Secondly**, Indonesia is a developing country which is following the path of industrialization, the process in which innovation and technological change play an important role. In this developing-country context, to the major/overarching aims of economic policy are to achieve welfare, reduce unemployment and eventually, alleviate poverty. The question therefore is: does IT help achieving growth, lower unemployment and lower poverty, or not? And **thirdly**, among all of long-term agendas, in 2005 Indonesian Government has decided to formally adopt the Inflation Targeting as their main and sole monetary policy framework.

At a glance, given the dilemmatic choices between inflation and unemployment, we know that, by adopting IT, the Indonesia's monetary authority has to prioritize low inflation agenda over the other — most of them are real — macroeconomic achievements. The question on how can this anti-inflation monetary agenda in place and weighted more among the other agendas is always an interesting subject to find out. And Indonesia's case is a perfect story to be uncovered.

1.5 Methodological Issue and Report Structure

Since the research addresses theoretical and institutional aspects of the IT approach, we use two method of research: First, **Macroeconomic Modeling and Simulation**. Besides verbal arguments, the rationale underlying Inflation Targeting theory is also heavily based on the IT model. Mainstream economists use models as their reasoning technique and style, and in order to be able to communicate with them, we use the same technique. We present a basic/canonical IT model to theoretically analyze its assumptions and implications.

Many articles demonstrate how the inflation targeting modeling work, but probably the essence of the model consist of three important macroeconomic equations that is based on so-called New Macroeconomic Model:

(1) An **aggregate demand or Investment-Saving (IS) curve** that relates the level of real activity (i.e. output) to its expected and past real activity, and, the real interest rate.
(2) A price-setting or **Phillips curve** that relates inflation to its past and expected inflation, and the output gap
(3) A **rule for setting the policy interest rate** as the function of output gap and expected inflation.

The research reconstructs and evaluate that the standard model, arguing the model is insufficient to explain the whole phenomena of inflation. The standard model assumes that a higher interest rate will unequivocally reduce inflationary pressure on the economy. This may not be true, however. What is missing in the standard model is the (possible) negative impact of a higher interest rate — through investment — on labor productivity growth. If a higher interest rate depresses productivity growth, then the inflationary potential of the system will increase. In other words, a higher rate of interest has two conflicting impacts on inflation: it reduces inflation because it depresses investment demand, but at the same time, it raises inflation because it depresses productivity growth. The net impact is not known a priori. The extended model will be simulated in the computer program.

The second method is the case study on Implementation of IT policy in Indonesia. The core analysis of this case study will be based on **Institutional Analysis**, mainly by literature study on Bank Indonesia's Documents and any other relevant institutions or researches document that provide the information on the adoption of IT policy by Bank Indonesia. The case study will be focused on the adoption process of IT in Indonesia, and also the evaluation of IT implementation.

This report will be organized as follows: Chapter one serves as the introduction and all relevant attributes of the research including: The background, problems and objectives, questions and methodology. Chapter two discusses Inflation Targeting as a theoretical framework and its implementation issues, start from the brief history, formal definition of and the rationale behind the framework and then followed by the theory of institution analysis and policy transplantation. The exposure on formal model underlying IT will be discussed in Chapter three. While an intensive assessment on the model and its extension will be demonstrated in Chapter four in order to uncover the hidden cost of implementing IT framework. Chapter five presents a description and analysis of the Institutional aspect of IT implementation in Indonesia's economic setting; some experiences will also be elaborated based on prior studies. And finally, the conclusions that answer the research questions, the lesson learned and the recommendations will be drawn in Chapter six.

Chapter 2
IT Theory and Practice:
A Review on Literatures

"Inflation is like sin; every government denounces it and every
government practices it"
—Frederick Leith-Ross

2.1 From Monetarism to IT: A Brief History

Inflation Targeting came to replace Monetarism, the old rule of monetary policy introduced by Milton Friedman. His famous quote, "*Inflation is everywhere and always a monetary phenomenon*" marked the dawn of monetarism. In addition, Milton Friedman emphasized his belief in the power of money and associated it with a machine as John Stuart Mill said. "*Money is only a machine..,*" he wrote, "*but it is an extraordinary efficient machine. Without it, we could not have begun to attain the astounding growth in output and level of living we have experienced in the past two centuries...,*" And then he gave a constraint, "*But money has one feature that these other machines do not share. Because it is so pervasive, when it gets out of order, it throws a monkey wrench into the operation of all other machines*", that was the philosophy of money held by Friedman (Friedman, 1968). Meaning by that, Friedman argued that price is highly correlated with money, and by then, – he also believed that – the quantity of money can be used as policy instrument to control inflation. If the central bank creates too much money then it causes inflation, and if it is too little there might be a collapse in the economy, so monetarism is about to create the right amount of money to achieve the stable prices (as cited in Galbraith, 2008).

Monetarism is also in-line with and underlined by the concept of so-called Natural Rate of Unemployment (NRU) or Non-accelerating Inflation Rate of Unemployment (NAIRU), developed by Friedman together with Edmund Phelps in 1968. This theory tells us to preserve a certain level of —arguably called natural— unemployment in order to keep inflation low and constant. Monetarism was abandoned as a guide to monetary policy, after it was found in 1980s that central banks could not directly control money supply (and hence inflation). And the NAIRU model has also failed to show its credibility when Alan Greenspan, in the late 1990s, allowed unemployment to fall below the NAIRU level — 6%, 5.5%, 5%, 4.5%, and finally 4% — while US inflation remained steady (Galbraith, 2008).

Furthermore, Mishkin (2001) gave the following evaluation on monetarism based on three grounds. First of all, monetarism is problematic because the relation between the operating variable (i.e. monetary aggregate) and goal variable (i.e. inflation) was always unstable. Various cross-countries studies show that the relation between monetary aggregate and inflation is weak in practice. It is true for industrialized countries like Switzerland or Germany, and it is also true in industrializing countries such as Latin America (Estrella and Mishkin, 1996, Mishkin, 2001, Mishkin and Savastano, 2000). Secondly, transparency and accountability in the central bank's communication play a key role in the success of monetary targeting —and

it is difficult to be transparent and accountable while using money supply as the policy instrument. Thirdly, flexibility in conducting monetary targeting is preferable and became an important success factor instead of implementing a rigid rule. If there is any success story (i.e. Germany and Switzerland) in controlling inflation under the monetary targeting regime, it is mainly caused by the flexibility in the implementation. Friedman later conceded his failure by saying to the Financial Times in 2003: "*The use of quantity of money as a target has not been a success, I am not sure I would as of today push it as hard as I once did*" (as also cited in Galbraith, 2008). This time, his statement buried all imagination of monetarism.

Afterwards, Inflation Targeting emerged, it is proclaimed to be a consensus among the world's economist on macroeconomic policy, and the consensus rests on the assumption that: First, it is a continuation of the main monetarist messages that monetary policy can solely press the inflation low permanently at NO cost to employment and output. Secondly, central bank needs to be independent in order to gain credibility for low inflation (or anti-inflation) policy. Thirdly, a well-timed aggressive interest rate tightening can reduce inflation expectation and preempt a resurgence of inflation without creating recession (Alamsyah et al., 2003, Boediono, 1998). Gabor (Forthcoming) summarizes the difference between monetarism and inflation targeting in the following table.

	Monetarism	Inflation Targeting
Macro-policy Mix	Monetary Policy as stabilization tools Fiscal Policy is secondary or completely ineffective	
Money	Neutral for the long-term	• Neutral for the long-term • Non Neutral for short term (due to price rigidities)
Inflation	• Aggregate demand-driven • Need to be low, to maintain price as signaling device	
Transmission Mechanism	Banks' reserves $\Rightarrow$ Money Supply $\Rightarrow$ Price (quantity theory of money)	Interest Rate $\Rightarrow$ Aggregate demand and expectation $\Rightarrow$ Price (closing the output gap)
Financial Stability	Price stability is a prerequisite for financial stability	
Rules vs. Discretion	Ruled by money growth	Constrained discretion: Commitment to IT
Operational Target	Bank Reserves	Interest rate in money market
Exchange Rate	• Flexible • No foreign exchange intervention	• Flexible • No foreign exchange intervention • Disagreement on indirect intervention (through the interest rate)
Fiscal Policy	Inflationary	• Inflationary • A temporary stabilization tool in extraordinary circumstance

Table 2 – Comparative Features between Monetarism and Inflation Targeting

By looking at that comparative table above, both approaches still share some similar principles: First, on the proportion between monetary and fiscal policy, both are seeing the fiscal instrument as secondary and less effective than the ultimate monetary policy. Second, on the inflation perception, both of them perceived inflation as a result of excess aggregate

demand, which and therefore needs to be stabilized at a low level in order to maintain price as a signaling device and also as a key factor for financial stability (Gabor, Forthcoming, Woodford, 2008).

However, they are essentially different on some features, mainly on the choice of means and the mechanism to reach low and stable inflation. Firstly, in monetarism, open market operation is necessary and regarded as a sufficient instrument for controlling bank reserves, and through the quantity theory of money the effect will be transmitted into money supply and eventually to inflation. Meanwhile, in the inflation targeting regime, the interest rate in money market is used as an operational instrument. In this way, the transmission mechanism is no longer passing through the money supply but through the output gap channel. The detail mechanism can be understood by looking at the model that will be discussed in the next chapter (Gabor, Forthcoming).

Secondly, the difference between both approaches is lies in their assumption about money, although both think that money is neutral in a longer term, which means that money supply only affects the nominal variables of the economy and not the real variables, the inflation targeting regards money as non-neutral in a shorter term due to price rigidities. Thirdly, they differ in the issue of policy rule versus discretion. While monetarism is always associated with a fixed policy rule, the inflation targeting is classified as a constrained discretion. Fourthly, both of them require the flexibility in exchange rate and do not expecting the intervention from foreign exchange, but for inflation targeting there is a disagreement on indirect intervention especially through the interest rate (Gabor, Forthcoming). Overall, we can roughly say that the two monetary policy regimes use different means in order to achieve the same goal, which is low inflation.

2.2 Inside the Inflation Targeting

The most extensive explanation of IT can be found in the book of Bernanke (Bernanke et al., 1999a). In that IT text book, the authors define inflation targeting as: "*a framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or more time horizon, and by explicit acknowledgement that low, stable inflation is monetary policy's primary long-run goal*".

From the definition we can characterize IT as: **First**, it is a framework. **Second**, it has a communicative element which is implied in the activity of public announcement. **Third**, there is a quantitative target (or target ranges) over time-horizon and this target is obviously an inflation rate. **Fourth**, there should be an acknowledgment that low and stable inflation is the primary long-run goal of macroeconomic policy.

The phrase 'framework' is being used to make a clear distinction between two extreme roles of monetary policy, namely "rule" and "discretion". Furthermore, Bernanke explain that the rules are the monetary policies that are essentially automatic, and monetary authority has no, or little, role in doing analysis or value judgment. The practice of rule in monetary policy can be found in the gold standard system, where the principal of monetary policy is limited only to maintain the price of gold at the official value. Another example can be found in the constant-money-growth, where some measures of the money growth is required to increase by a fixed percentage per year. Since the rule needs discipline and credibility, it most likely lacks the flexibility of the central bank to deal with unusual situation, and he argues that IT is not a rule.

Contrary to the rule is discretion. A central bank that follows discretionary policy has no public commitment on its objective and action. It, of course, promises the flexibility in dealing with uncertainty and responding the new information but at the same time, because of lack of discipline, the uncertainty in the public mind is also increasing, and therefore put the system into a tendency toward inflation. And put differently, the author claims that IT as a 'constrained discretion', where the conceptual structure and discipline are imposed into the central banks while still allowing some flexibilities (Bernanke et al., 1999a, p5).

Since two main purposes of the framework are: 1) Improving communication between policy maker and the public, and 2) providing discipline and accountability of monetary policy, then the announcement of inflation target is become the way for the central bank to communicate their intention to the public, and in particular, to the financial market. The book claims that this communicative feature of the framework is important — and again especially — for the private sector to reduce the uncertainty of the future inflation and improve their planning. And for the public, the announcement will enhance the debate and increase the public's clarity and understanding on monetary policy's direction. Furthermore, the book avers that the public is more familiar with the change in consumer price than the growth rate of money supply (Bernanke et al., 1999a, p23).

Thirdly, it takes inflation rate as the only macroeconomic objective to be targeted, and get rid the monetary authority of any other objectives but inflation. If the public announcement is essential process of IT implementation, then this feature is essential mechanism of inflation targeting within the economy. The inflation is believed for —many IT adherent — economists as the sole macroeconomic variable that can be influenced by the monetary policy through interest rate as operating instrument.

And finally, the target of inflation within this framework should be as low as possible since the low and stable inflation is believed as necessary condition to bring a long-run efficiency and growth into the economy and even moderate inflation rate can be detrimental for the economy due to the uncertainty created from it. This is the belief nurtured by anti-inflation economists and central bankers.

2.3 Institutional Transplantation and Political Aspect of IT

Institutional issues (concerning credibility and authority) are central to the IT approach which has been adopted by many countries across the world. This spread of IT raises major questions concerning "institutional transplantation". To address these issues, I make use of institutional analysis, an analytical tool to explain the necessary institutions for making IT policy work and what are their roles, while institutional transplantation analysis is used to explain the typical transplanted policy feature — from international financial institution (IFI) into countries — of IT. One should also not ignore the fact that the conduct of monetary policy is about the conduct of money, and since the money is always attached with power, the political dimensions of this policy are also matter. Therefore, political analysis of the most influential institution will help the discussion.

2.3.1 Institutional Analysis

Not so many economists enter the discussion of monetary policy using the lens of institutional analysis. Most of them are utilizing macroeconomic model as an explanatory tools to construct the rationale of monetary policy, while in the same time, most of the economists are still ignorance about institution (Williamson, 2000), and if there is any, the construction of institutional economics is rarely touching the issue of monetary policy, most of institutional economists are talking about economics of infrastructure, governance or market structure. However, in the case of inflation targeting, the hallmark of this approach, as what have been emphasized by the theory, lies on the institutional aspect of the policy. We can find it in its nurtured idioms such as central banks credibility, the importance of public announcement, communicative policy making and so forth (Bernanke and Mishkin, 1997).

The relevance of institutional economic is highlighted by R. C. O. Matthews in his propositions: First, "institution do matter", and secondly, "the determinants of institutions are susceptible to analysis by the tools of economic theory" (Matthews, 1986, as also cited in, Williamson, 2000). And furthermore he also argues the applicability of institutional economics in a wide range of areas including: Industrial organization and corporate governance, labor economics, public choice, development and economic history. As an intellectual discourse, institutionalism intersects with many field of disciplines such as law, moral philosophy, sociology, and social anthropology, information theory, organization theory and even with game theory (Matthews, 1986, p907). Here we got a sense of relevance of the institutional analysis.

Williamson (2000) explains The New Institutional Economics by sketching the so-called four layer of social analysis (see Figure 1), the framework within which the NIE works. In the diagram, the solid arrow connects the higher with the lower level that indicates the constraints imposed from the higher level to the next lower level, while the dashed arrows show the feedback informational signal. There are four levels in the framework:

- **First level: The social embeddedness level**. This is the level in which the informal rule of a society exists. This is the place for cultures, norms, mores, traditions and even religions. However this layer is regarded as exogenous or given for most institutional economists. The order of change in this institutional level is very slow — reaching centuries or even millennia.

- **Second level: The institutional environment**. This is the place where the formal rules are introduced (i.e. constitutions, law, property rights). The designs of instrument in this level are encompassing the executive, legislative, judicial and bureaucratic function of government. When we can get the institutional environment right, we achieved first order of economizing.

- **Third level: The institutions of governance**. This is the place where all the formal rules that was established in second layer are enforced by governance. Here the governance, as John R. Commons explains, is an effort to craft order, mitigate conflict and realize mutual gains (Commons, 1932). And when the governance structure right the second order of economizing is achieved.

Level	Frequency (years)	Purpose
L1 — Embeddedness: informal institutions, customs, traditions, norms religion	10^2 to 10^3	Often noncalculative; spontaneous
L2 — Institutional environment: formal rules of the game—esp. property (polity, judiciary, bureaucracy)	10 to 10^2	Get the institutional environment right. 1st order economizing
L3 — Governance: play of the game —esp. contract (aligning governance structures with transactions)	1 to 10	Get the governance structures right. 2nd order economizing
L4 — Resource allocation and employment (prices and quantities; incentive alignment)	continuous	Get the marginal conditions right. 3rd order economizing

L1: social theory
L2: economics of property rights/positive political theory
L3: transaction cost economics
L4: neoclassical economics/agency theory

Figure 1 – Economic of Institution

- **Fourth level: The discrete structural analysis of governance**. This is the place where the neoclassical analysis works. Here the optimal and marginal analysis is used, and where the firm is represented by production function. And when we can make all of parameters right then we the third order of economizing is yet to come.

The room for institutional economics is available at the level 2 (economics of property rights or in a broader context called positive political theory) and level 3 (transaction cost economics) of the framework. Where the level 1 is usually taken by economic historians and other social scientists, and the level four is of the neoclassical economists (Williamson, 2000).

This framework will be used to analyze the IT implementation within the context of Indonesia, where the adoption of IT cannot be separated from the work and involvement of institutions and/or organization. The central banks, the government, the legislations, international financial institutions (IFI), parliament, financial markets, real sectors and many other actors are those who are involved and related with monetary policy. How they are interacting each other, who are the dominant and influential players, what is the legislation said and how it was created, those are the type of institutional questions that need to be revealed during this research through the light of institutional analysis.

