

Effects of Population, Consumption and Exports on Economic Growth in Indonesia Period of 2005-2017

Ali Sandy Hasibuan¹

¹Student of Post Graduated Program, Universitas Negeri Medan, Medan -Indonesia

Keywords: Population, Consumption, Exports, Economic Growth

Abstract: The aim of this paper is to analyse the effect of population, consumption and exports on economic growth in Indonesia. This study uses time series data in the period 2005-2017 obtained from the Badan Pusat Statistik (BPS) and Bank Indonesia (BI). This study uses multiple linear regression analysis using Eviews 10. The simultaneous test results show that population, consumption and exports have a significant influence on economic growth in Indonesia. The partial test results show that the population variable has a significant influence on economic growth in Indonesia, the consumption variable also has a significant influence on economic growth in Indonesia and the export variable also has a significant influence on economic growth in Indonesia.

1 INTRODUCTION

Economic development is a series of businesses and policies carried out by the government of a country or region to improve people's welfare. From the point of view of economics, development is defined as an effort to increase the growth of income per capita faster than the rate of population growth (Todaro, 2011).

Economic development is a multidimensional process which means that economic development has interrelated relationships and influences among the factors that produce economic growth. Development and economic growth have interrelated relations where development will encourage economic growth and economic growth can facilitate the economic development process itself.

Gross Domestic Product (GDP) is a benchmark for the success of a country's development. from GDP data, the value of a country's economic growth can be determined, and economic growth is defined as the rate of increase in income per capita (Sukirno, 1981).

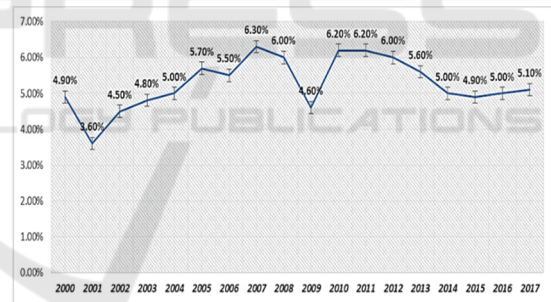


Figure 1: Economic Growth in Indonesia
(source : bps)

Figure 1. describes the graph of economic growth in Indonesia in the period 2000 to 2017. Based on the picture, it can be seen that the condition of economic growth has fluctuated from year to year. The lowest growth conditions existed in 2001 around 3.60% and the highest condition of Indonesia's economic growth was in 2007 at 6.30%.

In recent years, the percentage of Indonesia's economic growth has decreased. Then experienced a slight increase in 2017 where in the previous year Indonesia's economic growth of 5.00% rose to 5.10%. This change in economic growth is certainly influenced by variable variables supporting economic growth.

Theoretical economic growth is influenced by population (human resources), natural resources, physical capital, and human capital (Mankiw, 2009). As one of the factors that influence economic growth, the main role of the population is in terms of providing labor. Moreover, the population with superior quality of human capital will be a more productive workforce. Indonesia as a country with a large population is expected to be able to take advantage of the abundance of the population as a driving force for economic growth.

Conceptually, the population affects the output of the economy. High economic output can be obtained from the production of goods and services carried out by residents. The more population, a country will be able to produce more goods and services, which means it can consume more goods and services. This will further encourage economic growth (Thuku et al, 2013).

Output is usually measured by Gross Domestic Product (GDP). Gross Domestic Product shows the total value of final goods and services produced by all economic units. Economic growth occurs when an economy is able to increase GDP from the previous period.

On the other hand, Keynesian theory states that national income growth is determined by the amount of consumption expenditure, government expenditure, investment and net exports. To increase economic growth as measured by increasing national income, an increase in consumption demand, demand for government expenditure, investment demand, and demand is needed. export and import. The implementation of both concepts and theories (Classical and Keynesian) can be used to calculate economic growth both on a national scale and at the scale of regional macroeconomics.

According to Salvator (1990), it implies that exports are one of the engines of economic growth in its study showing that exports are one of the main factors for developing countries to increase their economic growth. Increased exports by developing countries can drive output and economic growth.

