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# **THE IMPACT OF GOVERNMENT EXPENDITURE, GROSS DOMESTIC PRODUCT (GDP), AND DOMESTIC INVESTMENT ON HUMAN DEVELOPMENT: THE CASE OF INDONESIA**

## **THESIS**



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**PADANG**

**2015**

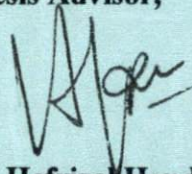
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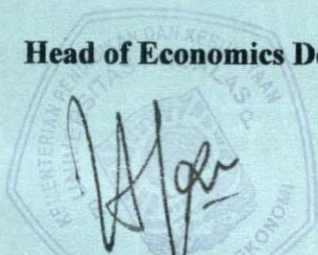


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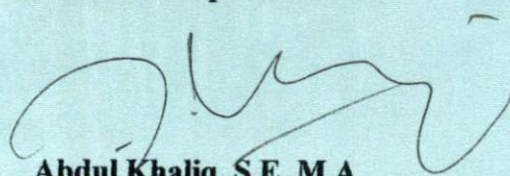
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*Dengan menyebut nama Allah yang Maha Pengasih  
lagi Maha Penyayang.*

*Tidak ada Tuhan melainkan Dia yang hidup kekal lagi terus menerus, tidak mengantuk dan tidak tidur. Kepunyaan-Nya apa yang di langit dan di bumi, tiada yang memberi syafa'at di sisi Allah tanpa izin-Nya. Allah mengetahui apa-apa yang di hadapan mereka dan di belakang mereka, dan mereka tidak mengetahui apa-apa dari ilmu Allah melainkan apa yang dikehendakinya. Kursi Allah meliputi langit dan bumi dan Allah tidak merasa berat memelihara keduanya, dan Allah Maha Tinggi lagi Maha Besar. (QS. Al-Baqarah : 256)*

*Allah SWT tidak akan membebani seseorang melainkan sesuai dengan kemampuannya. (QS. Al Mu'minun:62)*

*Sungguh, Allah SWT tidak akan mengubah nasib suatu kaum sampai mereka sendiri yang mengubah dirinya. (QS. Ar Ra'du:11)*

*Barang siapa menuntut ilmu, maka Allah akan memudahkan baginya jalan menuju surga. Dan tidaklah berkumpul suatu kaum di salah satu dari rumah - rumah Allah Mereka membaca kitabullah dan saling mengajarkannya diantara mereka, kecuali akan turun kepada mereka ketenangan, diliputi dengan rahmah, dikelilingi oleh para malaikat, dan Allah akan menyebut - nyebut mereka kepada siapa saja yang ada disisi -Nya. Barang siapa berlambat - lambat dalam amalnya, niscaya tidak akan bisa dipercepat oleh nasabnya. (S.R Muslim dalam Shahih-nya)*

*Bersikaplah kukuh seperti batu karang yang tidak putus - putus nya dipukul ombak. Ia tidak saja tetap berdiri kukuh, bahkan ia menenteramkan amarah ombak dan gelombang itu (Jalinus At Thabib)*



## *My Dedication*

*Dear God...*

*I know that I'm not perfect and sometime I forget to pray  
I know I have questioned my faith and sometime I lost my temper  
But, thank you for loving me unconditionally  
And giving me another day to start over again*

*Mom and Dad*

*There's no word can describe what  
you mean to me, there's nothing  
that I can repay for what you've  
done to me, there's no one that  
could replace both of you  
There is no imagination what I  
would be without you  
I just want to say massive thank  
you for being my parents and sorry  
for my mistake*

*Thank for My best friends*

*You listen when I have a problem  
You catch me when I'm about to fall  
And you bring so much joy into my life  
Thanks for being my friends through it all*

*Wassalam*

*Mulat Pangesti*



## LETTER OF STATEMENT

would like to state that my thesis with title "**The Impact of Government expenditure, Gross Domestic Product (GDP), and Domestic Investment on Human Development : The Case of Indonesia**" Is worked by myself and there is no part or all the posts that contain the phrase, idea, or opinion from another source without giving acknowledgment to the original author. As the parts are sourced from other people's work have included the source in accordance with the norms, ethics and rules of scientific writing. If they find a plagiarism in this thesis, I am willing to accept the sanction of revocation of academic degrees that I have gained.

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**THE IMPACT OF GOVERNMENT EXPENDITURE, GDP, AND DOMESTIC INVESTMENT ON HDI : THE CASE OF INDONESIA**

Thesis by: **Mulat Pangesti**

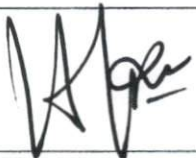
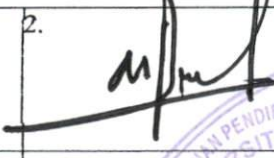
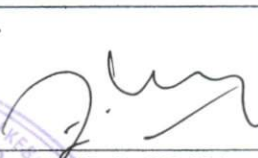
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**ABSTRACT**

*This research empirically analyzes the impact of government expenditure, gross domestic product (gdp), and domestic investment on human development in Indonesia by using annual time series data from 1992-2012. Ordinary Least Square (OLS) is the method used in this research. The result shows that government expenditure is significantly and negatively impact on human development in Indonesia. The Gross domestic product (GDP) are significantly and positively impact on human development in Indonesia. Domestic Investment is significant and positively impact on human development. The role of government in human development is needed in accordance with the government's role of allocation, distribution and stabilization.*

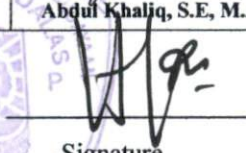
**Keywords: Government Expenditure, GDP, Domestic Investment, HDI**

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## PREFACE



All praises to be on Allah SWT. The writer would like to thank to Allah for the guidance and mercy therefore my thesis entitled **“The Impact of Government Expenditure, Gross Domestic Product (GDP), and Domestic Investment on Human Development : The case of Indonesia”** has finally been accomplished on time and without matter problem. Allah doesn't give what you want, but Allah gives what you need. This thesis is submitted as a partial requirement to acquire Bachelor Degree at Economic Department of economic Faculty of Andalas University.

The writer realize that thesis still far from perfection, it needs to be improved. For that reason, the writer would gladly welcome critics and suggestion for perfections. Hopefully this thesis can be helpful and gives benefit to anyone who read it especially to the academicians and students. In the process of completion, there are many people who have involved either directly or indirectly. I would like to express my gratitude to those people who made it possible for me to complete this thesis. With all of the humility, my infinitely gratitude I express to:

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## CHAPTER I

### INTRODUCTION

#### 1.1 Background

Human are the most important asset of the Indonesia. Human is not an object development but it is also expected to be subject so it's used to give a good contribution and make the benefit for the progress a country. Many country and also indonesia implement a development strategy that focuses on economic growth. Development goal is to increase economic growth as measured by indicators *gross domestic product* (GDP).

Since 1990, United Nations Development Program (UNDP) has published an indicator that combined economic and non economic factors that define well, being broadly that just Gross Domestic Product (GDP), it is called Human Development Index (HDI). The HDI provides a composite of three dementions of human development : longevity, life expectancy, education, and decent living standard. The Index is not a comprehensive measure of human development, but this index gives a broad view of manila human progress and see the relationship between income and welfare.

Human resource as one of the factors of production other than natural resources and capital to produce output. The higher quality of human resources has increased the efficiency and productivity of a country. Emphasis on the human productivity of production factor in total. Land, manpower, and other capital may experience diminishing return, but science does not.

According to UNESCO (2000), the Human Development Index is the level composition of achievement in education, health, and income per capita which shows that Indonesia's human development index is decline. In between 174 countries in the world, Indonesia keep order in-102 (1996), in-99 (1997), in-105 (1998), and in-109 (1999).

In the government's budget management are common attraction between investment in economic infrastructure (physical) and investment in social development. On the other hand, spending on infrastructure investment need to facilitate economic growth, but on the other hand also need investments to improve the quality of human resources. Successful human development, actually also provide positive benefits for economic growth through the availability of a qualified workforce. In the other words, there is relationship mentioned above between economic growth and human development (Ramirez, Rannis, and Steawart, 1998).

Indonesia's human development progress that has been highly dependent on economic growth from the early 1970s until the late 1990s, while the own of the government expenditure, it be routine expenditure and development expenditure (now merged) from the 1990s. Commands that have been just as busy in taking care of infrastucture development, population growth is allowed to allocate spending health and education more. While government spending on services such as health and education are relatively few (IHRD, 2004).

According to Budget Law in Hajibabaei (2009) the government budgets are allocated into 11 functions, as the following: general service, defense, public

security, health, tourism & culture, religion, education, economics, environmental, housing & public facility, and social security. The Indonesian government has had different development priorities before and after budget reform. Prior to budget reform in term of amount of budget allocated. The government gave higher priority to trading & national business and finance, local development, irrigation, and education sectors.

Therefore, the writer is interested in analyzing the effect of government's role to the human development, where the role can be measured by amount of government expenditure and gross domestic product (GDP) on this human development. In order to this problem writer would do research on the role of government in the human development, especially in Indonesia, which will be written in a thesis entitled “ **The Impact of Government Expenditure, Gross Domestic Product (GDP), and Domestic Investment on Human Development in Indonesia**”.

## **1.2 Research Questions**

Based on the descriptions that have been described in the background above the problem can be defined as follows:

- a. What is the impact of government expenditure on the human development in Indonesia?
- b. What is the impact of gross domestic product (GDP) on the human development in Indonesia ?
- c. What is the impact of domestic investment on the human development in Indonesia ?



### **1.3 Research Objective**

1. Examine the impact of government expenditure on human development index (HDI) in Indonesia.
2. Examine the impact of gross domestic product on human development index (HDI) in Indonesia.
3. Examine the impact of domestic investment on human development index (HDI) in Indonesia.

### **1.4 Research Advantages**

This study's benefits are:

1. As the partial fulfillment of Bachelor of Economics in Economic Faculty, Andalas University.
2. For the writer, as references materials and information for further research, as well as to increase knowledge.
3. For the reader is expected to add understanding regarding the economic analysis about the context of HDI (human development index) and factors that can be impact the HDI such as Government Expenditure and Gross Domestic Product (GDP) .

### **1.5 Research Scope**

This research is focused on the relationship between government expenditure, gross domestic product (GDP) and human development index in Indonesia. It has employed time series data during the period 1992-2012.

## **1.6 Writing Systematic**

This study is divided into six chapters, each chapter are briefly described as follows:

### **Chapter I: Introduction**

This chapter contains description the background of the human development index. Theoretically human development index influenced variables such as government expenditure, gross domestic product (GDP), and Domestic Investment. This chapter also describes about problem identification, research questions, research objectives, the research advantage, the scope of research, and writing systematic.

### **Chapter II: Theoretical Framework and Literature Review**

This chapter will provide the human development and HDI (human development index) theory and the relationship between economic variables such as government expenditure, gross domestic product (GDP), and Domestic Investment. To support the literature review some explanation from empirical studies in the past, as proven and also hypothesis.

