THE ANALYSIS ON THE EFFECT OF GOVERNMENT EXPENDITURE AND BUDGET DEFICITS ON INVESTMENT IN INDONESIA IN PERIOD 1995- 2009.

THESIS

DONNA BETERESIA
07 151124

FACULTY OF ECONOMICS
ANDALAS UNIVERSITY
2011

	University Alumnus Registration No:	Donna Beteresia	Faculty Alumnus Registration No:

Personal Identity

a) Date of Birth : Padang Panjang/ 11 April 1989 b) Parent's name: H.Karson Tanamal,SH.MH and Dra.Hj.Asmawati Kamal,MPd c) Faculty: economy d) Department : Economics e) Student Id No : 07 151 124 f) Date of Examination: July 25, 2011 g) Graduate Standard : with Honor h) GPA : 3.44 i) Leng of Study Period : 3 years 10 month j) parent's adress: Batu taba, Tanah Datar Regency.

The Analysis on the Effect of Government Expenditure and Budget Deficits on Investment in Indonesia in Period 1995-2009.

Thesis by : Donna Beteresia **Thesis Advisor : Drs. Masrizal, M.Soc.SC**

ABSTRACT

The aim of this study is to analysing the effect of government expenditure, budget deficits, interest rate and GDP on investment in Indonesia in period 1995-2009. Therefore this study tried to examine these variables by building two models that was previously developed by Kustepeli (2005).

Based on this research the results show that government expenditure, budget deficit, and interest rate has a negative effect on investment in Indonesia, but budget deficit and interest rate statically insignificant. However GDP positively influence investment. Therefore the suggestion is the government must increase the government expenditure to capital expenditure.

Keywords : investment, government expenditure, budget deficits,Fiscal Policy

This thesis has been presented before the examiniers in the Thesis Examination and successfully passed the Thessis Examination on July 25, 2011.

The abstract has been approved by the advisor and examiner:

Signature			
Full Name	Drs.Masrizal,M.Soc.Sc	Prof.Dr.Nurzaman Bactiar,M.Sc	Dr.Hefrizal Handra, M.Soc.SC

Approved by :

Head of Department : Prof.Dr.H.Firwan Tan, SE,M.Ec.DEA.Ing

NIP. 130812952 Signatute

The Alumnus has registered to the faculty of economics/ Andalas University and has obtained the Alumnus Registration Number :

	The officer in charge of Faculty/Andalas University	
Faculty Alumnus Registration No:	Name	Signature
University Alumnus Registration No:	Name	Signature

PREFACE

For the first time. Alhamdulilah I would like to say thanks to Allah SWT for goodness and favor that given to me so that I can finish my thesis about **The Analysis on the Effect of Government Expenditure and Budget Deficits on Investment in Indonesia in Period 1995-2009.**

Writing this thesis has been hard but in the process of writing I feel I have learned a lot. this thesis will be a motivator for me to became one step a head. Therefore, I would gladly welcome for suggestion and any critics to improve it is quality. I hope this thesis will have a valuable contribution to academicians, monetary authority, students, and readers general.

Padang, July 2011

DONNA BETERESIA

ACKLNOWLEDGEMENTS

In this chance, The authors wish to acknowledge the assistance provided by all those involved in finishing this thesis. First of all, I thank to Allah SWT who made it possible for me to accomplish this thesis.

Drs. Masrizal, M.Soc.Sc supportive advisor that he is: without a doubt, his ideas and comments on various theoretical and textual issues have contributed to the quality of this Thesis. I may start missing our discussions.

I am also greatly indebted to **Prof.Dr.Nurzaman Bachtiar.M.Sc** and **Dr.Hefrizal Handra,M.Soc.Sc** as my thesis examiner who have very helpful and kind in improving my thesis.

And so far I would like to thanks **Dr.Syafruddin Karimi,SE.MA** as Dean of Faculty of economic, **Prof.Dr.H.Firwan Tan,SE.M.Ec.DEA.Ing** as Head of Economics Department and **Edi Arianto, SE, M.Si** as the Head of International Program, Economic Faculty, Andalas University. And for the last all of my lecturers in International Program, Economic Faculty, Andalas University, Padang. Thank you for the knowledge shared with me (and other students) during classes. I realize now that economics is one of an interesting subject.

I want to express my depest thanks for my lovely parents **H.karson Tanamal, SH,MH** and **Dra.Hj.Asmawati Kamal,M.Pd** for the many ways in which they have helped me,for your fully support and motivate me, you are really super and perfect parents for me, and for my both brother **Donny Karsont,SH** and **Dicky Betterson** and also my lovely sister **Dika Rahma Sonata** thanks for always loving me.

And finally I would like to say thanks for Bea (ITI teacher) who had the laborious job for corrected my grammar into readable prose and for all my friends in economics department

that imposible I said one by one, for my close friend **Meri Oktavia Putri, Putri Irina Mayang sari, Yusri, Radhiati Mardiah , Eldika Prima septiana** thanks have always been there, listening and understanding when I made sense, and also when I did not'.thank for your time, your jokes, vacations, and for many things.

For you are guys **Mahlil Andre Putra, Rhio Eka Saputra, Hajal Mulia, Yusrian Yuzaf and Adri Hidayat**, gonna missing our journey and your uselessness of thinking, and for someone special there **Jeffri Minton Gultom**, thanks a lot, thanks for always try to understand me, support, help and give me this special feeling of comfort, to share unforgettable moments and always be there for me. Iam surely gonna missing your crazy things.

For all my Internasional class friends, I believe the world in our hands, can not wait to see u again 3 or 5 years later, lets fighting and keep in touch ☺. for (uri, didi, meri,nina icha, ,chaha, winny, ayank, yorga, dedi, said), keep spirit, get your degree ASAP.(ayu, Vela,nadya, legi) good luck for your seminar and maychu congrat ea ☺.. Lucky to be a part of this family. ^_^

Padang, July 2011

DONNA BETERESIA

Contents

Table Contents

Figure Contents

CHAPTER 1

INTRODUCTION

1.1 Background

Economic growth is one indicator to assess the economic condition of a country. During the period of research from 1995 until 2009, Indonesian economic growth is still relatively low compared to neighboring countries.

According to World Bank data, in 2008 Indonesia's economic growth is only 6.06% and 6.28% in 2007, while Vietnam has reached 6.18% in 2008 and 8.46% in 2007. Indonesia's per capita income is still relatively lower than that of the neighboring countries like Malaysia and Thailand. In 2009 due to world bank data, Indonesia's per capita income was only U.S. $ 830, while Thailand and Malaysia respectively have reached U.S. $ 1.995 and U.S. $ 3,400.

In fact, low level incomes and economic growth in indonesia like the data showed above because of supported by consumption. Investment and net exports are also a driving factor of growth are still quite low. In theory, economic growth that are sustained by the consumption will not be sustainable growth. Sustainable economic growth is the growth that is supported by investment. Growth will be underpinned by investments to increase productivity and to absorb employees. With labor absorbed the unemployment rate can be reduced (Mudrajad Kuncoro, 2004).

Table 1.1 Percentage of Government Expenditure and Government Consumption as share GDP in Indonesia

Years	Consumption Expenditure (% of GDP)	Investment Expenditure (% of GDP)
1995	69.41	28.43
1996	69.92	29.60
1997	68.52	28.31
1998	73.47	25.43
1999	80.55	20.14
2000	67.24	19.85
2001	69.19	19.67
2002	72.30	19.43
2003	67.06	19.51
2004	71.27	22.45
2005	70.77	23.44
2006	69.19	24.13
2007	71.01	24.97
2008	71.06	27.65
2009	72.01	28.70

Source: World Bank

Based on World Bank data from 1995- 2009, consumption is the biggest component that contribution to National Income in Indonesia. The average consumption 15 years before was 70%, meanwhile investment only 23 % (see table 1.1). This higher amount of spending on consumption rather than to investment in Indonesia during 1995 until 2009 can be occured because of there was crisis on 1997/1998 and also some calamity that force the government expenditure to help the calamity victim.

The government has sought ways to enhance the role of investment in economic growth, one of which is through expansionary fiscal policy. Expansionary fiscal policy is considered to promote investment through increased

aggregate demand. This thought was the brainchild of Keynes, where the increase in aggregate demand is needed and it will increase investment and further it will encourage economic growth.

Expansionary fiscal policy is characterized by increasing government expenditure. As a consequence, increased government spending is also often accompanied by an increase in the budget deficit like that in the Keynesian concept, but other well-Classical monetarist considers expansionary policy will be crowding out investment because the budget deficit increases.

Expansionary fiscal policy initially was applied to the government which always aims to contribute to encourage increased investment in Indonesia. However, the increase in government expenditure is not always followed by the more intense investment. Keynesian view of expansionary fiscal policy to improve the investment does not seem likely to prove even in accordance with Classical monetarist assumption that assumes that the investment will be driven by increasing government expenditure.

Descriptively, expansionary fiscal policy conducted by the government through increased government spending cannot ensure increased investment significantly. Moreover, increased government spending is still dominated for consumptive expenditure. If so, the Keynesian assumption that government spending can have a positive impact on investment cannot be proven. Neither can be the effect of budget deficits on investment. However the deficit financed with debt can have an impact on interest rates. By basing the monetarist theory of flow-Classical, increased government spending caused the deficit can actually disrupt

the balance of the loan market. Thus, expansionary fiscal policy can actually be the dominant reason for not investing in Indonesia.

Although the expansionary fiscal policy can affect investment, there are many other factors that may affect investments, such as interest rate and national income. In theory, interest rates are a very influential factor on investment. Interest rate in Indonesia is still relatively higher than other countries in Asia. This factor is considered to be one of Indonesia's investments and is still low compared to other countries. Indonesia's national income increased from year to year and can also be influential because they reflect the demand for goods / services by increasing community that encourage increased investment by entrepreneurs. This factor may be one reason for investing in Indonesia and continue to grow in nominal terms. However, there are still other factors that affect investment.

The debate between two theories that underlie the link between fiscal and investment policies are Keynesian and monetarist Classics which will become an interesting topic for discussion. Increased government spending is always associated with an increased budget deficit, the more focused problem with the fact that the increase in expenditure is not always accompanied by an increase in the amount of the same deficit. That is because government revenue also continues to grow each year. The amount of increase in government spending will certainly vary with the amount of increase in the deficit. Effect on investment will also be different and raises a question whether it will lead to the phenomenon of crowding out or crowding in on the investment. This problem becomes an

important matter because it involves the investment prospects of sustainable economic growth.

Based on the background above, this research will focus on **The Analysis on the Effect of Government Expenditure and Budget Deficits on Investment in Indonesia in Period 1995-2009.**

1.2 Research Objectives and Purpose

1.2.1 Objectives

The objectives of this research are:

a. Analyzing the effect of government expenditure on investment in Indonesia due to Keynesian thought.
b. Analyzing the effect of budget deficits on investment in Indonesia due to Classical thought.
c. To analyze whether the government's expansionary fiscal policy boost the investment in Indonesia or create crowding out.

