Population Growth and Economic Growth in Indonesia

Bachelor Thesis Finance

I.K.W.T.Putera 763717

Supervisor: J.Zheng Second reader : Liping Lu

> Tilburg University FEB 2011

ABSTRACT

This research is about the condition in Indonesia, it will examine the relationship between the population growth and economic growth in Indonesia. There still a big discussion and opinions among economist in the world about the effect of population growth and economic growth. Many believe that less population means fewer problems and can encourage the economic growth; in the other hand a lot of economist has arguments that more population can be a good trigger for economic situation.

The population in Indonesia is very big; number four in the world, meanwhile the economic situation in Indonesia is growing and improving. Therefore this is a perfect condition to conduct a research and to find out the effect of population growth to the economic growth.

Table of Contents

ABSTRACT	2
Table of Contents	
CHAPTER I :	
Introduction	
1.1 Problem Indication	
1.2 Research question and Problem Statement	5
1.3 Research Design	5
1.4 Contribution :	5
Chapter II :	7
Theoretical Background	7
2.1 Population Growth in General	7
2.2 Population Growth in Indonesia	
2.3 Economic Growth	
Chapter III :	
Data Analysis	
3.1 Cobb – Douglas Model	
3.2 Linear Regression Result and Analysis	
Chapter IV :	
Conclusion	
Bibliography	
APPENDIX	
The World Population	
Population distribution by region	
Indonesia Birth Rate	
Indonesia Death Rate	
Indonesia Life Expentancy	
Indonesia Food Production in South East Asia	
Public Health of Indonesia	
Indonesia GDP	
Indonesia Fix Asset Investment	
Indonesia Employment Rate	

CHAPTER I : Introduction

<u>1.1 Problem Indication</u>

Indonesia is the largest economy in South East Asia as well as the member of G-20. Indonesia had a 6 % of economic growth in 2010 and the GDP of Indonesia based on the data provided by the Badan Pusat Statistik Indonesia (Indonesia Central Statistic agency) is increasing over time. The economic growth of Indonesia is in the right track and seems promising in the future. On the other hand Indonesia is the 4th largest country in the world in terms of population; according to Indonesia Central Statistic agency in 2010 the total population is 237,641,326. This big number of population resulting from several factors, for example, the food production distribution, improvement in public health and the conquest of disease (Kinder, 1998).

The big population growth of Indonesia can be seen from some indicators, for example birth rate, death rate and life expectancy. Base on data from The World Bank birth rate of Indonesia at 2008 is 18.6 % while the death rate at 2008 is 6.3%. Thus it is clear that birth rate exceeded the death rate. Another indicator is the life expectancy. According to the World Bank shows on 2007 the life expectancy at birth is 70.4 years old and for the 2008 the life expectancy has increased to 70.8 years. All of these indicators are influenced by some factors such as religion and culture.

In term of religion, Indonesia is the biggest Muslim country in the world (Parnohadiningrat, 2007). Even though the form of the government in law perspective is Republic not the Islam government, such as Saudi Arabia, still the Islamic rule in the major society of Indonesia is very delicate. This factor has a role and big contribution to the population growth, because the use of contraception for example a condom is prohibited and to have a child is a blessing from God (Anshari, 2010). An Islamic law likes this has been obeyed by a lot of Indonesian family. Having a family as well as children in Indonesia is in their culture, the trend of not having family and just lives together without any commitment such as marriage in neighbouring country like Singapore and Australia is not acceptable in Indonesian culture of life. To have family and has children is the example of an achievement of life in their culture (Indonesia Tourism, 2003).

The rapid growth of population will have consequences in almost every sector, like health, education, job sectors and of course the economy. The developing country with high population growth will meet the problem in these sectors, for instance the availability of social services, the high of unemployment rate, poverty ,etc (Todaro and Smith, 2009). Indonesia is still enjoying its economic growth but the high population growth is the unique factor that can affect this growth, either in positive or negative way.

1.2 Research question and Problem Statement

To answer the problem statement there will be two research questions; these two research questions will be answered and explained to get the better understanding of the impact of population growth on the economic growth in Indonesia.

- 1. What factors affect the population growth in Indonesia?
- 2. How population growths affect the economic growth in Indonesia?

Therefore the problem statement will be:

What is the correlation between the population growth and the economic growth in Indonesia?

