

Analysis of Public Consumption, Population Growth, and Government Expenditure on the Economic Growth in North Sumatera Province

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ABSTRACT

This study aims to examine and analyze the effect of public consumption, population growth and government spending in North Sumatera Province. The types of data used in this research are quantitative and secondary data. The objects in this study consisted of 33 regencies/cities in North Sumatera. This study uses panel data (Pooled Data), which combines Time Series and Cross-Section data for six years, starting from 2015-to 2020. The analytical method used in this research is the panel data analysis method with the Random Effect Model (REM) approach, using the Eviews ten estimation tool. The regression results show that public consumption and population growth have a positive and insignificant effect on economic growth partially. Meanwhile, government spending has a negative and significant impact on the economic growth of 33 Regencies/Cities in North Sumatera during the 2015-2020 period.

Keywords: Economic Growth, Public Consumption, Population Growth, Government Expenditure

INTRODUCTION

Economic growth is an important indicator in achieving the success of a country's development. Each country will strive to optimize economic growth to achieve development. Economic growth is a quantitative measure that describes the development of an economy in a given year

compared to the previous year (Sukirno, 2006:9). The government's efforts to improve community welfare reflects in economic growth. Increased economic growth will positively impact employment so that people have income and can meet their daily needs. The high economic growth can be seen in the development of Gross Domestic Product (GDP) (Tambunan, 2003:29).

Based on data published by the Central Statistics Agency for 2018-2020, overall economic growth has decreased. Nationally, growth in 2018 was 5.17%, higher than in 2019, which was 5.02%. Throughout 2020, Indonesia's economic growth contracted by -2.07%. Many countries worldwide experienced the same trend except Indonesia, such as the United States, which experienced a contraction of -2.5% and Singapore by -3.8%.

Economic growth between provinces in Indonesia experienced a contraction. Only three provinces experienced positive economic growth, namely Central Sulawesi, North Maluku and Papua. The economic growth of Java Island experienced a contraction of -2.51%, Sumatra Island by -1.19%, Kalimantan Island by -2.27% and Bali Nusa Tenggara by -5.01%. Meanwhile, Sulawesi Island grew by 0.23% and Maluku and Papua by 1.44%. One of the factors that caused the contraction in Java was

restrictions on activities so that economic activities did not run normally.

Meanwhile, on the island of Sumatra, it shows the average public consumption has decreased due to the Covid-19 pandemic. The islands of Maluku and Papua experienced positive growth due to increased copper production. In 2020 the lowest economic growth among 34 provinces in Indonesia was Bali Province, where the economic growth reached -9.3%.

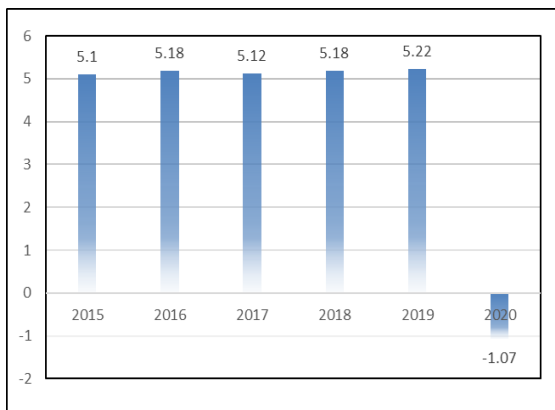


Figure 1 North Sumatera Economic Growth in 2015-2020
Source: BPS North Sumatera, 2020

Based on Figure 1.2, North Sumatera's economic growth in 2015-2019 was 5 percent and slightly fluctuated. In 2015 economic growth was 5.1 percent, and it increased in 2016 by 5.18 percent. North Sumatera's economic growth had increased by 5.22 percent in 2019. Economic growth contracted in 2020 with achievement of -1.07 percent compared to 2019 of 5.22 percent. The contraction in 2020 was driven by a decline in demand due to limited people's purchasing power and slowing exports. In addition, Soekowardojo (2021), the Head of Bank Indonesia Representative for North Sumatera Province, said that delayed government spending also impacted the decline in the demand and supply sides. Based on the demand side, household consumption from 4.45% in 2019 decreased to 2.98% in 2020. The reduction in consumption was due to the Covid-19 pandemic, where people held back their consumption and tended to be on guard amid certainty during the pandemic (Bank Indonesia, 2021).