2.3.2 Institutional Transplantation Analysis

Next to the Institutional analysis, there is also a notion of institutional transplantation analysis. It is defined by De Jong and Mamadouh (De Jong and Mamadouh, 2002) as "*one of the many concepts in use to label the transfer of policies from one setting to other*". So according to this definition there are two settings, first is a donor setting where the policy is originated or previously implemented and there is also a host setting to which the policy is transferred.

Ward (Ward, 1999) then coined the term 'diffusional episodes' to classify the power relationship between the importing (host) and exporting (donor) agents. They are:
  I.   Authoritarian imposition
  II.   Contested imposition
  III.   Negotiated imposition
  IV.   Undiluted borrowing
  V.   Selective borrowing
  VI.   Synthetic innovation (Ward, 1999, p58, as also cited in De Jong and Mamadouh, 2002)

In this respect, we can essentialize those classifications into only two types of relationships, one is coercive diffusion and another is voluntary diffusion. Another element of policy transplantation is the transplants itself. Transplant, as explained by De Jong and Mamadouh (2002), can become manifest in institutions — itself —, policies, programs, procedures, ideologies, justifications, attitudes and ideas. And institutions can be used to contain, transfer and implement these transplants.

The institutions can also be characterized into two types: First is *formal institution* where rules of the game are settled telling us about authority, obligation and prohibition, and the choice of actions under the given conditions. Second is *informal institution* where the traditions and rituals are practiced, based on cultures and norms. The tension between formal and informal nuance of the institutions somehow create the environment within which the transplantation process occur. By adopting a formal institution of the donor, there is an expectation that the informal practice of the host will follow. In a contrary, transplanting the informal institutions is always a bit harder than the formal one, since it is more subtle in practice and harder to unravel, and when these difficulties exist, the ideological injections or even formal legislations are often necessary to be taken (De Jong and Mamadouh, 2002), and this means promoting imposition.

In addition, there are three types of action within the policy transplantation process. This typology first — as cited by De Jong and Mamadouh (2002) — coined by Elinor Ostrom (Ostrom, 1982) and then reframed by Toonen (Toonen, 1990). They are:

- **The constitutional level:** "the whole set of legal and socio-cultural conditions, rules, norms and values that provide the context in which decision making processes and relations take place. (Ground rules)".

- **The level of policy areas:** "The system of legal, financial, political and organizational relations between various government units within a state structure. In this study, this level coincides with a policy sector".

- **The operational level:** "the whole set of exploratory activities, procedures, techniques and administrative forms used by individuals within the constitutional and institutional framework. This operational level concerns the concrete process of decision-making" (completely quoted from De Jong and Mamadouh, 2002, p22).
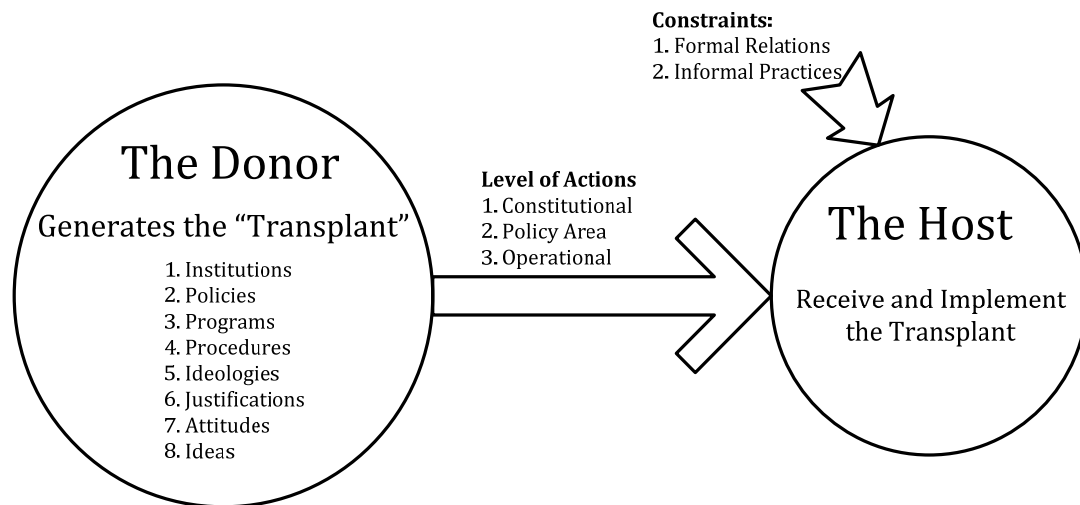
Figure 2 – Policy Transplantation Diagram

In brief, I shall illustrate the scheme of policy transplantation in the Policy Transplantation Diagram (see Figure 2). The big circle represents the donor agent, the place where the transplant is being generated, and then through several levels of actions (big arrow) the transplant is tried to be implemented in the host (country) that is represented by smaller circle. At the host level, some formal and informal constraints shape the situation that could or could not fit with the transplant. The final adjustment of the transplant, formal regulation and the informal practice determine the successfulness of a transplantation process.

By combining formal-informal type of institution with the action type of institution, De Jong then came to the following matrix of six domains of institutional transplantations.

Level of Action	Formal Relations	Informal Practices
Constitutional level (ground rules)	Legal systems	Value orientations
Level of policy area (relations between governmental bodies)	Formal regulations	Informal codes
Operational level (daily activities)	Procedures	Roles

Adopted from (De Jong, 1999, p214)

Table 3 – Different domains of institutional transplantations

According to the table we can draw the higher the level of actions the more demanding the institutional transplantation is, and the more informal the relation the more tricky the implementation (De Jong and Mamadouh, 2002). This institutional transplantation framework is also fits with the typical of transplanting IT into a host country. We will discuss the use of this framework given de context of Indonesia in Chapter 5.

The Question on Legitimacy

There is still an important question remaining to be answered: to what extent a transplanted policy considered as legitimate? De Jong and Stoter (2009) offer two conditions in which the policy transplantation can be justified as legitimate:

1) ***Legality*** or legal legitimacy. This implies that all the process of transplantation should be considered valid under the existing legal system.

2) ***Acceptance*** or cultural legitimacy. This implies that the transplant needs to be aligned with the social context, cultural values and political preferences of the adopting entity.

The condition of legal and acceptable should be satisfied in order to avoid resistance from the host country. In the context of IT as a transplant framework, it is not difficult to establish a new legal system but it is a bit tricky to be acceptable in term of social-economic setting and political preference[1] of the host.

2.3.3 Political Economy of IFI

Another discourse relevant to the literature of IT is the political role of the donor agent. Since IT is classified as transplanted policy, then it is also necessary to analyze how it is being dispersed around the world. Numerous authors have agreed that International Financial Institution (i.e. International Monetary Fund and World Bank) have played a great role and privilege in running neo-liberalization agenda over countries (De Jong and Stoter, 2009, Gabor, Forthcoming, Wade, 1996, Woods, 2006, Woods, 2000, Storm and Rao, 2004) or what Epstein called financialization agenda (2006). And admittedly, the influence of the Fund over countries' stabilization agendas through a so-called *IMF conditionality* is also recognized by the Fund's economists and justified in order to restore the viability of country's external payment position (Mussa and Savastano, 2000). The World Bank for example, privileged a special position as a generator of ideas in the world development program, the Bank's ability to frame the debate based on: 1) its ability to influence the terms in which low-income countries gain access to international capital markets, 2) A research and policy-design budget far larger than that of any other, 3) its ability to attract global media coverage of its major reports (Wade, 1996).

Within the context of IT, the use of economics, in particular, the creation of macroeconomic framework and model, including the effort to train the 'economic professional' of the central-bankers from the host countries has played a great role in spreading the policy. Gabor (Forthcoming) identified that there are three components of which the IT regime policy-making based on: 1) The Gaps model, the model to measure the position of current economic

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[1]Term 'culture' might be inappropriate to be used in the issue of monetary policy

situation and how far it deviate from the equilibrium, 2) The factors that makes them deviate, and 3) Policy rule which talk on how to deal with this. Those components further become the core idea in constructing the model for Inflation. However, there are inbuilt uncertainties in the model and most often the eventual judgment leave to the technocrats. So that, the existence of this model increases the technical independency of a nation on the IMF (Gabor, Forthcoming).

Although, the IMF claimed that the process of applying conditionality into a country to contain some elements of flexibility and involve participatory type of decision-making — through the negotiation process — (Mussa and Savastano, 2000), such strong influence that comes from its conditionality power and intellectual authority has made the global economic relation between the IFI — which in fact represents the power of rich countries — and the host countries become more unequal, the autonomy of a nation state to determine the choices in economic policy made the host's independence eroded and therefore the relation between the two become less democratic (Storm and Rao, 2004).

2.3.4 The Case for the Host

Since most of the IT countries are of the industrializing countries, we should also take a look at the importance of those countries to put industrialization agendas in the top priority and try to analyze the position and the relevance of IT framework in the agenda, and answer why fighting the inflation should be prioritized over others. Such agendas are required in order to solve unemployment issue caused by large number of unabsorbed population into the formal economy's activities. In order to do so, it is important also to have an in-depth investigation on the structural characteristic of the host countries and keeping them on the right industrialization track.

According to Storm and Naastepad (2005) based on their study on the success story of industrialization in East Asia there are keys principles that need to be held by countries to keep running in the industrialization pathway:

1) The cross-border capital flows should be maintained, in order to insulate the domestic economy from the uncontrolled externality and to make sure that the national investment and re-investment cycle accumulated.
2) Macroeconomic stability should be achieved, in term of exchange rate and interest rate to prevent inflation and foreign debt and again, stimulate inflation.
3) The use of the state policy to increase domestic investment and saving and then transmit them into industries is necessary.
4) To protect the country from import and control the foreign exchange to create competitive industries.
5) If the import of intermediates, capital goods and technology is crucial in the industrialization process then the built industries should be orientated for export.
6) The new industries and new technology should be nurtured to diffuse innovation while the old and declining sector should be protected or upgraded.
7) Instead of capital market-based, highly regulated bank-based financial sector should be promoted in order to put private financial capital subordinate to industrial (productive) capital.

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8) Foreign Direct Investment (FDI) should be attracted and directed at the same time for export purpose and/or increasing local content performance to build national technology system.
9) Administrative and political capacity of the state should be improved in order to carry on development agendas.
10) Be aware on unequalizing tendency and maintain a degree of social cohesion and political stability.

Those prescriptions reflect what is necessary to be done for a country to undertake the industrialization path that is believed as the way to get the majority of the population involved in formal economic activities. That implies a need of appropriate regulation and government intervention and also teaches us the importance of maintaining social cohesion and political stability to gain a sustainable economic growth. In this way, the economic system is highly incorporated into social system. On the contrary, the *laissez-faire* approach does not square easily with the industrialization agenda, and the hope for growth and equality will be given away to the illusive and speculative notion of an 'invisible hand', and for sure, the economy running at a different pathway with the society.

Chapter 3
The Model

The production of economic knowledge is a site where power is exercised
——De Goede

3.1 Early History of The New Consensus Macroeconomic (NCM) Model

The standard IT model is originated from the so-called New Consensus Macroeconomic (NCM) Model. In the 1960s, when the debate on macroeconomics was dominated by the neoclassical synthesis, there are two features of formal model: First, they were the results of collaboration academia and central bank. And secondly, that was an attempt to make a comprehensive and in-depth representation of the structure of the economy. As a result, the early formal model resulted from this namely MPS model (MPS stands for MIT, Pennsylvania, and the Social Research Council, which supported the project) was the model represented a large structure, encompassed sector-by-sector, based on equation-by-equation and using national statistical categories (Fontana, 2009).

MPS model became popular among the academia and practitioners for decades, but it was eventually abandoned because: Firstly, large structural models which contain many equations and identities, have difficulties in predicting in predicting structural change and therefore become impractical. Secondly, again because of its large structure, the model could not deal with the new theoretical and empirical updates. And after major criticism, overhaul and amendments on the old model, the NCM was introduced in 1990s. This new model is far smaller than the old one, consists of only three equations in its standard model, and reflected some advances in theoretical and econometric research; the new model also allows the role of rational expectation in the policy-making process. This rational expectation feature of the new model marks the paradigm shifting that clearly distinguish the old and the new model (Fontana, 2009).

Just to repeat what is discussed in the previous chapter, the model underlying IT regime consist of three components: First, it is an identification of the actual position of the economy compared to its equilibrium tendency (gaps model). Secondly, the model seeks for the investigation about the factors that make the system deviate from its natural behavior. And finally, the system addresses the problem by defining policy rule in order to bring back the economy 'on track' (Gabor, Forthcoming).

3.2 The NCM Model

Basically, the new model based on three linear algebraic equations, they are: First, IS curve that describes the dynamic change in output gap as a function of expected and past activity, and the real interest rate. Second, it is Philip curve equation, which shows the relation between

inflation with past and expected inflation and the output gap. And thirdly, the equation of policy rule expresses the real interest rate as a function of inflation and the output gap.

$$(\,Y - \bar{Y})_t = \alpha_0 + \alpha_1 (Y - \bar{Y})_{t-1} + \alpha_2 E_t (Y - \bar{Y})_{t+1} - \alpha_3 (i_t - E_t(P_{t+1})) + s_1 \quad (1)$$

$$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3 (Y - \bar{Y})_t + s_2 \quad (2)$$

$$i_t = r^* + \gamma_1 (P_{t-1} - P^T) + \gamma_2 (Y - \bar{Y})_{t-1} \quad (3)$$

Figure 3 – The Core Equations of NCM Model (Adopted from Fontana (2010))

That model can be found in Fontana (2009); with some correction and completion on time indexes for variables taken from Arestis (2009), this is also the core model underlies the IMF model that is developed by Berg et al (2006). The purpose of the model is to illustrate the canonical theoretical model that underlies the IT idea. The behavior of the model will be investigated here, I am using the simple canonical model by assuming the system works as a closed-economy, and not in an open economy as what Arestis (2009) and Berg et al (2006) did, so the role of interest rate and the dynamic of foreign money market will be neglected in my model.

Equation (1) shows the output gap equation that describe the difference between the real or actual output/GDP (Y_t) with expected or trend output/GDP ($\bar{Y}$)[2], and the gap is expressed as a function of lag ($Y - \bar{Y})_{t-1}$ and lead output gap $E_t(Y - \bar{Y})_{t+1}$. The real interest rate is defined as a difference between nominal rate of interest and future expected inflation $\left(i_t - E_t(P_{t+1})\right)$, the symbol E_t denotes the expected value for inflation level at time t+1 (P_{t+1}). In many other literatures, the output gap is also often explained in a logarithmic term $Y_{gap} = 100 \log(Y/\bar{Y})$ (i.e. Berg et al (2006)). α_0 is a constant variable of the equation and regarded as an autonomous factor for output gap, it could be also interpreted as fiscal policy or any other government/exogenous intervention into aggregate demand α_1 And α_2 are the elasticity of past and future output gap to the current output gap respectively and their values are positive, while α_3 indicates that the real interest rate negative effect on the output gap, which mean that raising the rate of interest will cost in the decrease of output.

Equation (2) describes the Philips curve relation, where the rate of inflation (P_t) is determined by the past inflation (P_{t-1}) and inflation expectation or future inflation (P_{t+1}) and also current output gap. β_1 And β_2 are the coefficients of past and future inflation with the total amount of both is 1 ($\beta_1 + \beta_2 = 1$), and β_3 are the effect of output gap and real interest rate gap to inflation respectively. The equation (1) and (2) both are ended with the stochastic shock variables s_1 and s_2 respectively.

Equation (3) demonstrates how the monetary policy rule is being conducted. It follows the Taylor rule (Easterly and Bruno 1995), the past inflation gap ($P_{t-1} - P^T$), which is the difference between past inflation (P_{t-1}) rate with the targeted inflation interest rate (P^T) and pas output gap $(Y - \bar{Y})_{t-1}$, is become the signal for the central bank to adjust their policy instrument which is current nominal rate of interest (i_t) and it is also expressed in term of equilibrium real interest rate (r^*), which is the "natural" rate of interest at which the level of actual output is equal to the its potential in the long run. γ_1 and γ_2 are the coefficients for

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[2] The GDP variables is expressed in term of growth rate

inflation gap and output gap respectively, and unlike the equation (1) and (2), equation (3) has no shock variable, which means that this framework only consider the macroeconomic policy as a pure adjustment mechanism, and not something that influence the system exogenously. Table 4 summarizes the list of variables/parameters, its explanation, and its unit of measure.