### **Chapter III: Research Methodology**

This chapter elaborates about study method of problem, containing research data such as research variables, data characteristics that accompanied by clarification about data collecting procedure, and also technique data analysis.

#### **Chapter IV: Overview of Indonesian Human Development**

This chapter describes the overview of research object, such as overview about trend of HDI (human development index), government expenditure, gross domestic product (GDP), and domestic investment.

#### **Chapter V: Empirical Findings and Analysis**

This chapter discusses about the study description contains a description of the research object, data analysis, interpretation and discussion of the result obtained from the study.

#### **Chapter VI: Conclusions and Recommendations**

This chapter consists of conclusion of the study and implication on the future research.



## **CHAPTER II**

### **THEORITICAL FRAMEWORK AND LITERATURE REVIEW**

#### **2.1 Theoretical Framework**

##### **2.1.1 Human Development Index (HDI)**

Human development is an alternative measure other than the purely economic indicators that seen people as the real wealth of a nation. UNDP (1990) defined human development as the process of widening people's choices and the level of their achieved well being. The development of HDI was inspired the capabilities approach proposed by AmartyaSen that focus on what people are able to do and be so that they have more freedom to live the kind of life which they find valuable (Nussbaum and Sen, 1993).

HDI (human development index) is one indicators of development. According to UNDP (the united nations development program) human development is the process of expanding options for residents to build their lives are considered valuable. Something are essential in human development so the people can experience a long and healthy life, knowledge, and have access to the necessary resource to be good life.

Human development index (HDI) is one indicator of the development that can be used to analyze the comparative status of socio economic development in the country and also describe human development in a country.

With HDI (human development index) rank number and information can be obtained the picture of the state of public welfare as measured by the longevity of people in a country with a measure of health and nutrition, education as measured by literacy rate, as well as the standard of living as measured by GDP (gross domestic product) per capita.

Development always give the positive or negative impact, Therefore necessary indicators as a measure of the development. Development indicators broadly divided into two (1) Economic indicator, covers :GNP (gross national product) per capita, economic growth, and GDP (gross domestic product) per capita with the purchasing power parity (PPP) approach. ( 2) social indicators, covers : HDI (human development index), and PQLI (physical quality life index) (Rokhmani, 2009).

According to Rokhmani (2009) Human development index (HDI) measured from some aspects are :

1. Life expectancy at birth aspect this is used as measured health quality
2. Adult literacy rate aspect this is used as educational equity
3. Combined gross enrollment ratio for primary, secondary, and tertiary education this aspect to measured the affordability of the education community
4. GDP per capita (gross domestic product per capita ) this aspect to measured about economic level of the community

According to Roknmani (2009) In the human development index (HDI) there are three variable of walfare and put it in an index, these variables are :

1. Longevity , as a measure of health and nutrition. Longevity is measured by the average life expectancy ( in years) from birth rate, calculated by taking a baby born in a given year will experience when the death rate of each age group.
2. Education, consist of a weighted average amount others : a) the literacy rate of the adult in the precentage (weight  $\frac{2}{3}$ ). b) year of the primary school, a person throughout 25 years of age (weight  $\frac{1}{3}$ ).
3. Standard of living,indicator standard of living is GDP (gross domestic product) per capita rill in dolar ppp (purchasing power parity) dollars, with no discounts to the level of global property with basic needs income, it is needed to achive a minimum level of nutrition and the discount increases with progressively increase revenue, reflecting the diminishing marginal utility of income.

According to Prabhu (2009) HDI (human development index) then calculated as the average index of third dimension variables.

The calculated HDI (human development index)

- I. Calculated the longevity index : this index measures the relative achievement a country interm of live expectancy at birth
- II. Calculated the education index : this index measures the relative achievement a country in terms of adult literacy and school



enrollment levels combined primary, secondary, and college. The first,calculated the adult literacy index and then composite index of school participation. Education index is a *weighted average* index of adult literacy and school participation. 2/3 weighted given to adult literacy,1/3 weighted given to composite of school participation

III. Calculated gdp index : this index of gdp measures as logarithma per capita of gdp (PPP US\$) adjusted. Adjusment are made by human being who deserve no consideration need unlimited income.

IV. Calculated the HDI (human development inde) after calculating the dimensions of the index, we can calculate the average hdi as an ordinary three dimensional index.

HDI (human development index) is calculated by the following formula

$$\text{HDI} = (\text{longevity index}) + (\text{education index}) + (\text{decent standard of living (gdp) index}) / 3$$

### 2.1.2 Government Expenditure

Governement expenditure is a part of the fiscal policy (Sukirno,2000) that is a government action to regulate course the economy by way of determining the amount of government revenue and expenditure each year is reflected in the national and regional budget. The purpose of this is fiscal policy in order to stabilize prices, the level of output and employment and spur economic growth.

Government expenditure in real terms can be used as an indicator of the amount of government activities financed by government spending. The larger and many government activities, the great of government expenditures are concerned.

In macroeconomic theory, the government expenditure consists of three major headings that can be classified as follows: (Boediono, 1999).

- a. Government expenditures for purchases of goods and services.
- b. Government expenditures for employee salaries. It changes in employee salaries have an influence on macroeconomic processes, in which the employee salary changing will affect the level of demand indirectly.
- c. Government expenditures for transfer payments. Transfer payment instead of purchasing goods or services by the government but noted market goods or the provision of direct payments to citizens which include for example the payment of subsidies or direct assistance to various segments of society, pension payments, interest payments on government loans to the public.

According to Wagner in Mangkoesoebroto (2001) said that government expenditure and government activities the longer increase. This tendency is called the law by wagner always increase role of government. This theory that increasing the role of government in economic activity and community life as a overall. Wagner say that in an economics, if the per capita income increase the relative

government spending will increase. Mainly because the government should regulate the relationship that arises in society, law, education, culture, and so on.

### **2.1.3 Gross Domestic Product (GDP)**

Gross Domestic Product (GDP) is believed to be the best economic indicators in assessing the economic development of a region. The national income accounts have major macro measure of the condition of an area. In general, comparison of conditions between countries can be seen as an illustration of local revenue, the World Bank determine whether a country is in a group of developed countries or developing through grouping magnitude of GDP, and the GDP of a country is equal to the total expenditure on goods and services in the economy (Herlambang, 2001).

GDP (Gross Domestic Product) is statistically the most attention because the economy is regarded as the best single measure of the welfare community. It is caused the underlying GDP (gross domestic product) measures two things at once: the total income of everyone in the economy and the total expenditure of state to buy goods and services from the economy. Reason of GDP (gross domestic product) can perform the measurement of total revenue and expenditure due to an overall economy, income must equal expenditure (Mankiw, 2003).

### **2.1.4 Investment**

Investments can be interpreted as an expense or expenditure-planting investments made by the company to purchase capital goods or equipment to increase the production capability of producing goods and services that available



in the economy. Increase the amount of capital allows the economy to produce more goods and services in the future (Mankiw, 2004).

Investment is an important factor for long-term economic growth (for sustainability of economic development). Economic development involves the activities of production (goods and services) in all economic sectors. For these activities need to build factories, buildings, offices, infrastructure, and so on. For the procurement of all, we need funds to finance called investment funds. With the production activities, it creates employment opportunities and increased incomes which in turn creates or increases demand in the market. Emerging markets and thus the volume of production, employment, and income in the country increased, it creates economic growth.

According to Keynes (1946) in Dompere (1999), there are several factors that affect aggregate investment, such as:

- Effect of Exchange Rate

Changes in exchange rates of investment are uncertainty. The effect of foreign exchange rate changes on investment can be directly through multiple channels, changes in exchange rates will affects the two channels, the domestic demand and supply side, to obtain the true value of the domestic currency will encourage expansion of investment in the trade of goods.

- Effect of Interest Rate

The interest rate has a significant influence on the impulse to invest. In the production, processing capital goods or raw material production requires capital (inputs) to produce another output / final goods.

- Inflation Rate

The inflation rate negatively affects the level of investment it is due to the high inflation rate will increase the risk of investment projects and long-term high inflation can reduce the average time fell to borrow capital and cause distortion of information about relative prices.

- Infrastructure

Many countries in the world, invites investors to participate in order to invest in the infrastructure sectors, such as toll roads, sources of electrical energy, water resources, ports, and others. Participation can be a financing denominated in dollars or foreign currency. Rebuilding the infrastructure seems to be an alternative option that can be taken by the government in order to tackle the crisis, with adequate infrastructure, the efficiency achieved by the business will be bigger and gained increasing investment.

- Government

Government spending here is covering all purchases of goods and services by local governments. Government as one of the economic actors who have the purpose to support the economy in order to runs better and passionate. The role of government as proposed by Keynes is often necessary to encourage economic growth.

## **2.2 Relationship between Economic Variables**

### **2.2.1 Relationship between Government expenditure and HDI (human development index)**

According to suparmoko (1996) government spending can be assessed from various aspects and can be divided into four classifications as follows:

- a). Government spending is an investment in order to gain the strength and the knowledge economy in the future.
- b). Government spending directly provide for the public welfare
- c). Government spending is a expenditure in the future
- d). Government spending is a means of providing more work and spread wider power buy

From the explanation above, it can be seen on the second point on the spending can directly provide for the welfare means government spending can make increasing walfare of citizen. In the education spending, government can



build adequate school facilities, teacher salaries that provide sufficient, providing scholarships for under privileged students and achievers. This case the government has to provide welfare for the community and can enhance human development in education sector.

Secondly, government spending can provide for the public welfare and can enhance human development in the health sector. The government can build infrastructure facilities and infrastructure health center, hospital, and health services are inadequate, provide immunization to infants to increase human development index, family planning to reduce infant mortality

Every year the government has allocated funds such as the allocation of funds to public education and health, it can give prosperity to the community. With a per capita expenditure this year, we can measuring living standards. The higher expenditure, the higher standard of life community.

Developing countries such as Indonesia, experienced intermediate stage of development, where the government should provide more public facilities such as education and health to increase the economic productivity. Facilities and assurance of education and health should be designed in such as way the government through government spending.

### **2.2.2 Relationship between Gross domestic product and HDI (human development index)**

One of economic indicator to measure the economic growth in a country, through gross domestic product (GDP). Therefore according to mankiw (2006)

GDP (*Gross Domestic Product*) is statistical economic the most attention because the economy is regarded as the best single measure of the welfare community. GDP can measure the total expenditure and total revenue of the economic for goods and services. So, GDP per capita show the revenue and expenditure from the average in economic. Because the most of people choose high level of income and expenditure. Finally GDP as measure the welfare of community. (Mankiw,2006). This is supported In study by Khodabakhshi, (2011) he stated that the index of gross domestic production per capita has had incorage the level of economic growth in the Indian.

The economic growth is the increase of the country concerned in long term capacity to provide a wide range of economic goods to the population as determined by lack of progress or adjusment technology, institutional and ideologies of the various demands of the exciting situation (kuznet in Todaro, 2004).

Base on explanation above show that the relationship between Gross Domestic Product (GDP) and Human Development Index (HDI) is the positive correlation. When the economic growth have increased,so the human development will be increase too.

