

# Pre Clearance Analysis on Dwelling Time for Imported Container (Case Study: Boom Baru Port)

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**Abstract:- Dwelling time is one of many problems that happens in Boom Baru Port. Dwelling time itself consists of pre-clearance, customs clearance, and post-clearance stages. One of the causes of high dwelling time is in the pre-clearance stage due to the length of time for obtaining a product permit, especially for imported commodities. The reasons for the length of time for obtaining this permit include the process of obtaining permits for prohibited and restricted goods, the process of quarantine, preparation of documents. In this study data were acquired through distributing questionnaires to forwarding companies. The analysis is done by entering the variables that has an effect toward the pre-clearance time at the Boom Baru Port so an equation model that can predict the length of pre-clearance time will be found. After data were analyzed using multiple linear regression, equation  $Y = 1,384 + 0,380 X_1 + 1,078 X_2 + 0,290 X_3$  is achieved, which  $X_1$  is the Prohibited and Restricted Goods Permit Process,  $X_2$  is the Quarantine Process, dan  $X_3$  is Documents Preparation Time.**

**Keywords:- Dwelling Time, Forwarding, Import Goods, Pre Clearance, Prohibited and Restricted Goods.**

## I. INTRODUCTION

The port is one of the gateways of international trade from various countries, especially in the city of Palembang. The Boom Baru Port is located on the Musi River with a distance about 108 km from the creek and is geographically located 02°-58'-48" south latitude and 104°-46'-36" east longitude. Regarding to international trade especially for importing goods, according to data from PT. Pelabuhan Indonesia II (Pelindo II) in Palembang, the container throughput at the Boom Baru Port especially for import goods tends to increase every year, as in 2015 import throughput were recorded at 25,802 TEUs, in 2016 there were 22,041 TEUs, and in 2017 there were 28,058 TEUs.

Directorate General of Customs and Excise [1] states that, dwelling time consists of pre-clearance, which is the time before customs inspection (since containers are unloaded from ships until the submission of PIB (Goods Import Notification), customs clearance, which is the time to

issue the SPPB (Approval Letter for Release of Goods) by Directorate General of Customs and Excise, and post-clearance, namely the time to release the imported goods from the container terminal.

The Indonesian National Importers Association [2] states that the longest dwelling time process is in the pre-clearance stage, because there is many government and private agencies are involved. The pre-clearance stage, one of the problems is when it is time to obtain permits for imported commodities which are included in the prohibited and restricted categories, which involve by many agencies, namely central ministries or non-departmental government agencies.

Previous research conducted by Situmorang and Buchari [3], analyzed to determine the performance of the container terminal capacity at the Boom Baru Port. The results showed that in 2018, the container stacking area could not accommodate all container flows. Putranto et al [4] mentioned that one of the dwelling time cause was the loading and unloading time of ships. Waty et al [5] concluded that dwelling time was caused, among others, by inadequate loading and unloading facilities and infrastructure and the duration of obtaining permits in pre-clearance stage.

From the previous research above it can be seen that the cause of dwelling time at the Boom Baru Port, beside the import container throughput which tends to increase every year, it is also found in the import process at the container terminal including container stacking field which has exceeded the capacity and the duration of permit processing which affects the dwelling time.

## II. LITERATURE REVIEW

### A. Review Stage

Waty et al [5] used descriptive research methods about the constraints that determine the duration of dwelling time and carried out a qualitative approach in implementing dwelling time handling strategies. In this research, it is stated that dwelling time in the pre-clearance process is caused by, among other things, free time of piling up of goods in a temporary piling place for 3 days, inadequate

loading and unloading facilities and infrastructure, arrival of ships on weekends, and the duration of obtaining of prohibited and restricted goods permits that inhibits importers from taking care of their customs obligations. The dwelling time handling strategy was formulated which was finally tested as a new regulation, the results of the implementation of the strategy showed a positive change, namely a decrease in dwelling time, from 5.30 days in August, continued to decrease to 3.57 days in December.