1.3 Research Design

In this paper, the remainder is organized as follows; Chapter one will explain about the problem indication, the problem statement, research question, and research design and data collection. Chapter two will cover all the theory, literatures and data that will be used to get better understanding as well as support the analysis in chapter three. Chapter three will be chapter where all the data both from literature review and various sources; for instance the data of population growth from the World Bank database; will be analysed and the result will be discussed in the chapter four. The last part of the paper is chapter four; this last chapter derive the conclusion of the paper, base on the background theory and data analysis.

1.4 Contribution :

The main purpose of this paper is to see the effect of the population growth to the economic growth, the definition of the population growth and the economic growth will be describe thoroughly in the early chapter of this paper so reader will not lost focus and can follow the

paper well. Furthermore the data analysis will be presented and analyzed, this part will be used as the base to make conclusion. My contribution is to provide the clear correlation between the population growths to the economic growth, especially in the developing country like Indonesia.

Chapter II : Theoretical Background

2.1 Population Growth in General

The world nowadays has large number of population; over 6 billion people live on this very blue earth and this number is quite significant compare with the total population in early 1900 when the number was only 1.6 billion people¹. The world population growth graphical data will be given in the *appendix A*. This number shows that population around the world is increasing. Thus this first section of second chapter will discuss the factors that cause population growth in general.

High rate of population growth today is the outcome from a difference between the birth rate and the death rate. A simple logic about this difference is the death rate is smaller than the birth rate, leading to the rapid increase of population around the world. In the past time, the birth rates and death rates were more or less the same. For instance, a lot of family had more than one child in the early of 1900 but not many reached their first year, so this turn of event made the population grow walked in relatively stable pace. Not only because the birth rates was equal to the death rates that made population grow stable but also because the other factors that influenced the high and fluctuating death rates, such as disease, malnutrition, plague, war and the limitation of technology at that time (Todaro and Smith, 2009).

Now in contrast, the world has a lot of people on it and three – quarters of total population in the world live in the developing countries and most of them are come from Asia, whereas Asia has contribution about more than 60 % of world population distribution this can be seen in *appendix B* (Population distribution by region, 2011). This high rate of population is projected to grow by 50% until year of 2050. The high population growth like this according to the Carolyn Kinder in her journal of the Population Explosion, has three major factor contribute to it, first is the food production distribution, food is the main source also the basic need for a man to live and if every man who stood on earth have enough food for themselves it will increase their life expectancy. Food production from this past 10 years has increased by 24 per cent this rates even outpacing the rate of population growth, according to the Food and Agriculture Organization (FAO) between 1950 and 1984 the grain harvested worldwide

¹ (About.com.Geography, 2011)

increased from 631 million tons to 1.65 billion tons this can be a good from many example that the food production and distribution has been enough to feed the world population.

Second is the improvement in public health. Before 1990, the access to clean and drinkable water was difficult, with less than 50% of the world population had accessed to clean water. By 1990, the percentage had increased into 75%. This 25% improvement shows that the public health all around the world has improved. The number of the density of the health worker in the world is also increasing. The number of doctor, dentist, and nurse is rapidly increasing overtime, in average there were only less than 1 health worker per 1000 people before 1970 and now this number has reached 3.97(Sources and classification of health workforce statistics, 2010). The third factor is the conquest of disease, a lot of scientist had done their job really well in the term of conquering a disease. This factor has a big impact to save many lives that caused by a deadly disease for instance, the use of vaccines to shield the body of human from infectious disease such as influenza, smallpox, polio, etc.

To summarize the population growth in general is the increasing of population now days are the result of the rapid transition of the negative factors from past twenty to fifty years ago that today is not the problem anymore. The birth rates and death rates were almost equal because of the factors that already mentioned above, but today the death rates have fallen sharply and the other hand the birth rate is growing.

2.2 Population Growth in Indonesia

Indonesia is the 4th largest country in the world; according to Indonesia Central Statistic agency on 2010 the total population is 237,641,326. This number could reach the 300.000.000 in the year of 2030. The data from the World Bank shows that the population in Indonesia is rapidly increasing, the simple but clear evidence from the statistic and data from World Bank is birth rate of Indonesia at 2008 is 18.6 % while the death rate at 2008 is 6.3% *(appendix C & D)* thus it is clear that birth rate exceeded the death rate. Another example is the life expectancy, data from The World Bank shows on 2007 is 70.4 years old and for the 2008 the life expectancy has been increasing into 70.8 years old *(appendix E)*.