The highest public consumption in 2020 was in the Regency/City in North Sumatra, namely Medan City at Rp. 1,631,598.98, and the second-highest was Padangsidempuan City at Rp. 1,394,225.24. While the lowest consumption was West Nias Regency at Rp.586,565.13 and Nias Regency at Rp.606.440.37. Overall public consumption in 2020 shows that urban areas dominate the highest public consumption compared to rural areas.

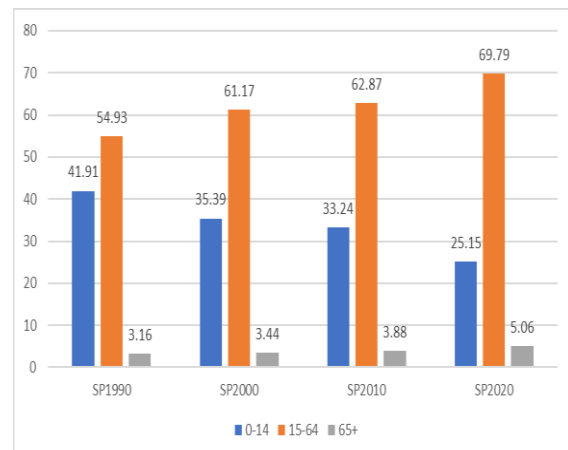


Figure 2 Population Composition by Age Group 1990-2020 (Percent)
Source: BPS North Sumatera, 2020

Figure 1.3 shows that the percentage of the productive age population (15-64 years) continues to increase from 1990-to 2020. The proportion of the abundant age population in 1990 was 54.93% of the total population, rising to 69.79% in 2020. The sharp difference between the percentage of the productive and non-productive age population (0-14 years and 65 years and over) decreased in 2020. It reflects that North Sumatera Province has the opportunity to be in the demographic bonus period. If the government makes optimal use of it, then North Sumatera can accelerate economic growth and improve people's welfare.

The very large number of productive age population in the population structure can be one of the development capital. The results of the 2020 Population Census noted that the majority of the population of North Sumatera is dominated by generation Z and millennials. The proportion of Generation Z

is 31.70% of the total population, and the millennial generation is 25.83% of the total population of North Sumatera. These two generations are included in the productive age, which can be an opportunity to accelerate economic growth (Population Census, 2020:14).

Table 1: Total District/City Government Expenditures of North Sumatera Province in 2015-2020

Year	Gov. Expenditure (Rupiah)	Growth Rate (%)
2015	35.335.797.015	9
2016	40.302.267.216	14
2017	43.311.662.066	7,5
2018	45.313.335.247	4,6
2019	46.462.646.769	2,5
2020	46.719.189.536	0,6

Source: BPS Sumatera Utara, 2020

Based on Table 1, North Sumatera's government expenditure in total showed an increase, but the growth rate of GRDP did not necessarily increase. The trend showed a decline. It can be seen from the growth rate of 14% in 2016 down to 7.5% in 2017. The lowest percentage of government spending occurred in 2020, 0.6%. The low government spending in 2020 was due to the government delaying realizing its budget due to the COVID-19 pandemic. Total government spending for 2020 reached Rp. 46,719,189,536 billion, has a low difference compared to the previous year of Rp. 46,462,646,769 Billion.

Junaidi (2010) states that government spending positively impacts economic growth. The increase in government spending in developing countries will encourage the development process to lead to a rise in economic growth. In addition, Hariyanti (2016) explains that the public sector or government spending has an important role in the provision and improvement of infrastructure, which will lead to a smoother production process of goods and services. It will encourage improvements in the production process, leading to increased economic growth.