The impact of population, consumption and exports in their influence on economic growth in Indonesia still has to be studied. Thus, the process of improving the country's economy on a macro level can be achieved and felt by all communities in particular. From the description above, the author is interested in conducting research with the title " Effects of Population, Consumption and Exports on Economic Growth in Indonesia Period of 2005-2017"

2 THEORETICAL FRAMEWORK

2.1 Population

According to the Badan Pusat Statistik (BPS), population are all people who are domiciled in the geographical area of Indonesia for 6 months or more and / or those who live less than 6 months but aim to settle. According to Maltus (in Lincoln Arsyad, 2010) that the general tendency of the population of a country to grow according to a series of measurements is to double every 30-40 years. Meanwhile, at the same time, due to the decreasing yield of the land production factor, the food supply only grows according to the arithmetical series. Because the growth of the food supply cannot keep pace with the very fast and high population growth, per capita income (in the farming community is defined as per capita food production) will tend to fall to very low, which causes the population to never stabilize, or only slightly above the subsiten level

Population growth is a dynamic balance between two forces that increase or decrease the population. The development of the population will be influenced by the number of babies born but simultaneously will also be reduced by the number of deaths that can occur in all age groups. In the spatial context of population mobility also affects changes in population, where immigration will increase the population and emigration will reduce the population in a region.

In the theory of growth according to Kuznet prior to the era of growth, the economic activities of the population were concentrated from the extractive primary sectors, namely agriculture, fisheries and mining. The process of economic growth has since been characterized by a diversification of sectoral activities with the growth of various types and types of industries (Djojohadikusumo, 2004).

2.2 National Consumption

Household consumption expenditure is one of the macroeconomic variables. A person's consumption expenditure is part of the income spent. If the consumption expenditure of all people in a country is added up, then the result is the consumption expenditure of the country concerned.

In macro terms, public consumption expenditure is directly proportional to national income. The greater the income, the greater the consumption expenditure. The comparison of the size of the additional consumption expenditure to income is called Marginal Propensity to Consume: MPC. In societies whose economic life is relatively unstable, their MPC numbers are relatively large, while their MPS numbers are relatively small, meaning that if they get additional income, most of the additional

income will be allocated for consumption. This is the opposite to the people whose economic life is relatively more established. According to Rahardja (2001: 45), consumption expenditure consists of government consumption and public consumption.

Some of the reasons underlying the level of consumption of the community or household are:

- a. Household consumption expenditure has the largest position in total aggregate expenditure.
- b. Household consumption is endogenous in the sense that the amount of household consumption is related to other factors that are considered to influence it. Therefore we can compile economic models and theories that produce an understanding of the relationship between the level of consumption and other factors that influence it. The theory and model is known as the consumption model theory which has proven to be beneficial for macroeconomic managers.
- c. The rapid development of society has resulted in the behavior of consumption behavior also changing rapidly. This is another reason that contains a study of household consumption remains relevant

2.3 Export

According to Curry (2001), exports are goods and services sold to foreign countries to be exchanged for other goods (products, money). The export process is an action taken to issue goods or commodities from within the country to enter them into other countries. The development of exports from a country is not only determined by the factors of comparative advantage but also by factors of competitive advantage. The essence of the competitive advantage paradigm is the superiority of a country in global competition in addition to being determined by comparative advantage (classical theories and H-O) it has and also because of protection or assistance from government facilities, also determined by its competitive advantage. Competitive advantage is not only owned by a country, but also owned by companies in that country individually or in groups. 17 Another difference with comparative advantage is that competitive advantage is more dynamic with changes, such as technology and human resources (Tambunan, 2001).

2.4 Economic Growth

In general, economic growth is defined as increasing the ability of an economy to produce goods and services. Economic growth shows the extent to which economic activity will generate additional income for the community in a given period. Because basically economic activity is a process of using production factors to produce output, then this process will in

turn result in a return of service to the factors of production owned by the community. With the economic growth, it is expected that people's income as the owner of production factors will also increase (Sukirno, 2006: 423).

According to Kuznets economic growth is a long-term increase in the ability of a country to provide more and more types of economic goods to its population; this ability grows according to technological progress, and institutional and ideological adjustments that are needed (Jingan, 2010: 57).

Thus it can be concluded that economic growth is a development in economic activity characterized by an increase in the output of goods and services which impacts on the increase in per capita income.