### **2.2.2 Relationship between Domestic Investment and HDI (human developement index)**

Investment in its various forms will provide a lot of influence on the economy of a country in the smaller the coverage area. Due to the creation of

investment, will bring a state in economic activity. Where the investment can create the jobs, create goods and services to be marketed to consumer and have the interaction between producer. With it is will make the progress, both in economic and human development.

Investment is one important factor in determining the level of national income. The community investment activities enables continuous increase economic activity and employment. Increase level of income and wealth. (Sukirno,2000).

Base on explanation above, shows that a investment very important in development, both in economic development but also human development. investing in economic infrastructure (physical) and investment for social sector. On the one hand, infrastructure needed to facilitate economic growth, but on the other hand also the investment required to improve the quality of human resources. successful human development is actually also provide positive benefits for the growth economic through the availability of qualified labor.

### **2.3 Previous Studies**

In the study of the government expenditure measure efficiencies toward peace and human development, by Prasetyo and Pudjono (2013). They found that the efficiency level of government expenditure in 82 countries towards the human development and peace index of the respective countries by using Data Envelopment Analysis (DEA) approach during 2007-2011. They found that only few countries that always being positioned in the efficient frontier during the sample period, namely: Japan, Nigeria, and Norway. By using Malmquist index



approach, they also found that Cyprus has the largest government expenditure efficiency improvement.

Stephen and Oluranti (2011) examine the relationship between Government Expenditure and Human Capital Development in Nigeria. They found the impact of government recurrent and capital expenditures on education and health in Nigeria and their effect on economic growth. The data is used for study from secondary sources while the augmented Solow model was adopted too. The result shows that there is a positive relationship between government recurrent expenditure on human capital development and the level of real output, while capital expenditure related to the level of real output negatively. The study recommends appropriate channeling of the nation's capital expenditure on education and health to promote economic growth.

Khodabakhshi (2011) analyze about Relationship between GDP and Human Development Indices in India. He found that the index of gross domestic production per capita in the Indian economy has had good growth but the impact on other indicators of human development index is very low even on some indicators such as life expectancy has been ineffective. The results show that the india's indexof the Human Development is growing along side the downside. Growth index had a decreasing trend from the beginning period in 2009 and in its least. 012, but the growth index reached in 2010, and it has found the upside situation in 0.014. India obtained 119 in position in the world human development index.

Pratowo (2011) "*Analisis faktor - faktor yang mempengaruhi terhadap indeks pengembangan manusia*". This study is an observational case that study with 35 regencies / cities in Central Java Province, with 8 years period (2002 to 2009). The expenditures of regencial goverment give positive influence significantly on the HDI. Elasticity of the HDI increased due to increas expenditures amounted to 0.032. If the regional spending 1 percent rose, then the average HDI will rise about 0.032 percent. Gini ratio is the significant negative effect on the HDI. Elasticity increased HDI in connection with a reduction in the Gini ratio is equal to -0.034, if the Gini ratio fell 1 percent, then the average HDI will rise about 0.034 percent. The proportion of non-food expenditures, significantly give positive influence on the HDI. HDI increased elasticity with respect to increase the proportion of non-food expenditures amounted to 0.172. If the proportion of non-food spending rose 1 percent, then the average HDI will rise about 0.172 percent. Dependency ratio become negative effect on the HDI significantly. Elasticity increased HDI in connection with a reduction in the dependency ratio is equal to -0.062. When the dependency ratio fell 1 percent, then the average HDI will rise about 0.062 percent.

Ndulu (2010) examined the negative impact of human capital flight on economic growth in Nigeria. The study reported that the challenge of human capital in Africa is not limited only to low level of education and training, but it also includes the current inability of the country to retain a large proportion of its skilled and professional personnel. Thus, Nigeria has been losing a significant

proportion of its skilled and professional manpower to other national market and depend on expatriate for many crucial functions increasingly.

Alin and Marieta (2011) analyze the correlation between health system and human development level within European Union. This study aims to test the correlation between the effects, effort and efficiency of health expenditure in the European Union and Human Development Index (HDI). Although we observe a correlation between HDI, effects and effort in the health system, however, HDI does not correlate with the health system efficiency calculated as the ratio between effect and effort. This aspect shows that the elasticity of the effects of health system reported on the financial allocation (effort of the health system which is expressed as a percentage of GDP decreases, as the increase of financial allocation in GDP.

From literature review above, we can see that study about human development index more specific. But in this study we just see an outline of the main factors influencing the Human development index (HDI). There are Government Expenditure, Gross Domestic Product (GDP), and Domestic Investment. Because government spending is considered as an important factor in human development, not only in education and health sector but also in other sectors also important in human development. Can be seen development goals is improving the welfare community. The welfare community can be realized with the fulfillment of basic needs, it is not only in education and health but also pay attention in other sectors such as public services, the environment, social protection, and infrastructure. With the fulfillment of basic needs will improve the



quality of human resources, and thus it will be able to good contribution and can improve the efficiency of productivity and will increased of GDP (Gross DomesticProduct) and overall to do that we need the investment.

Therefore this study choose the overall Government expenditure,GDP (Gross Domestic Product), and Domestic Investment as a factors influence of HDI (Human Development Index). we can see from the explanation above a comparison of these factors with the existing conditions in Indonesia.

## **2.4 Hypothesis**

The hypothesis in this research are:

- a. There is a significant and positive relationship between Government expenditure on HDI (Human Development Index) in Indonesia.
- b. There is a significant and positive relationship between Gross Domestic Product on HDI (Human Development Index) in Indonesia.
- c. There is a significant and positive relationship between Domestic Investment on HDI (human Development Index) in Indonesia.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1 Type and Sources of Data**

The type of data that used in this study is secondary data in the form of time series data which consists of Human Development Index (HDI), Government Expenditure, Gross Domestic Product (GDP), and Domestic Investment in Indonesia during period 1992- 2012.

The data were collected from many sources, such as: the majority of data are from National Planning Board, World Bank, Bank of Indonesia, Indonesia Economic statistic, United National Development Programme (UNDP), Central Bureau Statistic, Ministry of Finance, books, publications, and accessed from internet via [www.bi.go.id](http://www.bi.go.id), [www.bps.go.id](http://www.bps.go.id), [www.undp.org](http://www.undp.org). By visiting the official website of those institutions, the data is collected for this study.

#### **3.2 Model Analysis**

Data analysis model that is used is the econometric model, while the method that is used is the ordinary least squares (OLS). Data used quantitatively analyzed using the statistical analysis of a simple linear regression equation.

This study adopted the previous research model done by Razmi (2012), which this study examines the effect of government health expenditure on human

development index by using the ordinary least squares (OLS) over the period 1990 - 2009 in Iran. This paper follows the design process model bellow :

$$\text{HDI} = \beta_0 + \beta_1 \text{HEg} + \beta_2 \text{Gr} + \beta_3 \text{PRr} + \beta_4 \text{DTr} + \beta_5 \text{D1} + V_{it} \dots\dots\dots( 3.1)$$

Where :

- HDI = Human development index
- HEg = Health Expenditure
- Gr = Growth rate of GDP per capita
- DTr = Total Mortality Rate
- Pr = Primary School completion rate
- D1 = Dummy Variable
- $V_{it}$  = Error term
- $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  = regression coefficient

Based on equation above can write a function:

$$\text{HDI} = f(\text{HEg}, \text{Gr}, \text{PRr}, \text{DTr}) \dots\dots\dots(3.2)$$

In this study, the ordinary least square method is commonly used to assess the effect of health expenditure on human development. Government health expenditure is considered as public goods that invest in this sector. The result is positive and significant impact on human development has shown.

Based on the above study, this study specifies the model as follows:

$$\text{Log HDI} = \beta_0 + \beta_1 \text{Log GE} + \beta_2 \text{Log GDP} + \beta_3 \text{Log DI} \dots\dots\dots (3.3)$$

Where :

- Log HDI = The real log of HDI (human development index)
- Log GE = The real log of Government Expenditure



Log GDP = The real log of Gross Domestic Product

Log DI = The real of log Domestic Investment

$\beta_0$  = Intercept

$\beta_1, \beta_2,$  = regression coefficient

e = error term

If there are more than one independent, so regression analysis was called multiple regression model. Multiples regression model assessed effect of some independent variables towards dependent variable (Gujarati, 2006).

This research analyzes effect of Log HDI (Human Development Index) (Y) with Log of Government Expenditure ( $\beta_1$ ), Log of Gross Domestic Product ( $\beta_2$ ), and Domestic Investment ( $\beta_3$ ) . This research use multiples regression model that show the correlation between dependent variable and independent variables.

### 3.3 Operational Variables

Research variables consist of dependent and independent variables. Dependent variable is Log of Human Development Index (HDI). Independent variables are Log of Government Expenditure (GE), Log of Gross Domestic Product (GDP), and Log of Domestic Investment (DI).

To understand the terms of the variables which is used in this study, the operational restrictions will be explained as follows:

1. HDI (human development index) data used which is used is the log of HDI during the period 1992-2012.

2. Government expenditure (GE) data which is used is the real Log of GE that allocated by government in term of Rupiah (IDR) at constant price 2000 during the period 1992-2012
3. Gross domestic product (GDP) data which is used is the real Log of GDP at constant prices 2000 or real GDP in term of Rupiah (IDR) in annual period of 1992-2012.
4. Domestic Investment data which is used is the real Log of DI at real DI in term of Rupiah (IDR) in annual period of 1992-2012.

### **3.4 Classical assumption test**

In analyze multiple linear regression model in order to get better estimator, that is not bias linier with minimum variant (best linier unbiased estimator = blue) is satisfies the basic regress assumption which did steps of classical assumption test, consists of:

#### **3.4.1 Normality Test**

Normality test in regression model which is used to test whether residual value distributed as normal or not. In this case that testing not. Best regression model is has residual value that a normal distribution. Usually, there are two steps are used to test the normality in this regression model that are graphic regression analysis (normal P-P plot) and One Sample Kolmogorov-Smirnov test.

Graphic analysis (normal P-P plot) shows the spread of data at diagonal sources at normal graphic P-P plot of Regression Standardized Residual as basic

decision. If spread around the lines and follow the diagonal line so residual at that regression model distributed will be normal.

Next, to detect One Sample Kolmogorov-Smirnov method by seeing the residual significant. If significance more than 0.05, so residual value distributed normally. Otherwise, if significance less than 0.05 so residual value distributed aren't normally.

### **3.4.2 Multicollinearity test**

According to Ragner Fisher in Firdaus (2004), multicollinearity founded that has meaning perfect linear correlation or relationship between independent variable in this regression model.

The main thing that often happen in regression models of multicollinearity among others:

1. Theoretical error in the formation of regression function models used.
2. Too small number of observations to be analyzed with regression models.

Have known that the first error in the econometric work is a matter of small amount of data used.

The impacts of multicollinearity are:

1. Although the regression coefficient of variable X can be determined, but the standard of the error will tend to swell in value when the level of collinearity between independent also increase.