1.2.2 Purpose

This research is expected to provide the following benefits:

a. Policy benefits: this research is expected to be material consideration of government in policy making, particularly fiscal policy to optimize the investment.
b. Scientific benefits: to understand and explore issues in economic science, especially those related to policies fiscal and investment.

c. Practical benefits: it is hoped that this research can be useful as reference for subsequent researchers who are interested in conduct researches related to similar problems.

1.3 Problem Identification

Based on the formulation of the problem and by considering the control variables- interest rates, and national income - which also affect the investment, the study questions that can be arranged are as follows:

a. What is the effect of government expenditure on investment in Indonesia?
b. What is the effect of government budget deficit to investment in Indonesia?
c. What is the effect of interest rate and national income to investment in Indonesia?
d. Whether the expansionary fiscal policy led to crowding out of government in Indonesia or vice versa?

1.3 Hypothesis

Based on the theory and previous research, hypotheses can be formulated:

a. Government spending has positive influence on investment.
b. The budget deficit will negatively affect the investment.

c. Interest rates will negatively affect the investment.

d. National income will have positive influence on investment.

e. Crowding out will be occur because of increasing budget deficit

1.5 Systematic Writing

CHAPTER I: Introduction

This chapter describes the background of the problem, the formulation of the problem, hypothesis, purpose and usefulness of the research, and systematic research.

CHAPTER II: Theoretical Framework

This chapter describes the various theories that underlie this research, and discussions of the results of previous studies of the same kind.

CHAPTER III: Research Methodology

This chapter contains a description of how the research will be implemented operationally, and it also describes the research variables and operational definitions used; types and sources of data, methods of data collection and analysis methods.

CHAPTER IV: General Description

This chapter outlines a description of the object of the research, the growth of Investment, budget deficit and government expenditure.

CHAPTER V: Results and Analysis

This chapter discusses about the interpretation of data and also the result of the research.

CHAPTER VI: Conclusion

This chapter is the last one which contains conclusions and suggestions.

Chapter II

THEORETICAL FRAMEWORK

2.1 Basic Theory

2.1.1 Role of Government in the Economy

Government always plays a very important role in every country. However, the role of government in each economic system is different. There are some thoughts about the role of government in the economy. These thoughts are divided into two major groups, namely Classical and Keynesian.

Classical thought tends to forbid government intervention in the economy. According to their view, disequilibrium in the economy will be driven by the invisible hand to reach back to balance. The size of the role of the government is considered likely to distort the market and the market mechanism does not run as it should. In other words, classical economists emphasized the existence of economic liberalization. For classical economists, the role of government is only limited to:

a. Maintaining internal security and defense.

b. Holding court.

c. Providing the goods that are not provided by the private sector,

d. Major depression in 1930 caused many people began to doubt the view of Classical economists.

The private sector began to wilt, making government intervention absolutely necessary to rejuvenate the economy. That was suggested by Keynes,

that the government must take a dominant role in the economy. Freedom of the market without any government interference would not be able to do resource allocation and an optimal output (full employment of outputs). Therefore, Keynes thought we need government intervention, in the form of budget policies to overcome unemployment as well as increasing purchasing power and encourage business activity. Furthermore, the Keynesian role of government is divided into three, namely:

a. Allocation

   The government arranged for the allocation of economic resources efficiently.

b. Distribution

   Government tried to make development results to be enjoyed by the whole society for equitable development.

c. Stabilization

   The role of the private sector in the economy will create the economic conditions to very sensitive shocks that can cause unemployment and inflation. Therefore, governments should stabilize conditions in order not to get caught up in crisis.

2.1.2 Fiscal Policy

Fiscal policy is one of the instruments of macroeconomic policy. Macroeconomic policies are policies that aim to achieve higher output with a rapid growth rate, high employment, price stability, and equilibrium in balance of

payments. When compared with monetary policy, Keynes relied more on fiscal policy to achieve development goals. The reason is that fiscal policies can increase aggregate demand directly. by using the budget, the government can control and take a note regarding fiscal problems. a budget will show the government plan and government revenue within certain time. At a given period, the government can implement surplus, deficit, or balanced-budget enactment. Deficit occurs when the amount of expenditure is greater than acceptance. Instead, the budget surplus will occur if the entire revenue exceeds expenditure. In terms of budget balanced, would happen if all receipts and expenditures showed the same amount. the Condition of the budget is a reflection of fiscal policy elected government in that period. At the time of government budget are deficits, this mean that the government must take an expansionary fiscal policy. This policy aimed to increasing people's purchasing power. This policy generally done when the economy goes into recession / depression and high unemployment. Conversely, when the budget surplus, this means the government taking a contractionary fiscal policy. This policy aims to reduce the purchasing power of people and tackle inflation. Policy of balanced budget fiscal policy is also an option. In general, this policy was taken in order to achieve a certainty budget and increase fiscal discipline.

These policies are discretionary policies which involve decision making or amendment of certain decisions. In other words, the policy is deliberately set up to deal with certain economic conditions, as with the auto policy or more commonly referred to as automatic stabilizers.

Automatic stabilizers are policies that promote / suppress the economy when necessary without a deliberate policy change (Deliarnov, 1995). Stabilizers work automatically without need for a fiscal or monetary action. However, automatic stabilizers merely serve to reduce some of the turmoil in the economy rather than to eliminate the problem altogether.

2.1.2.2 Budget Deficit

The combination of the amount of government expenditure and revenue is summed up in a government budget. It has been described previously that in order to deal with certain economic conditions, it can be done through the fiscal policy. Fiscal policy can be seen in the government budget and the budget deficit is one of the government's fiscal policy is expansionary fiscal policy. Before discussing the budget deficit further, it is important to understand the structural budget and cyclical budget.

In short, the structural budget calculates how the revenue and government expenditure is, as well as the possibility of deficit / surplus if the economy was operating at the level of potential production. Meanwhile, the actual budget (actual budget / actual) record of expenditures, revenues, deficit / surplus are the real budget in a given period. After knowing the budget deficit can the cyclical budget be known. Budget calculates the impact of cyclical economic cycles then to the budget - measures the change in revenue, spending, and deficit / surplus that arise because the economy is not operating at a potential output. Cyclical nature of this budget represents the difference between the actual budget and structural budget (Samuelson, 1997).

2.1.3 Investment

2.1.3.1 Definition of Investment

Investment is a sacrifice in the present consumption to increase consumption in the future. Investment or capital formation may be in the form of investment in real assets and financial assets: investment in real assets such as land acquisition, machinery, plant construction and others. Meanwhile, investments in financial assets can be done in the money market or capital market. In the money market, investments are made in the form of deposits or central bank certificates, while in the capital market in the form of stock, or bonds.

Investment also plays an important role in macroeconomics. First, the investment represents a significant component of expenditure and subject to change. Thus, major changes in investment will greatly affect the aggregate demand and ultimately resulted also in output and employment. Second, raise investment capital. With the construction of buildings or equipment purchases, potential output will increase, and long-term economic growth will also increase.

2.1.3.2 Investment Theory and Thought

In Samuelson (1997) important elements in understanding the concept of investment are the result of sales, costs, and expectations. Below are descriptions for each element.

a. Sales Results

Investment activities provide additional sales revenue for the company only if the investment makes the company able to sell more products or produce

more cheaply. This means, a very important determinant in investment is the overall amount of output (or GNP).

At the macro level, Keynes formulated the relationship between investments in national output. The investment accelerator model confirms that the rate of investment will be proportional to the change in output of the economy (Mankiw, 2003). This accelerator model creates the possibility that spending huge investment will fluctuate. If the investment is proportional to the change in national output Y, then if the economy is in recovery period, the investment will be positive, and if the economy is in recession, investment becomes negative. Thus, national income will have positive influence on investment. The higher the national income of a country is, the greater the form of investment is.

b. Investment costs

The next important element is the cost of investment. This element is closely related to interest rates, a mechanism of monetary policy in the arena of modern economics. At the time the amount of money circulating in the community increases, the price of money - namely interest rate - will be reduced. Reduced interest rates will make investment costs down, and more companies will be able to buy more machines, and other forms of investments, and later will be able to increase the aggregate amount of investment. Besides interest rates there are other elements that influence the investment in decisions, in terms of cost it is tax. Higher or lower taxes are used by the government to encourage or discourage investments in the private sector.

c. Proceeds from sales and cost expectations

An important element - after the sale and the cost - is expectation. Investment decisions will depend on the expectations and future situations. The monetarists and Keynesians have the distinction of private sector investment spending. Monetarists tend to argue that the private sector is relatively stable. The reason is: because the private sector expenditure is based on the theory of permanent income the consumption spending will be relatively stable. Consumption expenditure is a component of relatively large expenditures and changes only slowly, i.e. within the framework of the adjustment of individuals with an estimated consumption of permanent income in the long term.

Other factors that cause consumption spending relatively stable are the elasticity of investment spending to the interest rate which is quite large. The flexibility of interest rates and prices also leads to investment and consumption spending being stable. If a decline in investment and money supply is fixed then the interest rate will go down. The decline in interest rates will cause investment return pushed up to compensate for the initial investment. This means that investment has not changed much. If the increase in investment and / or consumption is not enough to offset a decline in investment through changes in the price of private spending, it will remain stable. The mechanism of a decrease in investment will result in the emergence of unemployment so that the wages and then prices will go down. For the money supply, falling prices mean that the value of the real money will rise. Increase of the real value of money will encourage spending. In the alternative Keynesian view, the rising real value of money will reduce the interest rate then it will encourage increased investment. Contrary to

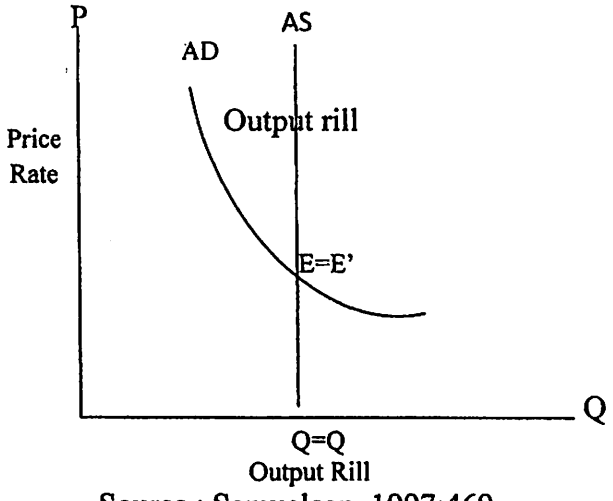
monetarist thinking, Keynesians argue that the private sector is not stable. The instability comes from a shift in attitude and an estimation of entrepreneurs and consumers. In addition, the instability of the private sector is also caused by inflexible prices.