Overall, in 2020, public consumption growth was lower than in the previous year. People's purchasing power caused a decline in growth. Due to social restrictions and regional lockdowns,

workers in the tertiary sector are greatly affected. In addition, the activities of celebrating Eid al-Fitr and HBKN celebrations were relatively not as high as the previous year due to the appeal not to leave the house and go home. The upper-middle-class tends to hold back their consumption concerns about being exposed to Covid-19 getting wider. However, the massive social safety net prepared by the central and regional governments restrained the decline in public consumption. In addition, the income of workers in the agricultural sector, especially plantations, tends to increase in line with the increase in commodity prices on the international market (BI, 2020:1).

In entering the fourth quarter of 2020, public consumption growth is predicted to improve. Improvements from the health side have supported the acceleration of public spending, especially ahead of the long Christmas and New Year holidays. Shopping activity was also boosted by income starting to improve in line with the workers' return to work affected by Covid-19. Based on the North Sumatera economic report (2020), people's purchasing power is quite well maintained with government programs. The government expanded the Family Hope Program and the Basic Food Card Program to preserve the purchasing power of the lower class. The policy for distributing Village Funds Direct Cash Assistance (BLT) was relaxed, and electricity-intensive was expanded. The distribution of Central and Regional Government Cash Social Assistance runs smoothly and helps support the purchasing power of the lower middle class. Based on some of these, Government Programs should increase public consumption. Still, the fact is not following the data released by the BPS in 2020 that public consumption is declining and the APBD is experiencing a budget deficit. On the other hand, North Sumatera's economic growth contracted to minus 1.07%.

Based on the conclusion above, the economic growth of North Sumatera

Province decreased and even contracted to minus 1.07 percent. According to Keynes's theory, public consumption expenditure and government spending can encourage economic growth. However, the fact is that in 2020 total government spending will increase, but public consumption will decline. At the same time, several government programs such as the Social Assistance Program for the Family Hope Program, the Basic Food Card Program and the Direct Cash Assistance are expected to increase public consumption to spur economic growth. The 2020 Population Census publication also said that the growth of the productive population of North Sumatra was growing every year. It means that North Sumatra has the opportunity to be in the demographic bonus period to encourage economic growth.

Based on the explanation above, the researcher is interested in researching "The Effect of Public Consumption, Population Growth and Government Expenditure on Economic Growth in North Sumatra Province".

Framework

Following the description of the background of the problem, literature review, and previous research, a conceptual research framework prepares as follows:

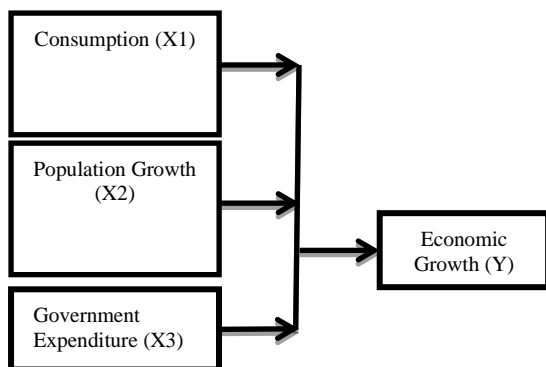


Figure 3. Conceptual Framework

- H1: Public consumption has a positive and significant effect on economic growth
- H2: Population growth has a positive and significant effect on economic growth

- H3: Government Expenditure has a positive and significant effect on economic growth

RESEARCH METHODS

In this study, researchers used quantitative data. Quantitative analysis is used to analyze quantitative information (which can be measured, tested and informed in equations, tables and so on). This research is associative. The associative analysis determines the effect or relationship between two or more variables (Sugiyono, 2018: 92). So this study aims to see how big the influence of Public Consumption, Population Growth and Government Expenditure on Economic Growth in North Sumatra Province. The type of data in this study is secondary data in the form of a combination of cross-section data with time series with 198 observations. The secondary data used in this study used 33 regencies/cities in North Sumatra Province from 2015 to 2020.

RESULT AND DISCUSSION

Chow Test

Table 2: Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	18.85610	(32,162)	0.0000
Cross-section Chi-square	307.424706	32	0.0000

Source: Data processed using Eviews 10

Based on the results of the Chow test above, the probability value is $0.0000 < \alpha 0.05$. So H_0 is rejected, and H_a is accepted. It means that the Fixed Effect Model (FEM) is the best.