2. High levels of collinearity, the probability of accepting a hypothetical, but one hypothesis is that enlarges its value.
3. If high multicollinearity, person will obtain a high  $R^2$  value but none or little regression coefficients were statistically significant.

How to determine whether there is multicollinearity can be identified by the following characteristics:

- a. Collinearity is often suspected when  $R^2$  is quite high among (0.7-1) and if the simple correlation coefficient is also high but none or very few significant partial regression coefficients individually. On the other hand F-test rejects  $H_0$  who said that the whole simultaneous partial regression coefficient value is zero.
- b. Although the simple correlation coefficient value is high this raised the suspicion that happen multicollinearity, but in this case it does not apply necessarily.
- c. To determine whether there is multicollinearity in a multiple regression model, we suggest that we will not only see the simple correlation coefficient but also the partial coefficient.
- d. Because of that collinearity arise due to one or more independent variables are perfectly correlated with other independent variables, one way is to make every  $X_i$  regression to the rest of other variables and calculate  $R^2$  and we give symbol  $R_i^2$ .

### 3.4.3 Heterocedasticity test

Heterocedasticity test aims to test whether the regression model variants of the residual inequality occurs one observation to other observations. If the variance of the residuals of the observations to other observations is fix that is called homocedasticity and if different it's called heterocedasticity. The better regression model is homocedasticity. To detect the presence or absence heterocedasticity study which is conducted by analysis of the chart is to see scatter plot.

Heteroscedasticity test with Rank Spearman method is done by correlating all the independent variables on the absolute residual values using Spearman rank correlation. If there is a significant correlation of independent variables positively with the absolute value of the residual in a regression model that formed there is a problem of heteroscedasticity (Suliyanto, 2011).

Heteroscedasticity symptoms is shown by the Spearman rank correlation coefficient of each independent variable with residual absolute value  $|e|$ . If the probability value is greater than the value of alpha ( $\text{Sig.} > \alpha$ ), then certainly the model does not contain or symptoms heteroscedasticity said that, it does not happen if  $t\text{-test} < t\text{-table}$ .

### 3.4.4 Autocorrelation test

Autocorrelation test aims to tests whether in linier regression model there is correlation between disturbing errors at t-period with error at t-1 period

(before). If happens correlation in regression model so there is autocorrelation (Ghozali, 2005). Autocorrelation arises because sequential observations over time are related to each other.

According to Firdaus (2004) to see whether there is autocorrelation can be used following requirements:

DW less than 1.10 = There is autocorrelation

DW 1.10 and 1.54 = Undecided

DW 1.54 and 2.46 = There is no autocorrelation

DW 2.46 and 2.90 = Undecided

DW more than 2.91 = There is autocorrelation

To detect the presence or absence of autocorrelation test which is used Durbin Watson test as examiner with significant level ( $L$ ) = 5%. Elementary decision whether or not autocorrelation (Ghozali, 2005) is described as follows:

1. If DW value is located between lower bound ( $dl$ ) then the result is no positive autocorrelation.
2. If DW value is located between lower bound ( $dl$ ) and upper bound ( $du$ ) then the result is positive autocorrelation.
3. If DW value greater than ( $4-dl$ ) and smaller than ( $4$ ) then the result is no negative autocorrelation
4. If DW value is located between upper bound ( $4-du$ ) and lower bound ( $4-dl$ ), then the result is no negative correlation.



5. If DW value is located between upper bound ( $du$ ) and  $(4-du)$ , then the result is no autocorrelation both of positive or negative.

According to Santoso (2004), decision whether or not autocorrelation are as follows:

1. If DW value is located lower than -2, so there is positive autocorrelation.
2. If DW value is located between -2 and +2, so there is no autocorrelation.
3. If DW value is located greater than +2, so there is negative autocorrelation.

### **3.5 Statistical Hypothesis Test**

Statistical testing is also called significant testing to see there is or no the correlation independent variables separately or together on the dependent variable. Statistical testing as conducted using the following steps:

#### **3.5.1 Coefficient of Determination ( $R^2$ )**

Coefficient of determination was essentially measures how far the ability of model to explain variation in the dependent variable. Value of  $R^2$  is small, its mean the ability of independent variables in explaining variation in the dependent variable is very limited (Ghozali, 2005).

#### **3.5.2 T-test**

T-test is a test that have the purpose to know each of the regression coefficient significant or not. Before doing the test, first we have to set our hypothesis:

$$H_0: \beta = 0$$

$$H_a: \beta \neq 0$$

Based on data, value of  $\beta$  will be tested, if  $\beta = 0$  it means that coefficient of dependent does not have significant effect with independent variable. If  $\beta \neq 0$  it means that coefficient of dependent have significant effect with independent variable. T-test:

$$\{T\text{-test}\} = \frac{\beta_j}{SE(\beta_j)}$$

$$\{T\text{-test}\} = \{\alpha; df = (n-k)\}$$

The testing was done by compared of t-test value which was gotten with t-table that the determinant as below:

- a. If  $t\text{-test} < t\text{-table}$ , so  $H_0$  will be accepted and  $H_a$  will be rejected, it means there is no significant correlation between independent variable and dependent variable.
- b. If  $t\text{-test} > t\text{-table}$ , so  $H_0$  will be rejected and  $H_a$  will be accepted, it means there is a significant correlation between independent variable and dependent variable.

### 3.5.3 F-test

F-test is commonly used as test of the overall significance of the included independent in a regression model. First step we have to do is create hypothesis:

$H_0$  = independent variable have no significant effect to dependent variable

$H_a$  = independent variable significantly affect to the dependent variable

$$F\text{-test} = \frac{R^2 / (K-1)}{(1-R^2)/(n-k)}$$

Known:

F = testing the overall significance of the effect of the dependent variable

$R^2$  = determination coefficient

K = number of parameters

n = number of population

k-1 = v1 (degrees of freedom numerator)

n-k = v2 (degrees of freedom denominator)

$H_0: b_i = 0$ , there is no correlation between independent variable and dependent variable

$H_a: b_i \neq 0$ , there is a correlation between independent variable and dependent variable

The decision theorem are:

- a. If  $F\text{-test} < F\text{-table}$ , so  $H_0$  will be accepted and  $H_a$  will be rejected, it means there is no significant correlation between independent variable and dependent variable.



- b. If  $F\text{-test} > F\text{-table}$ , so  $H_0$  will be rejected and  $H_a$  will be accepted, it means there is a significant correlation between independent variable and dependent variable.

## **CHAPTER IV**

### **OVERVIEW OF INDONESIAN HUMAN DEVELOPMENT**

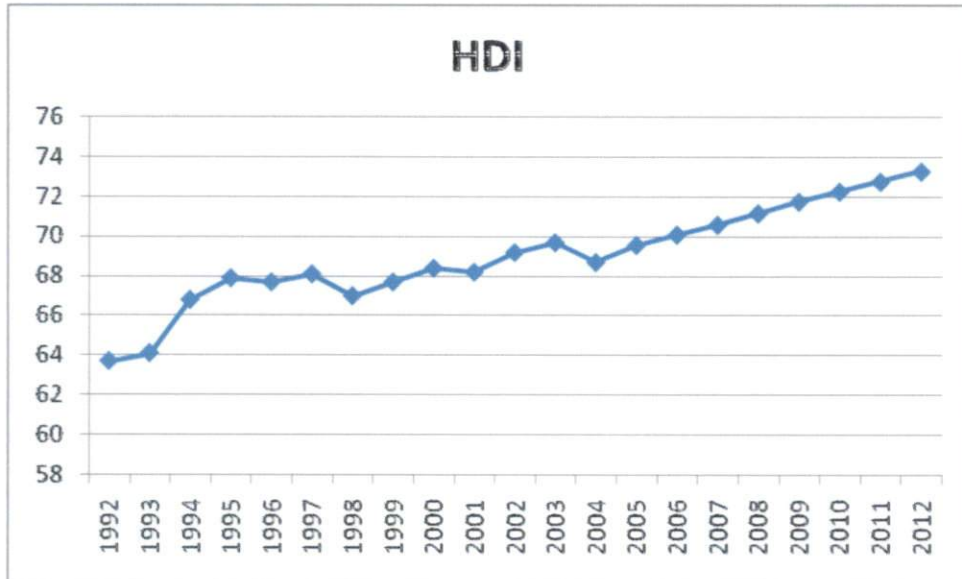
#### **4.1 Human Development Index in Indonesia**

Human development index is a success measure of the human development aspects in a country that to be composed of three dimensions: the dimension of a long and healthy life, as measured by life expectancy, the dimensions of knowledge as measured by literacy rates and average length of the school as well as the dimensions of life viable as measured by purchasing power parity. Besides human development was also influenced by other factors such as the availability of employment opportunities, economic growth, infrastructure, investment and government policy.

Improving the welfare of the community is not only related to issues of income, but also in terms of access to education and health. Improvement in the quality of Indonesian society is reflected in the improvement of Human Development Index (HDI). Contruction of Indonesian society during the period 1996-2007 increased except 1996-1999, where a decline in human development achievements. This is a result of the economic crisis in Indonesia.

**Figure 4.1**

**Total of human development index in Indonesia period 1992-2012**



*Source: Statistics Indonesia, processed by author*

Based on the graph above, we can see that trend of HDI in Indonesia tends to fluctuate every year during period 1992-2012. Before the crisis in 1996 HDI Indonesia amounted to 67,70 , in 1997 amounted to 68,10. This figure is higher than the HDI in several southeast Asian countries such as Vietnam, Cambodia, and Myanmar. However, the economic crisis of the mid year 1998, HDI Indonesia decreased to 67,00. The Development of the HDI shows performance improvement up to 1999 until in 2012 as it did in the graph above. Development occurs because there is a change in HDI components. Changes can alter the amount of the increase or decrease in percent components of the HDI, there are life expectancy, literacy rates, average length of the school and the real expenditure per capita.



In 2005, Indonesia ranks 110 with HDI of 69.6 the previous year 2004 amounted to 68.8 it was still higher than Vietnam, which is the medium human development countries in southeast Asia. Indonesian human development is trend continue to rise, showing the state of the Indonesian economy began to stabilize and welfare of Indonesia that began to take shape after the economic crisis in Indonesia. Until the year 2012 Indonesia continued to increase until HDI 73.9.