The cause of Indonesia's population growth in general is more or less the same with the entire factor that cause population growth in general, which is the improvement in the food

production distribution, improvement in public health also and the conquest of disease. For the food production and distribution Indonesia has done well, to make it more credible and relevant there is example from an article that shows the growth of food such as paddy has increased significantly, the production of paddy increased consistently 2.78% per year from 2004 into 2007 and at 2008 the production of this product reached 5.46% and the highest among the neighbour country in the South East Asia; the table is presented at *appendix F*; (Abdul, 2009). The improvement in public health and the conquest of the disease both are presented at *appendix G* this table tells about the improvement in public health of Indonesia from 1995 until 2009 such as the percentage of the health worker, percentage of the immunisation given to the newborn baby, etc. From these three factors Indonesia has done it and still improving it continuously, from this point of view it is clear now why the population growth in Indonesia can be this high, in addition these three general factors for the population growth are already explained before. Apart from it, there are other factors that also contributed in the Indonesia's high population; these factors are religion and culture.

Indonesia is the biggest Moslem country in the world but the form of government in law perspective for Indonesia is a form of Republic not the Islamic form like Saudi Arabia. Still the major religion which is Islam has a big contribution towards the behaviour of Indonesian. The Islamic rule almost become the unwritten rule in Indonesia, there is no formal law consequence such as fine or imprisonment, however if Moslem people disobey their religion's rule there will be an ethical dilemma or bad stereotyping from the major society. How a religion can be such a big factor for contributing the growth of Indonesia population?

Sudjamman Parnohadiningrat with his paper of *Challenging Stereotypes: Indonensia as the World's Largest Majority Muslim Country* tells that the trend of Indonesian people to loyaly obey their religion is very high so that to disobey it is a humiliation for themselves. The relation for the population growth is that to limit the maximum number of children a family can have with proper law, like in China is difficult. The Indonesia government also has the program to reduce the probability of a family having more than two children, with the contraception method such as condom or socializing the calendar system. But this program were not so popular, because the use of contraception for example a condom is prohibited and to have a child is a blessing from God (Anshari, 2010). Thus the motivation of having small and compact family is so low on the other hand the trend of avoiding the use of contraception is high.

The culture in Indonesia also has a low contribution for prevent or limit the population growth in Indonesia. Like the common culture in Asia, a family is the main essence of somebody's life. In Indonesia a culture to have a family is the most popular one and the pressure from society to have one is very big, for example if a person has reached a certain age, for a man let say 30 years old and he has not a family yet, this person will be labelled as a fail man in his social life (Indonesia Tourism , 2003). Other example are the trend of not having family and just lives together without any commitment such as marriage in neighbouring country like Singapore and Australia is not acceptable in Indonesian culture of life. Next example is the common believe that more children are more money because in the retirement age the parent can rely their expenses to the children. The conclusion from the culture of Indonesian people is to have family and has children are the example of an achievement of life in their culture (Indonesia Tourism , 2003).

2.3 Economic Growth

This section will explain about the definition of the economic growth in general. The purpose of this section is to give the clear and better understanding of the economic growth. Economic growth by the definition is the increase of the number of goods and services that are produced from a country over time; this can also be defined as the ability to increase the production of goods and services or in the simplest way to explain it is the increase in real gross domestic product (GDP) in a nation. If a nation has more resources, it could make more services and goods; it will reduce the scarceness and more satisfaction to consumer. This growth should be calculated in real terms for example the adjusted inflation rate, this is happened to eliminate the effect of the inflation from the price of the services and goods produced by a nation (Goodwin, Nelson, and Harris, 2008).

Economic output can be increases if only there is an expansion of the inputs used to produce the services or the goods. Hence if a country has more resources to use in its process production it may means that this country is able to produce more and use this excess resource to expand their total services or goods, however it does not necessarily mean this country shall produce more. This inputs sometimes can be called as capital, where there are five types of capital (Goodwin, Nelson, & Harris, 2008), first and second is the land and natural resources, both of these capital are the capital that are provided by the land of a country. Third and fourth capital is the social and financial capital; these capitals refer to the system and engagements from an institution or government that make production achievable. The last capital is the human capital also called as the manufactured capital to differentiate it from the other capitals. This human capital is the spotlight for this paper, because there might be a positive or negative correlation between the increases in human capital; in this paper can be seen as the population growth; towards the economic growth.