Kourouniotti et al [6] used the ANN (Artificial Neural Network) method to find out what factors influenced the dwelling time in field. The data used include container data, data from sea transport, and time record when containers were taken outside the port during 2014. Data analysis was carried out with six times experiments according to the ANN method, by adding one data group in each experiment as each independent variable. From the results of the experiment, it says that the factors that affect the length of dwelling time in field includes the time and date of each process, port of origin, size and type of container, and the type of commodity imported.

Neysi et al [7] used three stages to identify and develop strategies to reduce dwelling time. The first step is by reviewing the literature about the factors that influence dwelling time, the second step is to develop a dwelling time reduction strategy using the Delphi method. In the third stage, it is processed using the Analytical Hierarchy Process (AHP) method based on practicality, cost, duration, and effectiveness and its effect on dwell time. The results concluded, priority strategies to reduce dwelling time include 1) the use of electronic systems, 2) the use of intermodal transportation, and 3) the development of relationships between agencies that influence the process of moving containers at the port.

Anita and Asmadewa [8] used the theory of constraints to find out what was the problem in the dwelling time specifically for the yellow and green lines at Tanjung Priok Port. Data obtained by interviews with regulators, port operators, and service users. The results of the interview are then processed using the step of thinking called the five main steps. This study concludes that the main problem found in dwelling time is the pre-clearance stage (before the customs inspection), namely the duration of processing permits for prohibited and restricted goods which involve many government agencies.

### B. Dwelling Time

Dwelling time is a measure of the time, calculated from an imported container being unloaded from the ship until the container leaves the Port area through the main gate out [9]. The concept of dwelling time is also similar to the concept used by the Directorate General of Customs and Excise.

The Directorate General of Customs and Excise [1] states that dwelling time consists of:

- Pre-Clearance, which is the time before customs inspection (since the container is unloaded from the ship to the submission of PIB (Goods Import Notification).
- Customs Clearance, is the time to issue the SPPB (Approval Letter for Release of Goods) by Directorate General of Customs and Excise.
- Post-Clearance, namely the time to release the imported goods from the container terminal.

### C. Factors that Affect Dwelling Time

One way to approach and to find out the cause of the dwelling time is to define the equation of the dwelling time first. dwelling time is the sum of DO (Delivery Order) time, SPPB time, SP2 (Container Delivery Letter) time, and container pick up time [10].

Duration of DO is the length of time in when the owner of the goods 1) coordinates the preparation of the container pickup truck and 2) coordinates with the field officer to pay all obligations relating to the shipping agent to obtain a DO (Delivery Order). The length of time for SPPB consists of 1) the length of time the PPJK (Customs Clearance Service Company) fills in the PIB document and 2) the length of time getting the SPPB response from the Directorate General of Customs and Excise.

After getting DO and SPPB, the owner of the goods must pay a Delivery Note and then get SP2. The length of time for SP2 consists of 1) the length of time filling and submitting a Request Delivery and 2) the length of queuing time to pay for Delivery Note.

### D. Pre-Clearance Stage

As explained earlier, one of the stages in dwelling time is pre-clearance, which is the time required from the container to be unloaded from the ship to the submission of PIB (Goods Import Notification), in accordance with the Directorate General of Customs and Excise Regulation No. PER-16 / BC / 2016 which states that to be able to export imported goods from the customs zone with the purpose of importing for use, importers are required to submit PIB documents and / or Customs Supplementary Documents.

The Ombudsman of the Republic of Indonesia [11] explains several obstacles in the pre-clearance stage, including:

- In the licensing process, not all government agencies are integrated in one system and the various government agencies issuing permits are not yet optimal. As a result, import clearance and quarantine processes cannot be run and must wait for the other licenses (waiting for the documents to be complete).
- The Shipping Party has not served optimally in the process of BL (Bill of Landing), DO (Delivery Order) and Customs Notification (BC 1.1) documents due to holiday constraints.
- The duration of obtaining Prohibited and Restricted Goods licensing from the relevant agency.

### E. Import Licensing

The main problem found in the pre-clearance stage is the length of time for processing and controlling permits to import prohibited and restricted goods which involve many government agencies [9].

In most processes of import of prohibited and restricted commodities, the permit document is one of the supplementary documents that must be included together with the PIB (Goods Import Notification) document, for further processing by the Directorate General of Customs and Excise until the issuance of the Approval Letter for Release of Goods) as a container permit may leave the customs area, in this case the Boom Baru Port.