2.1.4 Displacement Investment by Fiscal Policy (crowding out)

Displacement in the context of investments, or often called crowding out; is a concept of thought which states that government spending, government deficit or government debt can shrink the amount of investment in the business world (Samuelson, 1997). In general, there is no difference in understanding of the displacement of investment by fiscal policy. the debate is solely about the large amount of displacement.

Classical monetarists claim that there is a 100% displacement of investment by government spending. Economy is assumed to have the characteristics of classical and monetarist understanding. Aggregate supply curve (AS) is vertical and it is only the money that may affect aggregate demand. If the government increases spending, then the aggregate demand curve (AD) will not shift. This is because the only money that may affect it is the total expenditure. If fiscal policy does not influence demand, the impact of this policy is the decline in investment.

Figure 2.1 A displacement of investment (crowding out) Classical monetarist



Source : Samuelson, 1997;469

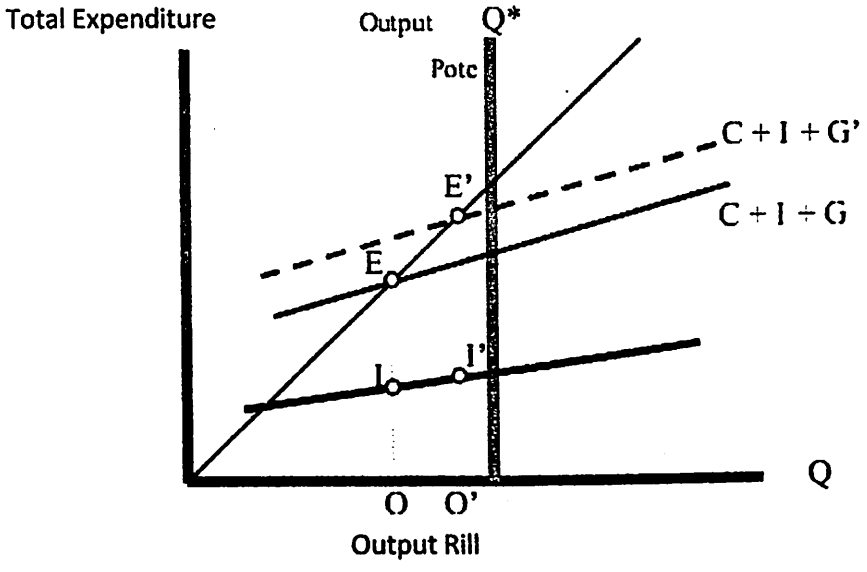
Displacement may occur because the economy is approaching full employment level. In the monetarist case, a rise of government spending without a change in M (money supply) can not shift the AD curve. Thus, investment and other requests that are sensitive to interest rates were eliminated by the increase in G at 100%, because interest rates will rise and then the output will be unchanged. Based on Figure 2.1 it can be viewed simply that the total gross national product does not change with the fiscal measures, so the new equilibrium point (E ') remains at the old equilibrium (E). Thus, it can be said that when fiscal policy stimulates the economy, money demand will increase, and if the money supply is not change, interest rates will be rise, and eventually interest rates will rise sufficiently so that the investment decreased by the amount of increasing in government purchases.

According to the Keynesian view, the economy is assumed to have unemployment, and the sensitivity of investment by the interest rate is low.

Because there is unemployment; the economy is not working at full level employment. Monetary policy was assumed to compensate with good fiscal policy. In this case, the central bank will raise or lower the money supply to keep interest rates unchanged for when output increases. With these assumptions, the policy of fiscal expansion is considered not to affect interest rates, and the policy can increase output and income. In conjunction with private investment, Keynesians thought that there was a positive impact from the expansion of the investment policy that is by the positive expectations of the investors. Positive expectation includes increased quality and quantity of public goods that can be suggested in the smooth economic activities. In the end, this view concludes that fiscal expansion will have positive influence on investment in other words; the investment will be pushed into (crowding in).

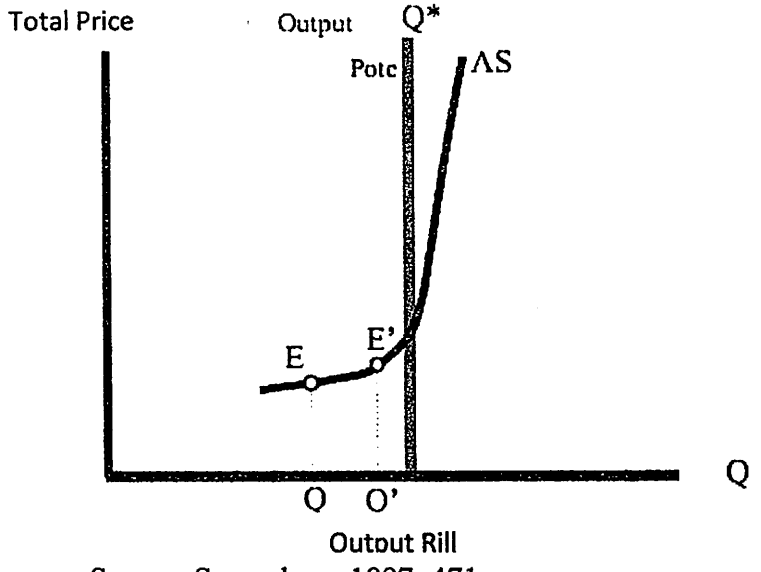
Figure 2.2 Crowding in (keynessian)

a. Behind AD curve



Source: Samuelson, 1997 :471

b.Analysis AD-AS



Source: Samuelson, 1997 :471

In Figure 2.2a can be seen that at the time of fiscal policy to increase spending from G to G ', the deficit structural will increase, spending will be shifted to line up (C + I + G '). Furthermore, the equilibrium level of output is moved from Q to Q 'and thus output is higher then the investment will be pushed and moved from I to I '.Then, the impact of investments by using analysis pushing AD and AS can be seen in Figure 2.2b. The U.S. curve is described by slope upward to reflect the assumption that the economy can are in a position of equilibrium, with resources not fully used (underemployment). In addition, the AD curve to shift right shows that spending is influenced both by the fiscal policy and monetary policies. Thus will be seen the impact of the expansion fiscal investment.

2.2 Previous Research

This study develops previous research that has been developed by Kustepeli (2005). In addition, this study also adopted several related studies conducted by academics in other countries than Indonesia ALSO, such as Pakistan, Canada, Turkey, Iran, and panel data for 145 countries, 33 countries and LDCs.

a. Yesim Kustepeli (2005)

Research conducted by Kustepeli aims to find out the affectivity of the government's fiscal policy in the context of displacement hypothesis of private investment. Kustepeli built two models with the same dependent variables but one of the independent variables is different. The overall model is that the investment has as a function of GDP, interest rates, and fiscal policy. In the first model, which included fiscal variables, is government expenditure and the second model is the fiscal deficit. The first model reflects the Keynesian thinking, while the second model is a flow-Classical monetarist.

Model (1): RPINV = f (RINTRATE, RINC, RGOVSPN)..... (2.1)

Model (2): RPINV = f (RINTRATE, RINC, RGDEF)..... (2.2)

By using Johansen's co integration tests and VAR, the results of both models showed differences in the context of the displacement of investment. Government spending causes the investment forced entry, while the deficit

encourages investment to come out (crowd out). Meanwhile, as an intermediary variable, the variable interest rate has negative and positive alias national income.

b. Adnan Husain (2009)

Adnan Hussain, et al. (2009) studied the problem of displacement of private investment by fiscal policy which is in this case the government expenditure, with a case study in Pakistan. By using co integration and the ECM approach, the results of these studies found that non-government development expenditures such as debt service and military defense are a negative effect on private investment in the long run, while spending on infrastructure, health, education and social welfare will be able to encourage private investment to enter.

In Adnan Hussain, et al. (2009) several studies are also described related to the problem of displacement of private investment, such as Majumdar (2007), and Kye-sik Lee (1987). Majumdar takes a case study of Bangladesh's economy to analyze the investment function. The variables used to describe the function of investment in research are the public debt, GDP, and interest rates. By using co integration and the ECM approach, the most basic research is strengthening the hypothesis of displacement outward investment (crowding out).

Meanwhile, Kye-sik Lee studied a similar problem to the case of South Korea. Results of the research found that fiscal policy has a positive influence on economic stabilization. Furthermore, the research also shows that debt financing through the tax will encourage investment to enter.

c. Boatai Wang (2004)

Wang Boatai finds results for Canada's economy, where government spending on health and education has a positive impact while the infrastructure and debt repayment are negative impacts on private investment. In this analysis the method of estimation is co integration and ECM tests.

d. Berument and Burak Dogan (2002)

Berument & Burak Dogan analyzes the asymmetric effects of government spending, either contraction or expansion on the economy of Turkey. The data used are quarterly data from 1987: I to 2001: I. Empirical results found show that consumption and private investment declined at the time of increased government spending (expansive).

e. Haryo Kuncoro (2000)

Research by Haryo Kuncoro tries to observe the expansionary fiscal policy's impact on economic growth in Indonesia through the private sector's responsiveness of economic activity for the period of 1969-1996. The analysis is based on the goods market approach by using the Almost Ideal Demand System (AIDS). The result is that the policy of fiscal expansion, which is on the increase in spending development, did not result in crowding out of domestic goods market. Insistence of development expenditure only occurs partially on the private investment expenditure component. Crowding out does not occur on private

consumption. Overall, the budget remained on expansionary policy will increase private sector spending on goods market in which the positive response with such national output is not declining.

f. Yeganeh Mousavi Jahromi and Paragraph Zayer (2008)

The aim of the research is to analyze the effect of budget deficits on private consumption and investment in Iran (1942-1984). This study used the ARDL approach (autoregressive distributed lag) for the analysis of co integration between variables. The findings indicate that while the budget deficit had a positive effect on private consumption, there was no long-term relationship between variables. In addition, the study found that there is long-term relationship between the budget deficits by private investment. These relationships show that the budget deficit negatively affects private investment.

g. Davide Furceri and Ricardo M. Sousa (2009)

The purpose of this study was to analyze the influence of government expenditure to the private sector to find out whether the phenomenon occurred in crowding out or crowding. The study uses panel data from 145 countries from 1960 to 2007. The model is constructed by analyzing the relationship between private consumption growth and changes in government expenditure over GDP ratio, and one other model that analyzes the relationship of private investment growth of government spending over GDP ratio. The models possess the same model specification with the one used by Romer and Romer (2007) and Furceri and Karras (2009) which is used to calculate the effect of tax changes on

economic activity. To avoid errors in the specification of the model then added a control variable, i.e. the budget deficit as a ratio of GDP. The results of this study indicate that government spending could result in crowding out in the private sector, be it consumption or investment. Habib Ahmed and Stephen M. Miller (1999)

The purpose of this study was to evaluate the effect of each component of government expenditure on investment using fixed and random-effects methods. By applying the budgetary constraints, this study also examines the effect of government financing by taxes and government spending with debt financing. The samples taken are as many as 39 countries, both developing countries and developed countries. The results of the analysis show that in general, government spending financed by taxes would be more urgent than outward investment expenditures financed with debt. Separately, government spending on social security and welfare will reduce investment, while expenditure on transport and communication will do more investments.

h. Niels Hermes and Robert Lensink (2001)

This research takes a case study in 33 LDC countries (Less Developed Countries) by year observations from 1970 to 1998. The purpose of this study was to analyze the effect of fiscal policy on private investment. By using panel data, all equations are estimated using GLS (Generalized Least Square) to avoid the problem of heteroscedasticity. In addition, all equations are also estimated by Fixed Effects Method. Data analysis can be divided into two with one set of

models that focus on linear relationships and other models are non-linear. Each set of the models is divided into three regression equations with different fiscal policy variables for each equation. Variable is the total government expenditure and revenue, government expenditure specified for each type, and government revenues are also specified for each source. The findings obtained are that with detailed expenditure and government revenue per type will produce a different effect on investment.