One of the indicator for the economic growth as mentioned before is the GDP, Gross national product (GDP) is an indicator for gauge the health of economy in a country. It represents the national income and output of a given country's economy. GDP is used as a economy situation comparison to the previous year, for example if the GDP is increasing 2% it means that the progress of economy in a given country has grown by 2% compare to the last year.

There are three ways to measure the GDP :

- Output measure: This is the nominal all the goods and services produced by all sectors of the economy for example from energy, construction, manufacturing, agriculture, the service sector and government (BBC News: A GDP)
- Expenditure measure: This is the degree when a household and government buy a number of goods and services, then they invest these goods or services into machinery and buildings. It as well includes the value of exports minus imports (BBC News: A GDP)
- Income measure: The value of the income generated mostly in terms of profits and wages. (BBC News: A GDP)

In theory all three approaches should produce the same number.

The most common approach to calculate the GDP for a given country is the following formula (Schenk) :

GDP = C + I + G + (X - M)

C: Total amount of private consumption in the economy

I: Total amount of investments by business

G: Total amount of government expenditures on goods and services

- X: Total amount of exports (goods and services)
- M: Total amount of imports (goods and services)

Chapter III : Data Analysis

The theoretical background about the economic growth and population growth has been given in the previous chapter. Now, this chapter will present the relation between the economic growth and population growth. First of all, the Cobb – Douglass model will be presented; this part will consist about the explanation of the model, the resource of the model and the reasons why Cob – Douglas model can be a bridge between the economic growth and the population growth. The next one, the data will be analyzed and explained with the support of Cobb – Douglass model because this model will be a bridge between the economic growth and population growth.

3.1 Cobb – Douglas Model

The history of Cobb – Douglas model; according to the N. Gregory Mankiw in his Macroeconomics book (2009); it was found by collaboration between a U.S senator and a mathematician. The senator was Paul Douglas, he was a senator of Illinois state from 1949 to 1966. Once, he wondered about one surprising fact, the division of national income between capital and labor had been approximately constant for a long period or in simple explanation the total income of workers and capital owners grew at the same rate when the economy grew wealthier. After finding this fact, Douglas asked a great mathematician, Charless Cobb, what type of production function would result in constant factor if factors always earned their marginal products (Mankiw, 2009). Afterward, together they made a production function that later known as Cobb – Douglas production function.

The Cobb-Douglas production function can be expressed as $\mathbf{Y} = \mathbf{K}^{\mathbf{a}} * \mathbf{L}^{(1-\mathbf{a})}$ (Burda and Wyplosz, 2009)

Where: Y is real output

L is a measure of the flow of labour input

K is a measure of the flow of capital input

"a" is a fractional exponent, 0 < a < 1, representing labour's share of output (described below)

In some cases the "a" (alpha) exponent is assigned to capital; of course, such an assignment reverses the appearance of "a" and "(1-a)" in the expressions here. A more general form of

the function would be $\mathbf{Y} = \mathbf{A} * \mathbf{L}^{\mathbf{a}} * \mathbf{K}^{\mathbf{b}} * \mathbf{T}^{\mathbf{c}}$ where T is a third input (land, energy); for Cobb-Douglas, the fractional exponents (a, b, and c) must sum to 1.

The constant return to scale (CRS) is the property of the Cobb-Douglass production function. So if there is an increasing from both input, it will result in an equal proportional increase in output; that is, double both L and K inputs and the outcome is double Y real output. Mathematical evidence of this property is reasonably simple. The CRS property occurs because the sum of the exponents on the L and K input variables sum to one. In more general forms of this production function, the fractional exponents on the input variables could sum to less than one (decrease the returns to scale) or sum to greater than one (increase the returns to scale or economies of scale). Thus, these general forms with the log-linear transformation could be (and often are) employed to econometrically test for returns to scale (Hajkova and Hurnik, 2007).

Cobb-Douglass production function also has some difficulties; there is a big argument about the constancy over time exists in this function. This function invented by Cobb and Douglass is based on the mathematical characteristic such as diminishing marginal returns to either factor of production (Tan, 2008). They ignored the basis knowledge from the engineering, technology or management of the production process; when often the nature of the machinery and other capital goods differs between time-periods as well as to what is being produced, yet this production function is still often used to analyse the supply – side performance and measurement of a country's productive potential (Hajkova and Hurnik, 2007). Furthermore, here below, it will be discussed the reasons why this production function can be a bridge between the population growth and the economic growth.

