
Factors Affecting The Gap Between Districts / Cities In North Maluku Province 2016-2020

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Abstract

The purpose of this study is to analyze the effect of Economic Growth, Investment, agglomeration, on the regional disparities of districts/cities in North Maluku province in 2016-2020. The method of analysis used in this study is the regression of panel data for the period 2016-2020 sourced from the Central Bureau of Statistics of North Maluku. Statistical tests include Common, Fixed, and Random tests, as well as conducting Chow and Hausman tests to obtain the tests to be selected. The results of the data analysis showed that among the four economic growth variables (X_1) has a negative and significant influence on the regional gap. Investment variables (X_2) and agglomeration (X_3) have a positive and significant influence on the regional gap.

Keywords: *Regional Disparities, Economic Growth, Investment, Agglomeration*

INTRODUCTION

Economic development is an effort to improve the standard of living as measured by the high and low per capita real income. In economic development, the increase in people's income is followed by changes in the social structure and attitudes of society, improvement of conditions outside the economic aspect, such as improvement of government institutions, improvement of attitudes, and efforts to reduce the gap to a higher level of economic activity.

Economic development is a multidimensional process that includes changes in structure, life attitudes, and institutions that aim to increase economic growth, reduce the inequality of income distribution, and eradicate poverty (Todaro, 1981). Economic development is an effort to increase per capita income by processing potential economic power into the real economy through capital investment, the use of technology, the addition of knowledge, skill improvement, to improve the welfare of the community (Sukirno, 1996).

Economic growth is one of the indicators of public welfare. Economic growth is an indicator of the welfare of the community in a region. If the economic growth of an area increases, it is expected that the growth can be enjoyed equally by the entire community.

Improving the standard of living and welfare of the community is required to increase economic growth and equitable distribution of income. Economic growth is measured by gross Regional domestic product (GRDP) and its growth rate. Differences in economic development that occur lead to gaps between regions. The gap is a result of the failure of development in the era of globalization to meet the physical and psychological needs of citizens (Winarno, 1998).

The development gap between regions is a common aspect in the economic activities of a region. This gap is basically caused by differences in the content of Natural Resources and differences in geographical conditions found in each region. As a result of these differences, the ability of a region in encouraging the development process also becomes different.

Therefore, it is not surprising that in each region there is usually a developed Region (Development Region) and underdevelopment Region (Underdevelopment Region). The occurrence of this gap between regions has implications for the level of Community Welfare

between regions. Therefore, this aspect of the development gap between regions also has implications for the formulation.

Regional Development Policy carried out by local governments. Inequality of income between regions causes inequality of economic development so that there is economic inequality. Because of the difference in the rate of economic growth, here the role of local governments is needed to increase growth and develop disadvantaged regions so that economic growth can be evenly distributed.

Gaps have both positive and negative impacts. The positive impact of the gap is to encourage disadvantaged areas that experience gaps to rise and increase their growth. But The Impact. negative from the gap is often seen as unfair and hinders the welfare of society.

North Maluku as one of the regions with a fairly high distribution also experienced unevenness in the acceleration of development between its regions. The development carried out in the region aims not only to increase the per capita income of its people, but also to catch up with economic growth compared to other regions.

Table. 1. GRDP by District / City Province

Region	Gross Regional Domestic Product By Regency / City Of North Maluku Province (Billion Rupiah)									
	On The Basis Of Applicable Prices					On The Basis Of Constant Prices 2010				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Halmahera Barat	1786.2	1943.2	2084.5	2242.6	2280.4	1310.1	1375.7	1444.8	1521.9	1531.2
Halmahera Tengah	1769.0	1931.5	2195.7	2417.0	3279.9	1262.0	1335.2	1428.1	1518.9	1994.6
Kepulauan Sula	1948.3	2118.0	2287.2	2484.5	2508.0	1395.6	1463.0	1544.5	1639.6	1641.4
Halmahera Selatan	4359.4	5138.9	6317.5	7221.4	8720.5	3238.6	3758.6	4338.8	4865.9	5727.7
Halmahera Utara	4481.2	4960.4	5378.5	5592.5	5705.6	3350.2	3571.9	3658.1	3754.7	3746.5
Halmahera Timur	2512.6	2751.6	3206.1	3484.6	3541.5	1883.2	2018.2	2179.6	2291.8	2297.8
Pulau Morotai	1201.9	1318.6	1438.4	1528.5	1579.3	872.9	927.2	989.2	1031.7	1056.1
Pulau Taliabu	1066.1	1157.2	1325.6	1449.3	1485.5	767.9	808.6	906.0	989.6	998.6
Ternate	7877.2	8687.3	9687.8	10632.3	10535.2	5785.4	6222.3	6736.3	7274.9	7188.0
Tidore Kepulauan	2256.4	2441.0	2660.8	2880.5	2940.8	1687.1	1788.4	1896.2	2012.3	2035.5
Maluku Utara	29150.6	32272.6	36468.8	39695.5	42319.5	21556.7	23210.9	25034.1	26597.6	28020.7