In addition, the relationship between fiscal variables specific to the investment is non-linear. In particular, capital spending and spending for defense positively effect private investment.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Variables and Operational Definition of Variables

The variables in this study consist of one dependent variable and four independent variables. The dependent variable is investment. Meanwhile, the independent variables include government expenditure, budget deficit, interest rates, as well as national income. Here is the operational definition per variable:

a. Investment (I)

Investment is the gross fixed capital formation for one year. Capital formation includes land improvements (fences, ditches, drains, etc.); plant, machinery, and equipment purchases, and construction of roads, railways,, including schools, offices, hospitals, private residential housing, commercial and industrial buildings. According to the 1993 SNA, net acquisitions of valuables are also considered as capital formation. Data are in constant values with the base year 2000, in rupiah, and sourced from the World Data Bank.

b. Government Expenditure (RGE)

Government Expenditure is the real value of the total number of realization government spending during the fiscal year, which includes central government spending and transfers to the regions in accordance with APBN. Due to fiscal year state budget with the difference before and after 2000, the data used is data that has been through the process of data interpolation. The real value obtained by dividing the total government expenditure deflator. The amount of

this expenditure is denominated in rupiah and sourced from the Finance & Budget Memorandum.

b.Budget Deficit (RDF)

Budget Deficit is the operational deficit, the real value of the difference between total revenue (excluding revenue debt) and total government expenditure (excluding repayment of principal debt) during a fiscal year in accordance with the state budget. The real value is obtained by dividing the total nominal budget deficit with the deflator. The amount of this expenditure is denominated in rupiah and sourced from the Finance & Budget Memorandum.

c. Interest rate (RIR)

Interest Rate is an interest rate adjusted for inflation as measured by the GDP deflator. Data expressed in percentages and sourced from the World Data Bank.

d. National Income (GDP)

National Income is the Gross Domestic Product which is the sum of gross value added by all resident producers in the economy plus product taxes and less subsidies not included in the value of the product. It is calculated without any deduction for depreciation of fabricated assets or for depletion and degradation of natural resources. Data expressed in rupiah, with base year 2000, and sourced from the World Data Bank.

3.2 Types and Sources of Data

Data to be processed is quantitative data and is a secondary data. Secondary data is data obtained indirectly, in this case is through literature study.

Secondary data was obtained from the Finance and Budget Memorandum issued by the Ministry of Finance, and also from the World Data Bank.

3.3 Analysis Method

3.3.1 Research Model Specifications

This study developed a research Kustepeli (2005). Therefore, the model is the econometric model with model specifications as defined by Kustepeli (2005). Model specification is by comparing the two models as follows:

$I = f(RGE, RIR, GDP)$ .....Model I

$I = f(RDF, RIR, GDP)$.....Model II

In econometric this model can be written as:

$I = \beta_0 + \beta_1 (RGE) + \beta_2 (RIR) + \beta_3 (GDP) + e$..... (3.1)

$I = \beta_0 + \beta_1 (RDF) + \beta_2 (RIR) + \beta_3 (GDP) + e$..... (3.2)

Where:

I = Investment

RIR = Interest rate

GDP = national income

RGE = Government Expenditure

RDF = budget deficit

The first refers to the Keynesian model of thinking, while the second model refers to the Monetarist thought-Classical.

3.3.2 Classical Test Assumptions

As making estimations of linear equations using the method OLS, the assumptions of OLS must be met. If the assumptions are not met, then it is not possible to be able to generate parameter values, which are BLUE (Best Linear Unbiased Estimator).

BLUE assumptions (Gujarati, 2003:153) are:

1. Expected value of the average error is 0 (zero).
2. Fixed variance (homoscedastisity).
3. There is no autocorrelation in the disturbances.
4. The variables that explain the non-stochastic or if the stochastic is distributed independently of the disturbances ui.
5. There is no multi-collinearity among the variables that explains it.
6. u is normally distributed with mean and variance given by the assumptions 1 and 2.

To determine whether the model meets the assumptions BLUE or not, some testing of multicolinearitz needs to be done, autocorrelation test, heteroscedasticity test and also test for normality to ensure that the data were normally distributed.

3.3.2.1 Multicolinearity Test

Multicolinearity or colinearity is one of multiple violations of OLS assumptions where there are significant linear relationships between some or all independent variables from the regression model (Gujarati, 2003). Due to the

linear relationship in a regression equation the coefficient value is difficult to determine, or even if in a regression equation there is perfect multicolinearity the coefficient value can not be determined and the standard error becomes infinite.

There are some impacts caused by multicolinearity, among others:

a. Varian regression coefficient becomes large.
b. Large variant will cause problems, such as width confidence interval (confidence interval) and standard error are large so that the greater possibility of the estimated β is not significant.
c. Many variables are not significant, but the coefficient of determination (R^2) remains high and significant F test.
d. Sometimes the figures obtained regression coefficient estimates will have a value that does not comply with the substances, or conditions allegedly so they mislead the interpretation.

Therefore to determine whether there is multicolinearity or not is very important, here are some ways to detect the existence of multicolinearity in a model.

a. By looking at the inflation factor (VIF) in the regression model
b. By comparing the value of individual determination coefficient (r2) with simultaneous determination of values (R2)
c. By looking at the value and condition eigenvalue Index. In this discussion multicolinearity will be tested by looking at the inflation factor (VIF) in the regression model. According Santoso (2001), in general, if VIF values

are greater than 5, then these variables have multicolinearity problems with other free variables.

3.3.2.2 Heteroscedasticity Test

The second problem of a regression equation is heteroscedasticity. Heteroscedasticity is a condition where the value of the variance of the error terms is not constant, so the regression equation will lead to become even less efficient, in a sense becomes smaller, larger, and misleading. One way to test the presence or absence of the heteroscedasticity problem in an equation is to use White's Heteroscedasticity Test, no cross terms. Hypotheses used in testing are:

H_0: $\beta_1 = 0$, there is no heteroscedasticity

H_1 : $\beta_1 \neq 0$, there is heteroscedasticity

The method to detect the existence of heteroscedasticity can be used in various ways such as using the plot chart. In addition, the test can also be done by formal methods, namely: White Test Park Test, Glejser Test, Spearman's rank correlation test, Goldfed-Quandt Test, and others (Gujarati, 2003). In this discussion the heteroscedasticity test will be conducted using Spearman's rho test, by correlating residuals (unstandardized residual) with each independent variable. If a significant correlation is less than 0.05 it means, there is heteroscedasticity in the model.

3.3.2.3 Autocorrelation Test

Autocorrelation will arise because of the time sequence of observations related to one another (Hanke & Reitsch, in Mudrajad Kuncoro, 2004).

Autocorrelation Problems can arise because the residual is not free from one observation to another. In other words, this problem is often found in time series data.

As a result of autocorrelation, OLS can not generate value estimates BLUE. Linear parameter results remain unbiased but inefficient (the variance is under the estimated one). Value of standard error estimates generated by OLS will be smaller than the actual standard error, so that tends to reject H0. There are several ways to detect the presence or absence of autocorrelation, the Durbin Watson test, Lagrange Multiplier Test or the Breusch-Godfrey, Statistics of Q or the Box- Pierce and Ljung Box. In this study, the test used to confirm the presence or absence of autocorrelation or correlation is the Durbin Watson test. Prerequisites that must be filled with the test using the Durbin-Watson test (DW test) are:

a. If d is smaller than dl or greater than (4-du), the null hypothesis was rejected, which means there is autocorrelation.
b. If d lies between du and (4-du), then the null hypothesis is accepted, which means there is no autocorrelation.
c. If d lies between dl and du or between (4-du) and (4-dl), it does not produce definitive conclusions.

The du and dl value can be obtained from the Durbin Watson statistic tables that depend on the number of observations and many explanative variables.

3.3.3 Normality Test

To meet the assumption that the data must be normally distributed, the normality test is necessary. This test can be done with the histogram and also the Jarque-Bera test. Normality test can be performed per variable and can be also several variables at once by using the residuals from the regression that has been done. Residual value is used for testing normality.

If the JB coefficient is smaller than 2, then the data are normally distributed or by looking at the probability, if it is greater than the level of significance of the data then they are normally distributed.

3.3.4 Statistics Test

3.3.4.1 T test

T test or partial test used to see the significance of each regression coefficient. T test can be performed in one direction or two directions. In this study, the t test conducted was a one-way t test. Null hypothesis (H0) for each variable is as follows:

a. RGE H0 : = 0 where RGE not influence I. Ha : > 0

b. RDF H0 : = 0 where RDF not influence I. Ha : < 0,

impact RDF due to I is negative.

c. RIR H0 : = 0 ; = 0 where RIR not influence I. Ha : <0 ; < 0,

impact RIR due to I is negative.

d. GDP H0 : = 0 ; = 0 where GDP not influence I. Ha : > 0 ; > 0 ,

impact GDP due to I is positive.

Rejection region is determined by comparing the value of t statistic with value t-table with degrees of freedom n-1 and by comparing the p-value of the critical value (α). Value of t statistics and p-value can be seen from the results of computerized recourse through the software SPSS 16. If the value of t statistic is greater than value in t tables, and p-value is smaller than the critical value (α), then H0 is rejected and Ha is accepted.