### F. Prohibited and Restricted Goods

Prohibited and restricted goods are goods that are prohibited and / or restricted from being imported. Regulations on the import of imported goods are issued by the relevant central government agencies, which stipulate prohibited and restricted goods regulations on imports and submit these regulations to the Minister of Finance.

Relevant government agencies that set Prohibited and Restricted Goods regulations on imports and have submitted these regulations to the Minister of Finance, until the period of August 2013 can be seen in the following table 1.

Fish Quarantine Agency, Fisheries Product Quality and Safety Control
Agricultural Quarantine Agency (Animal and Plant Quarantine)
Ministry of Communication and Information Technology
Ministry of Trade
BPOM (Food and Drug Supervisory Agency)
Ministry of Agriculture
Ministry of Energy and Mineral Resources
BAPETEN (Nuclear Energy Supervisory Agency)
Ministry of Forestry
Ministry of Industry
Ministry of Marine and Fisheries
Ministry of Health
Indonesian National Police
Ministry of Environment
Ministry of Defense
Ministry of Transportation
Bank Indonesia
TNI Headquarters
Directorate General of Customs and Excise

Table 1:- Government agencies

Based on the authority granted by the Ministry of Finance, the Directorate General of Customs and Excise has the authority to oversee the import or release of goods belonging to the category of prohibited and restricted goods, therefore the prohibited and restricted goods permit document is one of the complementary documents that must be included together with the document PIB (Goods Import Notification), to be further processed by the Directorate

General of Customs and Excise until the issuance of the SPPB (Approval Letter for Release of Goods).

Imported commodities that are included in the category of prohibited and / or restricted goods can be seen in table 2.

A Machine That Uses BPO	Medicinal Material
Animal	Medicinal Raw Materials
Animal Medicine	MMEA (Ethyl Alcohol Beverage)
Automotive Raw Materials	Narcotics
B3 Waste	Nitro Cellulose
BBM (Fuel)	Non-B3 Waste
BPO (Ozone Depleting Substances)	Not New Capital Goods
Cash	NPIK
Ceramics	Odor Preparations Containing Alcohol
Cheesy	Optical Discs
Children's Toy	PCMX
CITES Commodity	Pesticide
Clove	Pig Products
Color Multifunction Machines	PKRT (Household Health Supplies)
Commodities Must Be Labeled In Indonesian	Plant
Corn	Plastic
Cosmetic Raw Materials	Plastic Waste
Cosmetics	Precursor
Drug	Pressurized Tires
Electronic	Psychotropic Drugs
Ethylene	Radioactive Material
Explosives	Rice
Firearms	Rough Diamonds
Fish	Saccharin
Fish Medication	Salt
Food	Sheet Glass
Food Additives	Shoes And Footwear
Food Supplement	Shrimp
Foodstuffs	Soy
Hand Tools	Steel
Hazardous And Toxic Material (B3)	Sugar
Hazardous Materials (B2)	Telecommunication Tools And Devices
Health Supplement Material	Textiles And Textile Products
Horticulture	Traditional Medication Ingredients
Lubricant	Traditional Medicine
Mandatory Commodity SNI	Vaccine
Medical Devices	

Table 2:- Prohibited and restricted goods

### III. METHODOLOGICAL FRAMEWORK

In this section, the methodological framework applied in this research is presented. Data is collected by conducting a questionnaire to the forwarding company. The questionnaire was conducted to a population of forwarding companies as many as 52 companies that were registered with ALFI (Indonesian Logistics and Forwarders Association) and participated in the import process at the Boom Baru Port. With the number of samples taken the same as the population.

The questionnaire results were processed by multiple linear regression analysis methods to determine the influence of one variable on other variables. This method is used to predict how far the value of the dependent variable changes (pre-clearance time), if two or more independent variable values are changed.