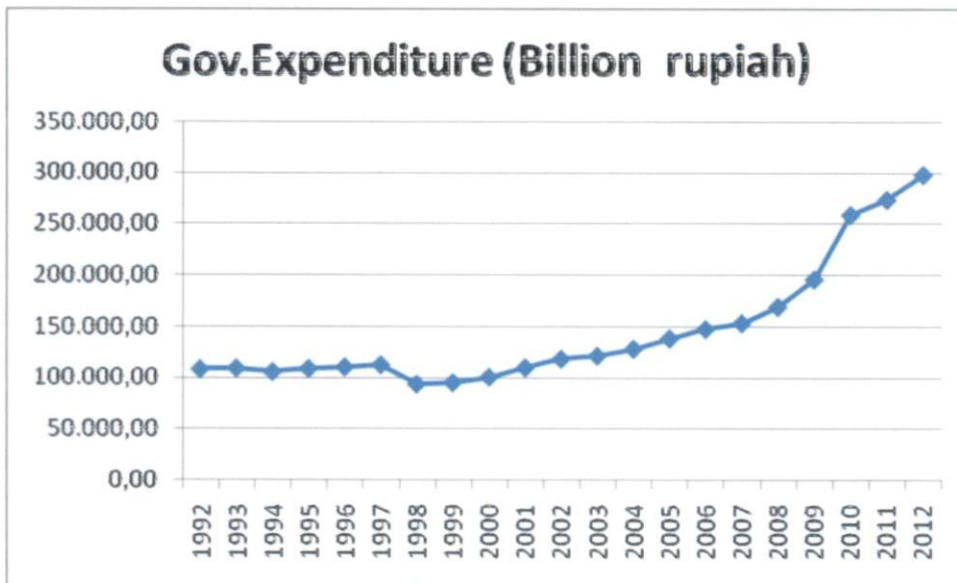
Based on the report by the UNDP human development , HDI position in Indonesia over than Philippines and Vietnam. But it's still under than Singapore, Brunei, Thailand and Malaysia which are in the high human development category. When in detail, HDI is a composite index of life expectancy, education index and GDP index based on PPP (Purchasing Power Parity). Where government spending for education and health have an important role to improve the HDI.

#### **4.2 Trends of Government Expenditure (GE) in Indonesia**

Government expenditure is spending used to finance the construction of the Central Government, both held at the central and regional levels. Kunarjo (1996) revealed that government spending plays a role in bringing the public demand for the provision of facilities and infrastructure that cannot be met by the private sector. Government spending continues to grow resulting revenues should be increased. This means that the government must be able to explore the sources of revenues which were largely derived from taxes.

**Figure 4.3**

**Government Expenditure at constant price (2000) in Indonesia over  
periode 1992- 2012**



*Source: Statistics Indonesia, processed by author*

From the graph above we can see that government expenditure is getting increase every year. From 1992-1997 the increase of government expenditure was from 108,170.49 billion rupiah in 1992 to 112,598.04 billion rupiah in 1997. In 1998 government expenditure decrease about 93,597.42 billion rupiah. This condition happens because there was a financial crisis and higher spending on interest payments on external debt.

In 2000 there was an increase in government spending budget of 100,538.09 billion or an increase of  $\pm 13.6$  percent above the target set. Exceeding of the operational expenditures of the target is almost entirely derived from the

payment of subsidies, especially fuel subsidies which increased to more than twice of the original plan.

In 2005 government expenditure increased by 138,424.90 billion this condition happen because of the increased fiscal stimulus and recovery of purchasing power. In the period of 2007-2011, government expenditure did the increasing from 153,309.60 billion rupiah to 273,771.03 billion.

#### **4.3 Trends of Gross Domestic Product (GDP) in Indonesia**

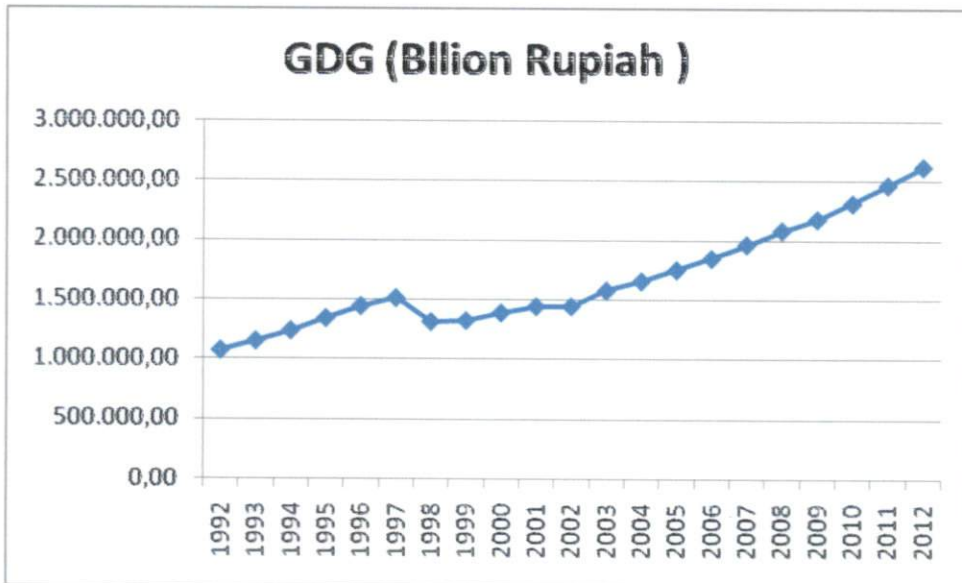
High economic growth that is sustainable process is the desire of every developing country. This is required for the survival of the economic development in this state. Population growth resulted in economic need is also getting increase, the need to increase revenue every year. This can be obtained through an increase in aggregate output or gross domestic product (GDP) annually.

In the mid 1980s government began to remove barriers to economic activity. This policy is shown especially in the external and financial sector and designed to increase employment and growth in non oil export. Since 1987-1997, annual real GDP grew on average nearly 7% and many analysis recognizes Indonesia as a state industrial economy and as the growing in main market



**Figure 4.2**

**Growth of Gross Domestic Product (GDP) at constant price (2000) in Indonesia over period 1992-2012**



*Source: Statistics Indonesia, processed by author*

At 1995 and 1996, Indonesia has higher economic growth than previous year about 1,342,285.05 billion rupiah in 1995 and 1,444,873.03 billion rupiah in 1996. This improvement was primarily driven by the impact of consumption and investment boom at this year (1995). In 1998, Indonesia faces a crisis. This crisis becomes multidimensional crisis that bring bad effect to economic growth. Based on the data in 1998, economic growth Indonesia decline sharply become 1,314,201.74 billion rupiah.

Declining Gross domestic product in 1998 is caused by investment and consumption activities declining sharply. Declining of investment activity is causes unbalance or worst off in business, worsen in banking condition, and lack

of confidence of foreign investors. Meanwhile, decline of investment is also caused by decline of demand for consumption. Otherwise, demand for export recorded positive growth, but fundamentally export is not enough to overcome Indonesian economy.

In 2000, Indonesia's GDP reached 1,444,405.73 billion rupiah. It shows plots of Indonesia is trying to improve the economic condition. By increasing the GDP is expected growth so Indonesia can have a healthy economic development. Economic growth in Indonesia in 2003 reached 1,577,171.30 billion rupiah, it is driven by all the components of GDP such as Household consumption, government spending, investment both in the domestic and foreign affairs as well as export and import.

In 2004, Indonesia's GDP reached 1,656,516.80 billion rupiah if it is compared with 2003. In 2005 Indonesia's GDP reached 1,750,815.20 billion rupiah bigger than the previous GDP. Then in 2006, Indonesia's GDP increased 1,847,126.70 billion rupiah. In 2007, the growth tends to stable because GDP growth reach 1,964,327.30 billion rupiah. This is caused by growth of domestic demand, both of consumption and investment. Private consumption increased due to better purchasing power, meanwhile investment growth increase due to better perception of investors and increasing the return on investment. Three sectors that giving bigger contribution on GDP are agriculture, industries, and trade.

During period 2009 and 2010 economy still recovery, but Indonesian economy still face some problems like high inflation, restriction in real sector,

capital inflow, and so on. GDP in 2009 , 2,177,741.70 billion rupiah , and in 2010 the value GDP Indonesia is 2,310,689.80 billion rupiah. At 2011 the growth of GDP is 6,66% with the value is 2,464,676.50 billion rupiah.

#### **4.4 Trends of Domestic Investment in Indonesia 1992 -2012**

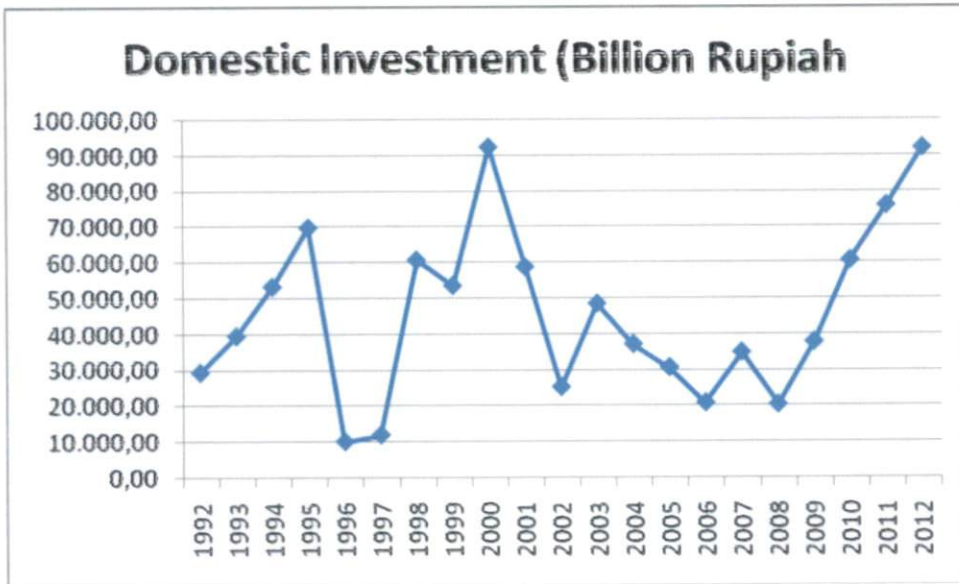
In the graph above, we can see that the domestic investment is fluctuated during the period of 1992-2012. From 1994-1998 domestic investment is increase from 53 billion rupiah to 60 billion rupiah. During 1999 domestic investment decrease be 53.55 billion rupiah. in 2000-2003 domestic investment still is fluctuated from 92.41 billion rupiah in 2000 until 37.14 billion rupiah in 2003.

From the period 2006 domestic investment decrease about 20.77 billion rupiah. During period 2007-2012 the domestic investment tends to stable due to Indonesian economic from 34.878 billion rupiah in 2007 and become 92.182 billion rupiah in 2012



**Figure 4.4**

**Domestic Investment in Indonesia**



*Source: Statistics Indonesia, processed by author*

## CHAPTER V

### EMPIRICAL RESULTS AND ANALYSIS

#### 5.1 Regression Results Analysis

This study aims to examine the total of Human Development Index (HDI) and relationship between economic variables such as Government Expenditures (GE), Gross Domestic Product (GDP), and Domestic Investment. Data used in this research is secondary data with time series data that takes from 1992-2012. Author used the log total of Human Development Index (HDI) as dependent variable, log of Government Expenditures (GE), log of Gross Domestic Product (GDP), and Domestic Investment as independent variables.

##### 5.1.1. Classical Assumption Test

Classical assumption test aims to assess the data whether it is feasible or not to be tested and analyzed. Test assumptions used are normality test, multicollinearity test, heteroscedasticity test and autocorrelation test.