3.3.4.2 F Test

F-statistic Test is testing the overall model to test the accuracy of the model. Testing this model involves the entire value of coefficient together with the distribution F. Null hypothesis (H0: $\beta 1 = \beta 2 = \beta i = 0$), means that all coefficients are different from zero, whereas the alternative hypothesis (Ha: $\beta 1 \neq \beta 2 \neq \beta i \neq 0$) means that not all coefficients are different from zero. Rejection region is determined by comparing the value of the F-statistic with the F-table with degrees of freedom k-2 and n-k +1 or with comparing value p-value $<\alpha$, the null hypothesis (H0: $\beta 1 = \beta 2 = \beta i = 0$) is rejected with the alternative hypothesis it is accepted, meaning that not all coefficients equal to zero.

3.3.4.3 R Square

R-squared value (R 2) statistic measures the success rate of regression models used in predicting the value of the dependent variable. Or in other words, R^2 indicates how much the percentage of independent variables used in the model can explain the dependent variable. If R^2 equals to 0 it means that there is no impact in the independent variable model on the dependent variable, otherwise if

the value of R^2 over take 1, so it means the independent variable used in the model fully influence the dependent variable. So we can say this model is perfect.

4.1.2 Government Expenditure Growth

Based on the classification of government expenditures by function, expenditures are divided into expenditures for public service functions, and also for economic functions. In general, increased government spending was dominated by the public service function. The Budget of the public service functions includes: public service programs conducted by the state ministries and agencies, providing various kinds of subsidies, debt interest payments, administrative restructuring program population, community empowerment, local development, as well as science and technology research and development programs.

Meanwhile, spending on economic functions allocated to support efforts to accelerate economic growth quality by strengthening economic resilience that is supported by the development of transportation, agriculture, infrastructure, and energy. Although showing improvement, the amount of budget allocated for this function is not greater than the public service function. Government expenditures are also classified by the type of spending. Based on the type of spending, the development of central government spending is still dominated by expenditures that are required (non-discretionary expenditure) rather than expenses that are non-binding. Expenditures that are required include: personnel expenditures, debt interest payments, subsidies, and some expenditure items. Expenditures that do not bind are the following: capital expenditure, social assistance, some expenditure items and other expenditures.

According to Rostow and RA. Musgrave, the growth of government spending are in line with the economic development stage of a country. It was also experienced by Indonesia where total government expenditure continued to increase almost throughout the year. Government expenditures increased rapidly 23.64% in 1997. Increased expenditure was used to stabilize the economy during the crisis. The average growth of government expenditure was 7.03% during this research. (see Table 4.2)

Tabel 4.2 The Growth of Government Expenditure (Billion)

Period 1995 – 2009

Years	Government Expenditure	Government Expenditure Growth
1995	1692.26	0
1996	1809.07	6.90%
1997	2236.79	23.64%
1998	2303.80	3.00%
1999	2759.68	19.79%
2000	2825.86	2.40%
2001	2988.63	5.76%
2002	2662.15	-10.92%
2003	2948.78	10.77%
2004	3158.24	7.10%
2005	3202.07	1.39%
2006	3867.13	20.77%
2007	3739.93	-3.29%
2008	4297.90	14.92%
2009	4131.95	-3.86%
Average		7.03%

Source : World Bank

Higher development of world crude oil prices in 2004 also has greatly affected Government expenditures. Government spending exceeded the target and even in larger quantities than the increase in state revenue.

Based on the components that affect it, increasing in state spending was mainly to soar fuel subsidies in particular, in addition to the implementation of certain policies such expenditure side include financing for the implementation of the 2004 election, the national movement of forest and land rehabilitation, as well as provision of salaries for 13 month to government officials and retirees. Like in previous years, government spending in 2005 to 2009 was also dominated by regular expenses of fuel subsidy and expenditure side policies to respond to natural disasters that hit the country.

4.1.3 Development of Budget Deficit

Budget deficit has occurred since the beginning of the Old Order regime until today. Although using the principle of a balanced budget, actual budget is always in deficit. Deficit financing can be done through printing money or monetization, foreign debt and domestic debt. In the state budget, deficit financing is divided into two headings namely domestic financing and foreign financing. Domestic financing can be sourced from the banking and non-banking. Financing can be done through the banking sector to the central bank and commercial banks. Budget deficits through the banking sector can be traced through the monetary authority balance sheet and consolidated balance sheets of commercial banks in the form of changes in net claims central government.

Table 4. 3 The Growth of Real Budget Deficit (Billion)

Period 1995-2009

Years	Real Budget Deficit	Real Budget Deficit Growth
1995	-183.14	0
1996	-277.54	51.55%
1997	-563.03	102.86%
1998	-1575.5	179.83%
1999	-531.2	-66.28%
2000	-161	-69.69%
2001	-354.33	120.08%
2002	-194.99	-44.97%
2003	-274.91	40.99%
2004	-215.74	-21.52%
2005	-78.25	-63.73%
2006	-221.26	182.76%
2007	-289.79	30.97%
2008	-252.6	-12.83%
2009	-199.11	-21.18%
Average		**29.20%**

Source : World Bank

From the table above we can see that budget deficit increases sharply in years 1997,1998 due to economic crisis, and also in 2006 increases by 182.7% because the government must stimulate the economy which had slowed in 2005 due to the Tsunami in Aceh.. The growth of deficit seems to go down in 2009 by about -21.18%, where the average of deficit growth is 29.20%. This is mainly caused by some components of state revenue that is expected to decline due to global crisis but which actually showed an increase, thus exceeding its target, while on the spending, some expenditure items can not be absorbed entirely as budgeted.

CHAPTER V

RESULTS AND DISCUSSION

Based on the available data (Gross Fixed Capital Formation, Real Budget Deficit, Government Expenditure, Real Interest Rate, and GDP), this chapter will discuss about analyzing the results both economically and econometrics to determine whether the dependent variable used in the model is influenced by these variables in the previous period or not.

Economic analysis will be explained about the meaning of parameters obtained from the regression that includes the parameters investigated conformity with the hypotheses that have been set according to economic theory, and also it will be seen how the independent variable changes against to dependent variable. During the statistical analysis it will be seen how far the validity of the model used in the study is through the statistical testing of the model.

5.1 Data Analysis

5.1.1 Classical Test Assumptions

Classic assumption test was applied to each equation used in this study. There are four models testing classical assumptions for the model to ensure the variable has a BLUE (Best Linear Unbiased Estimator) parameter. Overall, the classic assumption test results show that all variables in both model complete the requirements for BLUE.

5.1.1.1 Multicolinearity

Tests conducted to determine the presence or absence of multicolinearity in this study is by looking the inflation factor (VIF) in the regression. According to Santoso (2001), if the VIF is greater than 5, then these variables have multicolinearity problems with the dependent variable. Here the multicolinearity test results are based on the VIF in model 1 and also model 2.

Table 5.1 Multicolinearity (Model 1)

Coefficients[a]

Model	Colenearity Statistic	
	Tolerance	VIF
(constant)	0.392	2.549
Government Expenditure	0.877	1.140
Real Interest Rate	0.419	2.388
GDP		

Source: Regression Result

Table 5.2 Multicolinearity (Model 2)

Coefficients[a]

Model	Colenearity Statistic	
	Tolerance	VIF
(constant)	0.702	1.424
Real Budget Deficit	0.804	1.244
Real Interest Rate	0.839	1.192
GDP		

Source: Regression Result

Based on the results of the test summary multicolinearity with the inflation factor (VIF) after performing a regression of each independent variable, either model 1 or model 2 value inflation factor (VIF) of all variables is less than 5, as

we see above the VIP value in model 1 to Government Expenditure is 2.549, 1.140 for variable interest rate and Real GDP is 2.388. While in model 2, the value of VIP to the budget deficit is 1.424, 1.244 real into interest rate and 1.192 to GDP variable. So it can be ascertained that there is no multicolinearity in the models.

5.1.1.2 Heteroscedasticity

The Heteroscedasticity test is used to determine the presence or absence of inequality and residual variance in regression models. In this discussion heteroscedasticity test will be conducted using Spearman's rho test, by correlating residuals (unstandardized residual) with each independent variable. If the significance of correlation is less than 0.05, it means that the model is free from heteroscedàsticitical problems.

Based on the results of the heteroscedasticity test summary at 0.01 significancz level (2-tailed) we can see that all independent variables in both the model 1 and model 2 have a significant value (2-tailed) higher than 0.05. In model 1 correlation between Unstandardized Residual to the Government Expenditure, interest rate and GDP is the 0.860, 0.639, and 0.612. While in model 2 Unstandardized Residual correlation value with the real deficit, interest rate, and GDP is the 0.742, 0.524, and 0.732. Therefore, it can be sure that the regression model in model 1 and model 2 are free from heteroscedasticity problems. Here are the heteroscedasticity test results.

Table 5.3 Heteroskedasticity (Model 1)

Correlations

			Unstandardized Residual	Government Expenditure	Interest Rate	GDP
Spearmans's Rho	Unstandardized Residual	Corelation Coefficient	1.000	-0.004	-0.196	0.082
		Sig (2-tailed)		**0.990**	**0.483**	**0.771**
		N	15	15	15	15

Source : Regression Result
*correlation is significant at the 0.01 level (2-tailed)

Table 5.4 Heteroscedasticity (Model 2)

Correlations

			Unstandardized Residual	Budget Deficit	Interest Rate	GDP
Spearmans's Rho	Unstandardized Residual	Corelation Coefficient	1.000	0.093	-0.179	0.096
		Sig (2-tailed)		**0.742**	**0.524**	**0.732**
		N	15	15	15	15

Source : Regression Result
*correlation is significant at the 0.01 level (2-tailed)

5.1.1.3 Autocorrelation

The Co integration test is conducted to determine whether there is a balance in the long term between the independent and dependent variables in the model. Null hypothesis (H0) in the autocorrelation test is that the equation does not contain autocorrelation. In other words, if the variables in the model integrate then there is a relationship in the long term. Prerequisites that must be filled in the test method using Durbin-Watson test (DW test) with the following conditions:

a. d is smaller than dl or greater than (4-du), the null hypothesis was rejected, which means there is autocorrelation.

b. If d lies between du and (4-du), then the null hypothesis is accepted, which means there is no autocorrelation.

c. If d lies between dl and du or between (4-du) and (4-dl), it does not produce definitive conclusions. Du and dl value can be obtained from the Durbin Watson statistic tables that depend on the number of observations and many explanatory variables. Below are the results of regression for autocorrelation test.

Table 5.5 Autocorrelation (Model 1)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.917[a]	.841	.798	.04549	**1.653**

Source : Regression Result

Table 5.6 Autocoleration (Model 2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.808[a]	.652	.558	.06735\	**.592**

Source : Regression Result

From the above output it can be seen that the DW value is derived from regression models; in model 1 it is 1.653, while the table with a significant DW 0.01 and the amount of data (n) = 15 and k = 3 then the obtained value of 0.95 and du dl at 1.46 because the value of DW (1.653) is in the area between du and (4 - du), it can be concluded that model 1 is free from autocorrelation .