After determining the independent and dependent variables, the equation model used in this study can be seen as in (1).

$$y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \tag{1}$$

Where:

- y : Dependent variable (pre-clearance time)
- a : Constanta (intercept)
- $\beta_1 - \beta_3$  : Slope coefficients for each explanatory variable
- X<sub>1</sub> : Prohibited and restricted goods permit process
- X<sub>2</sub> : Quarantine process
- X<sub>3</sub> : Documents preparation time
- ε : The model's error term (the residuals)

### IV. DATA ANALYSIS

This chapter will present data processing that had been achieved from respondents who were the object of research, namely 52 forwarding companies that took part in the import process at the Boom Baru Port.

Data is processed with multiple tests using the SPSS Ver. 25 for Windows. Testing is needed to study or analyze the data to get a calculation of the factors that influence the pre-clearance time at the Boom Baru Port, in which the pre-clearance is the time required since the container is unloaded from the ship to the submission of PIB (Goods Import Notification) to Directorate General of Customs and Excise. The testing stages include:

- Linear regression equation
- Significance test
- Correlation coefficient analysis
- Coefficient of determination analysis
- Hypothesis test

#### A. Linear Regression Equation

This study using multiple linear regression, this is because more than one independent variable is used. With the help of SPSS Ver. 25 for Windows application program, output of regression calculations using 3 independent variables (X<sub>1</sub>-X<sub>3</sub>) is obtained.

Model		Coefficients <sup>a</sup>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constanta)	1,384	2,039		,679	,500
	Prohibited and Restricted Goods Permit Process (X <sub>1</sub> )	,380	,135	,343	2,811	,007
	Quarantine Process (X <sub>2</sub> )	1,078	,471	,279	2,289	,027
	Document Preparation (X <sub>3</sub> )	,290	,126	,281	2,303	,026

a. Dependant Variable: Pre-clearance time (Y)

Table 3:- Regression Calculation Results

Table 3 shows the values of constants and regression coefficients, so that multiple linear regression equations can be formed  $Y = 1,384 + 0,380 X_1 + 1,078 X_2 + 0,290 X_3$ .

#### B. Significance Test

On table 3 we can see the significance value of t (Sig.), which is then compared with the value of the significant level (α) 5% with the test criteria 1) if Sig. < α, then the variable is significant, 2) if Sig. > α, then the variable is not significant.

Independent Variable	Sig.	Alpha	Results	Means of Conclusion
Prohibited and Restricted Goods Permit Process (X <sub>1</sub> )	0,007	0,05	Sig. < α	Significance
Quarantine Process (X <sub>2</sub> )	0,027	0,05	Sig. < α	Significance
Document Preparation (X <sub>3</sub> )	0,026	0,05	Sig. < α	Significance

Table 4:- Significance Test Results

#### C. Correlation Coefficient Analysis

Correlation coefficient analysis is used to find the relationship and prove the relationship between two or more variables.

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,539 <sup>a</sup>	,291	,246	2,96361
a. Predictors: (Constant) Prohibited and Restricted Goods Permit Process (X <sub>1</sub> ), Quarantine Process (X <sub>2</sub> ), Document Preparation (X <sub>3</sub> )				
b. Dependant Variable: Pre-clearance time (Y)				

Table 5:- Correlation Coefficient Value

From table 5, it can be seen that the value of the correlation coefficient (R) is 0.539, meaning the value is above 0, which can then be interpreted that there is an influence relationship between the independent variables (X<sub>1</sub> - X<sub>3</sub>) to the dependent variable (Y).

**D. Correlation Of Determination Analysis**

Sudarmanto [12] shows the coefficient of determination analysis is used to measure the level of accuracy of the regression line, where the greater the value of R Square, the better the regression line. In addition, the coefficient of determination analysis is also used to measure the contribution of the independent variable (X) to the dependent variable (Y).

From the analysis shown in table 5 above, the coefficient of determination is 29.1%, it indicates that the influence of the the independent variables (X<sub>1</sub> - X<sub>3</sub>) is 29.1% against dependent variable (Y).

**E. Hypothesis Test**

This section will be discussed about hypothesis test, including the simultaneous test (F test) and partial test (t test). The results of simultaneous hypothesis testing can be seen in table 6.