Economic growth is an increase in the output of society caused by the increasing number of production factors used in the production process, without any change in "technology" production itself, for example output increases caused by the growth of capital stock or the addition of production factors without changes in production technology the old one (Arsyad, 2010: 96).

2.5 Effect of Population on Economic Growth

The economic growth rate can be attributed to the rate of population growth because in principle economic growth must be enjoyed by the population. The number of residents needs to be considered because besides being a subject, the population is also an object of development. Changes that have been made in the aspect of population will affect the development process and the objectives to be achieved.

In the view of classical economists there are four factors that influence economic growth, namely the number of people, the amount of stock of capital goods, the area of land and natural wealth, and the level of technology used even though realizing that economic growth depends to many factors. But classical economists focus on the influence of population growth on economic growth. In their growth theory, it is assumed that the area of land and natural wealth are fixed in number and the level of technology has not changed. Based on this example, it is further analyzed how the influence of population growth on the level of national production and income (Sukirno, 2010: 433).

According to classical economics, the law of additional yields that are increasingly scarce will affect economic growth. This means that economic growth will not continue. At the beginning, if the population is small and natural wealth is relatively excessive, the rate of return on capital from the investment made is high. Then entrepreneurs will get a big profit. This will get new investment and

economic growth materialized. Such circumstances will not continue. If the population is too much, the first thing will decrease the level of economic activity because the productivity of each population has become negative (Sukirno, 2010: 433).

2.6 Effect of National Consumption on Economic Growth

Household consumption expenditure is the value of expenditures made by households to buy various types of needs in a given year. The income received by households will be used to buy food, clothing, transportation services, pay for children's education, pay rent for houses and buy vehicles. These items are purchased by households to meet their needs. (Sukirno, 2010).

Household consumption decisions are influenced by overall long-term and short-term behavior. Long-term household consumption decisions are important because of their role in economic growth. As for short-term analysis, the role is important in determining aggregate demand. Consumption is two-thirds of GDP.

Keynes had an absolute consumption theory called the Keynesian Theory (Absolute Income Hypothesis). Keynes argues that the amount of household consumption depends on the income generated. The comparison between the amount of consumption and income is called Keynes as Marginal Propensity to Consume (MPC). This MPC is used to measure that the greater the income owned, then the level of household consumption is also high, and vice versa.

2.7 Effect of Exports on Economic Growth

Export is an international trade process that aims to gain profits so that each country will benefit from the occurrence of international trade, this occurs because the specialization of each country is different so that international trade will occur so that efficiency and specialization will occur in each country. In other words, cost comparative emphasizes that comparative advantage will be achieved if a country produces an item that requires fewer hours of labor than other countries so that production efficiency occurs.

The important function of the export component of foreign trade is that the state gains and gains national income, which in turn increases the amount of output and the rate of economic growth. With a higher level of output the vicious circle of poverty can be broken and economic development can be improved (Jhingan, 2000). Exports play an important role in the economic activities of a country. Exports will generate foreign exchange which will be used to finance the import of raw materials and capital goods needed in the production process which will form

added value. According to Salvator (1990), it implies that exports are one of the engines of economic growth in its study showing that exports are one of the main factors for developing countries to increase their economic growth. Increased exports by developing countries can drive output and economic growth.

2.8 Previous Research

The results of the research by Darma Rika Swaramarinda entitled (2011) "The Effects of Consumption Expenditures and Government Investment on Economic Growth in Indonesia". The results of the study show that government consumption expenditure and investment expenditure have a positive effect on economic growth, there is a positive relationship between the expenditure of government consumption and economic growth in the study period.

The research results of Dian Purnamasari entitled (2015) "Population and Economic Growth: A New Empirical Explanation". The results of the research show that the Estimated Results indicate that population density has a negative effect on the accumulation of human capital and the accumulation of human capital has a positive effect on output. This study concludes that a large population will have a positive effect on economic output if the population has superior quality of human capital. This means that the positive influence of population density on output occurs when high population densities encourage the accumulation of human resources.

The research results of Christiawan Eka Arianto, et al, entitled (2015) "Influence of Population and Unemployment Rate on Economic Growth of Jember Regency". The results of the study show that from the results of the analysis carried out, conclusions can be drawn on the partial test (t test), it is known that the number of residents has a positive and significant influence on economic growth. While unemployment has a positive but not significant influence on economic growth in Jember Regency.