Growth theory; reffering to the book of Macroeconomics by Mankiw (2009); raises the issues on how sustained economic growth across nations and over time is possible. A tool is needed in order to answer the question above, which is the production function. Production function links the output of an economy; where as in this paper is the GDP; to the productive inputs. It relates to the Cobb-Douglas production function where two most important productive inputs which are the capital stock, represented by K, and labor employed, represented by L. Moreover, Mankiw (2009) shows that capital stock in this production factor; represented by K; including factories, machinery, buildings, road and railroads, telephone network and electricity. While employment or labor, represented by L; is the product of the average number of wokers employed during a period of a time. In short, the production function is useful, influential and widely-used. It is because in Cobb-Douglas production function reduces various and complex types of physical capital and labor input to two (Goodwin, Nelson, and Harris, 2008). Since this function does not reflect the profitability of a production nor the quality of life or the desriability of work, it can capture the level of potential productivity in a given country (Mankiw, 2009)

3.2 Linear Regression Result and Analysis

After describing the Cobb-Doglass model which functions as a tool to see the correlation between the population growth and the economic growth, this section will analyze and explain all the data as followed:

This Cobb-Doglas $\mathbf{Y} = \mathbf{K}^{\mathbf{a}} * \mathbf{L}^{(1-\mathbf{a})}$ is the base formula for the statistical formula. Thus this statistical formula will be $Y = \beta_0 + \beta_1 K + \beta_2 L + \varepsilon$

Table 3.1 Linear Regression Result*

wouer summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate					
1	.997ª	.995	.991	.01234					

Model Cummer

a. Predictors: (Constant), L, K

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.087	2	.043	285.422	.000ª
	Residual	.000	3	.000		
	Total	.087	5			

a. Predictors: (Constant), L, K

b. Dependent Variable: Y

Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Siq.
1	(Constant)	-15.125	4.220		-3.584	.037
	К	.565	.092	.615	6.128	.009
	L	2.578	.639	.405	4.035	.027

a. Dependent Variable: Y

*The Data of K can be seen in Appendix I and the data of L can be seen in Appendix J $Y = \beta_0 + \beta_1 K + \beta_2 L + \varepsilon$

Y=-15.125 + 0.565 K + 2.578 L + 0.01234

Table 3.1 shows the corelation between capital (K) and labor (L) towards the GDP (Y). As we can see in Table 3.1, the variables that affect the GDP (Y) are the coefficients of K and L; where coefficient of K is 0.565. This means that if there is an increase of capital by one, the GDP will also increase by 0.565 as well as the coefficient of L is 2.578. Therefore, if there is an increase of labor by one the GDP will also increase by 2.578.

Based on this evidence, we can analyze that economic growth in Indonesia is affected largely by the number of human factor instead of the capital. In addition to that, the population growth shows more of a positive impact rather than its negatives to the economic growth. For example; the growth of population enlarges labor forces and provides big domestic market for the economy. Those examples given can bring positive impacts of the population growth to the economic growth. Unlike in the most developed countries which they use machines, In developing countries, such as Indonesia, a lot of economic sectors are filled with human labor forces instead of machines. This human capital can not be easily subtituted by the machine or any other sophisticated technology, because most of the cases, the price of the machine and the latest technology are too expensive to be afforded by the industry. This growth of population enlarges the number of labor force will ensure not only the availability worker or labor in the labor market, but also enlarges labor force. It is known that, if there is too much supply the price will go down and the correlation with this case is the price of labor (wages) will be pushed down. Furthermore with this low wage of labor, it will encourage the industries that are labor intensive. In Indonesia a lot of industries are labor intensive, from the small scale industry until the large scale of industry, are still using a lot of worker hence with the efficiency of wage should indeed raise employment. Thus, if people can be employed and have a job; it means they will have the money to buy the product in the market, which does can spin the wheel of the economy.

Many pessimists think that with the population growth will seriously retarding on economic changes in the developing country in the world. The fearsome of population growth caused by the idea of more people means to more intensive use of land and maybe other natural resources such as water, gasoline or electricity. This idea is not relevant in the economic growth in Indonesia, whereas based on the result of Table 3.1 the condition in Indonesia the labor (L) has big impact on economic growth, its effect even bigger than the capital factor. This is because the condition is different in Indonesia; even though Indonesia has a big number of populations; Indonesia has many natural resources and land that has not yet been explored. The fearsome of intensive use of land and natural resources because of the increasing of population in other countries could be the opposite factor in Indonesia. The large number of population could encourage better specialty. For instance, according to the Indonesia Statistic Bureau, Indonesia has a very big sea part, around 3,926,946 km^{2;} with this high potential of land resources, it might be only five to ten percent that has been productively explored. With its big number of population, Indonesia could help its economic growth by putting the work forces in this untouched resource. Indonesia not only has a very big sea part, but also many other valuable resources; such as forests, oil reserves, natural gas, gold, etc; that could potentially help the economic growth of Indonesia with the support of the labor forces; they develop themselves and later on increase a larger market and return to knowledge or human capital.