Table. 2. PDRB capita City of North Maluku province

Region	Gross Regional Domestic Product capita of North Maluku province (thousand Rupiah)									
	On The Basis Of Applicable Prices					On The Basis Of Constant Prices 2010				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Halmahera Barat	15846.5	16971.2	17890.9	19303.3	17309.3	11622.8	12014.4	12400.5	13099.7	11622.4
Halmahera Tengah	34472.8	36571.6	40518.4	44282.6	58017.2	24593.0	25281.4	26353.1	27828.5	35282.4
Kepulauan Sula	20049.4	21351.6	22652.7	24881.4	24160.2	14361.9	14748.9	15297.4	16420.3	15812.1
Halmahera Selatan	19508.7	22610.3	27322.9	31217.0	35219.8	14492.8	16537.2	18765.2	21034.3	23132.5
Halmahera Utara	24407.7	26511.6	28228.8	29370.0	28945.4	18247.7	19090.6	19199.3	19718.6	19006.5
Halmahera Timur	28656.5	30549.6	34616.5	37301.5	38745.8	21477.6	22407.4	23533.6	24532.7	25138.9
Pulau Morotai	19257.5	20603.1	21936.0	23138.9	21351.8	13986.9	14486.9	15085.0	15619.2	14278.5
Pulau Taliabu	20775.1	22284.3	25247.7	27270.8	25662.3	14963.9	15571.4	17256.9	18621.7	17251.3
Ternate	36129.4	38936.9	42470.9	46086.3	51397.2	26535.3	27888.8	29531.6	31533.6	35067.3

Tidore Kepulauan	22976.0	24572.9	26498.0	28808.6	25782.3	17179.6	18003.3	18884.0	20125.4	17845.0
Maluku Utara	24580.7	26686.1	29586.1	32125.0	33085.4	18177.3	19193.0	20309.5	21525.0	21906.6

Source: BPS North Maluku province, 2022 (data processed)

Table. 3. GRDP growth rate by Regency / City of North Maluku province

Region	GRDP growth rate by Regency / City of North Maluku province on the basis of constant prices 2010 (percent)				
	2016	2017	2018	2019	2020
Halmahera Barat	5.13	5	5.03	5.33	0.61
Halmahera Tengah	11.24	5.8	6.96	6.36	31.32
Kepulauan Sula	5.11	4.83	5.57	6.15	0.11
Halmahera Selatan	5.69	16.06	15.44	12.15	17.71
Halmahera Utara	4.03	6.62	2.41	2.64	-0.22
Halmahera Timur	5.5	7.17	8	5.14	0.26
Pulau Morotai	6.29	6.21	6.69	4.3	2.36
Pulau Taliabu	5.69	5.3	12.05	9.23	0.91
Ternate	7.99	7.55	8.26	8	-1.2
Tidore Kepulauan	5.23	6	6.03	6.12	1.15
Maluku Utara	5.77	7.67	7.86	6.25	5.35
Average	6.151818	7.11	7.663636	6.515455	5.305455

Based on the previous description shows that the welfare conditions of each district/City are very different. A very noticeable difference is seen from the GDP per capita between Ternate with the lowest GDP per capita of -1.2 and Halmahera with the highest GDP per capita of 162.