While in model 2 DW value is 0.592, whereas from tables 0.01 and DW with a significant amount of data (n) = 15 and k = 3 we can see that the obtained value of 0.95 dl and du is 1.46 and because of the value of DW (0.592) is within the range dl and du, then the test Durbin Watson is doubtable.

5.1.2 Normality Test

To meet the assumption that the data must be normally distributed, the normality test is necessary. This test can be done with the histogram and also with the Jarque-Bera test. The normality test can be performed per variable and can also use several variables at once by using the residuals from the regression that has been done. Residual value is the value used for testing normality.

If JB coefficient is smaller than 2, then the data is distributed normally or by looking at the probability, if it is greater than the level of significance of the data then it is normally distributed.

Table 5.7 Normality Test (Model 1)

Descriptive Statistic

	Skewness		Kurtosis	
	Statistic	**Stand.Error**	**Statistic**	**Stand.Error**
Unstandardized Residual	0.083	0.58	-1.026	1.121

Source : Regression Result

Table 5.8 Normality Test (Model 2)

Descriptive Statistic

	Skewness		Kurtosis	
	Statistic	**Stand.Error**	**Statistic**	**Stand.Error**
Unstandardized Residual	0.464	0.58	-0.368	1.121

Source : Regression Result

From the output above we can see from model 1, that the statistical skewness value is 0.83 and skewness standard error is 0.580, so that the ratio of skewness became 1.43 (0.83/0.580), beside it kurtosis value is -1.026 and their standard error is 01.121, so that the kurtosis ratio is -0.91 (-1.026/1.121). In model 2, the statistical skewness value is 0.451 and the skewness standard error is 0.580, so that the ratio of skewness became 0.80 (0.464/0.580), beside it kurtosis value is -0.838 and their standard error is 01.121, so that the kurtosis ratio is -0.33 (-0.68/1.121). Due to the fact that the value of skewness and kurtoris are between -2 and 2, we can conclude that both models are distributed normally.

5.1.3 Statistic Test

5.1.3.1 T Test

T test is used to see the significances of each variables of regression. By conducting this test we know whether this independent variable influences the dependent variable. T test can be performed in one direction or two directions. In this research the conducted t tests are one-way t tests.

Table 5.9 T Test (Model 1)

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	-2.168	1.011	-2.145	.055
Government Expenditure	-.615	.170	-3.622	.004
Real Interest Rate	-.019	.018	-1.047	.317
GDP	1.588	.223	7.115	.000

Source: Regression result
Dependent Variable: Investment

Table 5.10 T Test (Model 2)

Coefficients[a]

Model	Unstandardized Coefficients		t	Sig
	B	Std.Error		
(constant)	-0.497	1.532	-0.324	0.752
Real Budget Deficit	-0.002	0.073	-0.025	0.981
Real Interest ra\te	0.004	0.028	0.153	0.881
GDP	0.974	0.233	4.173	0.002

source: Regression Result
*sig at confidence interval 95%

The critical values used are α = 5%, If T test is higher than T table, it means that the dependent variable is significant in statistic, so we reject Ho and receive Ha.

From the table above we can see the value of the T in model 1 for government expenditure is -3.622, interest rate is -1.047 and GDP value is 1.320, on the other hand in model 2 the value of t test for the real deficit, real interest

rate, and GDP are -0.25, 0.153, 4.713, and the value of T table at $\alpha = 5$ % is **2.201**. So we can conclude that from both models the government expenditure and GDP are significant in statistic, but the interest rate and the government budget deficit was not significant.

5.1.3.2 F Test

Test F-statistic is testing the overall model for test the accuracy of the model. Testing this model involves the entire value of coefficient together with the distribution of F. If F statistic is higher than F table, it can be concluded to reject Ho and accept Ha. It means that the independent variable influences the dependent variable in statistic. After performing regression, we can find the F value for each equation. For more details, here is a summary of the results of the F test.

Table 5.11 F Test (Model 1)

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.121	3	.040	**19.458**	.000[a]
	Residual	.023	11	.002		
	Total	.144	14			

source: Regression Result

a. Predictors: (Constant), GDP, Real Interest Rate, Government Expenditure

b. Dependent Variable: Investment

Table 5.12 F Test (Model 2)

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.094	3	.031	**6.881**	.007[a]
	Residual	.050	11	.005		
	Total	.144	14			

source: Regression Result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

From the output above, we can see that the F test for model 1 is **19.458** and for model 2 is **6.881**. This F test will be comparable to T table with degrees of freedom (n-k), (k-1) at $\alpha = 5$ %, where n is the total sample, and k is the amount of the variables. The value of the F table for both models is 3.490. From this result we can conclude that the independent variable influence the dependent variable in statistic.

5.1.3.3 R-*squared* (R^2)

R-squared value (R^2) statistic measures the success rate of regression models used in predicting the value of the dependent variable. Or in other words, R2 indicates how much the percentage of independent variables used in the model can explain the dependent variable. Here are the Results of R square regression for both models.

Table 5.13 R Square (Model 1)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.917[a]	.841	.798	.04549	1.653

source: Regression Result

a. Predictors: (Constant), GDP, Real Interest Rate, Government Expenditure

b. Dependent Variable: Investment

From the output above, we can see that the value of R Square for model 1 is 0.84 and in model 2 it is 0.65. It means that the result of regression shows that the independent variable in both equations strongly influence the dependent variable. For the t equation 84% the investment is influenced by government expenditure, real interest rate and GDP and 16% investment in Indonesia are influenced by other factors outside the model

Table 5.14 R Square (Model 2)

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.808[a]	.652	.558	.06735	.592

source: Regression Result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

From the output in the second model above 65.2% investment is influenced by real budget deficit, and real interest rate and GDP, and 34.6% are influenced by other factors outside of the model.

5.2 Interpretation of Data

5.2.1 The Impact of Government Expenditure

The impact of government expenditure in this model is described by the Keynesian model (Model 1). In this model, theoretically increasing government expenditure will make crowding in to investment, but the result showed that the coefficient of government expenditure is negative. It means that increasing government expenditure will reduce the investment. Look the result below :

Model 1

$$I = \beta_0 + \beta_1 (RGE) + \beta_2 (RIR) + \beta_3 (GDP) + e \quad (5.1)$$

$$I = -2.168 - 0.615(RGE) - 0.019(RIR) + 1.588GDP)$$

$$(-2.145) \quad (-3.622) \quad (-1.047) \quad (7.115)$$

From the equation above we can see that the coefficient of Government expenditure is – 0.615, which means that increasing government expenditure of I billion (cateris paribus) will reduce Investment to about Rp 0.615 billion.

It was found that the empirical results are different with the Kustapeli (2005). Nevertheless, there are others empirical results that support this result where increasing government expenditure will reduce investment, they are: Berument and Borak Dogan (2002) where they analyze the asymmetric effects of government spending either in the case of contraction or expansion on the economy of Turkey. The data used are quarterly data from 1987 to 2001. Empirical results found that consumption and private investment declined at the time of increased government spending (expansive). The other researchers are Devide Furceri and Ricardo M. Sousa (2009) they analyze the influence of

government expenditure on the private sector to find out whether the phenomenon occurred in crowding out or crowding in. The study uses panel data from 145 countries from 1960 to 2007 and the results of this study indicate that government spending could result in crowding out in the private sector.

In theory, increasing government expenditure will increase aggregate demand and then it will attract the investor to produce more, and related with the increasing the amount of this production, we need more investment. If we think like that, it is likely. The most extreme probability is that the government expenditure does not increase the aggregate demand. However, the reason that aggregate demand is rising not because of the increased government spending does not seem to be evident.

Other thoughts are that there are positive expectations from the private sector to government spending, by increased government spending and it is expected to fulfill the public goods, it is guaranteed. But in reality, the problem of poor infrastructure pose disincentives to investment in Indonesia (Tambunan,2006). As already mentioned in the section of growth of government spending, more government spending is dominated by expenditure on consumption, while the development expenditure or capital expenditure is not as big expenditure for consumption. So, in addition to increased government spending on capital expenditure which is already limited, the expenditure can not give optimal results to encourage investment. Ultimately, the intention of the prospective investors is to invest their capital constrained by a lack of supportive infrastructure.

This impact only occur in the long term where the investors' behavior to decide expectations require a relatively long time. Changes in government expenditure will be observed until a certain time and therefore negatively affect, it indicates that the private sector assume that government spending does not have a significant impact on improving the investment climate – in this case improvement of public goods - so that private the sector's confidence against the government reduced.

5.2.2 The Impact of Budget Deficit

We can see the impact of budget deficit in the monetarism model or in the second model. The beginning of the hypothesis is that deficit will have negative impact on investment. The result from regression before showed that budget deficit has negative but not significant impact in statistic; it means that budget deficit statically did not influence the investment. If this deficit is in the influence, and the coefficient of real deficit is – 0.002 so increasing the deficit by 1 billion(cateris paribus) will reduce the investment -0.002 billion. Because of the fact that this variable is not significant in statistic, crowding out can not occur. Look the equation bellow:

$$I = \beta_0 + \beta_1 (RBD) + \beta_2 (RIR) + \beta_3 (GDP) + e \quad (5.2)$$

$$I = \underset{(-0.324)}{0\text{-}0.497} \quad \underset{(-0.025)}{-0.002(RBD)} \quad \underset{(0.153)}{+0.004\,(RIR)} \quad \underset{(4.173)}{+0.974\,(GDP)}$$

This result is the same with Kustapeli's (2005) research. The study from Dr. Emad. MA said that there are some possibilites why the budget deficit doesn't show crowding out. The reason are :

a. Government spending is productive.
b. Domestic and international money market are mutually integrated so that entrepreneurs and governments may borrow loans from both domestic money or from international financial markets.

The possibility of productive government spending can not be the reason why the deficit did not result in crowding out. The results of the analysis in this study show that government spending would negatively affect the investment. This means that the private sector did not expect that government spending is productive. As discussed earlier, government spending did not provide tangible results in an effort to boost the investment climate.

Conditions of Indonesia's current money market have grown rapidly and have been in integration with global markets (Syahril Sabirin, 1999). M.J. Maknun (2008) in his research on the integration of financial markets of ASEAN countries and Hong Kong proves that financial markets in these countries are in integration in the long term. With the mutual integration of domestic and global financial markets, entrepreneurs and governments can apply for loans from both domestic money markets or from international financial markets. Therefore, the balance of the loan funds will still be achieved because it can be met not only from the domestic money market but also from the global financial markets.

In addition, the possibility of investing does not cause crowding out by the budget deficit due to the efforts of the banking sector while maintaining deposit rates to remain stable and attract customers to keep their deposit money. So that shocks to shift the supply of loanable funds can be minimized.