Hausman Test

Table 3: Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.809922	3	0.8471

Source: Data processed using Eviews 10

Based on the Hausman test result table above, the probability value is $0.8471 > 0.05$. So H_0 is accepted, and H_a is rejected. The Random Effect Model (REM) model is the best model.

Lagrange Multiplier Test

Table 4: Lagrange Multiplier Result

	Cross-section	Time	Both
Breusch-Pagan	4.521707	2105.325	2109.847
	(0.0335)	(0.0000)	(0.0000)

Source: Data processed using Eviews 10

Based on the table of the Lagrange Multiplier Test results above, the probability value is $0.000 < 0.05$. So H_0 is rejected, and

H_a is accepted. The Random Effect Model (REM) model is the best model.

Estimated Results and Interpretation

The following are the results of the estimation of the research model using the best estimation model, namely the Random Effect Model (REM).

Table 5: Random Effect Model Estimation Results (REM)

Method: Pooled EGLS (Cross-section random effects)				
Date: 20/02/22 Time: 16:05				
Sample: 2015, 2020				
Included observations: 6				
Cross-sections included: 33				
Total pool (balanced) observations: 198				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.073568	0.340121	11.97682	0.0000
LOGKM?	0.000901	0.001494	0.603173	0.5471
PDK?	0.210496	0.037359	5.634466	0.0000
LOGPP?	-0.013156	0.001880	-6.995921	0.0000
Random Effects (Cross)				
_Nias--C	-0.201536			
_Mandailing natal--C	-0.051378			
_Tapanuli selatan--C	-0.051118			
_Tapanuli Tengah--C	-0.052141			
_Tapanuli utara--C	-0.045198			
_Toba--C	0.083702			
_Labuhanbatu--C	0.018604			
_Asahan--C	0.002248			
_Simalungun--C	-0.045306			
_Dairi--C	0.008295			
_Karo--C	0.119881			
_Deliserdang--C	-0.050548			
_Langkat--C	-0.070167			
_Niasselatan--C	-0.198674			
_Humbang hasundutan--C	-0.028109			
_Pakpabharat--C	0.042370			
_Samosir--C	0.029243			
_Serdangbedagai--C	-0.005806			
_Batubara--C	-0.012292			
_Padanglawasutara--C	0.016795			
_Padanglawas--C	0.013820			
_Labuhanbatu selatan--C	0.067360			
_Labuanbatuutara--C	0.024295			
_Niasutara--C	-0.157475			
_Niasbarat--C	-0.163601			
_Sibolga--C	0.110617			
_Tanjungbalai--C	0.093712			
_Pematang siantar--C	0.106975			
_Tebingtinggi--C	0.107446			
_Medan--C	0.060838			
_Binjai--C	0.084975			
_Padang sidempuan--C	0.135696			
_Gunungsitoli--C	0.006479			
Effects Specification				
			S.D.	Rho
Cross-section random			0.095147	0.7656
Idiosyncratic random			0.052642	0.2344
Weighted Statistics				
R-squared	0.347283	Mean dependent var		1.30495
Adjust R-square	0.337189	S.D. dependent var		0.06429
S.E.of regression	0.052344	Sum squared resid		0.53153
F-statistic	34.40635	Durbin-Watson stat		1.05085
Prob(F-statistic)	0.000000			

Source: Data processed using Eviews 10

Based on Table 5 above, the significant test results of North Sumatra's economic growth were obtained. The results of the equation test are as follows:

$$PE = 4.073568 + 0.000901\text{LogKM} + 0.210496\text{PDK} - 0.013156\text{LogPP}$$

Based on the estimation, results show that the Adjusted R-Squared value is 0.337, which indicates that the variables of public consumption, economic growth, and government spending together can explain economic growth of 33.7%. In contrast, the remaining 66.3% is explained by other variables not included in the model.

With an F-statistic value of 34.40635 and a significant probability of alpha of 0.00000, it can be explained that the variables of public consumption, population growth and government spending have a significant influence on economic growth in North Sumatra Province.