The gap that occurs in North Maluku province is influenced by many factors including economic growth, investment level, agglomeration. Economic growth is a process of long-term per capita output growth that occurs when there is a tendency (per capita output to rise) that comes from the internal processes of the economy (the forces that reside in the economy itself), not from outside and is temporary. Economic growth is the change in the level of economic activity that prevails from year to year. So to know it must be held comparison of national income from year to year, known as the rate of economic growth (Sukirno, 1985).

The hypothesis describing the relationship between economic growth and inequality is the Kuznet hypothesis. The linkages between economic growth and inequalities such as u are reversed. In the early stages of economic development, income distribution tends to deteriorate, but after the next stage, income distribution will improve and the level of inequality will decrease. Kuznet's hypothesis is proved by making a graph between the growth of GDP and the Wiliamson Gap Index.

Figure 1

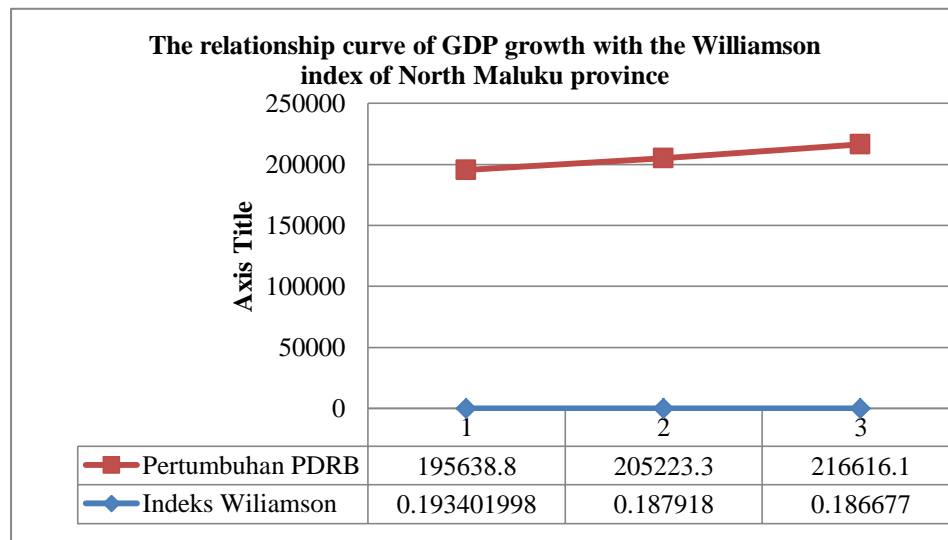


Figure 1 shows the Gap Index numbers tend to fall from 2016-2020. The gap level in 2016 was 0.1934 followed by economic growth of 5.77%. In 2017 The Gap level remained 0.187918 followed by economic growth of 7.67%. In 2018 The Gap Index remained at 0.186677 followed by economic growth of 7.92%.(BPS North Maluku).

Investment according to Sukirno (1994) can be defined as the expenditure or expenditure of investors or companies to buy capital goods and production equipment to increase the ability to produce goods and services available in the form ekonomian dalam :

1. The purchase of various types of capital goods, namely machinery and other production equipment to establish various types of industries and companies.
2. Spending on building residential houses, office buildings, factories and other buildings.
3. Increase in the value of stocks of unsold goods, raw materials, and goods that are still in the process of production.

Another factor affecting the gap is agglomeration.. Agglomeration is the spatial concentration of economic activity in urban areas due to the savings due to the adjacent location (economies of proximity) which is located with the cluster of companies, workers, and consumers (Montgomery in Kuncoro, 2002). Agglomeration (concentration of activity) of production is used as one of the variables used to determine the regional gap (Jamie Bonet, 2007).

The agglomeration of production can directly affect regional disparities, that is, when there are barriers to labor mobility between regions, or when there is a surplus of labor in the economy.

RESEARCH METHODS

Research Variables

The independent variable used in this study is the region gap. While the dependent variable is economic growth, investment, agglomeration, in North Maluku province in 2016-2020.