No	Variables	Explanation	Unit of Measure
1	$(Y - \bar{Y})_t$	The actual Output Gap or Output Gap in period t	%
2	$(Y - \bar{Y})_{t-1}$	The past Output Gap/Output Gap in Period t-1	%
3	$E_t(Y - \bar{Y})_{t+1}$	The Lead or expected Output Gap in period t+1	%
4	i_t	The nominal rate of interest in period t	%
5	P_t	The annual rate of inflation in period t	%
6	P_{t-1}	The past rate of inflation in period of t-1	%
7	$E_t(P_{t+1})$	The expected rate of inflation in period t+1	%
8	P^T	The inflation target that is set by central bank	%
9	r^*	The equilibrium real interest rate or the 'natural' rate of interest at which the level of actual output is equal to its potential output	%
10	Y	The actual output or the output growth rate in a particular period of analysis	%
11	$\bar{Y}$	The potential output or trend growth rate. It can be also calculated as an average growth rate of an economy	%
12	α_0	Autonomous factor of output gap (could be fiscal policy)	%
13	α_1	The coefficient of past output gap factor to the current output gap	Dimensionless
14	α_2	The coefficient of expected output gap factor to the current output gap	Dimensionless
15	α_3	The coefficient of real interest rate factor to the output gap	Dimensionless
16	β_1	The coefficient of past inflation rate factor to the current inflation rate	Dimensionless
17	β_2	The coefficient of expected inflation rate factor to the current inflation rate	Dimensionless
18	β_3	The coefficient of current output gap factor to the current inflation rate	Dimensionless
19	s_1	The stochastic shock variable of output gap	%
20	s_2	The stochastic shock variable of inflation rate	%
21	γ_1	The coefficient of past inflation gap (between past inflation and targeted inflation) factor to the nominal interest rate	Dimensionless
22	γ_2	The coefficient of past output gap factor to the nominal interest rate	Dimensionless

Table 4 – List of Variables/Parameters and Its Unit of Measure

This theoretical model will be used to understand the way inflation targeting works. Furthermore, this model will be numerically specified and then simulated in the computer program.

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3.3 Simulation Scenario and Model Specification

The model will be processed in such a way that we can learn from its behavior, there are three steps needed for doing this: **First**, identify the transmission mechanism of the policy and also develop the algorithm. **Second**, calibrate the parameters and variables of the model with numerical values that come from stylized fact. And finally, simulate it in the computer program. The modeling and simulation is NOT aimed for achieving the exact verification of the reality, instead, it will be used to deepening our understanding on the behavior of the system.

3.3.1 Transmission Mechanism and Algorithm

From equation (1) and (2) we can analyze that the nominal interest rate influences the inflation rate through the output gap. For example by changing the nominal interest rate we can have our real interest rate also changing in the same direction. And the change in the real interest rate causes the change the output gap in the other way through the change in consumption and investment and in aggregate demand (Fontana, 2009).

$$\Delta i \Rightarrow \Delta r \Rightarrow \Delta C \,\&\, \Delta I \Rightarrow \Delta AD \Rightarrow \Delta Y \,\&\, \Delta UN \Rightarrow \Delta P$$

Figure 4 – Aggregate Demand Transmission Mechanism

Another mechanism that exists in the model is the inflation expectation mechanism. The rational expectation theory tells us that people's expectation of the future value of inflation can affect the current inflation rate. And if the central bank shows its commitment to the interest rate policy, which means by minimizing the gap between P_{t-1} and P^T then the expectation of inflation will help the central bank in their effort of using the interest rate to stabilize the inflation. So here we the second core mechanism of inflation control (Fontana, 2009) (see Figure 5).

$$\Delta i \Rightarrow \Delta (P - P^T) \Rightarrow \Delta E_t(P_{t+1})$$

Figure 5 – Rational Expectation Transmission Mechanism

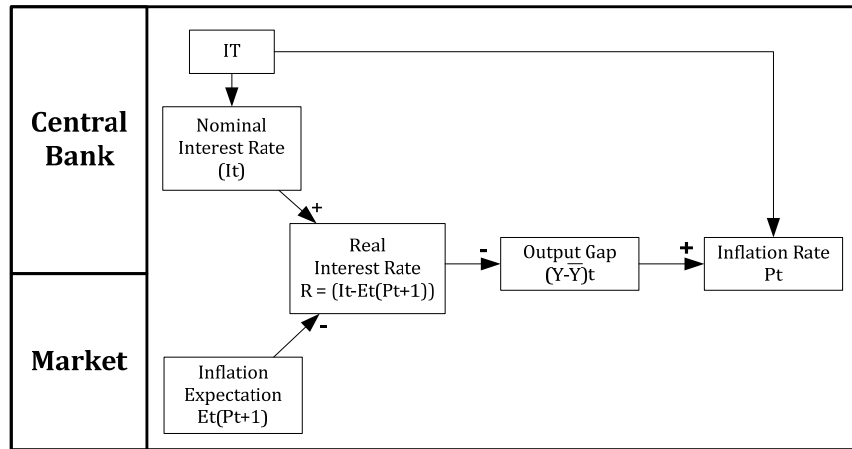The whole transmission mechanism can be depicted in the following Figure:

Figure 6 – the Whole Transmission Mechanism (adopted from Filho, 2007)

In Figure 6, we can see that inflation rate can be influenced by the central bank through the instrument of interest rate and also by the market through inflation expectation, those of two variables can directly influence the output gap:

The next step to investigate the behavior created from the model is defining the algorithm, since we have only three equations we can easily construct the algorithm for simulating the model by substituting equation (1) into equation (2)

$$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1})$$
$$+ \beta_3 [\alpha_0 + \alpha_1 (Y - \bar{Y})_{t-1} + \alpha_2 E_t(Y - \bar{Y})_{t+1} - \alpha_3(i_t - E_t(P_{t+1})) + s_1] + s_2$$

$$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3 \alpha_0 + \beta_3 \alpha_1 (Y - \bar{Y})_{t-1} + \beta_3 \alpha_2 E_t(Y - \bar{Y})_{t+1}$$
$$- \beta_3 \alpha_3(i_t - E_t(P_{t+1})) + \beta_3 s_1 + s_2 \quad (4)$$

Figure 7 – Inflation rate as a Function of Nominal Interest Rate

By looking at the equation (4) we can see how the operating instrument (i_t) and targeted variable (P_t) are related to each other. Both are related negatively, which means that the inflation rate will fall when the central bank increases the rate of interest and vice versa.

3.3.2 Numerical Specification and Calibration

The parameters of the system will be determined based on various resources, since the model is not purposed for verifying the reality, numbers and parameters in this specification is assumed at reasonable level, and some of them come from various econometric study with a stylized version. At the initial state, the level of inflation is determined as 6% while inflation target will be set at 5% and then the rest of the value can be seen in the following table.

Step	Equation	Variables	Parameters
1	Equation (3) $i_t = r^* + \gamma_1(P_{t-1} - P^T) + \gamma_2(Y - \bar{Y})_{t-1}$	$P_{t-1} = 6\%$ $P^T = 5\%$ $i_t = 9\%$ $r^* = 5\%$ $(Y - \bar{Y})_{t-1} = 1\%$	$\gamma_1 = 3.5$ $\gamma_2 = 0.5$
2	Equation (2) $P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3(Y - \bar{Y})_t + s_2$	$E_t(P_{t+1}) = 5\%$ $(Y - \bar{Y})_t = 1\%$ $P_t = 6\%$	$\beta_1 = 0.6$ $\beta_2 = 0.4$ $\beta_3 = 0.4$
3	Equation (1) $(Y - \bar{Y})_t = \alpha_0 + \alpha_1(Y - \bar{Y})_{t-1} + \alpha_2 E_t(Y - \bar{Y})_{t+1}$ $- \alpha_3(i_t - E_t(P_{t+1})) + s_1$	$(Y - \bar{Y})_{t+1} = 0.2\%$	$\alpha_0 = 2.24$ $\alpha_1 = 0.75$ $\alpha_2 = 0.05$ $\alpha_3 = 0.5$

Table 5 – Specifications and Calibration

By having those parameters and variables, we can say that now the system is in the initial set point. When we run it overtime we can get the steady-state behavior like the following figure.
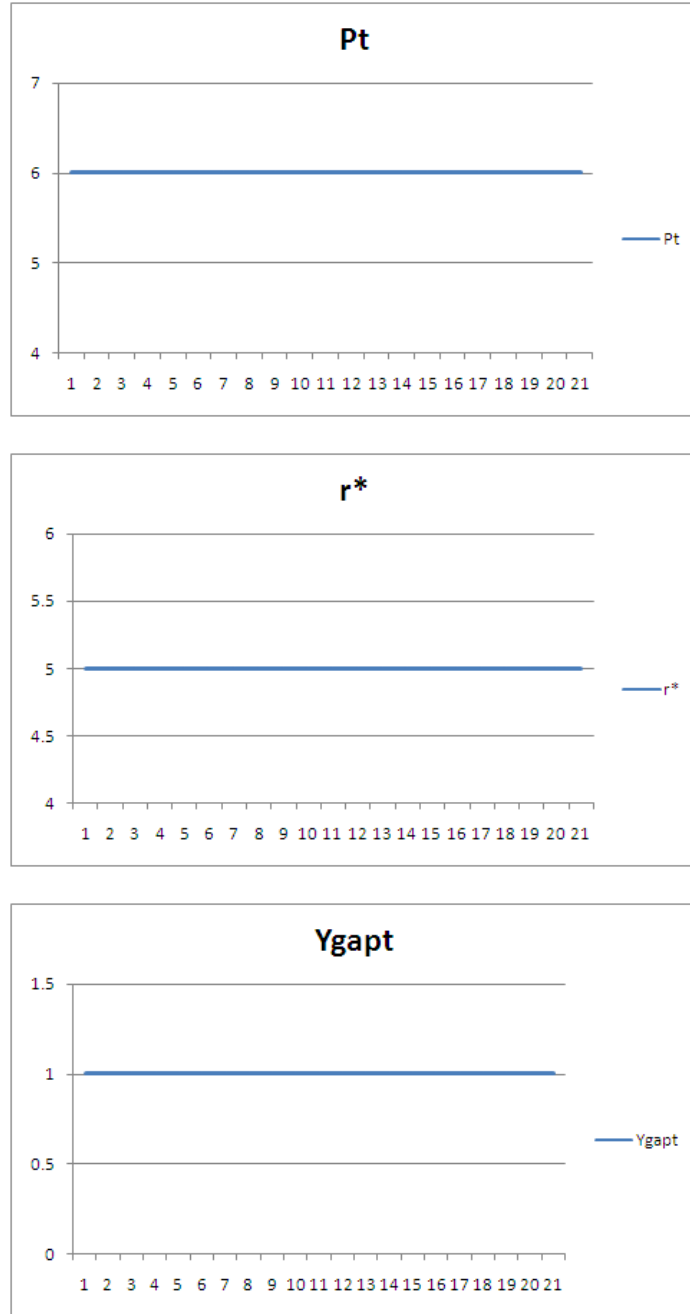
Figure 8 – Outcome Variables of Calibrated System

Figure 7 show that all observable variables are in the steady-state behavior and do not indicate any changes from the initial state over time. It shows the relevant outcomes of the system which are inflation rate (P_t), real rate of interest (r^*) and output gap ($Y_t - \bar{Y}$). According to literatures, in the steady state, these values are constant at the Natural Rate of Unemployment, which is the level of unemployment that is necessary to anchor and stabilize inflation.

3.4 Inflation Shock

In the IT literature, it is explained that the IT framework is not fit to handle the inflation that comes exogenously into the system, instead IT is only effective for tackling the inflation caused by aggregate demand, in this case however, the term shock might be less relevant. But since the purpose of this simulation is to illustrate how the model and its transmission mechanism work, it is valid to use stochastic variable s_1 in equation (1) as a shock in aggregate demand that generates inflation. There are of course others ways of generating inflation, one of them probably by raising the expected inflation, but the dynamic of this expectation is rather difficult to configure, so we assume in this simulation, the central bank has succeed in assuring people that the anti-inflation policy will be taken as priority then the value of expected inflation will be similar with what is targeted $(E_t(P_{t+1}) = P^T)$.

Now we are going to test the system with the inflation shock. Supposed there is a rush in the economy about one commodity due to the increase in aggregate demand and this situation is manifested in the increase of s_1 from 0% to 0.5%. And according to the aggregate demand transmission mechanism the inflation will also increase through the increase in the output gap. The reaction of the system can be observed from these following pictures:
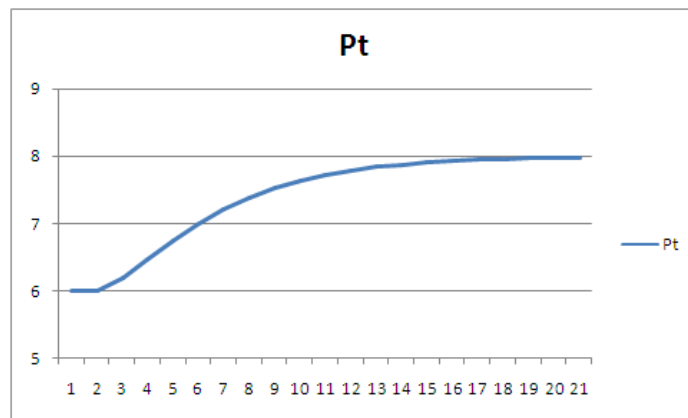
Figure 9 – Inflation Rate after the Shock
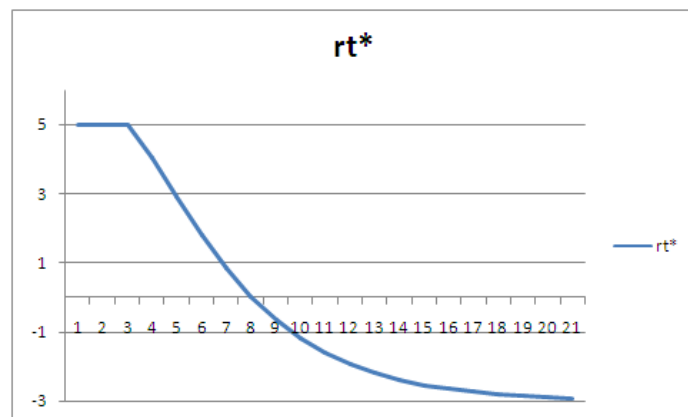
Figure 10 – Real Interest Rate after the Shock
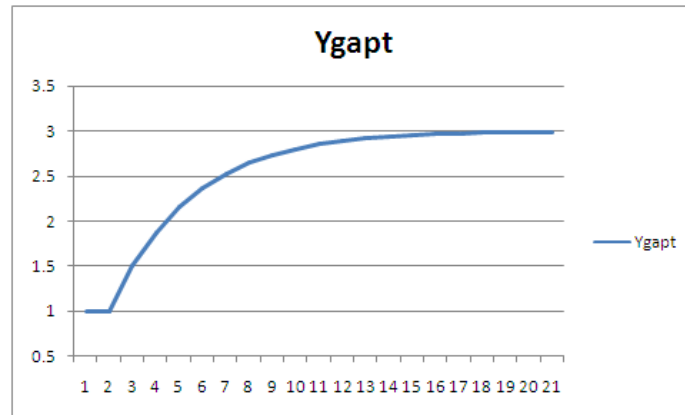
Figure 11 – Output Gap after the Shock

After the shock (t=2), the inflation rate is going up, but it reaches the new steady-state point after some times ($P_t=8\%$). The same happens with the real interest rate and the output gap, but the real interest rate reacts negatively after the shock and then stabilizes at its new steady-state point while the good news of the shock is that it leads to a bigger steady-state gap between actual and trend growth(the output gap increases from 1% to 3%.).

3.5 Policy Toward Inflation Shock

According to IT framework, we should consider the nominal interest rate as an operational instrument to react against inflation. Here, the nominal rate of interest is increased to keep inflation at its pre-shock level. If we apply this policy (at t=5), the system will show the following behavior:
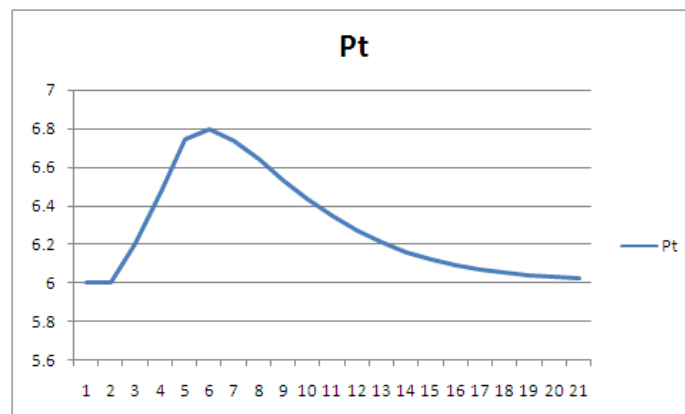
Figure 12 – Inflation Reaction after Policy
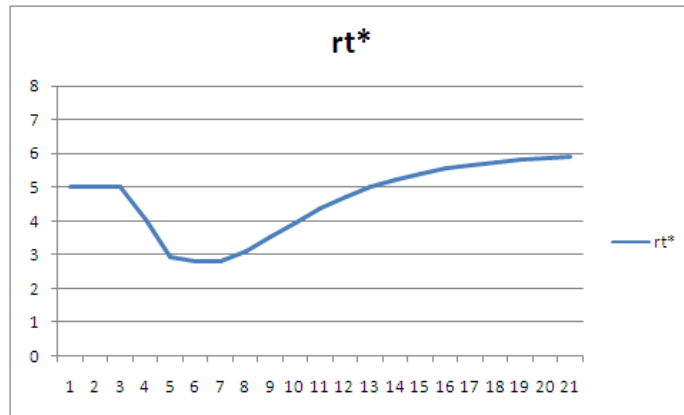
Figure 13 – Real Interest Rate after the Policy
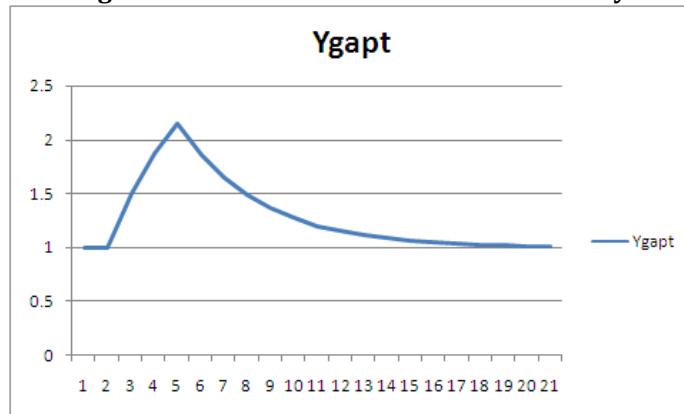
Figure 14 – Output Gap after the Policy

The policy (raising interest rate) can indeed return the inflation rate toward its initial condition (before the shock) the inflation fall to 6% and the enjoyment of increasing output gap is canceled since the value also comes back to 1% (except for real rate interest that reaches the new equilibrium at the higher level of 6% than before the shock 5%). However, following this model, we can say that IT policy is effective to bring back the inflation to its normal level as it was before the shock at the cost of output.

