

Effects Of Economic Growth, Regional Development Patterns And Types Of Ports On Supply Chain In Indonesia

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Abstract: The purpose of this study is to analyze the Economic Influence, Regional Development Patterns and Types of Ports in Chains in Indonesia. This study uses primary data which is carried out by obtaining the results of quisoners obtained through 200 samples, which are directly related to port service users. The results showed that all variables had a positive effect on the Supply Chain, but only the port type variable had a significant effect of 0.000, while the economic growth was not significant with a value of 0.504, while the development of the region with a value of 0.088. So that in this study shows that only by increasing the type of port will increase the efficiency of demand for infrastructure services in Indonesia, so that Dwelling Time, which is part of the use of the time the ship is in the port area can be an efficient port.

Keywords: Economic Growth, Regional Development Patterns and Types of Ports on Supply Chain

1 INTRODUCTION

The logistics performance of a country (domestic and international) is very important for economic growth and competitiveness in trade. At present the logistics sector is one of the pillars of economic growth, including in Indonesia, (Ministry of Trade, 2016; Arvis, et al., 2016). An efficient and well-performing logistics system is a key factor in sustainable economic growth, because it is a driving factor for trade performance (Havenga, 2010). Popescu and Sipos (2015) analyzed the relationship between logistics performance and GDP in 28 European Union, using two indicators (Logistics Performance Index (LPI), and GDP per capita). Logistic Performance Index is measured based on aspects of customs, competence, logistics services, infrastructure, timeliness, international shipping, and search for goods, Arvis, et al. (2012), LPI Indonesia ranked 63rd in the world with a value of 2.98, and ranked 4th in ASEAN, after Singapore, Malaysia and Thailand, (Arvis, et al. 2016b). World Bank Report, Indonesia in Quality of port infrastructure was ranked 82 with a value of 3.81, Malaysia ranked 16 with a value of 5.57, and Singapore ranked 2 with a value of 6.66. (Global Mobility Report 2017). Demand for marine transportation support services is reflected in the loading and unloading of goods in ports throughout Indonesia, both domestic goods flows and the flow of goods into and out of Indonesia by sea (Figure 1).

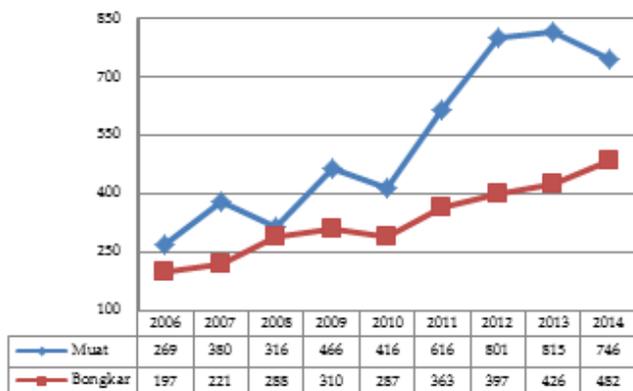


Figure 1

Development Of Loading And Unloading Flows In The Port Of Indonesia

Source - BPS Transportation (In Thousands of Tons)

Loads of goods from ports in Indonesia are higher compared to unloaded goods, load flows have increased sharply after 2010, while loading and unloading has experienced a constant increase, this indicates that there is an increase in exports through ports in Indonesia. Export - Import (macroeconomics) is one of the variables related to Supply Chain, because a country needs foreign exchange from the trade balance as a component of national income. Supply chains in export imports can be understood in international trade theories, which show that the separation of production and consumption leads to globalization that does not combine production processes with consumption in one region, Baldwin (2006) then calls it "globalization" first unbundling "which allows increasing proximity to all inputs in the production process. The efficiency of demand for port infrastructure services in Indonesia is interesting to study, because of the emergence of the Dwelling Time problem, it is part of the time used of the ship while in the port area which shows the inefficiency in the port (Wilmsmeier, et al 2006 and Raballand G, et al. 2012 Inefficiency is a concern because it can be viewed from both the supply side and the demand side, so this research takes the road to see the efficiency on the demand side, using macroeconomic variables, although efficiency is associated with microeconomic variables (Farrell, M.J, 1957 and Koopmans TC, 1951).