Types and sources of Data

The type of data in this study is quantitative data and the source of data used is secondary data. Secondary Data is a source of research data obtained through intermediate media or indirectly in the form of books, records, existing evidence, or archives both published and unpublished in general. In other words, researchers need data collection by visiting libraries, study centers, archive centers or reading many books related to their research. The data collection institutions used in this research are among others: the Central Statistics Agency of North Maluku province in several years of publication. The data needed in this study include : GRDP on the basis of constant prices 2010 North Maluku province in 2016-2020 . GRDP on the basis of prices applies Regency / city in North Maluku province in 2016-2020.. GDP per capita on the basis of prices valid 2010 North Maluku province in 2016-2020. GDP per capita on the basis of constant prices 2000 districts / cities in North Maluku province in 2016-2020. Total population for each Regency / city in North Maluku province in 2016-2020. Data on the population of North Maluku province in 2016-2020. Investment Data are PMA and PMDN that have been realized in North Maluku province in 2016-2020.

Methods used F-statistical test (Chow Test), Hausman test, estimation of fixed Effect coefficient Test (R2) model significance test(F test), individual significant Test (t test) with the help of software Eviews 10.

RESULTS AND DISCUSSION

Description Of Research Data

In this study, the data used in the form of time series and cross section data. The variables used are independent variables consisting of Economic Growth, Investment, agglomeration. The dependent variable is the regional gap in the Regency / city in North Maluku province.

Tools used to analyze the data in this study are tools Econometric E-views (e-views). This study uses econometric analysis.

Economic growth

Economic growth is the process of increasing income (GDP) without associating it with the rate of population growth. Population growth is usually associated with the level of economic development, or even not rarely considered the same thing. Economic growth is a form of percentage change in national income in a given year compared to the previous year.

Economic growth is the process of changing the economic condition of a country continuously towards a better state during a certain period. Economic growth can also be interpreted as the process of increasing the production capacity of an economy that is manifested in the form of increasing national income. The existence of economic growth is an indication of the success of economic development.

Table 4. Economic Growth Rate Of Maluku Province 2016-2020 (%)

Region	2016	2017	2018	2019	2020	2021
Halmahera Barat	5.13	5	5.03	5.33	0.61	1.5
Halmahera Tengah	11.24	5.8	6.96	6.36	31.32	162
Kepulauan Sula	5.11	4.83	5.57	6.15	0.11	1.34
Halmahera Selatan	5.69	16.06	15.44	12.15	17.71	14.04

Halmahera Utara	4.03	6.62	2.41	2.64	-0.22	3.3
Halmahera Timur	5.5	7.17	8	5.14	0.26	8.43
Pulau Morotai	6.29	6.21	6.69	4.3	2.36	2.62
Pulau Taliabu	5.69	5.3	12.05	9.23	0.91	13.05
Ternate	7.99	7.55	8.26	8	-1.2	2.88
Tidore Kepulauan	5.23	6	6.03	6.12	1.15	1.35
Maluku Utara	5.77	7.67	7.86	6.25	5.35	16.4
Rata-rata	6.151818	7.11	7.6636364	6.515455	5.305455	20.62818

The economic growth of regencies / cities in North Maluku province on average tends to increase from year to year. South Halmahera regency which experienced a cendrung good economic growth rate, while Ternate Regency cendrung decreased.

Investment

Investment is a capital plan carried out by investors, both foreign and domestic investors in various business fields that are open to investment, which aims to obtain profits (Sutrisno,2000).Self-investment from foreign investment (PMA) and domestic investment (PMDN).

Table 5. North Maluku Province Investment

Region	2016	2017	2018	2019	Average
Halmahera Barat	4481000	5169000	5692500	-	5114166.667
Halmahera Tengah	6505090	6505090	6525480	-	6511886.667
Kepulauan Sula	1655412	1678877	1713720	-	1682669.667
Halmahera Selatan	3919126	3901026	4054080	-	3958077.333
Halmahera Utara	7244058	5937160	58214760	-	23798659.33
Halmahera Timur	12795820	15127848	15422200	-	14448622.67
Pulau Morotai	13630000	13630000	13776000	-	13678666.67
Pulau Taliabu	559400	559400	0	-	372933.3333
Ternate	22620175	28990722	29983537	-	27198144.67
Tidore Kepulauan	8540791	9567419	77745261	-	31951157
Maluku Utara	81950871	90507702	213127574	-	128528715.7
Rata-rata	14900158.5	16506749.45	38750464.73		

Investment in districts / cities in North Maluku province tends to increase every year. The most investment was in North Maluku regency which amounted to 128,528,715.7 million in. While the least investment in Taliabu Island is 372,933. 3333 million.