The results of the interpretation of the equation are as follows:

a. Consumption Variable

The community consumption variable (LogKM) has a coefficient value of 0.000901 and $t\text{-sig} = 0.5471$. Based on the equation results, it is known that the variable of public consumption has a positive and insignificant effect on economic growth at a significance level of 95%, which can be seen with the $t\text{-sig}$ value $>$ from $= 0.05$ ($0.5471 > 0.05$). For every 1 percent increase in public consumption, the economic growth variable in 33 Regencies/Cities in North Sumatra will increase by 0.000901 percent.

b. Population Growth Variable

The population growth variable (PDK) has a coefficient value of 0.210496 and an at-sign of 0.0000. Based on the results of the equation, it is known that the population growth variable (PDK) has a positive and significant effect on economic growth at a significance level of 95% which can be seen with the $t\text{-sig}$ value $<$ of $= 0.05$ ($0.0000 < 0.05$). For every 1 percent increase in population growth, the economic growth variable in 33 Regencies/Cities in

North Sumatra will increase by 0.210496 percent.

c. Government Expenditure Variable

Government Expenditure (LogPP) has a coefficient value of -0.0131556 and a $t\text{-sig}$ of 0.0000. Based on the results of the equation, it is known that the government expenditure variable (LogPP) has a negative and significant effect on economic growth at a significance level of 95% which can be seen with the $t\text{-sig}$ value $<$ of $= 0.05$ ($0.0000 < 0.05$). For every 1 percent increase in government spending, the economic growth variable in 33 Regencies/Cities in North Sumatra will decrease by 0.0131556 percent.

DISCUSSION

Analysis of the Effect of Public Consumption on Economic Growth

The regression results show that the coefficient of public consumption is 0.000901 with a probability value of 0.5471. The probability value $>$ alpha 0.05 means that public consumption has a positive and insignificant effect on economic growth. The coefficient value is 0.000901, which means that if public consumption increases by 1 percent, it will increase economic growth in 33 regencies/cities in North Sumatra in 2015-2020 by 0.000901 percent.

Consumption has an important role in the stability of a country's regional economy. Community consumption in an area describes the level of community welfare. The higher the level of consumption, will increase changes in economic activity in national income. In aggregate, public consumption expenditure is directly proportional to national income—the greater the payment, the greater the consumption expenditure. Public consumption is closely related to the rate of economic growth. When aggregate demand rises, it will produce higher output to increase the region's economic growth rate.

One of the factors that cause public consumption to have no significant effect on economic growth in North Sumatra in 2015-2020 is due to differences in consumption

levels of rural and urban communities. In 2020, it showed that people's consumption level in cities is higher than people's consumption in districts. Overall, the level of urban consumption in North Sumatra has increased. Sibolga City experienced an increase in public consumption from Rp.1,067,331 to Rp. 1,169,743, Tanjung Balai City from Rp.943,512 to Rp.1,030,183, Pematang Siantar City from Rp.1,095,262 rose to Rp. 1,326,421, Kota Tebing Tinggi from Rp. 1,102,521 rose to Rp. 1,244,930, Kota Medan experienced an increase of Rp.1,831,599 compared to the previous year, which was Rp. 1,559,944, Kota Binjai from Rp. 1,085,891 to Rp. 1,160,877 and Padangsidempuan City from Rp. 1,200,271 to Rp. 1,394,225.

By Engel's law, "Income spent on food, as a percentage of overall income, decreases as income increases, other factors remaining constant". According to Engel's law, as a person's income increases, the percentage of income spent on food decreases, assuming other factors remain constant. Based on public consumption data from 2015 to 2020, urban areas in North Sumatra appear to have relatively higher welfare than rural areas.

Analysis of the Effect of Population Growth on Economic Growth

The regression results show that the coefficient of population growth is 0.210496 with a probability value of 0.0000. The probability value $< \alpha$ 0.05 means that population growth has a positive and significant effect on economic growth. The coefficient value is 0.210496, which means that if population growth increases by 1 percent, it will boost economic growth in 33 regencies/cities in North Sumatra in 2015-2020 by 4.284064 percent.