The research results of Dian Fristia Alfianto entitled (2014) "analysis of the influence of population, labor, education level and government expenditure on economic growth in grobogan district in 1990-2012". The results showed that population, labor, government expenditure had a significant effect on gross regional domestic product (RGDP) while the education level did not have a significant effect on gross regional domestic product (RGDP).

The results of Ismadiyah Purwaning Astuti's research, Fitri Juniwati Ayuningtyas entitled (2018) "the influence of exports and imports on economic growth in Indonesia from 2000-2016". The results showed that exports had a positive influence on economic growth..

Ari Mulyanta Ginting's research results entitled (2017) "analysis of the effect of exports on Indonesia's economic growth 2001-2015". The results showed that exports had a positive and statistically significant influence on economic growth in Indonesia..

2.9 Framework of Thinking

Based on the explanation of the theory and previous research, the framework of this research can be described as follows:

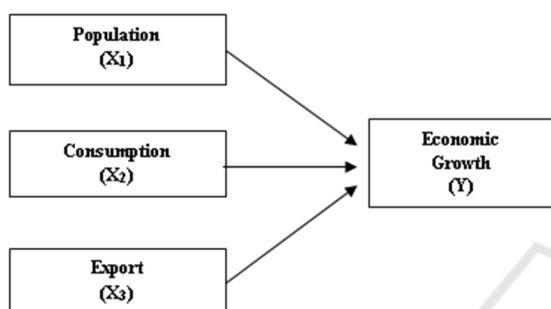


Figure 2: Framework of thinking

3 RESEARCH METHOD

This research was conducted in North Sumatra Province. The data used in this study are secondary data based on periodic data series (time series) from 2005 - 2017 obtained from the Central Statistics Agency. The analysis technique used in this study is quantitative analysis techniques.

In this study the independent variables were Population (X1), Consumption (X2) and Export (X3) in Indonesia in 2005 - 2017. Whereas the dependent variable was Indonesian Economic Growth in 2005 - 2017. The analysis tools used were analysis multiple linear. The regression equation is as follows:

$$Y = \beta_0 + \beta_1 \text{Log}X_1 + \beta_2 \text{Log}X_2 + \beta_3 \text{Log}X_3 + \mu_i$$

Description:

- Y = Economic Growth
- X1 = Population
- X2 = Consumption
- X3 = Export
- β_0 = Constanta
- $\beta_1, \beta_2, \beta_3$ = Regression coefficient
- μ_i = Error term

This analysis aims to determine the Effect of Population, Consumption and Exports on Economic

Growth in Indonesia from 2005 - 2017. In this analysis using the program Eviews 10 assistance which aims to see the effect of independent variables on the dependent variable.

4 RESULT AND DISCUSSION

4.1 Estimation Results

Multiple regression analysis is a method used to determine the possible forms of relationships between variables, namely the independent variable and the dependent variable together with the help of the program Eviews 10, the following results are obtained:

Table 1: Results of Multiple Regression Estimates

Dependent Variable: LOG_PDBG

Method: Least Squares

Sample: 2005 2017

Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25.35258	1.680960	-15.08220	0.0000
LOG POP	4.463171	0.212204	21.03250	0.0000
LOG CONS	0.038451	0.025361	1.516129	0.0163
LOG EX	0.043944	0.017869	2.459256	0.0362
R-squared	0.999823	Mean dependent var		12.33389
Adjusted R-squared	0.999764	S.D. dependent var		0.092011
S.E. of regression	0.001414	Akaike info criterion		-10.03659
Sum squared resid	1.80E-05	Schwarz criterion		-9.862760
Log likelihood	69.23784	Hannan-Quinn criter.		-10.07232
F-statistic	16925.10	Durbin-Watson stat		1.497590
Prob(F-statistic)	0.000000			

Source : Eviews output

From the table of estimation results, the regression equation in this study is made as follows:

$$\text{Log_PDBG} = -25.3525 + 4.4631 * \text{Log_POP} + 0.0384 * \text{Log_CONS} + 0.0439 * \text{Log_EX}$$

From the above equation, the results that can be explained are as follows:

1. Constant value of -25,352, meaning that if the value of the Population, consumption and export value is 0, then the economic growth decreases by 25,352%.
2. Value of $\beta_1 = 4,463$, meaning that if the variable Total Population increases by 1% while the Consumption and Export variables remain then economic growth has increased by 4,463% Signs

- (+) indicate there is a unidirectional relationship between population and economic growth. If the population increases, economic growth will rise.
- Value of $\beta_2 = 0.038$, meaning if the Consumption variable is 1% while the variable Total Population and Exports is fixed then economic growth increases by 0.038%. The sign (+) shows that there is a direct relationship between consumption and economic growth. If consumption rises, economic growth will rise.
 - Value of $\beta_3 = 0.044$, meaning that if the Export variable is 1% while the variable Population and Consumption is fixed then economic growth increases by 0.044%. The (+) sign indicates a unidirectional relationship between exports and economic growth. If exports rise, economic growth will rise.

4.2 Classic Assumption Test

Multicollinearity

Aim to find out whether there is a significant correlation between fellow independent variables.

Table 2: Multicollinearity test

	LOG POP	LOG CONS	LOG EX
LOG POP	1.00000	0.79570	0.74349
LOG CONS	0.79570	1.00000	0.75509
LOG EX	0.74349	0.75509	1.00000

Source : Eviews output

From the table above it can be seen that there are no variables that have a greater value (>) 0.8. so it can be concluded that there is no multicollinearity in the regression model.

Serial Correlation (Autocorrelation)

To detect the presence or absence of serial correlation in the research model. This study uses the Lagrange Multiplier test (LM Test) to detect the presence or absence of autocorrelation. From the results of testing the data obtained the results of the Prob -obs * R-square value of 0.3580 > 0.05. so that it can be said that there is no autocorrelation in the regression model

Table 3: Autocorrelation test (LM Test)

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.656926	Prob. F(2,7)	0.5477
Obs*R-squared	2.054411	Prob. Chi-Square(2)	0.3580

Source : Eviews output

Normality

From the results of testing the above data obtained results with a Probability value > α or $0.502220 > 0.05$. so it can be concluded that the data used in this study has a normal distribution and passes the normality test.

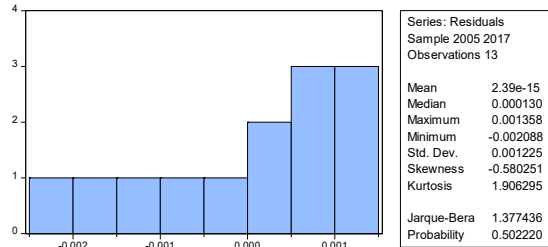


Figure 3: Normality test

Heteroscedasticity

To see the presence or absence of heteroscedasticity can be done by the White Heteroscedasticity test on Eviews by looking at the value of Prob Value -obs * R-square contained in the output table.

Table 4. Heteroskedasticity test

Heteroskedasticity Test: White			
F-statistic	3.3511	Prob. F(5,7)	0.0731
Obs*R-squared	9.1693	Prob. Chi-Square(5)	0.1025
Scaled explained SS	1.9914	Prob. Chi-Square(5)	0.8503

Source : Eviews output

From the table above, it can be seen the value of Prob Value -obs * R-square of 0.1025 > 0.05. it can be said that there is no heteroscedasticity in the regression equation model.

4.3 Hypothesis Testing

t Test

The t test is used to test the independent variables on the dependent variable partially. From the results of testing the data obtained the value of Prob (t-statistic) < α that is equal to 0.0000 < 0.05 for the variable Population. Thus the variable population has a positive and significant influence on economic growth in Indonesia. So, the higher the population, the higher the economic growth in Indonesia.

The value of the Prob (t-statistic) consumption variable is 0.0163 < 0.05. With the Prob value (t-statistic) it shows that the consumption variable has a positive and significant influence on economic growth. So, the higher the consumption of the

community, the higher the economic growth in Indonesia.

The value of the Prob (t-statistic) export variable is 0.0362 < 0.05. With the Prob value (t-statistic) it shows that the export variable has a positive and significant influence on economic growth. So, the higher the export of the community, the higher the economic growth in Indonesia.

