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Predictions on Economic Growth and Regional Spending in East Kalimantan Province: MRA Approach

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ABSTRACT— Economic growth is a necessary condition in carrying out economic development. Growth is also the main measure of development success. This article aims to predict the effect of Tax DBH, Non-Tax DBH, and investment on economic growth moderated by regional spending in East Kalimantan. We use a quantitative study which is a statistical analysis so that it can be calculated through the MRA. To reveal the study objectives, time-series data for 13 periods were needed. We can conclude that only Non-Tax DBH has a significant effect on economic growth with and without the regional spending interaction. On the other hand, DBH Tax and investment have no real impact on economic growth (both directly and indirectly through the interaction of regional spending). Originality in this article can be seen from the novelty value expressed by the time lag, the object of study, the analysis model, and the empirical findings that are different from other studies.

KEYWORDS: Tax DBH, Non-Tax DBH, Investment, Regional Spending, Economic Growth, MRA.

1. INTRODUCTION

Economic growth is essentially a reference for measuring the achievements of an economy's development from one period to the next. In line with this objective, various national development activities are directed towards equitable development to each region, especially regions that tend to have weaknesses in their revenue revenues. National development activities cannot be separated from the role of local governments in utilizing the available resources in their respective regions as an effort to increase regional capacities. For this reason, the increase must be supported by regional development carried out in a harmonious and integrated manner in the context of realizing national development. Good regional development is carried out in a sustainable manner according to the priorities and needs of the root regions and development targets have been determined through long-term and short-term development [14], [2]. In general, local governments (in terms of regional spending and financing), still depend on the central government. This can be seen from the source of revenue owned by the regions which are still dominated by contributions and assistance from the central government. The dependence of the regional government on the central government (post regional autonomy), still tends to be large by relying on sources of income derived from balance funds and loan funds. Balancing funds are a source of regional income originating from the State Revenue and Expenditure Budget (APBN) to support the implementation of local government authority to carry out their duties and responsibilities, in order to provide public services and improve community welfare [15]. Data released by [11], highlighted that the rate of economic growth tends to fluctuate. Its growth in 2015 was at the level of -1.21%, then it continued to decline by -0.38% (in 2016). In 2017, economic growth rose to 3.13%, and in 2018 fell to 2.67%. Then, from the 2019 period, it rose again to 4.77%. This indicates that economic growth in East Kalimantan is experiencing imbalances. On the other hand, several East Kalimantan macroeconomic indicators show that the numbers continue to rise every year. In addition to Regional Original Revenue (RO) which contributes to regional revenue, sources that also have the potential to the region are Production Sharing Funds (DBH),

General Allocation Funds (DAU), and Special Allocation Funds (DAK). [1] emphasizes that the balance is intended to overcome the vertical imbalance between levels of government to equalize fiscal capacity by encouraging regional spending on national development priority activities, encouraging service achievement, minimum standards, and stimulating revenue mobilization. DBH is one of the components of the balancing fund that comes from APBN revenues which are allocated to regions based on a certain percentage to finance their needs in the context of implementing decentralization [16]. One of the indicators of the success of development implementation that can be used as a macro benchmark is economic growth. Based on this explanation, this article will present the extent of the influence of non-tax DBH, tax DBH, and investment on economic growth in East Kalimantan Province.

2. Methods

2.1 Study design and hypotheses

The design in this article is based on explanatory research. The study aims to analyze the relationship between one variable and another or how a variable affects other variables [7]. This study consists of three main variables (independent, dependent, and moderation). The independent variable referred to is non-tax DBH (X1), tax DBH (X2), and investment (X3). Then, economic growth (Y) acts as the dependent variable and the moderating variable is regional spending (Z). Based on this basis, Figure 1 details the variables in this article.