The question now is, was that model represents the whole narrative of inflation targeting policy mechanism? Most of IT advocates are rarely talking about the whole costs of this policy. In Chapter 4, beside the loss in output that is obviously demonstrated above, another possible cost at which the IT policy implemented will be revealed.

Chapter 4
Uncovering the (Hidden) Cost:
IT Model Reconsidered

Say not 'I have found the truth,' but rather, 'I have found a truth.'
—Kahlil Gibran

4.1 Missing Variable: Labor Productivity

Most of IT adherents acknowledge that IT has a real cost. Pointing to the damaging effect of raising the interest rate to the real economy such as lower investment, lower employment creation, and — the most often — lower output. However, this chapter will only focus on one other possible cost of IT, generally not acknowledge, that lies in the labor productivity variable.

Labor productivity growth is an important factor within the context of development agenda in industrializing countries or even for Least Developing Countries (LDC) (Storm, 2008, Storm and Naastepad, 2005). Storm (2008) analyzed the UNCTAD report about Least Developing Countries[3] that the fastest-growing economies experienced a positive labor productivity growth for both agriculture and non-agriculture sectors, they also show their ability to manage the investment and domestic saving mobilization.

This labor productivity explanation is also valid for New Industrializing Economies (NIE).The productivity regime has been determinately governing the East Asian industrialization period (1950-2003) (Storm and Naastepad, 2005). There are some facts observed from the industrialization process in East Asian countries due to labor productivity: **First**, it showed that labor productivity growth has been the major source of East Asian per capita income growth. **Second**, the growth in labor productivity was caused by the rapid industrialization process. The process which was preceded by significant increases in agricultural productivity and industrial productivity was raised by sustainable improvement in manufacturing sector. **Thirdly**, East Asia was success to escape from the trade-off between labor productivity growth and employment growth. The trade-off comes from the replacement of job losses by the new machinery and technology but at the same time, the productivity growth leads to employment creation as well, especially in the sector in which the technology is developed. **Fourthly**, East Asian economic was also successful in accumulating capital, which is also an important factor to maintain the high rate of investment that, in turn, result in the high labor productivity growth (Storm and Naastepad, 2005).

In addition, the labor productivity is also highly related with the innovation capacity, the decline in labor productivity caused by low wages or flexibility in labor market regulation (due to easiness in hiring and firing labor) could be harmful for conducting innovation agenda

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[3] UNCTAD's Least Developed Countries Reports 2006 and 2007

especially for "*routinized*" innovation regimes that are dependent on continuous historical accumulation of knowledge (Kleinknecht and Naastepad, 2005). The experience from the Netherlands and the United States' change in wage bill in both countries may lower the labor productivity growth (Kleinknecht and Naastepad, 2005, Naastepad and Kleinknecht, 2004). Although in the US, there was an increase in labor productivity in the ICT sector when the ICT was booming, however this happened only to ICT sector, the rest were still suffer from low productivity (Gordon, 2000, as cited in, Kleinknecht and Naastepad, 2005).

According to Nicholas Kaldoor in his second Kaldor's law, or also known as Verdoorn's Law or Kaldor-Verdoorn law, labor productivity is positively related to the output growth. In mathematical term it is expressed as $\lambda_i = f(Y_i)$, where λ_i is the labor productivity growth in industry and Y_i is the output of industry.

The theory behind this is that higher output will stimulate higher labor productivity due to the static and dynamic increasing returns to scale and, as reflected in the Kaldor-Verdoorn coefficient, the static returns refer to technical and economic of scale while dynamic returns refer to broader things, it could be based on learning by doing, induced capital accumulation embodying technological progress and also all related positive effect of interrelated cluster of industries (Wells and Thirlwall, 2003, as cited in, Storm, 2008)

Kaldoor-Verdoorn relationship can be expressed in equation (5).

$$\lambda_t = \theta_0 + \theta_1(Y - \bar{Y})_t \qquad (5)$$

It shows the relation between labor productivity and output where θ_0 is a constant and θ_1 is what we called as Kaldoor-Verdoorn coefficient. This important relationship is often forgotten in many mainstream macroeconomic models since it is less tangible than any other variables. However, according to various studies on labor productivity and its relation with output growth, the existence is hard to be ignored.

4.2 Embedding Labor Productivity (λ) into NCM Model

In order to make the labor productivity mode tangible in the system, I incorporate the labor productivity variable and its relation with output growth into the three set of equations of IT model.

The most direct influence of labor productivity can be reflected in the price. The more productive the economy the more output you can produce given the similar input of production factor and it can affect the lower price of the output. So the Philips curve equation (equation 2) will be the best equation to be influenced by labor productivity. And here we have a new type of equation (2), namely equation (2'):

$$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3(Y - \bar{Y})_t - \beta_4 \lambda_t + s_2 \qquad (2')$$

Coefficient β_4 indicates that if labor productivity growth increases, this will reduce the economy's inflationary potential; as a result, the nominal rate of interest can be lowered, because inflation has fallen.

And then, by also incorporating equation (5) as a part of the whole model, now we have a new NCM model that is taking labor productivity account into account. The whole system will be rewritten as follows:

$$(Y - \bar{Y})_t = \alpha_0 + \alpha_1 (Y - \bar{Y})_{t-1} + \alpha_2 E_t (Y - \bar{Y})_{t+1} - \alpha_3 \big(i_t - E_t(P_{t+1})\big) + s_1 \quad (1)$$

$$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3 (Y - \bar{Y})_t - \beta_4 \lambda_t + s_2 \quad (2')$$

$$i_t = r^* + \gamma_1 (P_{t-1} - P^T) + \gamma_2 (Y - \bar{Y})_{t-1} \quad (3)$$

$$\lambda_t = \theta_0 + \theta_1 (Y - \bar{Y})_t \quad (5)$$

Figure 15 – Labor Productivity within the NCM Model

Since the model does not change the essence of the previous model (before embedding labor productivity), the transmission mechanism is also similar except now we have new transmission mechanism through the labor productivity channel.

$$\Delta i \Rightarrow \Delta r \Rightarrow \Delta C \ \& \ \Delta I \Rightarrow \Delta AD \Rightarrow \Delta Y \ \& \ \Delta UN \Rightarrow \Delta \lambda \underset{\Delta P}{\Rightarrow} \Delta P$$

Figure 16 – Transmission Mechanism via Labor Productivity

And now, the whole transmission mechanism looks like Figure 17.
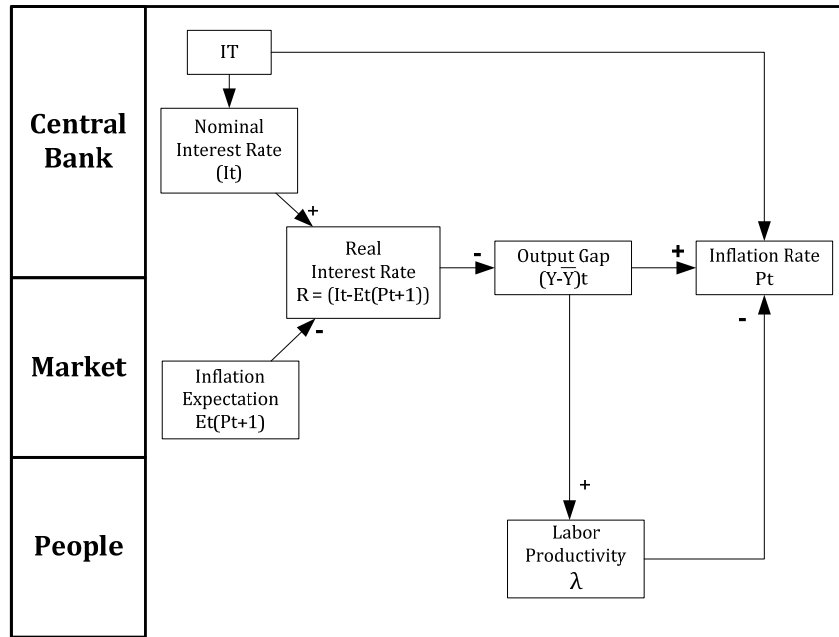
Figure 17 – Kaldor-Verdoorn Transmission Mechanism

It resembles the aggregate demand transmission mechanism, but now the channel is doubled since labor productivity becomes tangible in the model. By changing the nominal interest rate, the real interest rate is also changing in the same direction. And the change in the real interest rate causes the change the output gap in the other way through the change in consumption and investment and in aggregate demand. This will, in turn, affect output gap and unemployment.

Now, the output gap influences the inflation rate through two channels: First, there is a direct influence — following Equation (2). Second, there is an indirect influence via the change in labor productivity, from equation (5) to equation (2). Figure 17 implies that the final inflation level is not determined merely by the output gap, but the change in output can also has a side effect in influencing labor productivity growth, the economic variable that can be interpreted as anything due to the activities of general population.

Step	Equation	Variables	Parameters
1	Equation (3) $$i_t = r^* + \gamma_1(P_{t-1} - P^T) + \gamma_2(Y - \bar{Y})_{t-1}$$	$P_{t-1} = 6\%$ $P^T = 5\%$ $i_t = 9\%$ $r^* = 5\%$ $(Y - \bar{Y})_{t-1} = 1\%$	$\gamma_1 = 3.5$ $\gamma_2 = 0.5$
2	Equation (2) $$P_t = \beta_1 P_{t-1} + \beta_2 E_t(P_{t+1}) + \beta_3(Y - \bar{Y})_t - \beta_4 \lambda_t + s_2$$	$E_t(P_{t+1}) = 5\%$ $(Y - \bar{Y})_t = 1\%$ $P_t = 6\%$	$\beta_1 = 0.6$ $\beta_2 = 0.4$ $\beta_3 = 0.4$ $\beta_4 = 0.5$
3	Equation (1) $$(Y - \bar{Y})_t = \alpha_0 + \alpha_1(Y - \bar{Y})_{t-1} + \alpha_2 E_t(Y - \bar{Y})_{t+1} - \alpha_3\big(i_t - E_t(P_{t+1})\big) + s_1$$	$(Y - \bar{Y})_{t+1} = 0.2\%$	$\alpha_0 = 2.24$ $\alpha_1 = 0.75$ $\alpha_2 = 0.05$ $\alpha_3 = 0.5$
4	Equation (5) $$\lambda_t = \theta_0 + \theta_1(Y - \bar{Y})_t$$	$\lambda_t = 1\%$	$\theta_0 = 0.5$ $\theta_1 = 0.5$

Table 6 – New Calibration Variables and Parameters

The calibration principle of the new model is more or less similar to the previous one. The starting inflation rate and inflation target are still stay at 6% and 5% respectively and the rest of variables are following, I assume that the initial labor productivity growth is 1% and by having 1% of output gap the Kaldor-Verdoorn coefficient (θ_1) set at 0.5 and the θ_0 at 0.5 (See Table 5). After calibrating, the model is ready to be simulated with new parameters.

The result of calibrated system can be seen in Figure 18, the interesting we can see how the interested outcomes (Inflation rate, Real Rate of Interest, Output Gap and the new one is Labor Productivity) again reaching its steady-state point.
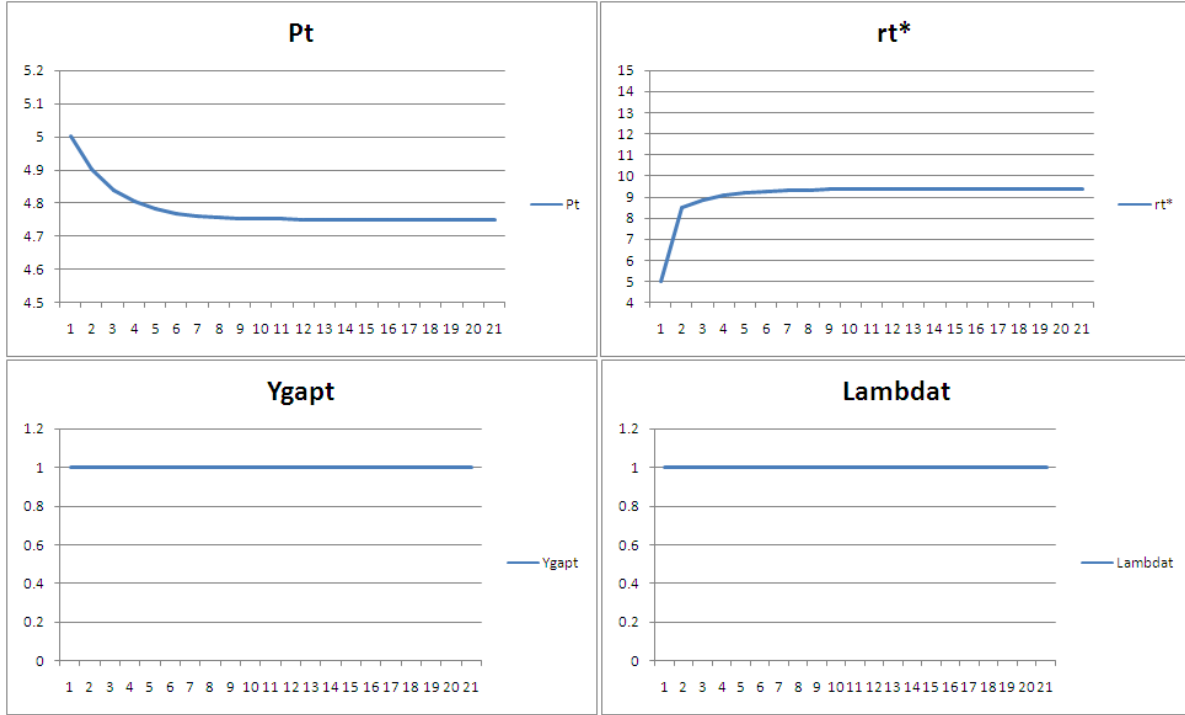
Figure 18 – Calibrated Outcomes (Pt, r_t, Ygap t, and λt)

However, the steady state point for inflation rate is decreasing from its previous level; this is happened due to the effect of positive Kaldoor-Verdoorn coefficient, when labor productivity is being incorporated into the system the output will be highe;r given the similar production function this will take an effect in reduce the price of goods and services. And since the inflation rate decreases, the real rate of interest is oppositely increasing. The new steady state inflation rate is now about 4.75% and the real rate of interest at 9.4% while the output gap and labor productivity both remain at the level of 1%.

4.3 Model Comparison

By now, we have two views on the system that is reflected in two models: First, the **standard inflation model (SIM)** in which the inflation, output gap and interest rate are formulated regardless the influence of labor productivity ($\beta_4 = 0$). And second, let's call it **Kaldor-Verdoorn inflation model (KIM)** where the labor productivity factor is taken into consideration and become one of important channel for tackling inflation ($\beta_4 > 0, i.e. \beta_4 = 0.5$).

In order to compare the consequences of having the two models it is useful to observe the behavior of them when the same shock applied into the system: **1) inflation targeting policy (ITP)** applied to tackle the inflation shock, in this case, the interest rate is being used (i.e. raised) as instrument to hold the increase in inflation after the shock. **2)** Inflation is being tolerated or **Inflation-relaxed Policy (IRP)**. In this case, moderate inflation is tolerated, which means no action is taken when the inflation is increasing after the shock, the shock itself is associated with the increase in aggregate demand. In order to make the two models comparable, the same type of shock with chapter 3 (i.e. $s_1 = 0.5 \ at \ t = 2$) and the same IT Policy

response (i.e. i_t from 9% to 10% at t=5) are applied. In so doing, we have combined four pair of scenarios to be compared:

1. Standard Inflation Model – IT Policy (SIM-ITP) vs. Kaldor-Verdoorn Inflation Model – IT Policy (KIM-ITP)
2. Standard Inflation Model – Inflation-relaxed Policy (SIM-IRP) vs. Kaldor-Verdoorn Inflation Model – Inflation-relaxed Policy (KIM-IRP)
3. Standard Inflation Model – IT Policy (SIM-ITP) vs. Standard Inflation Model – Inflation-relaxed Policy (SIM-IRP)
4. Kaldor-Verdoorn Inflation Model – IT Policy (KIM-ITP) vs. Kaldor-Verdoorn Inflation Model – Inflation-relaxed Policy (SIM-IRP)

4.3.1 Comparison I: SIM-ITP vs. KIM-ITP

This section compares the output behavior (Inflation, Real Interest Rate, Output gap, and Labor Productivity) of the standard inflation model that applying IT Policy and The Kaldor-Verdoorn Inflation model also with IT Policy.