##### 5.1.1.1 Normality Test

Normality test can be tested from P-P plot and also can be seen by Kolmogorov – Smirnov test. Based on table below we can see that P-value for Log GE is 0.363, Log GDP is 0.726, and Log DI is 0.925. So, we can concluded that the data set distribution is normal.

**Table 5.1**  
**Normality Test Result**

**One-Sample Kolmogorov-Smirnov Test**

| Independent Variables | Asymp. Sig. (2-tailed) |
|-----------------------|------------------------|
| Log GE                | 0.363                  |
| Log GDP               | 0.726                  |
| Log DI                | 0.925                  |

*Source: Data were processed*

**5.1.1.2 Multicollinearity Test**

Multicollinearity test is the presence of a strong relationship between the independent variables in the regression equation. Multicollinearity can be seen by regressing analysis model and the correlation between the independent variables by using Variance Inflation Factor (VIF) and Tolerance (Gujarati, 1995).

If VIF value is less than 10 and tolerance value is less than 0.1 so there has been no symptom of multicollinearity, otherwise if VIF value is above 10 and tolerance value is above 0.1, there has been symptom of multicollinearity so data must be grouped.



**Table 5.2**

**Multicollinearity Result**

| Variables           | Tolerance | VIF   | Conclusion   |
|---------------------|-----------|-------|--|
| Log Gov<br>Exp (X1) | 0.128     | 7.793 | VIF < 10 dan TOL ><br>0,1 there has been no<br>symptom of<br>multicollinearity |
| Log<br>GDP<br>(X2)  | 0.133     | 7.525 | VIF < 10 dan TOL ><br>0,1 there has been no<br>symptom of<br>multicollinearity |
| Log DI<br>(X3)      | 0.906     | 1.104 | VIF < 10 dan TOL ><br>0,1 there has been no<br>symptom of<br>multicollinearity |

*Source: Data processed*

**5.1.1.3 Heterocedasticity Test**

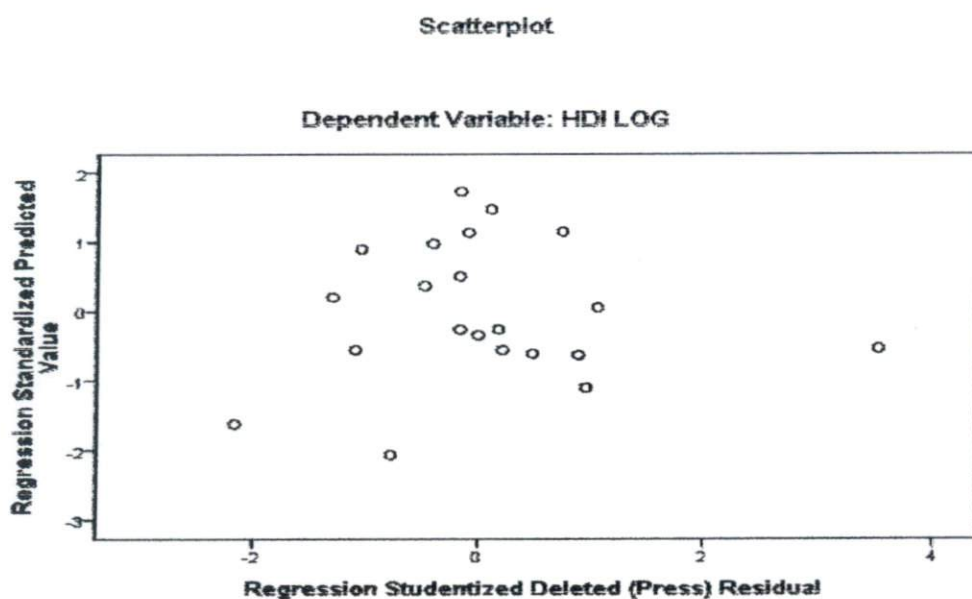
There are several methods that is used to test the heterocedasticity the error variance terms for the regression model. The models is used in the scatterplot diagram with the thought that:

1. If there is a specific pattern like dots that form a regular pattern floating, spreading, or narrowing. If forming a pattern that identifies the heterocedasticity.
2. Otherwise, if it does not form a particular pattern does not occur then identify heterocedasticity.

The figure below is heterocedasticity test results in research of Government Expenditure and Gross Domestic Product (GDP) impact on Human Development Index (HDI).

**Figure 5.1**

### **Heterocedasticity Test**



*Source: Data processed*

Based on figure of scatterplot above it explain, that the regression model causes there are no symptoms heterocedasticity are not visible on the graph to form certain patterns and dots spread randomly.

#### **5.1.1.4 Autocorrelation Test**

Autocorrelation means that there is correlation between one intercept and the others. Estimation result show, the value of Durbin-Watson statistic is 1.680.

**Table 5.3**  
**Autocorrelation Test**

**Model Summary<sup>b</sup>**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |               |
| 1     | .976 <sup>a</sup> | .952     | .943              | .00381797                  | .952              | 111.457  | 3   | 17  | .000          | 1.680         |

a. Predictors: (Constant), DI LOG, GDP LOG , Gov.Expenditure Log

b. Dependent Variable: HDI LOG

According to Firdaus (2004) to see whether there is autocorrelation can be used following requirements:

DW less than 1.10 = There is autocorrelation

DW 1.10 and 1.54 = Undecided

DW 1.54 and 2.46 = There is no autocorrelation

DW 2.46 and 2.90 = Undecided

DW more than 2.91 = There is autocorrelation

So we can conclude that there is no autocorrelation happen because DW is 1.680.



### 5.1.2 Statistical Test

#### 5.1.2.1 Determination Test ( $R^2$ )

According to Santoso (2001) that regression has more than two independent variables used Adjusted  $R^2$  as coefficient of determination. From the estimation result get the value of coefficient of determination ( $R^2$ ) is 0.943 or 94.3 percent. This result show that 43.3 percent variation of independent variables (Log Government Expenditures, Log GDI, and Log Domestic Investment) influenced on Log of HDI. In other words, those variations of independent variables explain variable of dependent variable (HDI), other 5,7% of HDI variation is explained by other variables which aren't in the model.

#### 5.1.2.2. T-test

The t-test is used to test the correlation between the dependent variable and independent variables individually. If the value of t-test < t-table (the significant level = 0.05), then it can be concluded that the individual independent variables significantly affect the dependent variable. Otherwise, if the value of t-test > t-table (significant level = 0.05), then it can be concluded that individual independent variables are not significantly affect the dependent variable.

In this case will be seen how the impact of independent variables (Log Government Expenditures, Log GDP, and Log Domestic Investment) on dependent variable (Log HDI) individually. It can be seen by the table 5.4 below :

**Table 5.4**

**The Result of Multiple Linear Regressions**

**Dependent Variable: Log Human Development Index (HDI)**

| Variable             | Coefficient | Std. Error | T-statistic       | Sig     |
|----------------------|-------------|------------|-------------------|---------|
| Constant             | 0.808       | 0.067      | 11.989            | 0.000   |
| Log GE               | -0.053      | 0.016      | -3.411            | 0.003   |
| Log GDP              | 0.025       | 0.21       | 9.650             | 0.000   |
| Log DI               | 0.007       | 0.003      | 2.072             | 0.054   |
| R                    |             | 0.976      | t-table           | 2.110   |
| R-Squared            |             | 0.952      | F-statistic       | 111.457 |
| Adjusted R-Squared   |             | 0.943      | F-table           | 3.20    |
| S.E of Estimate      |             | 0.00381797 | Sig (F-statistic) | 0.000   |
| Sum Squared Residual |             | 0.000      |                   |         |
| Durbin-Watson Stat   |             | 1.680      |                   |         |

*Source: Data processed*

Based on table above, we can see that the multiple linear regression equation as follows:

$$\text{LOG HDI} = \beta_0 + \beta_1 \text{Log GE} + \beta_2 \text{Log GDP} + \beta_3 \text{Log DI} + e$$

$$= 0.080 - 0.053 \text{Log GE} + 0.025 \text{Log GDP} + 0.007 \text{Log DI}$$

$$\text{T-test} = (-3.411) \quad (9.650) \quad (2.072)$$

$$\text{F-test} = 111.457$$

$$R^2 = 0.952$$

$$\text{Adjusted } R^2 = 0.943$$

$$\text{Durbin- Watson stat} = 1.680$$

From the regression above can be interpreted that:

1. The dependent variable (Log HDI) in Indonesia was 0.808 percent, if independent variables (Log Government Expenditure, Log GDP, and Log Domestic Investment) are fixed.
2. Log of Government Expenditure in Indonesia has negative and significant relationship with HDI in Indonesia where t-table was -3.411.
3. Log of Gross Domestic product in Indonesia has positive and significant relationship with HDI in Indonesia where t-table was 9.650.
4. Log of Domestic Investment in Indonesia has positive and significant relationship with HDI in Indonesia where t-table was 2.072.

#### **a. T-test on Government Expenditure (GE)**

$$H_0: \beta_1 = 0$$

$$H_a: \beta_1 < 0$$

Value of t-test for Log of Government Expenditure (GE) about -3.411 at degree of freedom (df) =  $n-k-1 = 21-3-1 = 17$ , in where  $n$  = number of data,  $k$  = number of parameters. T-table at significant level 95% (significant at 5% or 0.05) is 2.110. Thus,  $t\text{-test} > t\text{-table}$  ( $3.411 > 2.110$ ), it means can be concluded that  $H_0$  is rejected and  $H_a$  is accepted statistically. So, the government expenditure has

negative and significant effect on HDI in Indonesia partially. In other words, there is a negative relationship between independent and dependent variables.

**b.T- test on Gross Domestic Product (GDP)**

$$H_0: \beta_1 = 0$$

$$H_a: \beta_1 < 0$$

Value of t-test for Log of Gross Domestic Product about 9.650 at degree of freedom ( $df$ ) =  $n-k-1 = 20-3-1 = 17$ , where  $n$  = number of data,  $k$  = number of parameters. T-table at significant level 95% (significant at 5% or 0.05) is 2.110. Thus,  $t\text{-test} > t\text{-table}$  ( $9.650 > 2.110$ ), it means can be concluded that  $H_0$  is rejected and  $H_a$  is accepted statistically. So, partially the Gross Domestic Product (GDP) in Indonesia has positive and significant effect with HDI in Indonesia. In other words, there is a positive relationship between independent and dependent variables.

**c.T- test on Domestic Investment**

$$H_0: \beta_1 = 0$$

$$H_a: \beta_1 < 0$$

Value of t-test for Log of Domestic Investment about 2.072 at degree of freedom ( $df$ ) =  $n-k-1 = 20-3-1 = 17$ , where  $n$  = number of data,  $k$  = number of parameters. T-table at significant level 95% (significant at 5% or 0.05) is 2.110. Thus,  $t\text{-test} > t\text{-table}$  ( $2.072 > 2.110$ ), it means can be concluded that  $H_0$  is accepted and  $H_a$  is rejected statistically. So, partially the Domestic Investment in Indonesia has positive and significant effect with HDI in Indonesia. In other



words, there is a positive relationship between independent and dependent variables.