There is still a big debate on the effect of the high population growth in the economic growth. Often population growth is related with the food problems for example malnutrition and hunger, if people are hungry and cannot eat; they will get sick and not be able to work. If this is happening continuously, the economic wheel will be disrupted and it is harder for the economy to grow. Usually the malnutrition and hunger problem caused by the poverty and inadequate income, yet this problem can be solved if the people can work and gain income. Fortunately in Indonesia, as it has been mentioned above in the analysis, Table 3.1 shows how population growth has the positive impact to the Indonesian economic growth. The needs of labor force is high in Indonesia, thus people can be employed by the industry. This factor supports the development of the economy. Moreover, the developing economy is capable to produce surpluses food not only for the consumption inside Indonesia but can also be exported to other countries. Thus, from this point of view, there is another point to support that the positive impact of the population growth in economic growth.

The population growth needs to be maintained. There is a need for the government to develop new social infrastructure like road, school or transportation. This might be seems a negative effect because government need to increase its expenditure, but observing deeper, there is a positive side from this development of new infrastructures. If there is new construction of public infrastructure like harbour, road, airport or railways, this kind of construction needs a lot of investment and workers. This will attract money from the foreign investor as well as open more job opportunities. Thus, the employment rate can be increased and more cash flow and income can be achieved.

For the diminishing return factor, a population growth can overcome it. It can described as followed "A larger population may help overcome possibly diminishing returns to this generation's human capital in the production of the next generation's human capital because greater population growth induces more specialization and a larger market that raise returns to human capital and knowledge. If human capital per capita were sufficiently large, the economy would move to steady state growth, whereby in the steady-state growth path, consumption per capita would increase at a slower rate than human capital if the population is growing and if the production of consumer goods has diminishing returns to population.

However, consumption per capita can still be increasing, despite these diminishing returns, if the positive impact of the growth in human capital on productivity in the consumption sector more than offsets the negative impact of population growth." (Becker, Glaeser, and Murphy, 1999)

Now because it is clear that in Indonesia the population growth has a positive effect toward the economic growth, the positive trend of the population growth in Indonesia should be maintained. Since Indonesia already has a good track at the population growth, the role of government now is very important to keep it on the track. From the evidence above it can clearly be seen that population has positive impact to the Indonesia's economy, but if the population is continuously increasing without the counterbalanced from government, the population growth could become uncontrollable. Government should always prepare to provide the people of Indonesia with the wisest policy in term of population growth. With the findings and evidences above, it is still the best action for government of Indonesia to encourage the growth of its population, but this action should be done along another positive impact for this population itself. For instance the education program, government should provide not only cheap education but also a good education. Thus the growth is not only coming from its quantity but also increase the quality of the population. In the Table 3.1 the economic growth also affected by the capital, but the coefficient of this capital is not as high as the labour. It does not mean that capital has not yet contributed in the economic growth in Indonesia, it also has an impact, but this impact is not highly significant. Since Indonesia is still a country with the dominance of labour intensive industry. Still the existence of the capitals must be taking into government's account, because this capital could help the population to move the wheel of economy.

Chapter IV : Conclusion

The research question of this research is:

What is the correlation between the population growth and the economic growth in Indonesia?

The answer to this question has been discussed in previous chapter. The correlation between the population growth and the economic growth in Indonesia is positive. The population growth gives more positive impacts rather than its negatives to the economic growth. It means the increasing population in Indonesia will also increase the economic growth. There are many other opinions and big discussions about the correlation between the population growth and the economic growth out there, but this thesis finds and supports the positive relationship between the population and real income per capita. Not only the positive relationship but also in providing strong support to increase the population growth in Indonesia.

The idea from many pessimist economists about the larger population will have a bad impact to the economy growth also with respect is not significant with the result of the regression test. It is because the big population can overcome the possibility of the diminishing return, because greater population growth can give more specialization and larger market that raise return to human capital and knowledge. Moreover, the model that is used in this report to test the correlation between the population growth and economic growth is the Cobb-Douglas model. This model is used because it reduces many and complex types of physical capital and labour input into two.