Figure 19 – Inflation Rate (SIM-ITP vs. KIM-ITP)
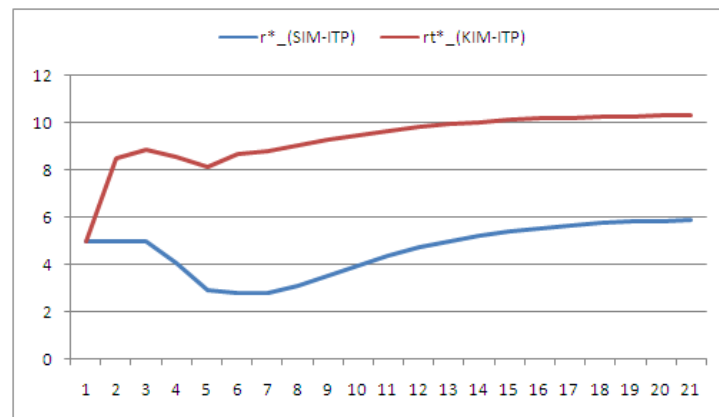
Figure 20 – Real Interest Rate (SIM-ITP vs. KIM-ITP)

34
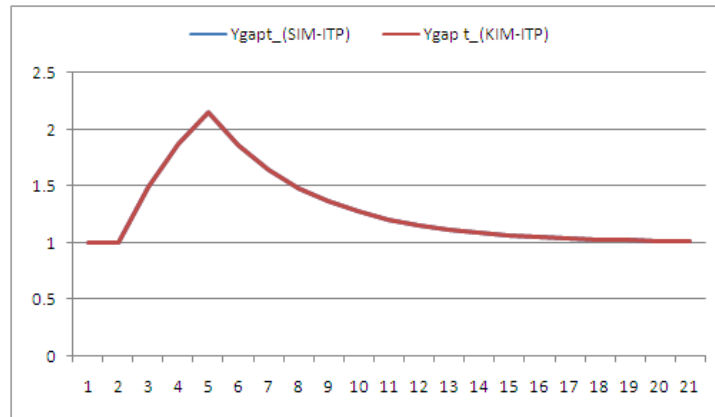
Figure 21 – Output Gap (SIM-ITP vs. KIM-ITP)
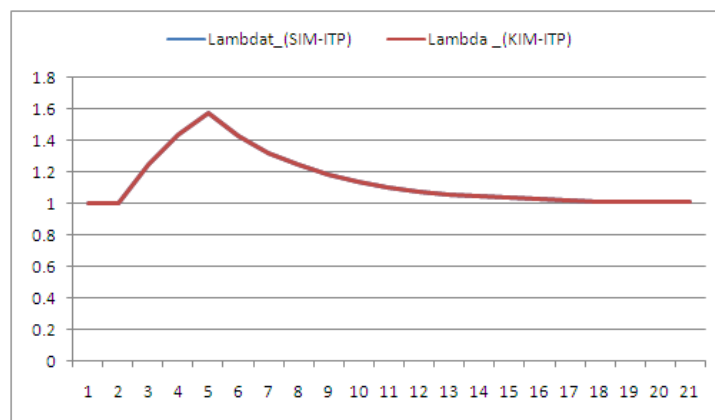
Figure 22 – Labor Productivity (SIM-ITP vs. KIM-ITP)

Since the two models are implementing IT policy, the only thing we could analyze here is the different between the two models. The last two outputs, which are the Output gap and Labor productivity show that there is no difference between the two model the results for both of them are intertwined. However, the Kaldor-Verdoorn Inflation Model performed better in inflation rate, this is due to the effect of labor productivity reducing price and therefore lower the inflation. Therefore, the real interest rate of Kaldor-Verdoorn Inflation model is higher than the standard one.

4.3.2 Comparison II: SIM-IRP vs. KIM-IRP

This section compares the output behavior (Inflation, Real Interest Rate, Output gap, and Labor Productivity) of the standard inflation model that applying Inflation-relaxed Policy and The Kaldor-Verdoorn Inflation model with the same Inflation-relaxed Policy, which means "doing nothing" after the inflation shock and let the inflation reach its steady-state point as long as it still stood at a moderate level. The results can be seen in the following figures.
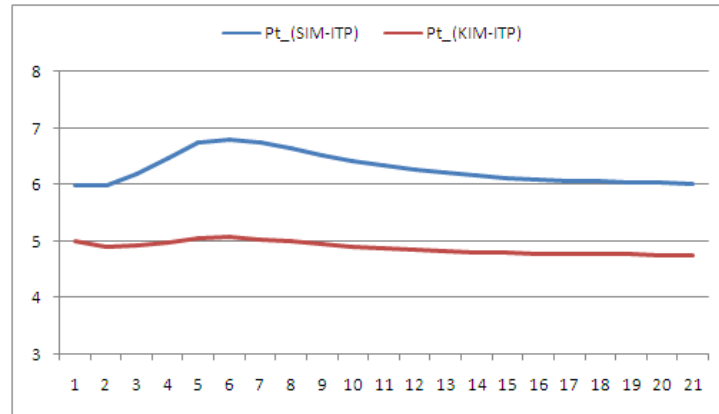
Figure 23 – Inflation Rate (SIM-IRP vs. KIM-IRP)

Figure 24 – Real Interest Rate (SIM-IRP vs. KIM-IRP)
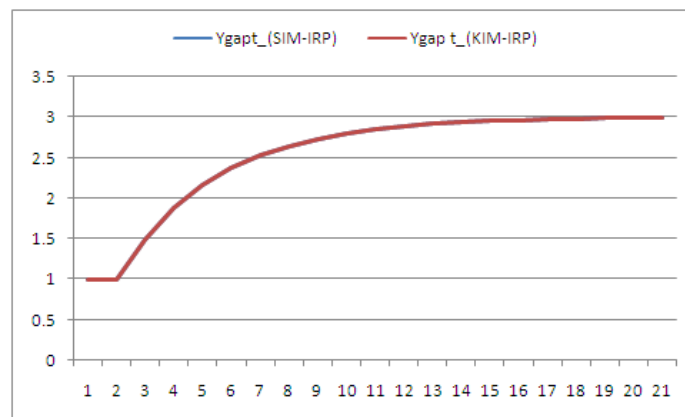
Figure 25 – Output Gap (SIM-IRP vs. KIM-IRP)

36
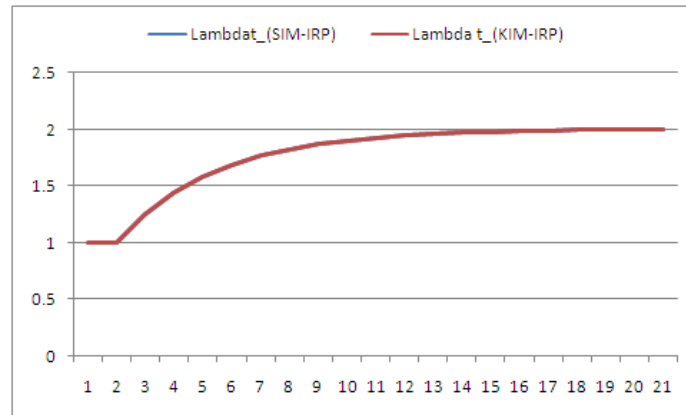
Figure 26 – Labor Productivity (SIM-IRP vs. KIM-IRP)

The similar result with the first condition is obtained in condition II. The output gap and labor productivity remain intertwined while the inflation rate of Kaldor-Verdoorn Inflation model is lower than the standard one, the real interest rate is also following the first one.

4.3.3 Comparison III: SIM-ITP vs. SIM-IRP

After comparing the characteristic of the two models, given the same applied policy, now we are going to test the effectiveness of the two policies between the ITP and the IRP, given the same modeling framework. For the standard model, we compare the behavior of the output variables between the ITP and the IRP. The results are in following figures.
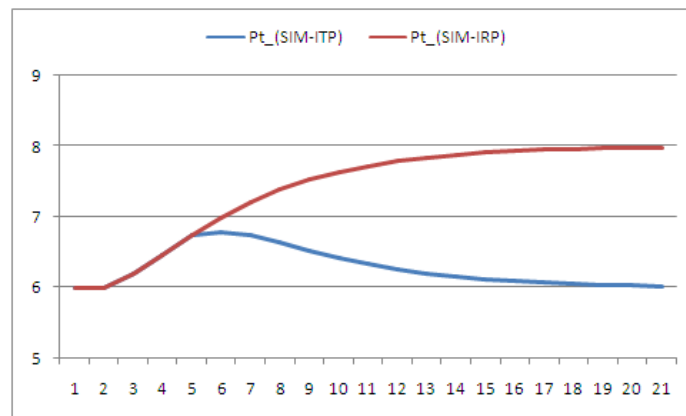
**Figure 27 – Inflation Rate (SIM-ITP vs. SIM-IRP)**
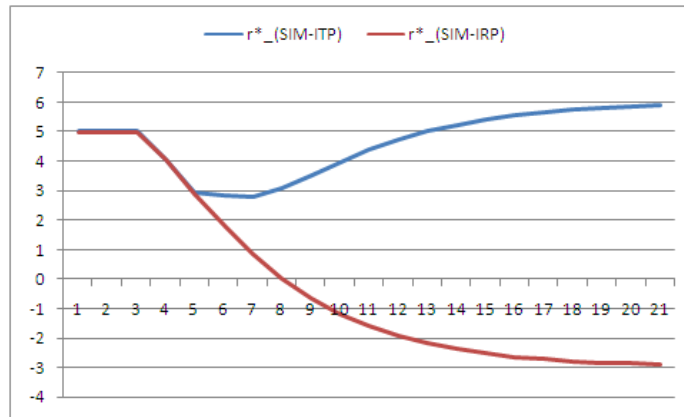
Figure 28 – Real Interest Rate (SIM-ITP vs. SIM-IRP)
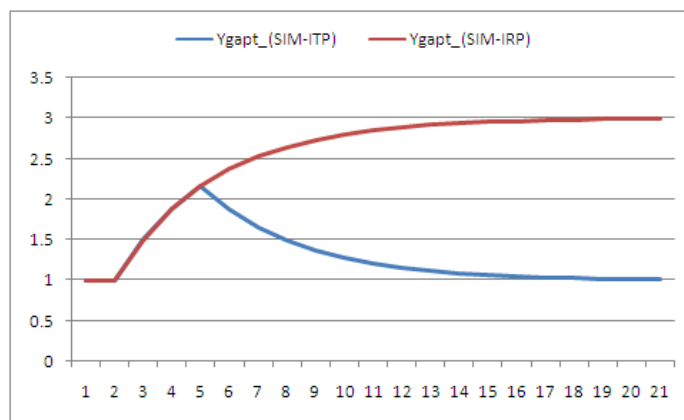
**Figure 29 – Output Gap (SIM-ITP vs. SIM-IRP)**
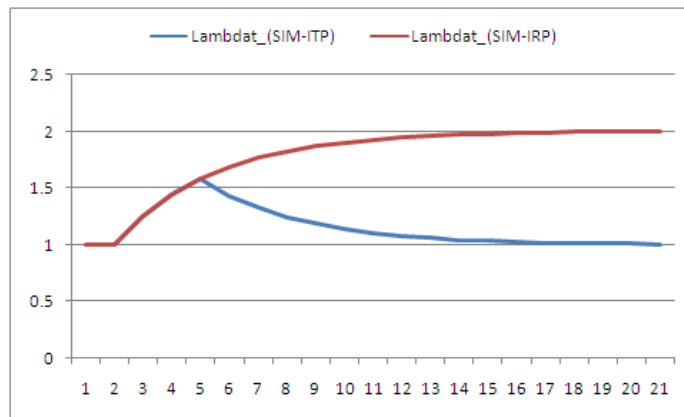
Figure 30 – Labor Productivity (SIM-ITP vs. SIM-IRP)

The result demonstrates the superiority of ITP over IRP in pressing the inflation rate into the original level. However the ITP suffers the loss in output and labor productivity significantly while the IRP tolerate the higher — but still — moderate inflation in order to enjoy the high output and high productivity growth.

4.3.4 Comparison IV: KIM-ITP vs. KIM-IRP

The last test is comparing the two policies within the framework of Kaldoor-Verdoorn Inflation Model. The result can be seen in the following figures.
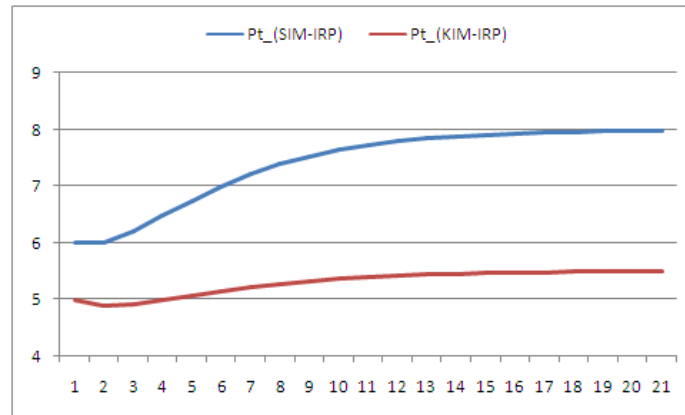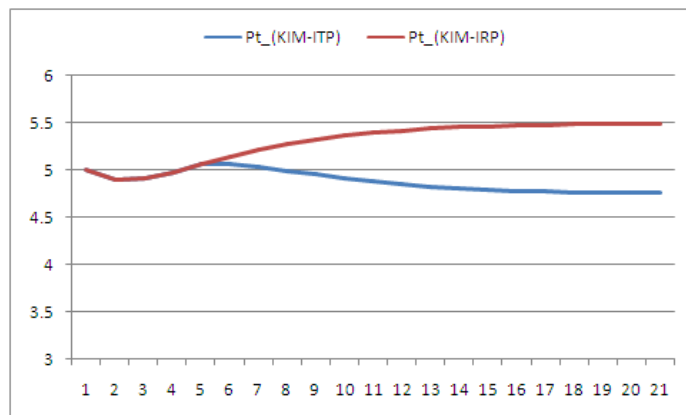

Figure 31 – Inflation Rate (KIM-ITP vs. KIM-IRP)
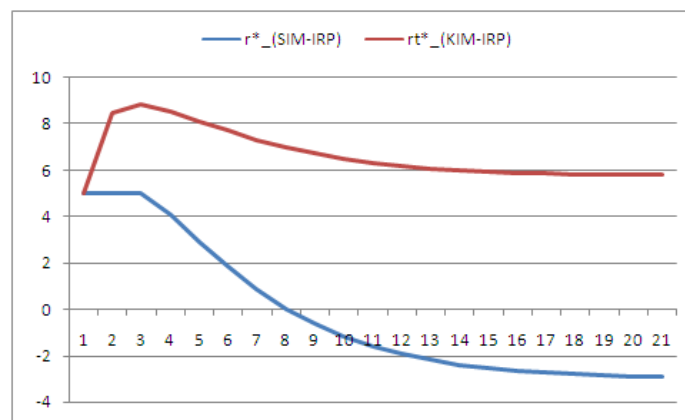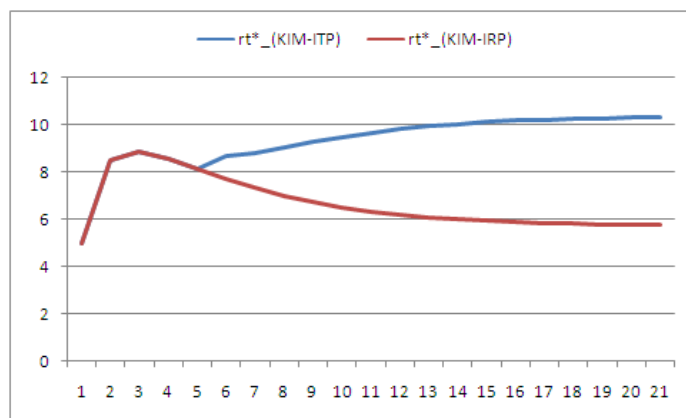

**Figure 32 – Real Interest Rate (KIM-ITP vs. KIM-IRP)**
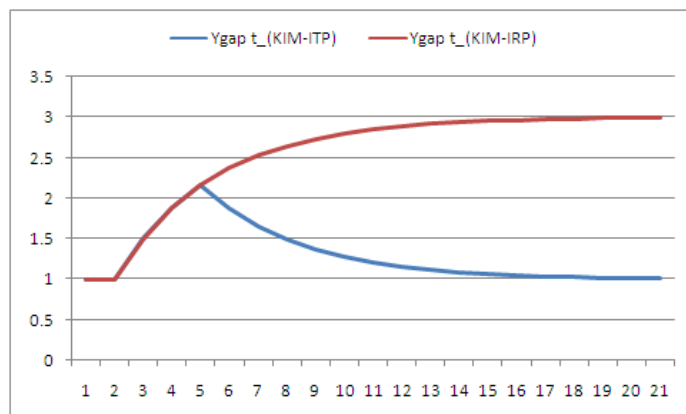
**Figure 33 – Output Gap (KIM-ITP vs. KIM-IRP)**
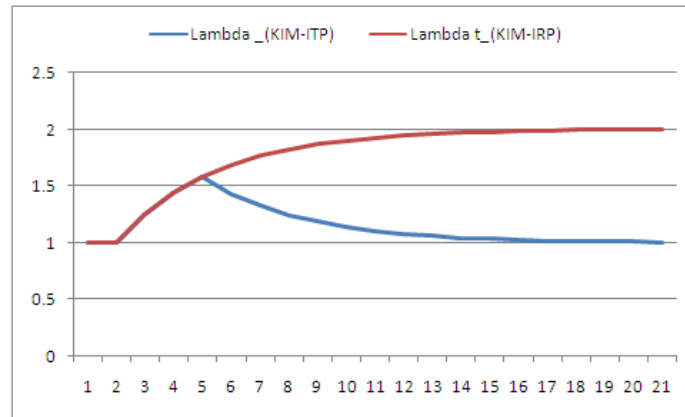
Figure 34 – Labor Productivity (KIM-ITP vs. KIM-IRP)

The similar results with condition III appeared here, the ITP is more effective than the IRP in lowering the inflation rate. While, the ITP did so at the cost of output and labor productivity while the IRP tolerate the higher — but still — moderate inflation in order to enjoy the high output and high productivity growth.