#### 5.1.2.3. F-test

F test is used to detect the correlation between dependent variable and all the independent variables (simultaneously). The using of F test is similar as the using for t-test. Hypotheses are formulated as follows:

This decision will use parameter at 5% ( $\alpha = 5\%$ ) based on the following rules:

1. If  $F\text{-statistic} < F\text{-table}$

$H_0$  is accepted  $H_a$  is rejected, (not significant) in other word, the independent variables simultaneously do not have any effect on the dependent variable.

2. If  $F\text{-statistic} > F\text{-table}$

$H_0$  is rejected and  $H_a$  is accepted, (significant) in other word, the independent variables simultaneously have effect on the dependent variable.

The F test is similar to the t test that comparing the value of the F-statistic and F-table value. To find the F-table value, we must get the degree of freedom from numerator ( $k-1$ ) and the degree of freedom for denominator ( $n-k$ ). With the level of significance  $\alpha = 5\%$ , the degree of freedom for numerator is  $3 = (4-1)$  and the degree of freedom for denominator is  $17 = (21-4)$ . It can be found that value of F-table in point (3 : 18) is 3.20.

From the regression we know that F-statistic is 111.457. We proceed to compare the F statistic value and F table value. From the comparison, it can be concluded that the F-statistic value is higher than the F-table value (F-statistic > F-table). It means that  $H_0$  is rejected and  $H_a$  is accepted (significant). The independent variables simultaneously have effect on dependent variable. In other words, the government expenditure, gross domestic product, and domestic investment significantly and simultaneously effect on human development index in Indonesia.

## **5.2 Estimation Results**

Based on the results of statistical data processing was found that Log of Government Expenditure (GE) has negative and significant impact on Log of Human Development Index (HDI) in Indonesia, Log of Gross Domestic Product (GDP) has positive and significant impacts on Log of Human Development Index (HDI) in Indonesia, and Log of Domestic Investment has positive and significant impacts on Human Development Index (HDI) in Indonesia.

### **5.2.1. The Impact of Government Expenditure (GE) on Human Development Index (HDI) in Indonesia**

Regression coefficient of Log of Government Expenditure is -3.411. It means increase in log of Government Expenditure will lead decrease the HDI in Indonesia. When the growth of Government Expenditure rises by 1%, the HDI will decrease -3.411%. Regression coefficient has negative value show that negative relationship between Government Expenditure and HDI in Indonesia.

The result above is not in accordance with the hypothesis, in hypothesis relationship government expenditure is a positive and significant on HDI, but the result were found to have a negative and significant. This result same with the study by Ali (2011) examines about "The role fiscal policy in human development : the Pakistan's perspective", the result show that current expenditure has negative impact on the human development. The policy regime of the democratic government has a negative effect on human development. The alarning condition of negative relation, the current expenditure needs attention of the policy maker for reducing corruption in the public spending to gain the maximum for the human welfare in Pakistan.

In this case, Pakistan has the same condition with Indonesia becacuse, until now the corruption is still be the problem which affects the Human Development Index (HDI). This is supported study by Akcay (2006) examine about "Corruption and Human Development", find that the corruption reduce government expenditure on education and health. Public officials do not want to spend more on education and health because those spending programs offer less opportunity for rent seeking. Corruption also reduces the level of social spending, foster education inequality, lowers secondary schooling, and causes unequal distribution of land, (Mauro : 1998).

### **5.2.2. The Impact of Gross Domestic Product on Human Development Index (HDI) in Indonesia**

Regression coefficient log og GDP is 9.650, it means increasing in Log of GDP will increase the HDI in Indonesia. When the log of GDP increase by 1%,



it will increase the HDI in Indonesia by 9.65%. Regression coefficient has positive value that show positive relationship between the Log of GDP and the Log of HDI in Indonesia.

The result above are in accordance with the hypothesis, that Gross Domestic Product (GDP) have a positive and significant on Human Development Index (HDI). This result related with the study by Setiawan and Hakim (2010), examine about "Index Pembangunan Manusia di Indonesia", the variables of this study is Gross Domestic Product (GDP), Income Tax, Dummy of Government Decentralization, dummy crisis in 1997 and 2008. The result show that GDP has a positive and significant on HDI, because increased in the GDP will be improve the population welfare. The tax income also has a negative and significant on HDI, because the increased in the tax income will be reduce the disposable income so it will decreased the population welfare. Dummy government decentralization did not have positive impact on HDI, that means decentralization of government haven't been able to be translated by local government to improve the welfare of society.

### **5.2.3. The Impact of Domestic Investment on Human Development Index (HDI) in Indonesia**

Regression coefficient log of GDP is 2.075, it means increasing in Log of Domestic Investment will increase the HDI in Indonesia. When the log of Domestic Investment increase by 1%, it will increase the HDI in Indonesia by 2.075%. Regression coefficient has positive value that show positive relationship between the Log of Domestic Investment and the Log of HDI in Indonesia.



The result above are in accordance with the hypothesis, that Domestic Investment have a positive and significant on Human Development Index (HDI). This result related with the study by Ramirez, Ranis dan Stewart (1998), shows that in the government's budget management is often times a tug of war between the investment to economic structure and investment for the sicial sector. Investment is needed in human development, to improve the quality of human resources.

## CHAPTER VI

### CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 Conclusions

Based on empirical results research discussed in the previous chapter, the main objective of this research is examine the impact of Government Expenditure, Gross Domestic Product (GDP), and Domestic Investment on Human Development Index (HDI) in Indonesia over period 1992 to 2012. In this thesis, the Ordinary Least Square (OLS) model is used to empirically test the impact of Government Expenditure on HDI and Gross Domestic Product on HDI in Indonesia . From the analysis of data the conclusions are as follows:

1. Based on the regression model testing can be concluded that the log of Human Development Index (HDI) in Indonesia over period 1992 – 2012 is influenced by the Government Expenditure (GDP) and the Gross Domestic Product (GDP) about 93.3 percent. 6.7 percent of HDI variation is explained by other variables which aren't in the model.
2. The Government Expenditure in Indonesia significant and has negative relationship with HDI in Indonesia this result is shown by the regression coefficient of Government Expenditure log about -0.509, it means increase in Government Expenditure will lead to reduce the HDI in Indonesia over period 1992 – 2012. This is not in accordance with the hypothesis, the hypothesis of a significant and positive.

3. The Gross Domestic product in Indonesia significant and has positive relationship with HDI in Indonesia this result is shown by the regression coefficient of GDP Log about 0.196, it means the increase in GDP will increase the HDI in Indonesia over period 1992- 2012.
4. The Domestic Investment in Indonesia significant and has positive relationship with HDI in Indonesia this result shown by the regression coefficient of Log of Domestic Investment about 0.007, it means increase in Domestic Investment will increase the HDI in Indonesia.

## **6.2 Recommendations**

Based on the study, it can be given recommendations as follows:

1. From the above result, allocation of funds should be distributed evenly effectively and efficiently. The government should be more transparent and control the reporting funds are distributed throughout the area. So it can provide a significant impact especially for the improvement of human resources. Improved quality of life for the Indonesian people and to the development of remote area.
2. With the increased good revenue, should be considered more a means of support to improve the human development with the supporting facilities and infrastructures public, education, health, the environment and socio protected and other. It is expected to increase the human development index (HDI).

3. For developing countries especially Indonesia is needed once their investment. Especially investment in development such as invest to infrastructure, facilities public, and also needed investment in education and health to improve the quality of human resource.



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[www.bps.go.id](http://www.bps.go.id)

[www.bi.go.id](http://www.bi.go.id)

[www.undp.org](http://www.undp.org)

# APPENDIX



Table 4.1 Human Development Index (HDI) in Indonesia over period 1992-2012

| Human Development Index |       |         |
|-------------------------|-------|---------|
| Year                    | HDI   | HDI LOG |
| 1992                    | 63.7  | 1.80414 |
| 1993                    | 64.1  | 1.80686 |
| 1994                    | 66.8  | 1.82478 |
| 1995                    | 67.9  | 1.83187 |
| 1996                    | 67.7  | 1.83059 |
| 1997                    | 68.1  | 1.83315 |
| 1998                    | 67    | 1.82607 |
| 1999                    | 67.7  | 1.83059 |
| 2000                    | 68.4  | 1.83506 |
| 2001                    | 68.2  | 1.83378 |
| 2002                    | 69.2  | 1.84011 |
| 2003                    | 69.7  | 1.84323 |
| 2004                    | 68.7  | 1.83696 |
| 2005                    | 69.57 | 1.84242 |
| 2006                    | 70.1  | 1.84572 |
| 2007                    | 70.59 | 1.84874 |
| 2008                    | 71.17 | 1.85230 |
| 2009                    | 71.76 | 1.85588 |
| 2010                    | 72.27 | 1.85896 |
| 2011                    | 72.77 | 1.86195 |
| 2012                    | 73.29 | 1.86504 |

Source: Statistics Indonesia

Table 4.2 Government Expenditure in Constant Price (2000) in Indonesia over  
period 1992-2012

| Government Expenditure |                                     |                        |
|------------------------|-------------------------------------|------------------------|
| Year                   | Gov.Expenditure (Billion<br>rupiah) | Gov.Expenditure<br>Log |
| 1992                   | 108,170.49                          | 5.03411                |
| 1993                   | 109,208.42                          | 5.03826                |
| 1994                   | 105,655.96                          | 5.02389                |
| 1995                   | 108,820.77                          | 5.03671                |
| 1996                   | 110,364.73                          | 5.04283                |
| 1997                   | 112,598.04                          | 5.05153                |
| 1998                   | 93,597.42                           | 4.97126                |
| 1999                   | 95,100.68                           | 4.97818                |
| 2000                   | 100,538.09                          | 5.00233                |
| 2001                   | 109,887.58                          | 5.04095                |
| 2002                   | 118,400.15                          | 5.07335                |
| 2003                   | 121,404.10                          | 5.08423                |
| 2004                   | 128,248.70                          | 5.10805                |
| 2005                   | 138,424.90                          | 5.14121                |
| 2006                   | 147,563.70                          | 5.16898                |
| 2007                   | 153,309.60                          | 5.18557                |
| 2008                   | 169,297.20                          | 5.22865                |
| 2009                   | 195,907.70                          | 5.29205                |
| 2010                   | 258,952.69                          | 5.41322                |
| 2011                   | 273,771.03                          | 5.43739                |
| 2012                   | 298,331.09                          | 5.47470                |

