Impact of the Economic Growth and Acquisition of Land to the Construction Cost Index in North Sumatra

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Abstract. This study aims to test the aggregation of the economic growth of North Sumatra and the influence of the Tax on Acquisition of Land and Building to the Construction Cost Index in North Sumatra. This type of research is explanatory survey with quantitative methods. The population and the sample district in North Sumatra with the observation time series and cross sectional. The analysis tool used is multiple regression. The results showed that there was economic growth aggregation of North Sumatra and the influence of the Tax on Acquisition of Land and Building affect the Construction Cost Index.

1. Introduction
An activity that is the end result of building / construction, combined with better land position place to use as a residence or other purposes. Construction activities in question in this survey is the only new construction activities. The results of activities including: buildings, roads, bridges, railways and railway bridges, tunnels, waterworks and drainage, sanitation buildings, runways, docks, building power generation, transmission, distribution and communication network construction. While construction activities include planning, preparation, execution, demolition, and repair buildings. If the construction of a regional level is so high that the lower the level of human welfare. Vice versa, if the index is low, the construction activities to improve human well being can be increased. If economic growth is high, it will increase incomes. The high income people will be able to improve people's lives so that it can meet the quality of human development that meets the wide dimension and plenty of choice. The high degree of income of the population will have the opportunity to improve the quality of life and life expectancy is high or long and healthy life, knowledge and skills or expertise as well as have the opportunity or the opportunity to realize this knowledge in productive activities so that residents have purchasing power. The technical performance requirements of projects posed a challenge to the sustainable development of small size particularly subject to local government projects in developing countries [3].

The increase in economic growth has positive influence on Construction Cost Index (CCI), the higher the economic growth of the Construction Cost Index lower and the number of buildings increased, so receipts Tax on Acquisition of Land and Buildings will also be higher [10]. Transfer of Tax on Acquisition of Land and Building (BPHTB) from the central government to local governments is a step
forward made by Indonesia in the structuring of the national tax system. Various parties assess the policy has been appropriately carried out, but no less important is how this policy is implemented so that the area can actually do the voting BPHTB well. That is, BPHTB not a simple process, that if the factor of the quality of human resources, technology, and others will be repaired immediately increase BPHTB. If BPHTB going well then the easier pemerintal area run economic program [2] and [6]. In the implementation of the transfer of a type of tax, there will always be a number of obstacles and barriers, especially if the tax type is a new kind of tax for the area as BPHTB [7].

BPHTB in the process, there will be some obstacles, whether sourced from the unpreparedness of the central government, local government unpreparedness, conditions on the ground, and others. Obstacles arise should receive immediate attention and be resolved to smooth the tax collection area. Tax on Acquisition of Land and Buildings is one of the activities in the form of tax receipts acquisition of land and buildings held by the Indonesian government in order to finance government expenditures to organize the administration and development. According to [9], Bea Acquisition of Land and Building is a tax on acquisition of land and or buildings. While the Acquisition of Land and / or building is a legal act or event which resulted in obtaining rights to land and / or buildings by private persons or the Agency. IKK changes have a negative effect on the change BPHTB, the higher the IKK which shows the poor condition of infrastructure in an area, the less BPHTB [1] and [2]. The local government should be able to make the area attractive both to live and to strive and invest through the publication potential of the region, the efficiency of the bureaucracy, infrastructure, creation of security, and the provision of regulations guaranteeing legal certainty. Local Government especially those experiencing low BPHTB have to do an evaluation of expenditure allocation area that the proportion of capital expenditure (infrastructure) continues to increase [7]. With the hope that the development of infrastructure will increase the value of land and buildings in the area. [8] State the testing concludes factors, such as Total Population and Inflation have influence on Duty on Acquisition of Rights to BPHTB. Total area has no significant influence on BPHTB. The Economic Growth serves as Mediating Variable upon the relationship between Land and Building Tax, Total Population and Inflation on BPHTB in North Sumatra, Indonesia.