4.4 Realistic Model and The Cost of IT

To sum up, four domains of the comparison can be mapped into the following matrix:

		Policy Reaction on Inflation	
		Inflation Targeting Policy ($i_t - i_{t-1} > 0$)	Inflation-Relaxing Policy ($i_t - i_{t-1} \sim 0$)
Two Views of the System	Standard Inflation Model ($\beta_4 = 0$)	Average Value: $P_t = 6.30\%$ $r^* = 4.62\%$ $Y_{gapt} = 1.30\%$ Lambda$_t = 1.15\%$	Average Value: $P_t = 7.45\%$ $r^* = -0.49\%$ $Y_{gapt} = 2.60\%$ Lambda$_t = 1.80\%$
	Kaldoor-Verdoorn Inflation Model ($\beta_4 > 0$)	Average Value: $P_t = 4.88\%$ $r^* = 9.53\%$ $Y_{gapt} = 1.30\%$ Lambda$_t = 1.15\%$	Average Value: $P_t = 5.31\%$ $r^* = 6.74\%$ $Y_{gapt} = 2.60\%$ Lambda$_t = 1.80\%$

Figure 35 – Four Domains Model-Policy Comparison

By putting the average values of the outcome into each domain, we can see that in the IT Policy is effective in lowering the inflation rate. In comparison with the IR Policy the IT Policy always comes out as a clear winner over inflation control, for the standard inflation model the IT Policy can bring the average inflation rate at 6.3% lower 1.15% than the rate achieved by IR Policy, while within the Kaldor-Verdoorn model the average Inflation rate touch the lowest level by the IT Policy (4.88%) 0.43% lower than that the IR Policy achieve. However, IT policy cannot manage the loss in other two variables which are Output and Productivity, for both models IT Policy can only achieve output and productivity level averagely at 1.3% and 1.15% respectively. It is far worse than if we relax the inflation target, as far as it is still under control the high output and productivity growth can be enjoyed significantly with still maintaining a macroeconomically harmless inflation level.

In the perspective of the model, incorporating Kaldor-Verdoorn relation into the New Consensus of Macroeconomic model did create a consequence. One obvious consequence is the following one. The inflation level is lower than the standard model has shown. Since the Kaldoor-Verdoorn coefficient become explicit (>0) in the model, the increase of output gap now can be conceived not only as the thing that causes the high inflation through aggregate demand, but also as something that can offset the increase in inflation through labor productivity. The more productive the economic activity, the lower the price can be obtained given the similar input to the production process. At this point, the Kaldor-Verdoorn inflation model provides a more realistic explanation of the inflation phenomena.

From figure 35, given the relatively low and stable inflation, high output and high productivity, it is fair to say that the right-bottom box is the most optimal environment for conducting a healthy and sustainable economic growth especially for the developing countries that need more growth to create jobs, catch up in terms of the technological change, and establishing an effective national innovation system, and thus, based on all this, need to reduce poverty.

Chapter 5
Demolishing the Straw Man:
IT in Indonesia

The cure would be worse than the disease
—Joseph Stiglitz

5.1 Chronic Inflation in Indonesia

In 2009 presidential campaign broadcasted in the national television, Indonesia's Vice President Jusuf Kalla who ran for presidency by competing against President Susilo Bambang Yudhoyono revealed that once he complained with the Board of Governors of Bank Indonesia (BI) for their inability to lower the interest rate. He associated the Indonesian Banking system as a "robber" by keeping the interest rate high and hindering the development of real sector, furthermore he urged the central bank to ease their dependency on the monetary theory favoring high interest rate (Koran Jakarta, 2009, Vivanews, 2009). Another story came just in July 2010; the Parliament approved Darmin Nasution as a governor of BI with some notes. The tone of that note demands Nasution to align BI with the development direction of the state, one point occurred in that notes is "to provide low lending interest rate" (Tempointeraktif, 2010). The two fragments above illustrate the tension between the pro-stability and pro-growth regime within the policy-making arena.

Kalla or the parliament, perhaps are not really aware of the inflation targeting theory, the monetary theory underlying the BI's reluctance to lower the interest rate, but they thought that there was something wrong when large part of Indonesian businesses community faced difficulties to expand their businesses and investors were hesitant to invest their capital in the real sectors that resulted in millions of Indonesian being jobless or fighting in a hostile informal world just because of the high interest rate. However, such theory has become the strongest mindset inside the central bank's officials and has been adopted by Indonesia for a decade.

Experience of inflation in Indonesia can be traced back to the late 1960s. The first mission of President Suharto when he was in office was to rid Indonesia of hyperinflation that touched 636% per annum in 1966 and even reach the peak of 1500% in mid-1966 (Chowdhury and Siregar, 2004). His government succeeded in reducing inflation to only 10% in 1969 and then fell again to 2% in 1971. Inflation struck back to the level of 20% during 1972-1980, and shows some dynamics afterwards, but the level never reaches as traumatic as it was in 1966 (McLeod, 1997).

Professor Mohammad Sadli (2005) illustrates the inflation in Indonesia as an endemic disease, just like malaria, the fear of it can easily be spread because it was strongly rooted in the history, once he advised those who are relaxed on inflation "not to play with fire" (Sadli, 2005),

that time inflation manifested itself in the basic commodities that really struck the poor people and led a bloody political crisis. The experience is still remaining in the collective memory of Indonesian people. As the crisis during 1997-1998, Inflation came again into policy discussion, and it became a hot issue since this economic crisis — as what happened in 1960s — led to political crisis. By then, the inflation targeting is introduced as a remedy.

5.2 Indonesia's Central Bank and the Adoption of IT Policy

Officially, Indonesia is recorded as a formal adopter of Inflation Targeting in 2005 (Battini et al., 2006, Epstein and Yeldan, 2008, Bank Indonesia, 2010). However the process of IT adoption in Indonesia cannot be separated from the emergence of Asian financial crisis in 1997. According to BI officials, at least there are two reasons why IT is justified to be implemented in Indonesia: **Firstly**, in 1997, the abandonment of the use of intervention band under the previous regime of managed floating requires the new alternative for nominal anchor, and inflation rate emerge as an alternative. **Secondly**, the new central bank legislation, enacted in 1999 prescribe the stabilization of rupiah as the sole objective of Bank Indonesia, although there is no explicit requirement of using IT, the features of the policy mentioned in the legislation — the announcement of inflation target — has implicitly call for IT (Alamsyah et al., 2001).

Moreover Alamsyah outlined that the adoption of IT is also necessary in order to response structural change in financial market after the crisis. The structural change refers to (as elaborated inAlamsyah et al., 2003): **First**, Exchange rate variability in the regime of managed floating. **Second**, the structural changes in the balance sheet of the banks, the failure of banking intermediary function and excessive liquidity in banking sector. And **third**, the increase in financial innovations and financial diversifications. These factors arguably affect and be affected by financial market is taken seriously into consideration of changing the monetary policy approach into IT.

Chronologically, with refer to the crisis period 1997-1998, Alamsyah et al (Alamsyah et al., 2001) discerned the monetary policy regime in Indonesia into three phases:

1) **Prior to the crisis:** Here, the conduct of monetary policy is driven by using base money as the operational target and set multiple objectives of monetary policy such as, low unemployment level, high economic growth, sustainable balance of payments position, and a tolerable rate of inflation. In this regime, exchange rate is used as an anchor of monetary policy. For long time, this monetary policy approach has shown its effectiveness until financialization of the economy challenged this regime and make the policy maker hard to control the base money growth anymore (Boediono, 1998, as cited in , Alamsyah et al., 2001)

2) **During the crisis (1997-1998):** In this period, basically the conduct of monetary policy is still based on monetary base targeting, taken as a temporary measure to absorb the monetary expansion caused by liquidity support to the banking system. The situation in this period is chaotic, the central bank somehow lose their control over monetary policy (Alamsyah et al., 2001).

3) **The Process towards Inflation Targeting,** this phase is marked by the enactment of new central bank law in May 1999. There are two essences in this law: Firstly, this law

gives BI the autonomy to formulate and implement the monetary policy. On the contrary to the old law that implies multiple objectives, the new law clearly states that the sole objective of monetary policy is to achieve and maintain the stability of rupiah[4]. Secondly, the new law provides BI with a framework for achieving price stability, BI is a full authority in deciding the inflation target (goal independence) and choosing the monetary instrument to achieve the target (instrument independence) (Alamsyah et al., 2001).

Afterwards, the effort toward implementing IT is prepared by BI. The attention largely paid on institutional aspect namely setting the regulatory system for independent central bank. More specifically it is creating a new central bank's legislation that put BI as an independent agent with a full control and authority in formulating monetary policy for 'fighting' inflation. So this new legislation is really supportive for IT since the prerequisite at which IT to be implemented is based on two things: **One** is high degree of central bank independence in formulating monetary policy term of goal and instrument, and **two** is No fiscal dominance, which means that monetization of fiscal deficit is strictly prohibited or limited (Alamsyah et al., 2001).

Admittedly, there was still a 'little' hesitancy within the BI's officials to implement the full-fledged IT. So far Indonesia is classified as an implicit Inflation Targeting country or — in other name — implementing Inflation Targeting Lite (ITL) (Stone, 2003), this hesitance due to problems and constraints come up from the field that needs to be faced by BI, at least there are eight problems (as elaborated in Alamsyah et al., 2001):

(1) The central bank independence could not be gained merely by formalizing a new legislation. Public respect also plays a very important role and need to be acquired especially in implementing the mission of refuting external intervention.
(2) The ambiguity of the mission statement which is "currency stabilization", it could be interpreted as either favoring price stability or exchange rate stability. In fact, the public pressure on BI to react against exchange rate volatility is always high and by concerning the exchange rate the supremacy of inflation control could be override, which is unfavorable according to the IT framework.
(3) Inflation is not only a matter of monetary policy. Many factors may affect inflation unexpectedly and this suggests the central bank to always revise the initial target. If these things repeatedly happened, it could worsen the central bank's accountability and credibility.
(4) The public tendency to interpret the official inflation target as a hard target rather that an inflation projection may reduce the central bank's credibility.
(5) Monetary policy choices in special circumstances, for example what should be done to interest rate when the pressure from exchange rate existed, or when commercial banks are reluctant to lend their money, how does the monetary policy play its role? These problems create confusion in taking the right channel for monetary policy.
(6) Due to technical complexity, the channels at which the monetary policy effective are still not clear and need further research. So far, the one-month interest rate could affect inflation through money market channel.
(7) Fiscal burden of bank recapitalization cost is still in fact limits the implementation of IT. In this situation, higher rate of interest could lead to unsustainable public debt.

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[4] **Article 7**: "the objective of Bank Indonesia is to achieve the stability of the rupiah value."

(8) The dilemma created from the extra cost (Rp 1 Trilion or USD 115.47 million per year) that BI needs to be paid raising rate of interest every 1%.

Despite all of these problems, BI's officials still seem so eager to grasp Full-Fledged Inflation Targeting. They believe that by committing the — stricter — full-fledged IT the BI's credibility could be improved. Thus, the focus should be paid on the effort of monetary policy to meet the target.

5.3 Institutional Analysis of IT Implementation in Indonesia

This section provides institutional aspect of IT implementation in Indonesia. As to elaborate the theoretical background, the analysis will encompasses the Economic of institutions framework of Williamson, the institutional transplantation process of IT and ended with the discussion on the issue of legitimacy.

5.3.1 Institutional Aspect of IT Adoption

From the institutional point of view of IT adoption in Indonesia, advocates of the policy claimed that IT regime touches multiple levels, at the government level it institutionalizes 'good' monetary policies, increases the transparency and accountability of the central bank and provides guidelines for other government policies. At the firm level, IT helps them to shape their expectation, reducing uncertainties and the cost that is associated with inflation. Furthermore IT also suggest that the other government's objectives should be subordinated to IT (Filho, 2007).

As a new law enacted (Bank Indonesia's Act, 1999), It was observed that BI is placed as a central agent within the framework. While previously, BI and the government are sitting in the same coordinative board, now in IT framework, the link and the dependency of BI to the government is being detached. The independency of BI — in goal and instrument — is important since IT is a legally-binding target rate of inflation that must be achieved by the central bank. Therefore, the article 9 of Bank Indonesia's Act 1999 state, verse 1: "*Other parties shall not interfere with the implementation of the task of Bank Indonesia …*" and verse 2: "*Bank Indonesia shall refuse and or ignore any form of interferences conducted by any parties in the implementation of its task*" these two verses marked a new form of relationship between the government and BI in IT era.

In the light of Williamson's four levels of social analysis, it seems that the process of IT adoption has touched some institutional issues. The level two and level three in the four level of social analysis —as mainly concerned by New Institutional Economic — could explain the IT policy adoption by Indonesia. Firstly, the acquisition of IT policy of Indonesia can be conceived as an adoption of formal rule and regulation (Second Level). The legal system at which IT implemented creates an institutional environment that implies a formal imperative for the policy maker to commit with the framework. This legal system comprises the new BI's Act in 1999 and any others derivative regulations supportive to the act. However the regulatory system that is established for IT implementation is not something shaped and imposed from the first level (social embeddedness), rather it is coming from outside (external agent) the social system. Interestingly, the social nuance (the first level) in the 1997's economic crisis coincide the political crisis that marked the end of authoritarianism and the dawn of

democratization. This setting demands the transparency and democratic control over all government's institutions including the central bank, something that failed to be institutionalized by imported BI's act. Secondly, the enforcement of implanted regulatory system (Third Level) has faced some difficulties (as explained in Section 5.2), the problem and difficulties in the enforcement and governance level of IT implementation is highly related to its socio-political pressure on the idea manifested in the formal system. Since the enactment of regulatory system disregards the natural structure of socio-economic system the effort of enforcement would even be harder.
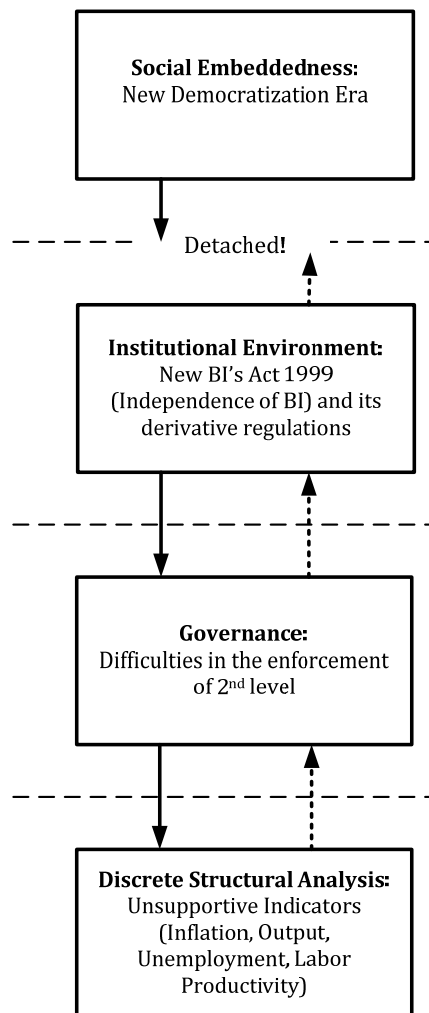
Figure 36 – Four Levels of Social Analysis of IT implementation in Indonesia

Figure 36 redraws Williamson's four levels of social analysis of IT implementation in Indonesia. As we can see that the adoption process of IT framework in Indonesia is isolated only at level 2 and level 3 of the diagram, even it is cornered only at level 2 in its realization due to the difficulties found in the enforcement and the governance of the formal system. The formal regulatory system created after IT adoption is detached from its social system and yet ineffective to be implemented at governance level. Therefore, there is less agreement when we come to analyze the outputs of the policy that is laid in the discrete structural level.

5.3.2 Indonesia-IMF's Engagement and The Role of 'Technocrat'

To understand the IT policy transplantation process, it is a good idea to review the record of engagement between Indonesian government and IMF. This can be traced back to the situation around the emergence of Asian crisis in the late of the Suharto's regime. And to deepen the analysis, it is important to be noted that the term of "Indonesian government" or "policy makers" is not refers to single monolithic group, instead, the policy arena in which the monetary policy taken in Indonesia show its dynamic and comprises multiple perspectives and orientations. According to Martinez-Diaz (2006) at least there are there groups that influence President Suharto:

> **First**, the "**technocrat**", it consists of academic economists-turned-policymakers. This group favors liberal and market-oriented economy; the existence of this group is originated during the 1960s, when a group of academia helps Suharto to stabilize the economy and this officials always stay at the key economic ministries for most 32-year of Suharto's regime.