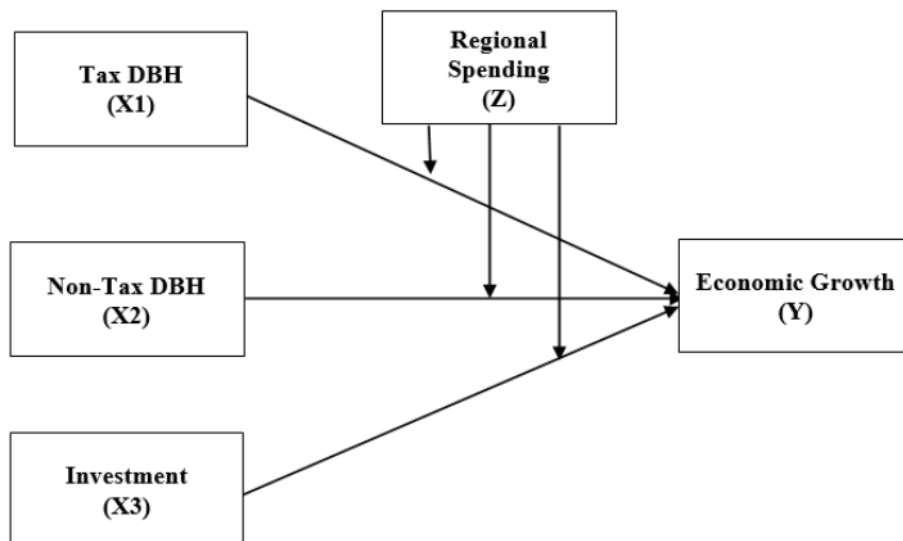


Figure 1: Study design.

Hypotheses are scientific statements based on theoretical and empirical studies which are temporary answers to the problems faced to be verified based on the empirical data collected [9]. The hypothesis in this article is as follows:

- Tax DBH has significant effect on economic growth in East Kalimantan.
- Non-tax DBH has a significant effect on economic growth in East Kalimantan.
- Investment has a significant effect on economic growth in East Kalimantan.
- The interaction of regional spending and DBH taxes has a significant effect on economic growth in East Kalimantan.
- The interaction of regional spending and non-tax DBH has a significant effect on economic growth in East Kalimantan.

- Regional spending and investment ¹ have a significant effect on economic growth in East Kalimantan.

2.2 Measurements

The variables that have been determined need to be defined accurately so that there is no double interpretation. The operational operations are as follows:

- Tax DBH (X1) is a portion derived from revenues including Land and Building Tax (PBB), Receipt of Taxes for Acquiring Rights on Land and Building (BPHTB), Income Tax (PPH), Domestic Taxpayers, and economic activities other taxes in East Kalimantan Province during the period 2007–2019 which are stated in Rupiah (IDR).

- ¹³ Non-Tax DBH (X2) is the distribution of taxes between the central and regional governments derived from natural resource revenues from forestry, general mining, fisheries, petroleum mining, natural gas mining, and geothermal mining in East Kalimantan Province during the 2007-2019 period in Rupiah (IDR).

- Investment (X3) is the realization of foreign and domestic investment in East Kalimantan Province during the 2007-2019 period in Rupiah (IDR).

- Regional Expenditure (Z) is the total regional expenditure (direct expenses and indirect expenses) of East Kalimantan Province during the 2007-2019 period in Rupiah (IDR).

- Economic Growth (Y) is the value of the economic development of an area in a certain year expressed as a percentage and a proxy of GRDP (%). Economic growth is measured using GRDP data in East Kalimantan Province based on constant prices during the 2007-2019 period in percentage units.

We use data collection techniques through a library research. Procurement of data in studies by examining records or archives and books, which have a relationship with needs [4], [6].

2.3 Analysis tools

To simplify the presentation based on the study objectives, we use a Moder ¹⁴l Regression Analysis (MRA). This analysis tool is considered appropriate because there is a moderating variable. Moderator variables are variables that will strengthen or weaken the relationship between other independent variables and the dependent variable. Thus, there is an interaction between certain independent variables and other independent variables [8]. Moderator variables as part of a class of variables and in social science are ²⁵ called specification variables. The specification variable is a variable that specifies the shape or size of the relationship between the predictor (independent variable) and criteria (the dependent variable). So, moderator variables can be developed using two dimensions or characteristics [5]. The testing of the hypotheses proposed is clarified through partial testing. A partial test (t-test) is used to answer whether the hypothesis statement is true. Basically, this test can show how far the influence of an individual explanatory variable is in explaining the dependent variable with a tolerance limit of 5%.

3. Results

After calculating through Statistical Product and Service Solutions (SPSS), it is necessary to describe the data for each variable in the form of the number of data objects used, the mean value, and the standard deviation. For equations without using moderation, the data generated are in Table 1.

Table 1: Descriptive statistics without moderating variables.

	Mean	Std. Deviation	N
EG	2.8746	2.04278	13
T-DBH	13.3777	.10723	13
NT-DBH	14.8876	10.41147	13

INV	16.6251	1.28148	13
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Source: SPSS v.25

Descriptively, it is known that the mean of Economic Growth is 2.8746 with a standard deviation of 2.04278. For Tax DBH, the average is 13.3777 with a standard deviation of 0.10723. Furthermore, for Non- Tax-DBH it has an average of 14.8876 through a standard deviation of 10.41147. For Investment, the average value is 16.6251 with a standard deviation of 1.28148. For the equation after the moderating variable, namely Regional Spending, produces the following data:

Table 2: Descriptive statistics with moderating variables.