2. Attribution Theory

Kuznets S (1966) defines economic development by showing a pattern of development, where a long-term increase in the ability of a country provides many types of economic goods to its population. This ability grows in accordance with the technological advances, institutional and ideological adjustments needed. Kuznets in Modern Economic Growth characterizes modern economic growth in six parts, first, the high growth rate of product per capita; second, the high rate of population growth; third, the high growth of production factors; fourth, the high structural transformation which is divided into four parts, 1) the occurrence of a shift away from the agricultural sector, 2) the increase in the scale of the production unit, 3) the existence of a shift in organization and employment status, 4) a shift in the consumption structure. Fifth, there is an expansion of knowledge in the problems of economic production, and the sixth is politics. Many studies have attempted to turn the facts of Kuznets' theory into

"economic law" apparently failing, such as Deininger K, Squire Lyn (1996), stating that the existence of the Kuznets curve is rejected in 90% of cases studied, this does not mean the Kuznetsian approach is outdated or useless. (Bértola L, 2005). The accumulation of capital formation in the agricultural sector is considered a less productive sector because it still produces primary products, but Timmer (2013) criticizes rapid growth but the portion of agriculture in the growth is getting smaller, while D. Restuccia et al. (2008), stated that the share of labor and capital income, both in the agricultural and non-agricultural sectors is the same, then he found differences in the productivity of agricultural workers in rich and poor countries, because of the problem of the use of modern inputs Jhingan (1992), quoting Kuznets's statement that changes in structural transformation as a series of interrelated changes in the composition of aggregate demand, foreign trade (export and import), aggregate supply (production and use of production factors, such as use labor and capital) caused by the development process and sustainable economic growth. The economy of a region in the long run will experience changes in the economic structure that originally relied on the agricultural sector will go to the industrial sector or services. On the labor side, there will be a shift in the use of labor from the village agricultural sector to the urban industrial sector, so that the contribution of agriculture decreases in national income. The economic growth model is a dualism model in economic development or welfare economy that has been developed by Fei John C.H. and Ranis G (1964), who developed the Lewis model, this is also known as the Labor Surplus model. This model recognizes the existence of a dual economy consisting of modern and primitive sectors and incorporating the economic situation of unemployment and underemployment, unlike many other growth models which consider backward countries homogeneous. According to this theory, the primitive sector consists of the agricultural sector that exists in the economy, and the modern sector is a small industrial sector that is growing rapidly. Both sectors are in the economy, which lies at the core of the problem of development. Development can only be done with a complete shift in the focal point of progress from agriculture to the industrial economy, resulting in the addition of industrial output. This is done by shifting labor from the agricultural sector to the industrial sector, indicating that underdeveloped countries do not experience labor supply constraints. At the same time, the growth of the agricultural sector must not be ignored and the results are sufficient to support the overall economy with food and raw materials. As in the Harrod-Domar model, savings and investment are the driving force in terms of the economic development of underdeveloped countries. In the Fei-Ranis model criticizes Lewis's model for ignoring agriculture. The Fei-Ranis model goes further and states that agriculture has a very large role in the expansion of the industrial sector. In fact, it is said that the growth rate of the industrial sector depends on the total amount of agricultural surplus and on the amount of profits obtained in the industrial sector. So, the greater the amount of surplus and the amount of surplus that is included in productive investment and the greater the amount of industrial profits obtained, the greater the level of industrial economic growth. Because this model focuses on shifting the focal point of progress from the agricultural sector to the industrial sector, Fei and Ranis believe that an ideal shift occurs when investment funds from surplus and industrial profits are large enough to buy industrial capital goods. like

plants and machinery. These capital goods are needed for job creation. Therefore, the conditions pursued by Fei and Ranis for a successful transformation that increase the level of capital and the level of employment must be greater than the level of population growth. The link between regional development and Supply Chain is carried out by researchers, including Marsden, T.K. (1998), who looked at rural development with the Food Supply Chain and found a significant relationship between local and non-local food networks towards rural development (Murdoch J, et al, 2000). The pattern of development related to the production and consumption geography which is then linked to Supply Chain is the concern of Rodrigue JP (2012), finding that regional structures are very dependent on the Supply Chain gateway served. The port as a terminal in the Supply Chain chain is highly dependent on economic activity in the region so it is considered that port availability will increase efficiency (Henderson, 1986 and Venables, 2009) so that increased economic activity will require increasingly modern port facilities (Murphey, 1989; and Lee, 2005)

3. RESEARCH METHODOLOGY

In this research model and technique of data analysis using multiple linear regression approach. In general, this study empirically examines the relationship and influence between economic growth variables, regional development patterns and port types on Supply Chain traffic flows and ship capacity, and described descriptively. This study uses primary data which is carried out by collecting the results of questionnaires obtained through 200 samples, which are directly related to port service users. So that the results obtained will give a more tangible picture of the variable relationships measured. For the relationship between X1, X2 and X3 independent variables on Supply Chain (y), this study uses multiple regression analysis model with the basic model $Y = \alpha + b_1X_1 + b_2X_2 + b_3X_3 + \epsilon$, where y is the dependent variable, X1, X2, and X3 is an independent variable, while α is a constant and ϵ is an error term.