As described in this research that the high number of population in Indonesia has positive impact to the economic growth. But it does not mean that the high number of population can walk alone to help the economic growth, the role of government is also important. The assistance from government is needed to achieve not only number of population, but also the increasing the quality of its population. The capital factor also has the role in Indonesia economic growth but the role is not too significant. The reason is because in Indonesia, the market is dominated by the labour intensive industries. Yet the existence of the capital is important, because this capital help to support the population and its growth. Furthermore, with the good support from capital the quality of population can be increased, such as good education or better health facility. Thus, the recommendation that can be given based on the result of this paper is that the encouragement of the population growth in Indonesia is an important task, but the increasing quality of the population cannot be forgotten either. In conclusion, based on the report findings, Indonesia should encourage its population growth because it shows positive impact to the economic growth.

Bibliography

Abdul, M. (2009). Strategi dan Pencapaian Swasembada Pangan di Indonesia. *Agrikultur dan Holtikultura di Indonesia* .

About.com.Geography. (2011, March). Opgeroepen op March 2011, van About.com: http://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm

Anshari, T. (2010, May 26). Kontrasepsi dalam Islam.

BBC News: A GDP. (sd). Opgeroepen op March 31, 2011, van BBC News: http://news.bbc.co.uk/2/hi/88618.stm

Becker, G. S., Glaeser, E. L., & Murphy, K. M. (1999). Population and Economic Growth. *American Economic Review, Papers and Proceedings : 89*, 145-149.

Burda, M., & Wyplosz, C. (2009). Macroeconomics A European Text. New York: Oxford.

Goodwin, N. R., Nelson, J. A., & Harris, J. M. (2008, December 12). Economic Growth.

Hajkova, D., & Hurnik, J. (2007). Cobb-Douglas Production Function: The case of a Converging Economy. *Czech Journal of Economics and Finance*, 465-476.

Indonesia Tourism . (2003, January 1). Opgeroepen op March 2011, van http://www.indonesia-ok.com/home.htm: http://www.indonesia-ok.com/home.htm

Kinder, C. (1998). *The population explosion : Causes and Consequences*. Yale - New Haven institute.

Mankiw, N. G. (2009). Macroeconomics. New York: Worthpublishers.

Parnohadiningrat, S. (2007). *Challenging Stereotypes: Indoensia as the World's Largest Majority Muslim Country*. Illonois: Embassy of the Republic of Indonesia.

Population distribution by region. (2011, March 31). Opgeroepen op March 31, 2011, van www.prb.org: http://www.prb.org/

Schenk, R. (sd). *Gross Domestic Product*. Opgeroepen op March 31, 2011, van Cyber Economics: http://ingrimayne.com/econ/Measuring/GNP1.html

Sources and classification of health workforce statistics. (2010, 12 31). Opgeroepen op March 31, 2011, van WHO: http://www.who.int/hrh/statistics/workforce_statistics/en/index.html

Stockwell, E. G. (1962). The Relationship Between Population Growth and Economic Development. 250 - 252.

Tan, B. H. (2008). Cobb-Douglas Production Function. 1-6.

Todaro, M. P., & Smith, S. C. (2009). Economic Development. In M. P. Todaro, & S. C. Smith, *Economic Development* (pp. 273-309). Pearson Education Limited.

APPENDIX

Appendix A



Source : United Nations Population Division, The World at Six Billion (New York:United Nations 2000)



Appendix B

Appendix C



Source : The World Bank (http://data.worldbank.org/indicator/SP.DYN.CBRT.IN/countries/ID?display=graph)

Appendix D



Source : The World Bank (<u>http://data.worldbank.org/indicator/SP.DYN.CDRT.IN/countries/ID?display=graph</u>)





Source :The World Bank (http://data.worldbank.org/indicator/SP.DYN.TFRT.IN/countries/ID?display=graph)

Appendix F

Indonesia Food Production in South East Asia

Negara	Luas Panen	Produksi	Produktivitas		
	(1000 ha)	(1000 metric tons)	(kg/ha)		
Indonesia	11,786.43	54,454.937	4,620		
Filipina	4,159.930	15,326.706	3,684		
Thailand	9,524.846	30,945.774	3,249		
Malaysia	658.200	2,202.000	3,254		
Vietnam	NA	35,917.900	4,981		