This study follows the Marxist school, which says that population pressure in a country is not population pressure on food ingredients but pressure on job opportunities. This theory argues that the greater the number of people, the higher the product produced, so there is no need for

population restrictions. Impoverishment does not occur because of rapid population growth but because the capitalists take some of the workers' rights. This flow also says that the higher the level of the human population, the higher the productivity if technology does not replace human labour so that it can encourage economic growth.

Population growth affects economic growth, supported by the results of the 2020 Population Census, which noted that the majority of North Sumatra's population is dominated by generation Z and millennials. The proportion of Generation Z is 31.70% of the total population, and the millennial generation is 25.83% of the total population of North Sumatra. These two generations are included in the productive age, which can be an opportunity to accelerate economic growth. In addition, the current generation of millennial children are more effective and take part in the economy.

This research is in line with Sandip Sarker et al (2016) conducted, who examined Urban Population and Economic Growth: South Asia Perspective. The results of his research show that population growth has a significant impact on economic growth in South Asia in the long term. In addition, this research is also in line with a study conducted by Rahman (2017), namely, The effect of population growth, environmental quality and trade openness on economic growth in Pakistan. The results show that population growth positively affects economic growth in Pakistan.

Analysis of the Effect of Government Spending on Economic Growth

The regression results show that the coefficient of government spending is -0.013156 with a probability value of 0.0000. The probability value $< \alpha$ 0.05 means that government spending has a negative and significant effect on economic growth. The coefficient value is -0.013156, which means that if government spending increases by 1 percent, it will reduce economic growth in 33 Regencies/Cities in

North Sumatra in 2015-2020 by 4.060412 percent.

This study's results do not follow Keynes's theory, which states the importance of the role of aggregate expenditure on the number of goods and services that the corporate sector will produce in determining the level of economic activity. An increase in the size of effective demand will increase economic activity, creating a production level. This situation will lead to a rise in the use of labour and the use of factors production.

This research is more directed toward the theory of government spending proposed by Rostow and Musgrave. The theory develops a development model that links the development of government spending with the stages of development, namely the early, intermediate and advanced settings. In the early stages, the government allocated more of its budget through investments to provide infrastructure for education, health, transportation, etc. Then in the intermediate stage, Rostow argues that government investment is needed to encourage economic growth to take off. At this stage, the role of the private sector is also getting bigger. At an advanced stage, government activities began to shift from providing infrastructure to spending on social activities such as providing social welfare programs Mangkoesoebroto (2010).

Based on data published by the Central Statistics Agency, government spending in 2015-2020 in total direct and indirect spending has increased. In 2015 the total government expenditure of North Sumatra amounted to Rp. 35,335,797,015 billion, increasing to Rp. 46,719,189,536 billion in 2020. Overall, the district/city government expenditure budget in North Sumatra has increased due to social assistance for handling COVID-19. Soekowardojo (2021), as Head of Bank Indonesia Representative for North Sumatra Province, said that delayed government spending also impacted the decline in demand and supply during the COVID-19 pandemic. It is what triggers government

spending not being able to stimulate economic sector activities so that it cannot spur economic growth in North Sumatra.

The results of this study are in line with research conducted by Safira (2019), which examined the effect of government spending on economic growth in East Kalimantan Province. His research shows that government spending had a negative and significant impact on economic growth in East Kalimantan from 2004-to 2016.

CONCLUSION

Based on the results of data analysis and research discussion, the following conclusions can be drawn:

1. Public consumption has a positive and insignificant effect on economic growth in North Sumatra.
2. Population growth has a positive and significant effect on economic growth in North Sumatra.
3. Government spending has a negative and significant impact on economic growth in North Sumatra.

SUGGESTIONS

1. Community consumption has an important role in encouraging economic growth. The level of consumption of urban communities is higher than the level of consumption of rural communities in North Sumatra. It is hoped that the government will realize programs to improve people's welfare more evenly throughout the districts in North Sumatra.
2. Population growth has a positive impact on the economy. The growth of the productive age population (15-64) continues to increase from 2015-to 2020. It is hoped that the government will optimize the growth of the effective generation so that it can be used as capital in accelerating economic growth and be wiser in utilizing the demographic bonus in North Sumatra Province.

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