ANOVA <sup>a</sup>						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	172,708	3	57,569	6,555	,001 <sup>b</sup>
	Residual	421,583	48	8,783		
	Total	594,291	51			
a. Dependant Variable: Pre-clearance time (Y)						
b. Predictors: (Constant) Prohibited and Restricted Goods Permit Process (X <sub>1</sub> ), Quarantine Process (X <sub>2</sub> ), Document Preparation (X <sub>3</sub> )						

Table 6:- Simultaneous Hypothesis Test (F-Test)

Based on table 6 above, the Fcount value is 6.555 and p-value (sig.) is 0.001. With a significant level (α) 5%, degrees of freedom v1 is 3, and v2 (n- (k + 1)) is 48, the Ftable value is equal to 2.798. Due to the value of Fcount > Ftable (6.555 > 2.798), it means that there is a significant influence on the independent variables (X<sub>1</sub> - X<sub>3</sub>) to the dependent variable (Y).

As for the partial hypothesis (t-test), using the help of SPSS Ver. 25 for Windows application program, partial test results can be seen in table 7.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constanta)	1,384	2,039		,679	,500
	Prohibited and Restricted Goods Permit Process (X <sub>1</sub> )	,380	,135	,343	2,811	,007
	Quarantine Process (X <sub>2</sub> )	1,078	,471	,279	2,289	,027
	Document Preparation (X <sub>3</sub> )	,290	,126	,281	2,303	,026
a. Dependant Variable: Pre-clearance time (Y)						

Table 7:- PArTial Hypothesis Test (t-Test)

Partial hypothesis testing to independent variables (X<sub>1</sub> - X<sub>3</sub>) is done with hypothesis 1) H<sub>0</sub> which means there is no effect on Y and 2) H<sub>1</sub> which means there is an effect on Y.

With the test criteria 1) if -t<sub>table</sub> ≥ t<sub>count</sub> ≥ t<sub>table</sub>, then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted and 2) if -t<sub>table</sub> < t<sub>count</sub> < t<sub>table</sub>, then H<sub>1</sub> is rejected and H<sub>0</sub> is accepted. Significant level (α) 5% and degree of freedom (v) is 48 (n- (k + 1)), then the value of t<sub>table</sub> is 2.011.

Independent Variable	t <sub>count</sub>	t <sub>table</sub>	Means of Conclusion
Prohibited and Restricted Goods Permit Process (X <sub>1</sub> )	2,811	2,011	H <sub>0</sub> rejected
Quarantine Process (X <sub>2</sub> )	2,289	2,011	H <sub>0</sub> rejected
Document Preparation (X <sub>3</sub> )	2,303	2,011	H <sub>0</sub> rejected

Table 8:- PArTial Hypothesis Test Result

From table 8, it can be seen that all values of t<sub>count</sub> > t<sub>table</sub>, then H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, meaning that there is an influence on the independent variables (X<sub>1</sub> - X<sub>3</sub>) on dependent variable (Y).

**V. CONCLUSIONS**

In general, the analysis results above can be concluded as follows:

- Analysis of the pre-clearance time equation model at the Boom Baru Port can be searched by modeling the existing data using multiple linear regression analysis. The best model obtained is  $Y = 1,384 + 0,380 X_1 + 1,078 X_2 + 0,290 X_3$ , where X<sub>1</sub> is Prohibited and Restricted Goods Permit Process, X<sub>2</sub> is Quarantine Process, X<sub>3</sub> is Document Preparation, and Y is Pre-clearance Time. All in units of time (day).

- The influence for each supporting factor of pre-clearance time at the Boom Baru Port is as follows:
- The coefficient  $X_1$  is 0.380, it states that if the Prohibited and Restricted Goods Permit Process ( $X_1$ ) has increased by one unit and the other variables are constant, the Pre-clearance Time (Y) will increase of 0.380 days.
  - The coefficient  $X_2$  is 1,078, it states that if the Quarantine Process ( $X_2$ ) has increased by one unit and the other variables are constant, the Pre-clearance Time (Y) will increase of 1,078 days.
  - The coefficient  $X_3$  is 0,290, it states that if the Document Preparation ( $X_3$ ) has increased by one unit and the other variables are constant, the Pre-clearance Time (Y) will increase of 0,290 days.

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