Agglomeration

Agglomeration is a spatial concentration of economic activity in urban areas due to savings due to adjacent locations (economies of proximity) associated with partial clusters of companies, workers, and consumers (Montgomery in Kuncoro, 2002). Agglomerations inhibit growth due to areas affected by agglomerations will slow down.

Table 6. North Maluku Province Agglomeration Level

No	Region	2016	%	2017	%	2018	%	Average	
1	Halmahera Barat	359	0.039721	386	0.031655	416	0.032911	1161	0.034276

2	Halmahera Tengah	280	0.03098	280	0.022962	280	0.022152	840	0.024799
3	Kepulauan Sula	144	0.015933	144	0.011809	144	0.011392	432	0.012754
4	Halmahera Selatan	607	0.067161	582	0.047728	582	0.046044	1771	0.052285
5	Halmahera Utara	153	0.016929	1067	0.087502	1100	0.087025	2320	0.068493
6	Halmahera Timur	522	0.057756	627	0.051419	658	0.052057	1807	0.053348
7	Pulau Morotai	281	0.031091	281	0.023044	301	0.023813	863	0.025478
8	Pulau Taliabu	44	0.004868	44	0.003608	0	0	88	0.002598
9	Ternate	623	0.068931	1180	0.096769	1266	0.100158	3069	0.090606
10	Tidore Kepulauan	1506	0.16663	1506	0.123503	1573	0.124446	4585	0.135363
11	Maluku Utara	4519	0.5	6097	0.5	6320	0.5	16936	0.5
12	Total	9038	1	12194	1	12640	1	33872	

The level of agglomeration of districts/cities in North Maluku province tends to increase from 2016 to 2018. The largest agglomeration was in North Maluku City at 16,936 (0.5%) and the lowest agglomeration was in Taliabu Island Regency at 88 (0.002598%).

Results and analysis

Model Selection

In a selection of data processing models used in a study needs to be based on various statistical considerations. This is aimed at obtaining an efficient guess.

a. Test F-statistics (Chow Test)

This test is used to select the model to be used between common Effect estimation model or fixed Effect estimation model, with hypothesis test :

- H_0 : choose to use the common Effect estimation model, if the probability value of the statistical F is not significant 5%.
- H_1 : choose to use the fixed Effect estimation model, if the F-statistical probability value is significant 5%.

This test uses the statistical distribution F-test, if the value of the calculation is greater than the value of the table then the model used is a fixed effect estimation model, while if the value of the calculation is smaller than the value of the table then the model used is a common effect estimation model.

Uji Chow

Redundant Fixed Effects Tests

Pool: POOL

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	64.828442	(10,40)	0.0000
Cross-section Chi-square	156.492749	10	0.0000

Based on the above table the cross-section F value of the calculation using Eviews-10 is 64.828442 with a probability of 0.0000. (less than 5%), so that statistically H0 rejected and failed to reject H1, then the appropriate model used is the fixed Effect estimation model.

b. Hausman Test

Hausman test is used to select the model to be used between fixed effect estimation model with random effect estimation model, with hypothesis test :

- H₀: choose using Random effect estimation model, if the F-statistic probability value is not significant 5%.
- H₁: choose to use the fixed Effect estimation model, if the F-statistical probability value is significant 5%.

Hausman test is using chi-Square statistical distribution, if the value of the calculation is greater than the value of the table then the model used is a fixed effect estimation model, while if the value of the calculation is smaller than the value of the table then the model used is a random effect estimation model.