Source: Statistics Indonesia

Table 4.3 Gross Domestic Product in Constant Price (2000) in Indonesia over  
period 1992-2012

| Gross Domestic Product |                      |            |
|------------------------|----------------------|------------|
| Year                   | GDG (Bllion Rupiah ) | GDP<br>LOG |
| 1992                   | 1,073,608.54         | 6.03085    |
| 1993                   | 1,151,488.91         | 6.06126    |
| 1994                   | 1,238,311.95         | 6.09283    |
| 1995                   | 1,342,285.05         | 6.12784    |
| 1996                   | 1,444,873.03         | 6.15983    |
| 1997                   | 1,512,780.22         | 6.17978    |
| 1998                   | 1,314,201.74         | 6.11866    |
| 1999                   | 1,324,598.78         | 6.12208    |
| 2000                   | 1,389,769.00         | 6.14294    |
| 2001                   | 1,443,405.73         | 6.15939    |
| 2002                   | 1,444,405.73         | 6.15969    |
| 2003                   | 1,577,171.30         | 6.19788    |
| 2004                   | 1,656,516.80         | 6.21920    |
| 2005                   | 1,750,815.20         | 6.24324    |
| 2006                   | 1,847,126.70         | 6.26650    |
| 2007                   | 1,964,327.30         | 6.29321    |
| 2008                   | 2,082,456.10         | 6.31858    |
| 2009                   | 2,177,741.70         | 6.33801    |
| 2010                   | 2,310,689.80         | 6.36374    |
| 2011                   | 2,464,676.50         | 6.39176    |
| 2012                   | 2,618,139.20         | 6.41799    |

Source: Statistics Indonesia

Table 4.4 Domestic Investment in Indonesia over period 1992-2012

| Year | Domestic Investment (Billion<br>Rupiah) | DI<br>LOG |
|------|---|-----------|
| 1992 | 29,341.70                               | 4.46749   |
| 1993 | 39,450.40                               | 4.59605   |
| 1994 | 53,289.10                               | 4.72664   |
| 1995 | 69,853.00                               | 4.84419   |
| 1996 | 10,071.52                               | 4.00310   |
| 1997 | 11,987.29                               | 4.07872   |
| 1998 | 60,749.30                               | 4.78354   |
| 1999 | 53,550.00                               | 4.72876   |
| 2000 | 92,410.40                               | 4.96572   |
| 2001 | 58,816.00                               | 4.76950   |
| 2002 | 25,262.30                               | 4.40247   |
| 2003 | 48,484.80                               | 4.68561   |
| 2004 | 37,140.40                               | 4.56985   |
| 2005 | 30,665.00                               | 4.48664   |
| 2006 | 20,778.40                               | 4.31761   |
| 2007 | 34,878.70                               | 4.54256   |
| 2008 | 20,363.40                               | 4.30885   |
| 2009 | 37,799.90                               | 4.57749   |
| 2010 | 60,626.30                               | 4.78266   |
| 2011 | 76,000.70                               | 4.88082   |
| 2012 | 92,182.00                               | 4.96465   |

*Source: Statistics Indonesia*



## Regression

Descriptive Statistics

|                     | Mean            | Std. Deviation | N  |
|---------------------|-----------------|----------------|----|
| HDI LOG             | 1.8384856<br>E0 | .01600298      | 21 |
| Gov.Expenditure Log | 5.1346413<br>E0 | .15221376      | 21 |
| GDP LOG             | 6.2097740<br>E0 | .11030641      | 21 |
| DI LOG              | 4.5944238<br>E0 | .26523314      | 21 |

Model Summary<sup>b</sup>

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |          |     |     |               | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
|       |                   |          |                   |                            | R Square Change   | F Change | df1 | df2 | Sig. F Change |               |
| 1     | .976 <sup>a</sup> | .952     | .943              | .00381797                  | .952              | 111.457  | 3   | 17  | .000          | 1.680         |

a. Predictors: (Constant), DI LOG, GDP LOG, Gov.Expenditure Log

b. Dependent Variable: HDI LOG

ANOVA<sup>b</sup>

| Model |            | Sum of Squares | df | Mean Square | F       | Sig.              |
|-------|------------|----------------|----|-------------|---------|-------------------|
| 1     | Regression | .005           | 3  | .002        | 111.457 | .000 <sup>a</sup> |
|       | Residual   | .000           | 17 | .000        |         |                   |
|       | Total      | .005           | 20 |             |         |                   |

ANOVA<sup>b</sup>

| Model |            | Sum of Squares | df | Mean Square | F       | Sig.              |
|-------|------------|----------------|----|-------------|---------|-------------------|
| 1     | Regression | .005           | 3  | .002        | 111.457 | .000 <sup>a</sup> |
|       | Residual   | .000           | 17 | .000        |         |                   |
|       | Total      | .005           | 20 |             |         |                   |

a. Predictors: (Constant), DI LOG, GDP LOG, Gov.Expenditure Log

b. Dependent Variable: HDI LOG

Coefficients<sup>a</sup>

| Model |                     | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | Collinearity Statistics |       |
|-------|---------------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
|       |                     | B                           | Std. Error | Beta                      |        |      | Tolerance               | VIF   |
| 1     | (Constant)          | .808                        | .067       |                           | 11.989 | .000 |                         |       |
|       | Gov.Expenditure Log | -.053                       | .016       | -.508                     | -3.411 | .003 | .128                    | 7.793 |
|       | GDP LOG             | .205                        | .021       | 1.412                     | 9.650  | .000 | .133                    | 7.525 |
|       | DI LOG              | .007                        | .003       | .116                      | 2.072  | .054 | .906                    | 1.104 |

a. Dependent Variable: HDI LOG

Collinearity Diagnostics<sup>a</sup>

| Model | Dimen<br>sion | Eigenvalue | Condition<br>Index | Variance Proportions |                     |         |        |
|-------|---------------|------------|--------------------|----------------------|---------------------|---------|--------|
|       |               |            |                    | (Constant)           | Gov.Expenditure Log | GDP LOG | DI LOG |
| 1     | 1             | 3.997      | 1.000              | .00                  | .00                 | .00     | .00    |
|       | 2             | .002       | 41.702             | .00                  | .00                 | .00     | .93    |
|       | 3             | .000       | 97.661             | .20                  | .12                 | .00     | .00    |
|       | 4             | 2.601E-5   | 392.004            | .80                  | .88                 | 1.00    | .06    |

a. Dependent Variable: HDI LOG

# Residuals Statistics<sup>a</sup>

|                                   | Minimum       | Maximum       | Mean          | Std. Deviation | N  |
|-----------------------------------|---------------|---------------|---------------|----------------|----|
| Predicted Value                   | 1.8063091E-01 | 1.8655746E-01 | 1.8384856E-01 | .01561105      | 21 |
| Std. Predicted Value              | -2.061        | 1.735         | .000          | 1.000          | 21 |
| Standard Error of Predicted Value | .001          | .003          | .002          | .000           | 21 |
| Adjusted Predicted Value          | 1.8083030E-01 | 1.8658519E-01 | 1.8386229E-01 | .01531546      | 21 |
| Residual                          | -             | -             | -             | -              | -  |
|                                   | 6.36119768E-3 | .00995279     | 5.4721232E-17 | .00351999      | 21 |
| Std. Residual                     | -1.666        | 2.607         | .000          | .922           | 21 |
| Stud. Residual                    | -1.962        | 2.723         | -.015         | 1.002          | 21 |
| Deleted Residual                  | -             | -             | -             | -              | -  |
|                                   | 8.81805830E-3 | .01085746     | 1.3729715E-4  | .00419061      | 21 |
| Stud. Deleted Residual            | -2.164        | 3.517         | .012          | 1.138          | 21 |
| Mahal. Distance                   | .479          | 8.625         | 2.857         | 2.104          | 21 |
| Cook's Distance                   | .000          | .372          | .048          | .087           | 21 |
| Centered Leverage Value           | .024          | .431          | .143          | .105           | 21 |

a. Dependent Variable: HDI LOG

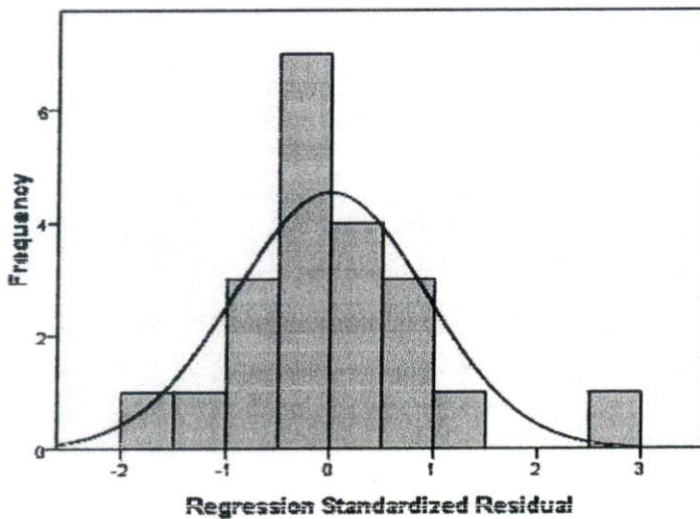
# One-Sample Kolmogorov-Smirnov Test

|                                 |                | HDI LOG  | Gov. Expenditure Log | GDP LOG   | DI LOG   |
|---------------------------------|----------------|----------|----------------------|-----------|----------|
| N                               |                | 21       | 21                   | 21        | 21       |
| Normal Parameters <sup>a</sup>  | Mean           | 1.838485 | 5.1346413            | 6.2097740 | 4.594423 |
|                                 | Std. Deviation | .0160029 | .15221376            | .11030641 | .2652331 |
| Most Extreme Differences        | Absolute       | .120     | .201                 | .151      | .120     |
|                                 | Positive       | .071     | .201                 | .151      | .081     |
|                                 | Negative       | -.120    | -.142                | -.076     | -.120    |
| Kolmogorov-Smirnov Z            |                | .552     | .922                 | .691      | .548     |
| Asymp. Sig. (2-tailed)          |                | .921     | .363                 | .726      | .925     |
| a. Test distribution is Normal. |                |          |                      |           |          |

## Charts

### Histogram

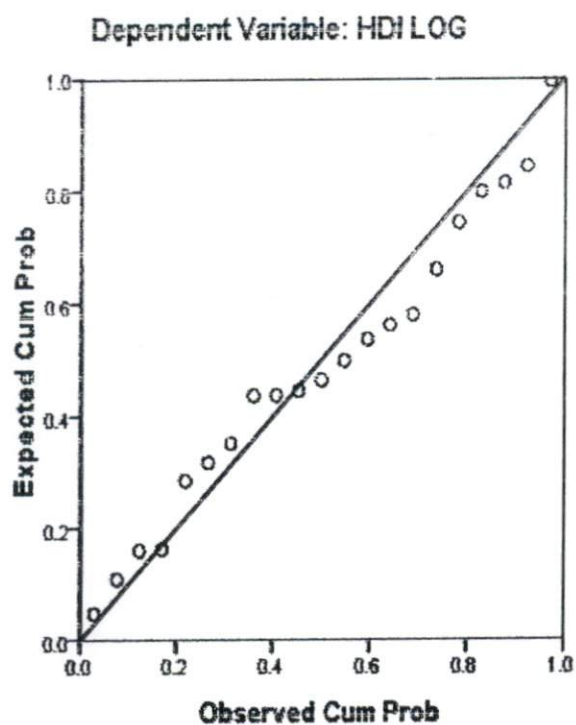
Dependent Variable: HDI LOG



Mean = -1.44E-14  
Std. Dev. = 0.922  
N = 21



Normal P-P Plot of Regression Standardized Residual



Scatterplot