	Mean	Std. Deviation	N
EG	2.8746	2.04278	13
Interaction of X1 and Z	202.4235	5.21159	13
Interaction of X2 and Z	225.2964	220.06104	13
Interaction of X3 and Z	251.7493	22.44207	13

Source: SPSS v.25

Table 2 highlights that the average for the Economic Growth variable is 2.8746 with a standard deviation of 2.04278. From the interaction variable between Tax DBH and Regional Spending, it has an average of 202.4235 with a standard deviation of 5.21159. The results for the interaction between Non-Tax-DBH and Regional Spending produce an average of 225.2964 through a standard deviation of 220.06104. Meanwhile, the average achievement in the interaction between Investment and Regional Spending is 251.7493 and the standard deviation is 22.44207. The next session is to find out whether the residual value in the regression model has a normal distribution. If you use initial data, the results to be obtained in this test are abnormal. There is a large gap between one variable and another so that [10] concluded that it is necessary to transform the data into normal using Logarithm (Lg). The appearance of the Kolmogorov-Smirnov test as a form of normality test [34], summarized in Table 3. The probability value of all variables is above the significance level ($n > 5\%$), so it can be concluded that the data used are normally distributed and fit for use in the study.

Table 3: Kolmogorov-Smirnov normality test.

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
T-DBH	.128	11	.200 [*]
NT-DBH	.177	11	.200 [*]
INV	.116	11	.200 [*]
EG	.187	11	.200 [*]
RS	.186	11	.200 [*]
Interaction of X1 and Z	.130	11	.200 [*]
Interaction of X2 and Z	.149	11	.200 [*]
Interaction of X3 and Z	.138	11	.200 [*]

Source: SPSS v.25

The first hypothesis proposed in this article is that Tax DBH has a positive and significant effect on Economic Growth. The obtained t-value for DBH is 0.149 with the resulting significance of 0.884 ($n > 5\%$), which means that the variable has a positive but insignificant effect on Economic Growth. In the second hypothesis, it is proposed that Non-Tax DBH has a positive and significant effect on Economic Growth.

Table 4: Unmoderated partial test results.

	B	t	Sig.
T-DBH	1.468	.149	.884
NT-DBH	1.694	2.876	.046
INV	-.288	-.407	.694

Source: SPSS v.25

Table 4 presents the t-count for Non-Tax DBH of 2.876 and the probability is 0.046 ($n < 5\%$), meaning that Non-Tax DBH has a positive and significant effect on Economic Growth. On the other hand, investment partially has a positive and significant effect on Economic Growth (third hypothesis). The empirical findings show that the t-count for the Investment variable is -0.288 and the significance is at the level of 0.694 ($n > 5\%$). Thus, investment actually has a negative and insignificant effect on Economic Growth.

Table 5: Moderated partial test results.

	B	t	Sig.
Interaction of X1 and Z	.186	-.542	.601
Interaction of X2 and Z	.634	4.561	.039
Interaction of X3 and Z	-.009	-.182	.860

Source: SPSS v.25

The fourth hypothesis states that the interaction between Tax DBH and Regional Spending has a positive and significant effect on Economic Growth. The results of the study are contradictory because the t-count of the interaction between Tax DBH and Regional Spending is -0.542 with a probability value of 0.601 ($n > 5\%$). Meanwhile, the fifth hypothesis is in line with the study findings if the interaction of Non-Tax DBH and Regional Spending has a positive and significant effect on Economic Growth. This is indicated by the acquisition of Non-Tax DBH and Regional Spending interactions reaching 4.561 through a probability of 0.039 ($n < 5\%$). From the seventh hypothesis, it is revealed that the Investment and Regional Spending interaction variable is -0.182 and the probability exceeds the statistical requirements ($0.860 > 0.05$), which means that Investment and Regional Spending have a negative and insignificant effect on Economic Growth (see Table 5).