Hausman Test Results

Correlated Random Effects - Hausman Test

Pool: POOL

Test cross-section random effects

Test Summary	Chi-Sq.		Prob.
	Statistic	Chi-Sq. d.f.	
Cross-section random	55.516274	4	0.0000

Source: processed data Eviews-10

The Chi-Square statistical distribution value of the calculation using Eviews is equal to 55.516274 with a probability of 0.0000 (less than 5%), so that statistically H0 rejected and failed to reject H1, then the appropriate model used is fixed Effect estimation model.

c. Fixed Effect Estimation

This test is done to estimate the panel data using dummy variables that aim to capture the difference between intercepts. In the sense of Fixed Effect is made aware of the difference in intercepts between districts but the intercepts are the same over time, assuming that the regression coefficient (slope) remains between districts.

Fixed Effect Estimation Results

Dependent Variable: Y?

Method: Pooled Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.534704	0.270021	1.980232	0.0546
X1?	0.039058	0.011053	3.533545	0.0011
X2?	1.375631	7.927654	1.735025	0.0404
X3?	1.345205	2.777997	0.484236	0.0309

Cross-section fixed (dummy variables)

R-squared	0.951493	Mean dependent var	0.463636
Adjusted R-squared	0.934516	S.D. dependent var	0.150915
S.E. of regression	0.038619	Akaike info criterion	-3.443143
Sum squared resid	0.059657	Schwarz criterion	-2.895689
Log likelihood	109.6864	Hannan-Quinn criter.	-3.231438
F-statistic	56.04483	Durbin-Watson stat	1.468846
Prob(F-statistic)	0.000000		

Source: processed data Eviews-10

From the results of the regression above can be seen that the probability of each individual shows that three significant variables are X_1 (economic growth), X_2 (investment), X_3 (agglomeration). R-squared showed a high yield of 0.951493. As for the F-statistical probability value of 0.000000 which means that the model is a significant high.

Testing Efficiency Determination (R²)

Coefficient determination (R²) is something that shows how large the variation of the dependent variable the regional gap can be explained by the independent variables the amount of Economic Growth, Investment, agglomeration.

In the fixed Effect estimation model, R² is 0.951493 that is, the variation of the dependent variable region gap is able to explain independent variables through the model by 95.14% while the remaining 4.86% is explained by other variables outside the model.

Model Identification Test (F Test)

F test is used to determine the significance or insignificance of independent variables against dependent variables together. From the results of the F-statistic estimation in the calculation using E-views of 56.04483 and the probability of 0.000000 (less than 5%), so it can be concluded that the fixed Effect estimation, independent variables such as economic growth, investment, agglomeration, together significantly affect the region gap dependent variable.

Individual significant Test (t test)

The test is used to determine the isignificant or insignificant of independent variables against individual dependent variables. From the results of the estimate :

a. Variable X_1 (Economic Growth)

From the estimation results obtained the coefficient of independent variable X_1 (economic growth) is 0.039058 and T-statistic is 3.533545 while the probability of 0.0011 using $\alpha=5\%$, so statistically indicate that the independent variable X_1 (economic growth) significant and affect the dependent variable Y (Gap region)

b. Variable X_2 (Investment)

From the results of the estimation of the result of the efficient independent variable X_2 (investment) is 1.356554 and T-statistic is 1.735025 while the probability is 0.0404 using $\alpha=5\%$, so statistically it shows that the independent variable X_2 (investment) significantly affects the dependent variable Y (regional gap).

c. Variable X_3 (Agglomeration)

From the estimation results obtained the coefficient of independent variable X_3 (agglomeration) is 1.345205 and T-statistic is 0.484236 while the probability of 0.00309 using $\alpha=5\%$, so statistically shows that independent variable X_3 (agglomeration) significant effect on dependent variable Y (region gap)

CONCLUSION

Based on the results of the study, the following conclusions can be drawn :

- 1.) The test results in this study show that economic growth affects the regional disparities of districts/cities in North Maluku province. This means that when economic growth decreases or increases affect the number of regional gaps.
- 2.) The test results in this study show that investment has an effect on the regional disparity of districts/cities in North Maluku province. This means that when the investment increases then the level of the region gap will go up as well and when the amount of investment decreases then the region gap will go down as well.
- 3.) The test results in this study showed that agglomerations have a positive effect on regional disparities in districts/cities in North Maluku province. This means that semkin high rate of agglomeration will then increase the region gap will further increase as well

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