F Test

The F test is used to test the relationship of independent variables to the dependent variable simultaneously. From the results of testing the data obtained the value of Prob (F-Statistics) < α is equal to 0.000000 < 0.05. Then the three independent variables, namely the population, consumption and export together influence economic growth in Indonesia.

Coefficient of Determination (R²)

The coefficient of determination is used to see how much influence the independent variables have on the dependent variable. The coefficient of determination is determined by the value of adjusted R-Square. Based on the estimation results obtained the value of R-Squared is 0.999823. This shows that the variable population, consumption and export are able to explain the variable of economic growth of 99.98%. While the remaining 0.02% is influenced by other variables not used in this study.

5 CONCLUSIONS

5.1 Conclusions

Based on the results of the analysis and discussion that has been conducted, the conclusions can be taken as follows:

1. The population has a positive and significant effect on economic growth in Indonesia
2. Consumption has a positive and significant effect on economic growth in Indonesia
3. Exports have a positive and significant effect on economic growth in Indonesia
4. Population, national consumption and export simultaneously have a positive and significant effect on economic growth in Indonesia

5.2 Suggest

Based on the results of the discussion and conclusions, the suggestions that the author needs to describe are as follows:

1. Population, export consumption is able to explain the variable Economic Growth of 99.98% So that in taking government policy it is necessary to pay attention to other variables not examined.
2. For researchers interested in conducting studies in the same field, they should add a time span of research and other variables not used in the study.

REFERENCES

- Alfiyanto, Dian Fristia (2014) 'Analisis Pengaruh Jumlah Penduduk, Tenaga Kerja, Tingkat Pendidikan dan Pengeluaran Pemerintah Terhadap Pertumbuhan Ekonomi Di Kabupaten Grobogan Tahun 1990-2012', *Electronic Theses and Dissertation Universitas Muhammadiyah Surakarta*. Available at: <http://eprints.ums.ac.id/30661/>
- Arianto, Christiawan Eka (2015) 'Pengaruh Jumlah Penduduk Dan Angka Pengangguran Terhadap Pertumbuhan Ekonomi Kabupaten Jember', *Universitas Jember Digital Repository*. Available at: <http://repository.unej.ac.id/handle/123456789/63990>
- Arsyad, Lincolin (2010) *Pengantar Perencanaan Pembangunan*. Media Widya Mandala: Yogyakarta
- Djojohadikusumo, Sumitro. (1994) *Perkembangan Pemikiran Ekonomi: Dasar Teori Ekonomi Pertumbuhan Dan Ekonomi Pembangunan*. Pt Pustaka Lp3es Indonesia: Jakarta.
- Jhingan, M.L (2010) *Ekonomi Pembangunan Dan Perencanaan*. PT. Rajagrafindo Persada: Jakarta.
- Mankiw, N. Gregory (2006) *Makroekonomi*. Erlangga: Jakarta.
- Purnamasari, Dian (2015) 'Penduduk Dan Pertumbuhan Ekonomi: Sebuah Penjelasan Empiris Baru', *Diponegoro University Institutional Repository*. Available at: <http://eprints.undip.ac.id/45748/>
- Astuti, Ismadiyah Purwaning dan Fitri Juniwati Ayuningtyas (2018) 'Pengaruh Ekspor Dan Impor Terhadap Pertumbuhan Ekonomi Di Indonesia', *Jurnal Ekonomi dan Studi Pembangunan*, 19(1), pp. 1-10. Available at: <http://dx.doi.org/10.18196/jesp.0.0.3836>
- Rahardja, Pratama (2008) *Pengantar Ilmu Ekonomi (Mikroekonomi Dan Makroekonomi)*, Edisi Ketiga. Fakultas Ekonomi. Universitas Indonesia
- Swaramarinda, Darma Rika (2011) 'Pengaruh Pengeluaran Konsumsi Dan Investasi Pemerintah Terhadap Pertumbuhan Ekonomi Di Indonesia', *Jurnal Ilmiah Ekonosains*, 9(2), pp. 95-105. Available at: <https://doi.org/10.21009/econosains.0092.01>
- Sukirno (2006) *Makroekonomi: Teori Pengantar*. Penerbit

Pt. Raja Grafindo Persada: Jakarta..
Todaro, Michael (2011) *Pembangunan Ekonomi Dunia*
Ketiga Erlangga: Jakarta.