5.2.3 The Impact of Control Variable

5.2.3.1 Interest rate

The results show that interest rate in model 1 was negative and in model 2 it was a positive impact on Investment, but not significant. Based on the Classical model the increased interest rate causes investment to increase also. Various literatures and the majority of previous studies that examined the relationship between investment and the interest rate explained that the higher the rate is, the more the investment will decline. In addition, interest rates are also regarded as a crucial motivating factor in influencing investor behavior. But there are also some researchers who found that the interest rate did not influence investment, they are Kulkarni and Erickson (1995) on Pritha Mitra (2006), Erden and Holcombe(2006) on Khan and Gill (2009).

In the case of Indonesia, a condition in which the relative rates are less affected, investment can indeed occur. The reason is that there are still many other factors that need more consideration to invest in Indonesia. Quoted from www.matanews.com, Deputy Planning Investment Coordinating Board (BKPM), Lucky Eko Wuryanto, said low level of investment in Indonesia is not a problem of high lending rates, but rather to the implementation of the law and still there are some other factors which can affect investment. JETRO survey about the factors

inhibiting the growth of business investment data in a number of countries in Asia, the biggest factor inhibiting investment in Indonesia is an increasingly expensive labor cost, followed by a taxation system that is difficult and complicated (Tambunan, 2006).

In other words, the reason why the interest rate is not significant is that there are many other factors that inhibit investment growth in Indonesia. So, even though interest rates are at relatively low levels it is not supported by the driving factors of other investments or in other words if the investment climate does not have support, the investment remain unaffected.

5.2.3.2 National Income

Both Keynesian and Classical, national income showed a positive impact on Investment in statistic. In the Keynesian model or in the first model the coefficient for national income or GDP is 1.588, it means that increasing national income by I billion (cateris paribus) will boost the investment about Rp.1.588 billion. In the second model due to classical thinking the coefficient is 0.974, it means that increasing national income (cateris paribus) will boost the investment by around RP. 0.974 billion.

If we compare both models the model based on the Keynesian thinking supports that national income boosts the investment rather than the Classical thinking. Other researchers also found the same result due to positive impact in national income to Investment, they are Kustapelli (2005), Acozta *et al* (2003),and Outtara (2004).

Positive influence of national income also shows that the private sector responds to increased demand from society for the increase in revenue. The response is shown by the increase of the number of production and so in the need of new investment.

5.2.4 Keynesian Model vs. Classical Model

In this analysis, investment according to the Keynesian model (Model 1) is influenced by government Expenditure, interest rate and national income and suppose that other variables are constant (cateris paribus), including consequence of budget deficit because of increasing the government expenditure. Meanwhile in the second model, based on the Classical thinking investment will be influenced by real deficit, interest rate and national income,(cateris paribus).

The results from regression showed that both models strongly influenced the dependent variable. This model has been passed some tests like F test, T test, normality test and assumption classic test. There are negative relationships between government expenditure and real deficit into investment. The coefficient value of government expenditure is -0.16, and the real deficit is -0.002 but real deficits in statistic are not significant. This coefficient showed that increasing government expenditure by I billion rupiah will reduce the investment by Rp0.615 billion, meanwhile increasing budget deficit by 1 billion also reduce investment by Rp0.002 billion. By comparing the amount of probable investment to push out, and because the budget deficit is not significant in statistic, the government expenditure will create crowding out.

Model 1

$$I = -2.168 - 0.615(RGE) - 0.019(RIR) + 1.588GDP)$$

(-2.145) (-3.622) (-1.047) (7.115)

Model 2

$$I = 0\text{-}0.497 - 0.002(RBD) + 0.004\,(RIR) + 0.974\,(GDP)$$

(- 0.324) (-0.025) (0. 153) (4.173)

On the other hand, both Keynesian and Classical, in long run interest rates does not influence the investment. And national income has positive impact. By seeing the coefficient of GDP in model I 0.358 and 0.217 in model 2, national income will boost investment by the assumption of the economic such as in model1.

CHAPTER V1

CONCLUSION

6.1 Conclusion

Based on results of the analysis and interpretation of data , we can conclude that:

a. The average growth of expenditure during 1995 - 2009 is 7.03 %. The highest rate occurred in 1997 about 23.64 % because of the serious crisis that shooked the Indonesian economy.

b. On the other hand the average growth of budget deficit is 29.20%. The growth of this deficit sharply increased in 1997 , where the deficit growth was more than 180% because of the crisis in 1997.

c. In investment side the growth seems to increase beginning in the year 2000 about 16.74%, because the economy began to stabilize again after the crisis, so that investment began to improve. The average investment in Indonesia during this period is 3.99%.

d. Government Expenditure has negative and significant impact on investment. It means that increasing government expenditure makes Investment became lower in Indonesia.

e. Budget deficit has a negative but not significant impact in T test. It means that increasing budget deficit did not make crowding out in Indonesia.

f. Both Keynesian and Classic, national income showed positive impact on Investment in statistic. It means that increasing national Income will also

increase the investment. But for the interest rate the results show that the interest rate has no significant in statistic to investment in both models.

6.2 Suggestions

Based on the results of the analysis and also conclusion, some suggestions from this research are :

a. During the period of research government expenditure are dominated by expenditure in consumption, and make investment decrease. The suggestion based on this research is that government should increase spending on development and capital expenditure.

b. To increasing investment, government should reduce the budget deficit that make investment became lower by increasing the national income.

c. The national income contribute more to Investment during this period of research so the government should increase and keep stable this national income with boosting the investment.

References

Ahmed, Habib dan Stephen M. Miller. 2000. *Crowding-Out and Crowding-In Effects of the Components of Government Expenditure.* University of Connecticut. Access on 15th January 2011

Alani, Emad M.A. Abdullatif. 2006. *Crowding-Out and Crowding-Ineffects Of Government Bonds Market On Private Sector Investment (Japanese Case Study),* Access on 13th January 2011

Fair,and case.2003.Principle of economics.6th edition. New york: Prentice Hall

Faisal Basri. 2002. *Perekonomian Indonesia, Tantangan dan Harapan Bagi Kebangkitan Indonesia.* Jakarta: Erlangga

Furceri, Davide dan M. Ricardo Sousa. 2009. *The Impact of Government Spending on the Private Sector: Crowding-out versus Crowding-in Effects.* Access on 7th February 2011

Gujarati, Damodar N. 2004. *Basic Econometrics.* 4th edition. New York: The McGraw–Hill

Companies Hermes, Niels dan Lensink, Robert. 2001. *Fiscal Policy and Private Investment in Less Developed Countries.* Access on 11th January 2011

Jahromi, Yeganeh Mousavi dan A. Zayer. 2008. *The Effects of Budget Deficits on Private Consumption and Investment in Iran.* Access on 7th February 2011

Khan, Rana Ejaz Ali dan A. R Gill. 2009. *Crowding Out Effect of Public Borrowing: A Case of Pakistan.* Access on 7th February 2011

Kustepeli, Yesim. 2005. *Effectiveness of Fiscal Spending: Crowding out and/or crowding in.* Dokuz Eylul University. Access on 5th January 2011

Looney, Robert E. 1995. *Public Sector Deficits and Private Investment: A Test of the Crowding-out Hypothesis in Pakistan's Manufacturing Industry.* Access on 5th January 2011.

Mankiw, N. Gregory. 2003. Teori Makro Ekonomi. 4th edition. Jakarta: Erlangga

Mudrajad Kuncoro. 2004. *Menanti Reformasi Iklim Investasi/Bisnis Di Indonesia.* Access on 5th January2011

Ouattara, Bazoumana. 2004. *Modelling the Long Run Determinants of Private Investment in Senegal.* Access on 6th January 2011

Priyatno Dwi.2010. Paham analisa Statistik data dengan SPSS.1st edition.Yogyakarta: MediaKom

Tambunan, Tulus. 2006. *Iklim Investasi Di Indonesia: Masalah, Tantangan Dan Potensi.* Access on 5th january 2011.

Samuelson, Paul A. 1997. *Ekonomi, vol I.* Jakarta: Erlangga

Wang, Baotai. 2004. *Effects of Government Expenditure on Private Investment: Canadian Empirical Evidence.* Access on 10th January 2011

APPENDIX 1

RAW DATA (MODEL 1)

YEARS	GFCF (Billion)	GOVERNMENT EXPENDITURE (Billion)	GDP (Billion)	INTEREST RATE (percent)
1995	346857.67	1692.26	1238312	8.34
1996	397201.96	1809.07	1444873	9.52
1997	431234.21	2236.79	1512780	8.21
1998	288891.78	2303.80	1314202	-24.60
1999	236326.62	2759.68	1324599	11.83
2000	275881.10	2825.86	1389769	-1.65
2001	293792.70	2988.63	1440406	3.72
2002	307584.60	2662.15	1505216	12.32
2003	309431.05	2948.78	1577171	10.85
2004	354865.74	3158.24	1756517	5.13
2005	393500.50	3202.07	1750815	-0.25
2006	403719.24	3867.13	1847127	1.66
2007	441614.01	3739.93	1963092	2.32
2008	493222.49	4297.90	2082104	-3.95
2009	543777.80	4131.95	2474008	6.75

Source : World Bank

APPENDIX B

CLASSIK ASUMPTION TEST (MODEL 1)

A. Multicolinearity Test

Variables Entered/Removed [b]

Model	Variables Entered	Variables Removed	Method
1	GDP, Rea Interest Rate, Government Expenditure [a]	.	Enter

Source: Regression result

a. All requested variables entered.

b. Dependent Variable: Investment

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.917[a]	.841	.798	.04549

Source: Regression result

a. Predictors: (Constant), GDP, Rea interest Rate, Government Expenditure

b. Dependent Variable: Investment

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.121	3	.040	19.458	.000[a]
	Residual	.023	11	.002		
	Total	.144	14			

Source: Regression result

a. Predictors: (Constant), GDP, Rea Interest Rate, Government Expenditure

b. Dependent Variable: Investment

Coefficients[a]

Model	Colenearity Statistic	
	Tolerance	VIF
(constant)	0.392	2.549
Government Expenditure	0.877	1.140
Real Interest Rate	0.419	2.388
GDP		

Source: Regression result

Collinearity Diagnostics[a]

Model	Dimension	Eigen value	Condition Index	Variance Proportions			
				(Constant)	Government Expenditure	Real Interest Rate	GDP
1	1	3.399	1.000	.00	.00	.02	.00
	2	.601	2.378	.00	.00	.85	.00
	3	.000	82.550	.10	.49	.07	.00
	4	4.587E-5	272.216	.90	.51	.05	1.00

Source: Regression result
a. Dependent Variable: Investment

b. Heteroskedasticity

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GDP, Interest Rate, Government Expenditure[a]	.	Enter

Source: Regression result
a. All requested variables entered.
b. Dependent Variable: Investment