4. RESULTS

This study found that the Multicollinearity Test showed that there were no independent variables that had a tolerance of less than 0.01, which means that there was no correlation between independent variables, so there was no multicollinearity between independent variables in the regression (Appendix, Table 1) For autocorrelation test at a significance level of 5%, with a number of samples (n) 200 and a total variable of 4 pieces, then in the Durbin-Watson table obtained the upper limit value (dU) 1.8094 and lower limit (dL) 1.7279, because the DW 2.011 value is greater from the upper limit (dU) 1.8094 and less than $4 - 1.8094$ ($4 - d_u$), it can be concluded that there is no autocorrelation in this regression model (Appendix, Table 2) For heteroscedasticity test, it appears that the point spreads randomly and spreads both above and below the number 0 on the Y axis, there is no specific pattern that is organized, therefore it can be concluded that there is no heteroscedasticity in the regression model (Appendix, Figure 1) To test the normality of the normal probability plot plot, it is seen that the points spread squeezed around the diagonal, and the spread follows the direction of the diagonal line. From the two graphs it can be stated that the regression model in this study fulfills the assumption of normality (Appendix, Figure 2) For multiple linear regression equation, it is known that the

relationship between the independent variable and the dependent variable can be formulated in the equation $Y = 7.287 + 0.043 + 0.114 + 0.450$ (Appendix, Table 3). From this model, a constant of 7,287 means that without economic growth, regional development and port type, there will be a Supply Chain change of 7,287, then the economic growth coefficient of 0.043 is positive, this means that every change in the value of economic growth assuming other variables remain Supply Chain changes will change by 0.043. then the development coefficient of the area is 0.114 with a positive sign, this means that every change in the value of the development of the area assuming other variables remain then changes in Supply Chain will change by 0.114, and the port type coefficient of 0.450 is positive, this means that each port type is assumed to be variable. otherwise, the change in Supply Chain will change by 0.450. The coefficient of determination (R^2) measures how far the ability of the model in explaining variations in Supply Chain variables, which if the R^2 value approaches 1 means that the independent variable of this study gives almost all the information needed to predict variations in Supply Chain variables where the results found R^2 is 0.433. this means that the relationship between the independent variable and the dependent variable is 43.3%. From these figures it can be concluded that the relationship between the independent variable and the dependent variable is quite strong. The size of the adjusted square (R^2) is 43.3%. The results of this statistical calculation means that the ability of independent variables in explaining the variation of changes in the dependent variable is 43.3%, while the remaining 56.7% is explained by other factors outside the regression model analyzed. Simultaneous significance testing (Test Statistics F) shows that all independent variables included in the model have a joint effect on the dependent variable (Appendix, Table 4) From the calculation of the F test, it is known that the value of F is 49.81 with a significance value of 0.000 which is smaller than 0.05, this indicates that all independent variables have a significant effect simultaneously on the Supply Chain. While for the results of the t test aims to find out how far the influence of independent variables individually in explaining the variation of the dependent variable, shown in as before (Appendix, Table 3) proved that all variables have a positive effect on the Supply Chain but only the port type variable has a significant 0.000, while for economic growth is not significant with a value of 0.504, while the development of the region with a value of 0.088. So that in this study shows that only by increasing the type of port will increase the efficiency of demand for infrastructure services in Indonesia, so that Dwelling Time, which is part of the use of the time the ship is in the port area can be efficient in the port. (Wilmsmeier, et al. 2006 and Raballand G, et al. 2012).

5. CONCLUSION

Based on the data that has been collected and hypothesis testing with multiple linear regression analysis and with Moderated Regression Analys has been done, then the conclusion of this research The government must pay more attention and develop more types of ports in Indonesia, this is because the increasing port services will have a positive impact on the efficiency of demand for port infrastructure services in Indonesia.

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