> **Second**, the group of "**nationalist**" and "**technologist**", this group often fill the position of key spending ministries and some senior military officers during the Suharto's era. This group favors a role for the state to protect the industries and allocating capital for the benefit of national entrepreneurs[5].

> **Third**, the "**cronies**", this group consists of large entrepreneurs who have close relationship with the president including Suharto's children and their close associates.

Among the three groups, the technocrat is a group that has no base of support within the government and no constituency outside it. However, they maintain a strong connection with the international financial institutions and "the market". The president treats the "technocrat" as crisis manager, and economic fixers when the chaotic economic situation happened. While the rest of the groups play a dominant role in the economy during the stability and prosperity period (Martinez-Diaz, 2006). However, in general, in the perspective of IMF-Indonesia relationship, the dynamic of the engagement is highly dependent on the roles played by the group of technocrat.

To limit the review on historical background, I will not present the longer historical horizon of the relationship between Indonesia and the IMF[6]; rather, I will focus to the moment surrounding the origination of IT policy and its transplantation process to Indonesia. Martinez-Diaz (2006) analyzed the engagement record of IMF and Indonesia by identifying the type of relationships based on two dimensions: First, the status of policy options within the decision making process. Whether the options are expanding or contracting. Second, the availability of a room for contestation whether the room is opened or closed. Based on this dimensions, the long-run relationship between Indonesia and IMF (1996-2005) is being fragmented by Martinez-Diaz (2006) into the six types of engagement periods.

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[5] However, I disagree with Martinez-Diaz's qualification that the group of nationalists is usually benefiting the "native" Indonesian rather than Chinese-Indonesian since one of the most vocal activist of this group (Kwik Kian Gie) comes from Chinese-Indonesian community. I suggest that the more appropriate term would be benefiting national entrepreneurs.
[6] More detailed story can be found in Martinez-Diaz (2006)

Period 1: Late New-Order Cronyism (1996 – July 1997)
Since around 1990, due to the strong economic growth and massive inflow of foreign investment and an — imprudent — boom in bank lending, the policy making under the new-order[7] characterized by the strong influence of — as well as high benefit for — the technologist and cronies and marginalized the technocrats.

In this period the access of the large part of the economy is closed to the technocrat. The technocrats were in control of exchange-rate policy and to a large degree of monetary policy but they role were limited in controlling the banking regulation, trade policy, and fiscal policy.

Period 2: Technocrat to Rescue (Aug. 1997 – Jan. 1998)
As the economic condition worsened in September 1997, the full-fledged engagement with IMF is believed as a way to restore the confidence over the government. The economic team signs the first letter of intent (LOI) with the fund in 31st October 1997 and the second one in 15th January 1998. It consists 50 action points that need to be obeyed by Indonesian government. At some point during October and January the technocrats and their World Bank's colleagues realized that the LOI with the Fund can be used also to insert the structural reform that they had considered for long time, and the insertion of the structural reform package into the LOI is heavily driven by the World Bank's staff than by the technocrat themselves, while for the technocrats this is the window of opportunity to advance the reform process and as a consequence they regain their policy influence.

According to the Fund's statement, "IMF management… viewed the program as an opportunity to assist the reformist team in pushing desirable reform and the [IMF] team viewed the program as providing leverage to do so". The effect was vast, the policy options is widened afterwards. What previously taboo issues become executable in this period. The IMF program includes the closure of 16 insolvent banks, the phasing out of monopolies in certain commodities, including cloves and plywood, the immediate lifting of non-tariff barrier on wheat flour, soybeans, and garlic, the suspensions of large infrastructure project and the opening of closed sector to foreign direct investment including banking sector, the IMF — together with the Bank — structural programs significantly expand the policy option and turn the economy into more liberalized.

Period 3: Suharto's Guerilla War (Feb. – May 1998)
Realizing that the LOI will be harmful for his relatives and associates, in this period, Suharto indicated not to comply with the LOI, he launched a guerilla war against the IMF, his cronies and relatives became his soldiers. Infrastructure project that was canceled by the LOI restarted under presidential order, and one of the closed banks belonging to a Suharto's relative was reopened under a different name, the new vehicles were also created to keep the monopoly of plywood and clove. The strategic position in the government is being replaced by the icon of nationalist and cronies in March as Suharto formed a new Committee for Economic and Financial Resilience.

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[7] New-Order is a term associated with Suharto's regime (1967 – 1998)

The IMF was worried with this situation, especially on the potential of the technocrats' dismissal by Suharto. Because by doing so, the IMF will be disconnected from information, expertise on local setting and political access and the public image on IMF could be worsened since the Fund was already blamed for making the banking sector chaotic and their tight monetary policy in late 1997. Moreover, Suharto announced the course of action namely IMF-plus which included the possibility to adopt currency board arrangement. The board marked the radical stance point between Suharto and the Fund's recommended exchange rate policy. And the board was announced without consulted with neither the technocrat nor the IMF.

Facing this situation, the Fund turned to a more coercive approach, Managing director of the IMF, Michel Camdessus, threatened President Suharto to withdraw the financial support if the currency board proposal was implemented. The coercion is intensified by the involvement of several G7 leaders, including President Bill Clinton, to push Suharto to stick to the IMF program and drop the idea of currency board. Eventually Suharto obeyed the call. Martinez-Diaz concludes from this period that the policy options were contracted in two ways. First, the option offered by LOI would not be opened so easily since the affected groups will react against this proposal. Second, as the technocrats loss their influence over the policymaking arena, the IMF and its top shareholders turn into more coercive approach in dealing with their clients.

Period 4: Habibie's Crisis management (June 1998 – Oct. 1999)
In this period the commitment on LOI is restated by the new LOI signed in 29th July 1998. Even the old technocrats no more in place the Coordinating Minister of Economy, Ginanjar Kartasasmita, known as a 'nationalist' figure, played an effective intermediary between the government and the IMF. The Habibie's administration was keen to comply with all the IMF conditionality stated in the LOI. The 1992 Banking Act was amended and opening the protected banking sector for foreign ownership, a new central bank law was enacted which set BI independent and authorized with full control over monetary policy.

Period 5: Democratic Transition and Fragmentation (Nov. 1999 – July 2002)
When President Abdurrahman Wahid indirectly elected in October 1999, the Indonesia's policy space as a room for contestation is opened but the menu of options available to policymakers contracted. President Wahid prefer the nationalists like Kwik Kian Gie and Rizal Ramli who have a confrontational style with the IMF lead the economic affair of the country, as a consequence the IMF adopt a more coercive stance and heavier dose of micro-management in the first LOI under Wahid administration in January 2000, this time the LOI is longer and detailed. In this period, the legislature tried to amend the 1999 central bank act particularly to drop the point of independence of the central bank and as usual the Fund objected strongly and threatening to withhold the next disbursement. In total clashes over the central bank amendment and over fiscal policy led the IMF to delay disbursement to Indonesia from December 2000 until September 2001.

Period 6: Life after the IMF (August 2002 onwards)
Due to the expiry of the engagement with the IMF, the government enjoys expanding policy options and opening the room for contestation at the same time. However, the foundation of the economy was still based on law inflation, balanced budget and stable but floating exchange rate. This is also supported by most voices to stop the tight with

the IMF. The voice was not coming from the radical political group; instead, it is a common sense of public mind to regain the independence in its own affairs.

Policy space as universe of policy options	**Expanding**	**Period 2:** Technocrats to the rescue (Aug 1997 – Jan 1998) **Period 4:** Habibie's crisis management (June 1998 – Oct 1999)	**Period 6:** Life after the IMF (Aug 2002 –)
	Contracting	**Period 1:** Late New-Order Cronyism (1996 – July 1997) **Period 3:** Suharto's guerilla war (Feb – May 1998)	**Period 5:** Democratic transition and fragmentation (Nov 1999 – July 2002)
		Closed	**Open**
		Policy space as room for contestation	

Figure 37 –Two dimensions of policy space 1996-2004 (Martinez-Diaz, 2006)

Martinez-Diaz then placed those periods in the matrix (see figure 37) of openness of policy space for contestation versus the contraction and expansion of policy options. Period 1 and 3 were the most difficult time for Indonesia because the policy alternatives were less available and the room for contestation closed, the policy options was expanded while the room for contestation was still closes in period 2 and 4 due to the cooperativeness of government with the IMF, this along with the good accommodation of the Fund's colleagues in the technocrats group to influence the government's policy making process. The option then contracted in period 5 because the resistance against IMF is increasing and the group of technocrats was being undermined during the Wahid administration, while the room for contestation was opened in this period because some of the nationalists took a lead in the economic affairs. As the relation with the IMF went to be ended, the option was expanded since the IMF's influence was getting weaker and the government became more independence in determining their own policy and the room for contestation is also still opened until today due to democratic environment.

Having Martinez-Diaz's study, we might go back to review the process from the perspective of policy transplantation. It was observed that the Fund has a high determination for contracting and expanding the policy option. Except for the period 1, in period 3 and 5 the initiative to shrink the options come largely from the Fund, and most likely, the coercive approach is being used to silent the emerging oppositions threatened the IMF agendas. That opposition mostly came from nationalist and/or cronies. Meanwhile, the richer options come to the desk along with the signal that the technocrat's position took control of the decision making process. Moreover IMF was also responsible for all the closeness in the room for contestation while the room start to open along with the increase of democratic control over the policy. Following Ward's diffusional episodes, because the coercion was used as a key approach for the donor to

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smooth their agenda over the host, the transplantation process can be understood as imposed borrowing or negotiated imposition type of diffusional episodes. Ward applied this status for the independent state that found themselves in the command of their own affairs, but still dependent on aid and technical support from the donor. The transplantation process has also utilized all the three levels of actions for both formal institutional arrangement and informal practices:

1. **At constitutional level,** formally the adoption of new BI's act set a new legal system for monetary policy while informally, the value of the free-market and liberalization ideology was promoted. However, it only succeeds in touching the legal system but failed to be transferred unanimously into people's values and ideology.

2. **At Policy Area Level,** formally, through the enactment of new bank central law, the transplantation of IT framework succeed to make BI as an independent entity, it detached from the political intervention of the government as well as from democratic control. Informally, by setting the BI independent, the transplantation process favors the conduct of monetary policy can be run based on the 'official' monetary theory and model, which is the Inflation Targeting Framework. Something that in reality the central bank always need external "sparring partner" and technical assistance to guide them about the policy. In fact, during the strong democratization stream in the country, many times the central bank was not able to avoid the informal pressure and intervention from democratic control and civil society. Even though the right to refuse the intervention is guaranteed by the law.

3. **At operational level,** formally, the Fund tried to explicit their operational agendas through the LOI. At certain period, when the government gave a signal of disobedience the LOI was revised and changed into more detail and stricter. While informally, IMF maintained the 'friends' among the technocrat within the circle of policy makers to make sure that every single agenda is in place.

Thus, now the transplantation process can be mapped into the matrix of six domains (Table 7):

Level of Action	Formal Relations	Informal Practices
Constitutional level (ground rules)	**Favorable:** New Bi's act **Actual:** Enacted	**Favorable:** Promotion of Liberalism and Market-led development **Actual:** Remain Controversial
Level of policy area (relations between governmental bodies)	**Favorable:** Set Bi Independent **Actual:** Formalized	**Favorable:** Technical Assistance **Actual:** Rejection, due to democratic demand of transparency and accountability
Operational level (daily activities)	**Favorable:** Letter of Intent **Actual:** Signed	**Favorable:** Maintain the technocrat **Actual:** Remaining lively political and academic debate

Table 7 – the Result of Indonesia's IT Transplantation in Six Domains

The matrix shows us that all the formal effort in transplanting IT framework into Indonesia has been succeeded, while, the disappointment of the BI's officials on the implementation of IT is fundamentally caused by the failure to conceive the policy transplantation process also as value and ideological transfer, an ignorance attitude on the reality that is reflected from existing natural economic structure[8] of the population makes the work of transplantation is half-way and less likely to be succeed. It is true that the moment at which IT introduced to Indonesian public was coincided the time when the people were saturated with authoritarian regime under Suharto's cronyism and eagerly favoring the freedom and democracy. At a glance, the IT seemed to be a good alternative complied along the democratization process that is reflected from the freedom of central bank, however, the independence of central bank eventually realized as loosing the democratic control of the population and civil society and leave it to unaccountable and yet 'closed' science of monetary policy. As distrust to the central bank increasing, the IT is neither a credible policy nor legitimate one — due to the lack of acceptance.

5.4 Real Challenges for Indonesia

Although, the BI looked so optimist in IT, many economists warn Indonesia by criticizing the choice of inflation over output. Economist such as Paul Krugman, Hubert Neiss and Philip Browning expressed that the target could push BI to prematurely tighten the monetary screws and threaten the nascent economic recovery (as cited in Chowdhury and Siregar, 2004). Joseph Stiglitz argues that raising the rate of interest can reduce aggregate demand (as showed in the model) which can slow the economy, and the cost of raising the interest rate in term of the loss in output and employment would be higher than the effect on inflation. Furthermore Stiglitz revealed that in the most developing countries inflation is come from abroad (imported inflation) such as high oil and food prices, and given these challenges in the food and energy price both developing and developed countries need to abandon inflation targeting, because it only make the struggle to recover from the – food and energy – crisis even harder (Stiglitz, 2008).

5.4.1 Inflation and Growth: Clarifying the Relation

Another relevant question that need to be answered is "what level of inflation is categorized as harmful for the economy?" the advocate of inflation targeting argues that even moderate inflation (>2%) is detrimental for the economy, and by claiming this, inflation – at any level– is often used as a straw man to threaten the voice of tolerating even moderate inflation for the sake of growth, employment and productivity.

Nevertheless, those voices heavily based on the work of Fischer (1993) and Barro (1996). Fischer (1993) found that 10 % increase in inflation is responsible for the decline in output growth of only 0.4% per annum, while Barro (1996) estimated that 1% extra inflation reduces economic growth at a range of 0.02% to 0.03% per annum. Even if we accept these estimates, the negative effect of inflation on growth is quite small and negligible. However more studies

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[8] Here, I contextualize the cultural dimension of a policy transplantation process and translate it is a natural economic structure of a society

have revealed that such negative effect of inflation on growth has biased with outliers (Bruno and Easterly, 1996, Levine and Renelt, 1992, Levine and Zervos, 1993). According to Bruno and Easterly (1996), for inflation data from 1961-1994 the correlation loses the significance when Nicaragua is omitted[9]. And the negative growth during 20-40% inflation is caused by hyperinflation in Iran in 1980. Therefore Bruno and Easterly can clearly state that the believer that inflation is harmful exceeds what the evidence said. By having this evidence, one may conclude that a country needs a moderate inflation to sustain economic growth. Furthermore, setting the inflation at a very low level (single digit) cannot be justified only based on the fear of uncontrollable inflation, Dornbusch and Fischer (1993) revealed that the moderate range of inflation (15-30%) does not usually lead to extreme level. According to Bruno and Easterly (1998), the inflation will probably goes uncontrolled when it touched the threshold of 40% (as extensively discussed in Chowdhury and Siregar, 2004).

In Indonesia, the fragment of hyperinflation in 1960s distorts the historical data of inflation. It creates a strong paranoia over inflation among Indonesia's policy makers. Since then, the inflation aversion is always high. However, the work of Chowdhury and Siregar (2004) provides some econometric investigation on the relationship between growth and inflation in Indonesia. By using several statistical tests[10], they concluded that inflation and growth are positively correlated and both of the variables demonstrated a bi-directional relationship in term of causality. And by estimating the relationship – quadratic – model of economic growth as a function of inflation, the research also shows that the room for prudent inflationary policy is largely available in Indonesia up to 20.4% (Chowdhury and Siregar, 2004). The research is an attempt to view the inflation phenomena in a more objective way. It clarifies the memory bias of Indonesian people in perceiving the inflation. It has been a long time for Indonesian people to live under unnecessary fear of inflation, even as a word. And any skeptical point of view on it can be easily demolished by evoking the black memory of the past. Unfortunately, the psychology of fear has also been used to promote the 'straw man' namely Inflation Targeting.

5.4.2 Informal Sectors: Unemployment, Poverty and Productivity

Another odd facts underlying the choice of BI to adopt IT policy is the considerations itself. It was mentioned in section 5.2 that there are 3 reasons why IT adopted, and all of those three arguments come from the "too much" concern on the financial sector. Meanwhile the real challenge for Indonesian economy lies on how to lift up the life of the rest of the population which is significantly larger than those who are connected to the financial sectors. In this way of thinking, the economic measure to defend the large part of population instead of small number of financiers got its moral force. Only about 30 % of Indonesian populations live in a formal sector the rest (around 70%) are living in informal sectors (Wiebe, 1996), the sector that is characterized with hostile competition, low wage and high job insecurity, usually it consists of small family-based businesses and disconnected with the banking sectors. However, this sector reflects the real economic activity of the people, and for many times, it becomes the buffer that saves Indonesia whenever the crisis attacked, it is true in 1990s' crisis and also true in 2008 (in the 2008 global crisis, Indonesia still enjoy positive growth of GDP around 4% per annum), yet the informal sector become the unacknowledged hero.