4. Discussions

Through the MRA model, we find that Tax DBH and investment do not have a significant effect on Economic Growth. On the other hand, Non-Tax DBH actually has a significant effect on Economic Growth. The high and low of these three variables can have a positive or negative impact on Economic Growth in East Kalimantan. The factor of the lack of DBH Tax revenue originating from land and building tax revenue, the cost of acquiring rights to land and buildings, income tax, and so on, which causes a low impact on economic growth. In fact, most of the expenditure of the East Kalimantan provincial government to construct regional infrastructure comes from levies on natural resources. Meanwhile, those derived from taxes such as land and building tax (PBB), the cost of acquiring rights to land and buildings, and income tax have only a small contribution to the economy. At least, many buildings are still unemployed and this is a factor that affects tax revenue so that DBH Tax has a small contribution to expenditure and economic growth. In addition, the potential for regional revenues in East Kalimantan, which comes from revenue-sharing funds from natural resources, is one of the largest sources in the structure of the East Kalimantan Regional Budget (APBD). The economic growth of East Kalimantan, which has relied on oil and gas and mining in recent years, has experienced a decline due to lower prices for oil and gas and coal commodities. On the one hand, many foreign

investors who invest in East Kalimantan and the high interest in investing in East Kalimantan are not automatically able to encourage the economy to grow because, on the other hand, the stagnant and declining price of petroleum in the world market is the cause of the decline in the contribution of economic growth. Not only oil and gas, there are other sectors that also play a role in East Kalimantan, but namely coal mining is also currently stagnating and experiencing price drops, where the world market is experiencing an abundance of coal or is experiencing excess supply. Excess supply in the world market is not only detrimental to coal exporters such as the East Kalimantan region, but exporting countries are also affected. In Indonesia, the recession to coal has resulted in the reduction of company employees and some of them even closed their production to make savings. The large number of mining employees who have terminated their employment contracts can increase unemployment and reduce production, causing negative economic growth. From hypotheses 4 and 6, MRA also determines that Tax DBH and Investment have no significant impact on Economic Growth through Regional Spending interactions. Meanwhile, the fifth hypothesis actually proves that the interaction between Non-Tax DBH and Regional Spending has a significant effect on Economic Growth. Increasing Tax DBH and Investment, which is driven by Regional Spending, will reduce Economic Growth in East Kalimantan. This is due to the "crowding out effect" because the income in terms of the DBH Tax used in the regional development process has an influence on economic growth. High government spending (a budget deficit) originating from taxes and natural resources has resulted in a decrease in people's purchasing power, thereby reducing economic activity or suppressing economic growth. The facts also highlight that the Non-Tax DBH is one of the largest sources of regional income in the structure of the East Kalimantan APDB so that it will later become a source of financing which ultimately encourages economic growth. The fall in the prices of gas and coal commodities could have a multiplier effect on employment. On the one hand, many foreign investors who invest in East Kalimantan and the high interest in investing in East Kalimantan are unable to encourage the economy to grow. The stagnant and declining dynamics of petroleum prices in the world market have contributed to the decline in oil and the contribution of economic growth. On the other hand, investment shows an upward trend in line with the improving investment climate in East Kalimantan. The presence of regional spending as an instrument in intervening in the economy seems to have a negative impact on economic growth. The empirical findings contradict studies conducted by [3], [12]. The results of their study actually stated that DBH had a positive and significant impact on economic growth. In addition, investment (foreign and domestic) and labor have a positive and significant relationship to economic growth. This phenomenon indicates that the realization of DBH does not contribute optimally to economic growth. Especially for Tax DBH, it contributes a little to economic growth in East Kalimantan Province.

5. Conclusions and suggestions

Based on the analysis results, we can draw some conclusions that of all the hypotheses proposed, not all of them can be accepted. There are 4 hypotheses rejected, including Tax DBH and Investment have no significant effect on Economic Growth. Then, both of them also do not affect Economic Growth through Regional Spending interactions. Meanwhile, the 2 hypotheses are equally consistent which clarifies the relationship of Non-Tax DBH to Economic Growth, whether it is with or without Regional Spending interactions. As one of the government's benchmarks in assessing whether a region can be said to be prosperous or not, it is deemed necessary to make various efforts to increase economic growth [13]. With the various sources of funding obtained, the government should be able to make the most of it in order to produce a good economic level. This can be done by increasing local revenue through DBH and tax intensification efforts. The high dependence of the East Kalimantan government on Non-Tax DBH, it is necessary to continue to fight for it considering that East Kalimantan is the second largest natural resource producing area in Indonesia. Investments in sectors based on renewable natural resources are an alternative solution because they are relatively more stable in terms of commodity prices and reflect the real sector.

6. Conflict of interests and funding

We declare that there are no future conflicts of interest between authors. There is internal financial in this article, so the authors need to thank the Department of Economics, Faculty of Economic and Business, University of Mulawarman.

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