2. Method

This study uses secondary data the research sites were at 25 (twenty five) regencies/cities in North Sumatra Province and the Central Statistics Agency (BPS) of North Sumatra from 2010 to 2015. The data used in this research were time series secondary data. The hypothesis was tested using Structural Equation Modelling (SEM) with the aid of AMOS software. The data analysis technique in this research employed Structural Equation Modeling (SEM). SEM is a set of statistical techniques allowing testing of a series of relationships simultaneously [4] & [5]. Furthermore, in the data processing, the writer used the aid from software AMOS Structural Equation Modeling, which was one of the multivariate analyses capable of analyzing the variable relationships in complex manner. The definition of research variable is as the following:

| Variables | Operational Definitions | Indicator | Measure Scale |
|-----------|--------------------------|-----------|---------------|
| Economic Growth (X₁) | The added value generated by all business units within a given region. | Annual Product Domestic Regional Bruto in Rupiah | Ratio |
| Duty on Acquisition of Rights to Land and Building (BPHTB) (X₂) | Realization on income from Duty on Acquisition of Rights to Land and Building within a period. | BPHTB Total | Ratio |
| Construction Cost Index/IKK (Y) | Construction Cost Index in a region | Construction Index point | Cost Ratio |
The hypotheses were tested using Structural Equation Modeling (SEM) with AMOS software tools. The equation is formed as follows:

\[ Y = \alpha + b_1X_1 + b_2X_2 + e \]

Where:
- \( Y \) = Construction Cost Index (IKK)
- \( X_1 \) = Economic Growth
- \( X_2 \) = Duty on Acquisition of Rights to Land and Building (BPHTB)
- \( b_1, b_2 \) = Coefficient
- \( \alpha \) = Constant
- \( e \) = Error

This phase is done to test the suitability of the model to evaluate the goodness-of-fit index. Analysis using SEM requires some suitability index to measure the correctness of data and models to be filed.

2.1. Measurement Model
The measurement model links between latent variables with manifest variables as follows:

![Figure 1. Standardization Coefficient](image)

2.2. Evaluation of Regression Weight for Causality Test
The processing of data with analysis structural equation model using the AMOS tool obtained the results of the analysis on the relationship between variables as listed in the following table:
Table 2. Regression Weights

| Label | Estimate | S.E. | C.R. | P   | CR  |
|-------|----------|------|------|-----|-----|
| IKK_Y | ln_Eco_Growth_X1 | -13,056 | 2,368 | -5,513 | *** |
| IKK_Y | ln_BPHTB_X2      | 7,681   | 1,434 | 5,357 | *** |

Sources: AMOS result test. (2016).

An evaluation of regression weight for causality is using the value of CR. The test results show that all the regression coefficients are significantly different from zero, therefore the null hypothesis that the regression weight is equal to zero is rejected, and accept the alternative hypothesis that each indicator has a causal relationship which means that the model can be accepted.

1. ln_Eco_Growth (X1) significantly affects to the Construction Cost Index (Y) with the value of the critical ratio is -5.513.
2. ln_BPHTB_X2 (X2) insignificantly influences to the Construction Cost Index (Y) with the value of the critical ratio is 5.357.

The strength of the dimensions that make up the latent factors can be tested using the Critical Ratio (CR) of the regression weight generated by the model. CR identity is seen by t-value in the regression analysis. CR greater than 2.0 showed that the variables significantly the factors of dimension. It is also indicated by the results of the AMOS output with *** signs, indicate the probability of below 5% alpha. The results indicate that the dominant variables in determining the Construction Cost Index (Y) is the economic growth and Duty on Acquisition of Rights to Land and Building.

3. Results and Discussions
The hypothesis that the variable effect of the economic growth and Duty on Acquisition of Rights to Land and Building. Partially economic growth and Duty on Acquisition of Rights to Land and Building influence to the construction cost index (CCI). Caused by a phenomenon that the CCI used as an index shows the prices comparison of building materials/construction between different locations in the same period. Thus, the calculation of CCI must be made in comparable and representative [6]. CCI is calculated according to the type of groups of goods/commodities. Meanwhile, the economic growth in North Sumatera able to affect the construction cost index (CCI) because the higher vintensity of regional economic activity reflected in indicators of GDP of the districts/cities in North Sumatera that if it is will be shared with the production approach to the population, the community's income will increase proportionately according to the growing sectors in the community. Design factors affecting the cost of buildings include their function, geometry, specifications, emphasis on whole life costs, legislative constraints and socioeconomic factors [2]. The location, physical and environmental conditions of the site also exert a considerable bearing on costs.

4. Conclusions
The results indicate that the dominant variables in determining the Construction Cost Index is the economic growth and Duty on Acquisition of Rights to Land and Building.

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