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[9] Nicaragua experienced hyperinflation and negative economic growth in 1980s
[10] Chowdhury and Siregar (2004) using scatter diagram and Vector Auto Regression (VAR) to test the relationship between inflation and economic growth and its causality direction in Indonesia (i.e. using Granger causality test)

The government's inability to reduce the share of informal sector is related to many things; it is due to the complexity of the problem itself, low capacity of central government or regional government to manage the geographical and demographical complexity, lack of infrastructure, corruption culture of bureaucracy and so forth. However it is rooted majorly in the shaky policy orientation taken after the crisis. The recent macroeconomic stability that is praised by the government official was still reluctantly transformed into the real sector that is waiting for job creation, poverty alleviation, and productivity inducement through investment.

However, Indonesia has enjoyed a tremendous economic growth during the 1980s and early 1990s. At that time the strategic industries were growing fast, the technological catch up was put under the well planning. In order to regain that moment in a more democratic setting and by throwing out all the darkness during the Suharto's administration (corruption, collusion, and nepotism/cronyism) we should learn the key success factors of conducting industrialization during that time (as highlighted in Storm and Naastepad, 2005), they are ten factors that believed to be existed for those who favoring the path of pro-poor, pro-job, and pro growth development. Here, I analyze the role of IT adoption in supporting or hindering those of ten development factors by sketching the following Table 8.

No	Industrialization Agendas	Relevance	IT supportiveness
1.	Cross-border Capital Control	High	No
2.	Macroeconomic Stability	High	Yes
3.	Increase Investment and Saving and transmit to Industries	High	No
4.	Import Protection	Low	No
5.	Export Orientation	Low	No
6.	Conduct Innovation System	Low	No
7.	Subordinate Financial Capital to Industrial Capital	High	No
8.	FDI for export	High	No
9.	Enhance Administrative and Political Capacity	Low	No
10.	Maintain Social Cohesion	Low	No

Table 8 – Supportiveness of IT for Industrialization Agendas

There are two steps to analyze the table 8. First, each agenda item is being assessed for its relevance with IT policy and as we can see from the table the choice of monetary policy is highly relevant for at least five industrialization policies, while it is less relevant for the remaining five items. Second, for each item it is assessed whether inflation targeting supports that agenda or not. And among the five selected relevant items, IT only contributes to the objective of "macroeconomic stability" while it is unsupportive or even practically opposite to the agenda of cross-border capital control, investment and saving accumulation to finance the industries, subordinating financial capital to industrial capital, and managing an export-oriented foreign direct investment. Given this fact, it becomes clear that IT policy is counter-productive in fulfilling the need of economic development in Indonesia. So it is a high time for all of us to demolish the straw man.

Chapter 6
Reconsidering IT Policy: Conclusions

*The truth is that free markets are creatures of state power, and persist
only so long as the state is able to prevent human needs for security and
the control of economic risk from finding political expression*
—John Gray

6.1 Revisiting the Debate: The Core Mechanism vs. The Institutional Aspect

After a long investigation, the time has come now for me to sum up what has been done in the previous chapters. In so doing, first of all, I would like to revisit the debate between the proponents and the opponents of IT. For many times, the debate in the economic field — including in the topic of inflation targeting — is often conducted in two disconnected directions, while the opponents criticize the core mechanism of inflation targeting, the IT adherents evade the allegation by praising the institutional features of IT policy as the ultimate goodness of the framework. This typical debate can be found from the critic of James Galbraith (Galbraith, 1999) on the text book of Inflation Targeting (Bernanke et al., 1999a), and its reply from the book's authors to Galbraith (Bernanke et al., 1999b). The loss of output and employment is always central to the critics of inflation targeting, while the institutional idioms such as central bank credibility, rational expectation, and public announcement of inflation target decorate the narrative of IT. However, this research puts its best effort on reconciling the two aspects of the framework. The core mechanism at which IT is working was discussed heavily as well as the institutional aspect, here, both of them co-exist.

Technically, the IT model is discussed in chapter 3, starting from its history until the demonstration of its transmission mechanism aided by computer simulation. I argue that the model itself does not really tell the whole truth, and therefore, I hypothesize a hidden — but crucial — variable namely labor productivity. Thus, the complete elaboration and incorporation of labor productivity variable into the model was provided in chapter 4 which presents a comparative study against its standard model. And finally, chapter 5 served the elaboration and analysis of adoption and implementation of IT policy in Indonesia including the analysis on the structure of Indonesian economy, which gives us the sense of priority of inflation targeting in the country. Both of modeling and institutional studies are complementary, each has its own advantages and limitations in explaining certain respects of a phenomena. By a neat combination, both of them could become an overarching tool that is useful to increase our understanding on the IT policy.

6.2 Answering the Research Question

The findings in the previous chapters give us some indications on how to answer the earlier posed research question. Since the main research question entails two dimensions of analysis (model study and case study) in finding the effect of inflation targeting policy, the answer will also be given accordingly.

6.2.1 According to the Model Study

The standard model of inflation targeting, is the model that is based on the so-called New Consensus of Macroeconomic (NCM), it comprises the IS curve which expresses the output gap mechanism, the Philips Curve which expresses the inflation mechanism and the monetary policy rule for guiding the central bank to control the inflation. The model itself has shown its effectiveness in tackling the shock of inflation as simulated in chapter 3.

However, within the perspective of this standard model, there are only two parties who are being regarded to be able to influence the inflation. One is the state —on behalf of its central bank—, through the instrument of nominal interest rate. Two is the market, through rational expectation mechanism. This involvement of only few of stakeholders by the model raised the question on how realistic the model is, and then, where is the room of influence from the rest (e.g. the population, the workers) of the society.

The labor productivity then came into hypothesis due to its potential role. It is an important proxy variable bridging the real economic life of the society and the macroeconomic phenomena. The more realistic model is then developed by assuming the influence of labor productivity growth on inflation is not zero as maintained by the standard model; this is the way to associate the phenomena of inflation and growth and the labor productivity factor. By then the model provides a room for the society to contribute in reducing the inflation rate by increasing their productivity. The behavior of the new model shows that the increase in inflation rate could be offset by the increase in productivity growth.

The model shows that the monetary policy instrument, which is raising the interest rate, under IT regime, is indeed effective to bring back the inflation rate to the similar level as before the shock. However in this research, the attention is also paid on the cost of doing such policy. In the comparison with a "doing nothing policy" or previously mentioned as Inflation-relaxed policy (IRP) shows that the IT policy brings some unintended consequence in output growth and productivity growth, the need of not losing those two variables are even more relevant given the context of developing economies, sacrificing output and productivity can be associated with the failure in the job creation or poverty alleviation agendas. Thus, it is obvious that the monetary policy under the IT regime is not costless, and it is remarkable that the IT prioritizes inflation control over other agenda regardless the existing economic structure of the adopter.

6.2.2 According to the Case Study of Indonesia

Martinez-Diaz's study on a transplanted monetary policy adopted by Indonesian government during the 1990s crises contained some element of imposition from the IFI. However the level and intensity of coercive approach is highly dependent on the availability of policy influence for Indonesian technocrats who have been intimately bonded with the IFI's network for a long

time. When the room for them is ample enough, the coercive approach will be eased and vice versa, when the Indonesian government closes their access into policymaking process — by marginalizing the technocrats — or is unwilling to comply with the conditionality, the coercive approach will immediately be intensified.

As a transplant, IT framework has succeeded to be institutionalized within the Indonesian legal system. A set of acts and its derivatives have been enacted in order to base the policy with a strong legal standing. However, the implementation is not as smooth as that implied by the law. Several obstacles hinder the implementation of IT policy, although BI has an authority to be independent in formulating monetary policy a right to refuse any intervention, in practice, the intervention from the parliaments, business community, political executives, and civil societies are inevitable. The economic structure of Indonesian society has unconsciously shaped the mindset of the large part of Indonesian people that prone to lower the rate of interest, while, controlling inflation is always become a scapegoat when the BI reluctantly lower the interest rate. Observably, there is a constant tension between the message of IT and the nature of economic necessity of the society. In this respect, the IT transplantation process has ignored this contextual setting and only focuses largely on the formal transplantation process.

With respect to the legitimacy issue, I follow the concept of policy legitimacy by De Jong and Stoter (2009) that in order to be legitimate, a transplanted policy should satisfy two conditions: first it is legally legitimate and secondly it is acceptable within the socio-cultural setting, or political preferences of the host country. By following these qualifications the case of IT policy in Indonesia can be categorized as a half-legitimate policy while on the one hand it strong in term of legal institutional foundation and fragile at the socio-cultural and political ground.

And with respect to the structural fitness of the policy, it is elaborated in chapter 5, that the advantages offered by IT policy can only fulfill a tiny part of the necessary agendas that need to be run by developing economy like Indonesia. IT only promises the macroeconomic stabilization agenda, while it is irrelevant to carry out many others agendas such as the cross-border capital control agenda, investment and saving accumulation agenda, subordination of financial capital under the industrial capital agenda, and export oriented foreign direct investment (FDI) agenda. Even more, the effectiveness of IT policy in carrying out the macroeconomic stabilization agenda is also a big question. Stiglitz highlighted that since most of inflation sources in developing countries come from abroad (uncontrollable) then the central bank loses its control over imported inflation, we should not blame the central bank when the inflation is high and we should not also hail them when the low inflation is achieved (Stiglitz, 2008). In this respect, IT policy has limited relevance in the context of Indonesia's open-economy.

The rhetoric which says that inflation, even at a moderate level, could be detrimental for economic growth was rejected by the study of Chowdhury and Siregar (2004) which shows that in Indonesia, the growth and inflation is intertwined each other, the direction of influence of each variable are two ways, and the government still has an ample room for prudent inflationary policy up to 20% and the inflation rate still controllable.

Thus, to answer the central research question, I argue that according to the model study IT policy does take an effect in taming the inflation shock whenever it is happening, but the cost of doing so is much bigger and touch a larger aspects of the economy, because the economy has to

sacrifice its output and productivity, while the decrease in inflation rate as a result of raising interest rate is not significant enough in comparison with not taking any action (keeping the interest rate unaltered). From the case study we can say that the effect of IT policy is hardly to be configured since the commitment of the government in implementing IT policy is weak, or in a more technical terms, Indonesia is implementing a *flexible Inflation Targeting framework/Inflation Targeting Lite*. This means that — to call it more bluntly — Indonesia has never been really implementing IT Policy. Therefore we could not analyze — as indicated by Stiglitz — whether the low inflation that we enjoy is resulted from the IT framework or not. However some fragments of BI's reluctance to lower the interest rate somehow illustrates that the IT framework has influenced the conviction and the orientation of BI in bottlenecking the growth of the real sectors for the sake of an irrelevant stringent inflation control agenda.

6.3 (Not Really) A Consensus: The Need of a Room for Model Contestation

The IT policy that is spread all over the word is armed by some version of economic science. An analytical tool, namely the New Consensus of Macroeconomic heavily underpins this idea. However, the term 'consensus' itself is a self-proclaimed label that is rooted on Friedman-Lucas theory on natural rate of unemployment (NRU) that connects monetary policy with inflation control while the other objectives of macroeconomic policy such as employment and growth are being marginalized. It is also a claim that Friedman-Lucas theory is accepted by most economists. The agreement itself is based on several assumptions: First, Inflation is the only macroeconomic variable that monetary policy can affect in the long-run. Second, even moderate inflation is harmful. Third, low inflation is good for both efficiency and growth (Bernanke et al., 1999a, as cited in , Galbraith, 1999).

However, the consensus has never existed, as argued by Galbraith (1999) a long list of economists opposed the idea of NRU, Robert Eisner, a former president of the American Economic Association, James Tobin, Paul Samuelson, Robert Solow, and William Vickrey — all are Nobel laureates — has never accepted the Friedman-Lucas view. The disagreement is vast among the economics' profession, even the debate has grown more intense. Thus, the term consensus can be regarded as a marketing term to promote the model. Gabor (Forthcoming) argues that the model of inflation is political. There are several facts supporting this claim: First, the assessment of output gap in reality is highly uncertain, and such uncertainties, which are worsening during the crisis, are still incorporated in the quantitative conditionality. Secondly, the process of defining the sensitivity of a variable over the other variables is less scientific, which means that the knowledge on how the system responds to a policy is limited. The technocratic judgment is then invoked as a guidance to policy because the policy cannot be anchored to the empirical objectivity of the model. Thirdly, the policy rule becomes a site over policy priorities, since it is the central bank which decides and not the econometric technique.

Fontana (2009) argues that such political character of the model could be problematic for two reasons: Firstly, it contains the 'unemployment bias'. Secondly, it also imposes a 'distributional bias'. Unemployment bias comes from the central bank priority on price stability rather than output and employment (and henceforth, labor productivity), and the distributional bias reflected from the interest rate policy, when it increases, it benefits the few number of financial assets and burdening (through higher borrowing cost) the large part of the population that is tied to the productive activities (as cited in Gabor, Forthcoming).

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Thus, my study on IT model and the revelation of its latent cost of labor productivity contribute to the improvement of the debate in modeling the inflation. And by then, the room for model contestation is opened and more pluralistic views can be contained within the formulation of monetary policy. By incorporating the labor productivity variable, the new model that is developed in chapter 4 becomes a more realistic representation of the whole system that, in turn, corrects the unemployment and distributional bias of the standard model. The biases are corrected by involving a new stakeholder of the economy which is the rest of the population that is marginalized in the standard model. In this way, the labor productivity variable is a representative variable played as a proxy that links the activity of the population, the market and the government policy.

6.4 Restoring the Credibility of IFI and The Case for Indonesia

With regard to the lack of legitimacy in the IT transplantation process in Indonesia, there are two parties that need to be evaluated. First, it has been a long time that, the IFIs as a donor agent has been under the strong critiques for their alignment with free-market ideology and for the creation of unequal geopolitical configuration between the so-called western and non-western countries. The western countries (especially United States) have a disproportionate voting right in their general council and extending their influence far reaching their demographic and economic jurisdiction (Woods, 2000). The ongoing unhealthy globalization process create the structure of inequality and leads to the situation where the value of democracy eroded (Storm and Rao, 2004). Antony Anghie (2000, 2002) argued that the neo-liberal agenda (through privatization, liberalization, and creation of legal regimes facilitating commercial transaction and foreign investment) is another form of neo-colonialism, it has often aggravated unemployment and indebtedness of developing countries in the long run and increasing the potential of social tension and interethnic conflicts (as cited De Jong and Stoter, 2009)

Some leading authors (Easterly, 2006, Gray, 2009, Gray, 2002) have been very vocal in warning the IFIs by suggesting to also take the informal trust relation (or, in the IT case, existing natural structure of real economy) into consideration of the process of transplanting a policy into the host (as cited in De Jong and Stoter, 2009). In order to do so, as to restore the credibility of IFIs in the given context of monetary policy, it is important for the IFIs, especially the IMF, to start to develop a new framework for development-friendly inflation control, which will guide developing countries to manage their inflation problem without sacrificing their urgent necessities in economic growth, job creation and labor productivity enhancement. Relevant work in this area has been done by the PERI institute, it has taken an initiative to develop an alternative for inflation targeting, one come up into the discussion is "Real Targeting" which mean that monetary policy should be used to target the real macroeconomic variables, the target could be any real variables that is relevant to the current economic condition, and then uses and — if necessary — create any instruments to achieve the target (as discussed in detail in Epstein, 2003). Further researches are needed to establish the alternative and this report is not the right place to do so. However, it is quite a good news when the leading IMF economists has progressively started to reconsidering/revising IT policy to be implemented (Blanchard et al., 2010), something that needs to be welcomed eagerly.

For Indonesia, the reality is that, although IT has been legally institutionalized there are still real obstacles which hinder the implementation. It is nevertheless important to regain its

sovereignty in conducting monetary policy, every tendency toward institutional power concentration that goes beyond democratic control of the society — such as "too independent" central bank— should not go unchecked. And it is a high time for Indonesia to revive the national wisdom of *musyawarah*, the decision making process by consulting various views/groups to reach an agreement, within the process of democratic policy-making. By having this kind of pluralistic decision making environment that allow various opinions, the room for policy options will be expanded and the quality of the policy will also be sharpened due to the openness for policy contestation, thus the legitimacy issue will be addressed at the same time.

6.5 What we have learned so Far and what need to be learned in the future?

All in all, I would like to highlight that this research has provided lessons learnt, that the use of macroeconomic model gives us a rough sense in understanding the relation between observable/surface variables. This is useful for sketching general overview and physical-bounded mechanisms within which the economic processes are going on, the model then becomes a more powerful and richer explanatory tool when it was supplemented by the institutional analysis, an in-depth and holistic outlook of the inflation and IT policy phenomena become more clear and both the analyses could end up in convergence set of conclusions.

As for further research, an open-market type of inflation model is also a good object to be exercised. By doing so, we could observe more underlying transmission mechanisms, and analyze the influence of exogenous variables into the dynamic of inflation system. It is also interesting to know how the labor productivity will behave within the open system model. In addition to the institutional analysis, collecting primary data through various techniques of interviews is also a good idea to enrich the insights from the study. The result of the interviews could disaggregate the existing institutional process into more personal and individual actors behind the behavior of the institutions. Thus expectedly, more detailed dimension of analysis will be obtained.

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