Tabel 1. Produksi dan Produktivitas Padi di ASEAN Tahun 2006

 $Source: \underline{http://www.iasa-pusat.org/artikel/strategi-dan-pencapaian-swasembada-pangan-diindonesia.html}$

Appendix G

Public Health of Indonesia Indikator Kesehatan 1995-2009

No.	Indikator Kesehatan	1995	1996	1997	1998	1999	2000 ¹⁾	2001	2003	2004	2005 ³⁾	2006	2007	2008	2009
1	Persantasa panduduk yang mengalami kaluhan	25 38 *)	25.13	24.41	25.43	24.85	27.08	25.49	24.41	28.51	28.88	28.15	30.90	33.74	22.62
	kesehatan sebulan yang lalu	20.00 /	20.10	41.11	20.10	24.00	21.00	20.40	21.11	20.01	20.00	20.10	50.00	00.24	50,00
2	Persentase persalinan ditolong tenaga kesehatan (dokter, bidan dan tenaga medis)	46.13	50.01	53.87	51.81	<mark>60</mark> .17	63.5	64.2	67.9	71.52	70.48	72.41	72.53	74.86	77,34
3	% Balita yang pernah mendapat imunisasi BCG	72.33	75.27	79.99	85. <mark>4</mark> 4	85.67	n.a	n.a	n.a	88.35	87,34	89.30	89.40	90	91,89
4	% Balita yang pernah mendapat imunisasi DPT	72.42	77.48	81	83	83.18	n.a	n.a	n.a	86.51	84,63	87.11	86.44	86.09	89,05
5	% Balita yang pernah mendapat imunisasi Polio	7 <mark>0</mark> .25	84.48	87.53	89.69	85.94	n.a	n.a	n.a	88.08	89,16	92.22	89.67	87.25	89,88
6	% Balita yang pernah mendapat imunisasi Campak	53.92	51.88	62.89	71.52	65.05	n.a	n.a	n.a	77.17	72,53	78.23	75.9	75.47	77,23
7	Rata-Rata lama (bulan) anak 2-4 tahun mendapat ASI	21.71	20.81	20.78	21.09	21.35	1	-	19.89	1	÷				20
8	Rata2 anak 2-4 tahun yang disusui dengan makanan tambahan (bulan)	17.82	16.88	16.74	17.12	17.71	·		4.14	5	15	·			4
9	Rata2 anak 2-4 tahun yang disusui tanpa makanan tambahan (bulan)	3.89	3.93	4.04	3.97	3.54		•	15.75	10		2			16
10	Persentase penduduk yang mengobati sendiri	n.a	n.a		62.17	61.74	62.83	58.78	64.35	72.44	69.88	71.44	65.01	65.59	68, <mark>4</mark> 1
11	Persentase penduduk yang menggunakan obat tradisional	27.57 **)	n.a	ň	15.23	15.04	16.24	30.24	30.67	32.87	35.52	38.3	28.12	22.28	24,24
12	Persentase penduduk yang berobat jalan sebulan yang lalu	19.8	20.16	15.32	41.9	43.6	36.76	38.22	38.62	38.21	34.43	34.13	44.14	44.37	44,74
13	Persentase penduduk yang rawat inap setahun terkahir	0.25	0.24	0.26	n.a	n.a	1.83	0.93	n.a	1		2			2,35

Sourdce: Indonesian Statistic Bureau (http://www.bps.go.id/tab_sub/view.php?tabel=1&daftar=1&id_subyek=30¬ab=33)

Appendix H

Indonesia GDP

Year	Y
2004	256,836,883,305
2005	285,868,610,017
2006	364,570,525,997
2007	432,105,253,653
2008	510,501,774,123
2009	540,273,507,315

Source : The World Bank (<u>http://data.worldbank.org/indicator/NY.GDP.MKTP.CD</u>)

Appendix I

Indonesia Fix Asset Investment

Year	К
2004	316.632
2005	330.825
2006	357.068
2007	345.204
2008	369.472
2009	315.413

Source : The World Bank

(http://data.worldbank.org/indicator/GC.XPN.TOTL.GD.ZS?page=1)

Appendix J

Indonesia Employment Rate

Year	L
2004	93,722,036
2005	93,958,387
2006	95,456,935
2007	99,930,217
2008	102,552,750
2009	104,870,663

Source: Indonesian Statistic Bureau

(http://www.bps.go.id/tab_sub/view.php?tabel=1&daftar=1&id_subyek=06¬ab=2)