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.905[a]	.820	.770	39977.73384

Source: Regression result

a. Predictors: (Constant), GDP, Interest Rate, Government Expenditure

b. Dependent Variable: Investment

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.982E10	3	2.661E10	16.648	.000[a]
	Residual	1.758E10	11	1.598E9		
	Total	9.740E10	14			

Source: Regression result

a. Predictors: (Constant), GDP, Interest Rate, Government Expenditure

b. Dependent Variable: Investment

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	7989.996	53421.910		.150	.884		
Government Expenditure	-76.588	27.543	-.725	-2.781	.018	.242	4.140
Interest Rate	-716.956	1197.654	-.079	-.599	.562	.939	1.065
GDP	.359	.064	1.458	5.627	.000	.244	4.093

Source: Regression result

a. Dependent Variable: Investment

Collinearity Diagnostics[a]

Model	Dimension	Eigen value	Condition Index	Variance Proportions			
				(Constant)	Government Expenditure	Interest Rate	GDP
1	1	3.123	1.000	.00	.00	.02	.00
	2	.839	1.930	.00	.00	.91	.00
	3	.032	9.827	.73	.15	.02	.01
	4	.006	23.013	.27	.85	.05	.99

Source: Regression result
a. Dependent Variable: Investment

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.6329E5	5.7414E5	3.6653E5	75507.50280	15
Residual	-5.03592E4	6.47027E4	.00000	35436.47358	15
Std. Predicted Value	-1.367	2.750	.000	1.000	15
Std. Residual	-1.260	1.618	.000	.886	15

Source: Regression result
a. Dependent Variable: Investment

Correlations

			Unstandardized Residual	Government Expenditure	Interest Rate	GDP
Spearman's rho	Unstandardized Residual	Correlation Coefficient	1.000	-.004	-.196	.082
		Sig. (2-tailed)	.	.990	.483	.771
		N	15	15	15	15
	Government Expenditure	Correlation Coefficient	-.004	1.000	-.454	.839**
		Sig. (2-tailed)	.990	.	.089	.000
		N	15	15	15	15
	Interest Rate	Correlation Coefficient	-.196	-.454	1.000	-.196
		Sig. (2-tailed)	.483	.089	.	.483
		N	15	15	15	15
	GDP	Correlation Coefficient	.082	.839**	-.196	1.000
		Sig. (2-tailed)	.771	.000	.483	.
		N	15	15	15	15

Source: Regression result

**. Correlation is significant at the 0.01 level (2-tailed).

c. Autocorelation Test

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GDP, InterestRate, GovermentExpenditure[a]	.	Enter

Source: Regression result

a. All requested variables entered.

b. Dependent Variable: Investment

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.905[a]	.820	.770	39977.73384	1.663

Source: Regression result

a. Predictors: (Constant), GDP, Interest Rate, Government Expenditure

b. Dependent Variable: Investment

ANOVA [b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.982E10	3	2.661E10	16.648	.000[a]
	Residual	1.758E10	11	1.598E9		
	Total	9.740E10	14			

Source: Regression result

a. Predictors: (Constant), GDP, Interest Rate, Government Expenditure

b. Dependent Variable: Investment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7989.996	53421.910		.150	.884		
	Government Expenditure	-76.588	27.543	-.725	-2.781	.018	.242	4.140
	Interest Rate	-716.956	1197.654	-.079	-.599	.562	.939	1.065
	GDP	.359	.064	1.458	5.627	.000	.244	4.093

Source: Regression result

a. Dependent Variable: Investment

Collinearity Diagnostics[a]

Model	Dimension	Eigen value	Condition Index	Variance Proportions			
				(Constant)	Government Expenditure	Interest Rate	GDP
1	1	3.123	1.000	.00	.00	.02	.00
	2	.839	1.930	.00	.00	.91	.00
	3	.032	9.827	.73	.15	.02	.01
	4	.006	23.013	.27	.85	.05	.99

Source: Regression result
a. Dependent Variable: Investment

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.6329E5	5.7414E5	3.6653E5	75507.50280	15
Residual	-5.03592E4	6.47027E4	.00000	35436.47358	15
Std. Predicted Value	-1.367	2.750	.000	1.000	15
Std. Residual	-1.260	1.618	.000	.886	15

Source: Regression result
a. Dependent Variable: Investment

APPENDIX C

NORMALITY TEST (MODEL 1)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	15	-.06826	.06941	-1.54031 88E-15	.04032039	.083	.580	-1.026	1.121
Valid N (listwise)	15								

Source: Regression result

APPENDIX D

STATISTIC TEST

d. T test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.168	1.011		-2.145	.055
	Government Expenditure	-.615	.170	-.694	-3.622	.004
	Real Interest Rate	-.019	.018	-.134	-1.047	.317
	GDP	1.588	.223	1.320	7.115	.000

Source: Regression result
Dependent Variable: Investment

e. F Test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.121	3	.040	19.458	.000[a]
	Residual	.023	11	.002		
	Total	.144	14			

Source: Regression result
a. Predictors: (Constant), GDP, Real Interest Rate, Government Expenditure
b. Dependent Variable: Investment

f. R Square

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.917[a]	.841	.798	.04549	1.653

Source: Regression result
b. Predictors: (Constant), GDP, Real Interest Rate, Government Expenditure

APPENDIX E

RAW DATA (MODEL 2)

YEARS	GFCF (Billion)	Real Budget Deficit (Billion)	GDP (Billion)	INTEREST RATE (percent)
1995	346857.67	-183.14	1238312	8.34
1996	397201.96	-277.54	1444873	9.52
1997	431234.21	-563.03	1512780	8.21
1998	288891.78	-1575.5	1314202	-24.60
1999	236326.62	-531.2	1324599	11.83
2000	275881.10	-161	1389769	-1.65
2001	293792.70	-354.33	1440406	3.72
2002	307584.60	-194.99	1505216	12.32
2003	309431.05	-274.91	1577171	10.85
2004	354865.74	-215.74	1756517	5.13
2005	393500.50	-78.25	1750815	-0.25
2006	403719.24	-221.26	1847127	1.66
2007	441614.01	-289.79	1963092	2.32
2008	493222.49	-252.6	2082104	-3.95
2009	543777.80	-199.11	2474008	6.75

Source : World Bank

APPENDIX F

CLASSIK ASSUMPTION (MODEL 2)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.497	1.532		-.324	.752		
	Real Deficit	-.002	.073	-.005	-.025	.981	.702	1.424
	Real Interest Rate	.004	.028	.030	.153	.881	.804	1.244
	GDP	.974	.233	.810	4.173	.002	.839	1.192

Source: Regression result
a. Dependent Variable: Investment

Collinearity Diagnostics[a]

Model	Dimension	Eigen value	Condition Index	Variance Proportions			
				(Constant)	Real Deficit	Real Interest Rate	GDP
1	1	3.377	1.000	.00	.00	.02	.00
	2	.615	2.343	.00	.00	.76	.00
	3	.008	20.902	.00	.79	.17	.00
	4	6.814E-5	222.621	1.00	.21	.05	1.00

Source: Regression result
a. Dependent Variable: Investment

a. Heteroscedasticity

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	GDP, Real Interest Rate, Real Deficit [a]	.	Enter

Source: Regression result
a. All requested variables entered.
b. Dependent Variable: Investment

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.808[a]	.652	.558	.06735

Source: Regression result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

ANOVA [b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.094	3	.031	6.881	.007[a]
	Residual	.050	11	.005		
	Total	.144	14			

Source: Regression result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.497	1.532		-.324	.752
	Real Deficit	-.002	.073	-.005	-.025	.981
	Real Interest Rate	.004	.028	.030	.153	.881
	GDP	.974	.233	.810	4.173	.002

Source: Regression result

a. Dependent Variable: Investment

Residuals Statistics [a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.4448	5.7372	5.5547	.08179	15
Residual	-.10129	.10437	.00000	.05970	15
Std. Predicted Value	-1.343	2.232	.000	1.000	15
Std. Residual	-1.504	1.550	.000	.886	15

Source: Regression result

a. Dependent Variable: Investment

Correlations

			Unstandardized Residual	Real Deficit	Real Interest Rate	GDP
Spearman's rho	Unstandardized Residual	Correlation Coefficient	1.000	-.093	-.179	.096
		Sig. (2-tailed)	.	.742	.524	.732
		N	15	15	15	15
	Real Deficit	Correlation Coefficient	-.093	1.000	.057	.175
		Sig. (2-tailed)	.742	.	.840	.533
		N	15	15	15	15
	Real Interest Rate	Correlation Coefficient	-.179	.057	1.000	-.196
		Sig. (2-tailed)	.524	.840	.	.483
		N	15	15	15	15
	GDP	Correlation Coefficient	.096	.175	-.196	1.000
		Sig. (2-tailed)	.732	.533	.483	.
		N	15	15	15	15

Source: Regression result

d. Autocorrelation test

Variables Entered/ Removed [b]

Model	Variables Entered	Variables Removed	Method
1	GDP, Real Interest Rate, Real Deficit [a]	.	Enter

Source: Regression result

a. All requested variables entered.

b. Dependent Variable: Investment

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.846[a]	.716	.638	51851.16880	.627

Source: Regression result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.449E10	3	2.483E10	9.235	.002[a]
	Residual	2.957E10	11	2.689E9		
	Total	1.041E11	14			

Source: Regression result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8633.592	93075.645		.093	.928
	Real Deficit	-5.734	61.224	-.024	-.094	.927
	Real Interest Rate	309.334	2252.052	.033	.137	.893
	GDP	.217	.046	.853	4.693	.001

Source: Regression result
a. Dependent Variable: Investment

Residuals Statistics [a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.8094E5	5.4865E5	3.6786E5	72942.81847	15
Residual	-6.64131E4	8.86017E4	.00000	45961.14878	15
Std. Predicted Value	-1.192	2.479	.000	1.000	15
Std. Residual	-1.281	1.709	.000	.886	15

Source: Regression result

NORMALITY TEST (MODEL 2)

Descriptive Statistics

	N	Min	Max	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	15	-.10129	.10437	.05970121	.464	.580	-.368	1.121
Valid N listwise)	15							

APPENDIX H
STSTISTIC TEST (MODEL 2)

d. T Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.497	1.532		-.324	.752
	RealDeficit	-.002	.073	-.005	-.025	.981
	Rea lInterest Rate	.004	.028	.030	.153	.881
	GDP	.974	.233	.810	4.173	.002

Source: Regression result

a. Dependent Variable: Investment

e. F test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.094	3	.031	6.881	.007[a]
	Residual	.050	11	.005		
	Total	.144	14			

Source: Regression result

a. Predictors: (Constant), GDP, Real Interest Rate, Real Deficit

b. Dependent Variable: Investment

f. R Square

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.808[a]	.652	.558	.06735