

Analysis on the Influence of Inflation, Ship's Call, And Unloading Cost towards General Cargo Inter-Insular Ships in Surabaya Port

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Abstract

Indonesia is an archipelago nation since statistic shows that Indonesia consists of more than 13,000 islands, it is natural for inter-insular ships to play a dominant role in connecting one island to another supported by other local ships. In comparison, the inter-insular ships docking and unloading in Surabaya's port, as well as the Ship's call and DWT Ship's call, outweighs the local ships. In 2002-2006, inter-insular ships' unloaded 8,791 units of 28,739,718 tons; 7,820 units of 31,021,731 tons; 8,277 units of 25,496,489 tons; 9,595 units of 22,793,415 tons; and 9,345 units of 23,250,003 tons. On the other hand, in the same period of time, local ships only unloaded 1,204 units of 158,877 tons; 901 units of 157,663 tons; 1,023 units of 126,111 tons, 1,124 units of 403,826 tons; 919 units of 176,550 tons. This research wants to analyze the number of inter-insular ships, based on several internal and external variables: Unit Ship's Call (X1), DWT Ship's Call (X2), Inflation (X3), and Unloading Cost (X4). The research was done in Surabaya, Indonesian port during 2014-2015.

Keywords: Influence of inflation, ships call, unloading cost

INTRODUCTION

In reality, the inter-island or inter-insular sea trades are served by inter-insular ships, such as Liner ships, Trumper ships, and Special cruise ships. These ships, either bearing national's or international's flags, became the connector from one island to another to facilitate the flow of passengers and goods as well as ensure the sufficient supply of goods in certain territory or island (Sasono, 2014). Insufficient supply of goods would disrupt the balance between the flow of goods and flow of money, resulting in price increase should the flow of goods is lower than the flow of money. Hence, the inflation rate at that particular area would be increased (Prof. Dr. Herman Budi Sasono).

Since statistic shows that Indonesia consists of more than 13,000 islands, it is natural for inter-insular ships to play a dominant role in connecting one island to another supported by other local ships. In comparison, the inter-insular ships docking and unloading in Surabaya's port, as well as the Ship's call and DWT Ship's call, outweighs the local ships. In 2002-2006, inter-insular ships' unloaded 8,791 units of 28,739,718 tons; 7,820 units of 31,021,731 tons; 8,277 units of 25,496,489 tons; 9,595 units of 22,793,415 tons; and 9,345 units of 23,250,003 tons. On the other hand, in the same period of time, local ships only unloaded 1,204 units of 158,877 tons; 901 units of 157,663 tons; 1,023 units of 126,111 tons, 1,124 units of 403,826 tons; 919 units of 176,550 tons (Sasono, 2014). The number of inter-insular ships is fluctuating (Merkuryev et al., 1998), based on several internal and external variables: Unit Ship's Call (X1), DWT Ship's Call (X2), Inflation (X3), and Unloading Cost (X4).

Problem Statement

According to the background, the problems can be formulated as follows:

1. Is Unit Ship's Call influential to a load of General Cargo inter-insular ships docking at the harbor of Tanjung Perak Surabaya?
2. Is DWT Ship's Call influential to a load of General Cargo inter-insular ships docking at the harbor of Tanjung Perak Surabaya?
3. Is inflation influential to a load of General Cargo inter-insular ships docking at the harbor of Tanjung Perak Surabaya?
4. Is unloading fee influential to a load of General Cargo inter-insular ships docking at the harbor of Tanjung Perak Surabaya?
5. Are Unit Ship's Call, DWT Ship's Call, inflation, and unloading fees simultaneously influential to a load of General Cargo inter-insular ships docking at the harbor of Tanjung Perak Surabaya?

THEORETICAL REVIEW

Trading Theory

The grand theory of trading is the Theory of Exchanging (Young-Ybarra & Wiersema, 1999) stated that "Exchanging or trading emerges due to the fact that one or more parties see additional benefits coming from such activity. The additional benefits serve as the motives for people to do trading. The benefits are called the gains from trade. In short, the motive of conducting trading is the possibility of getting gains from trade.

According to Shore, et al. (Shore, Tetrick, Lynch, & Barksdale, 2006): "The classical theory of international trade was eminently successful in one area: it established convincingly the gains from international specialization and trade. These are attributed to the existence of a comparative advantage, which provides the opportunity for a country to import those goods for which its autarky costs are relatively high in exchange for exports of goods it can produce relatively cheaply in autarky. The country thus economizes in the use of its resources, obtaining for a given amount thereof a larger total income than if it attempted to produce everything itself."

Inter-island trading is merely a term for the trading activity between inhabitants of a territory with the inhabitants of another territory (McArthur & Osland, 2013). Thus, the reasons for trading and how it is conducted become essential in explaining the emergence of inter-island or inter-insular trading.

Ship's Call Unit and DWT ship's Call Inter-insular Ship

Ship's arrival or Ship's call is the number of ships entering and docking to a port for the purpose of unloading passengers or goods in a certain period, such as Ship's Call per day, Ship's Call per month, or Ship's Call per year. Each Ship's arrival or Ship's call would be counted in units. Since the number of ships entering would be the same with the number of ships exiting, the data in Harbor Master or Port Administration would be only on the Ship's call. The only exception to this is when unexpected things occurred, such as a burned-down or sinking ship, which usually happened due to technical errors of the stevedore in arranging the ship's docking positions. The docking ships consist of:

1. Sea Liner: a ship which sails between countries carrying the export-import commodities or enter country's commodities.
2. Inter-insular Ship: a ship which sails between islands in the region of a certain country, such as the domestic sailing route of Surabaya-Maumere or Surabaya-Samarinda.

3. Special Ship: a ship which is dedicated to solely transport industrial raw materials for its company owner, such as the ship of PT Bogasari which is dedicated to transport grains of wheat, the ship of PT Indocement which is dedicated to transport dry bulk concrete, or the ship of PT Pertamina with a sole purpose of transporting Pertamina fuels – raw and LPG.
4. Local Ship: an inter-island ship, such as fishing or trading ship, which is usually made of wood. It is usually 30-60 meters long and about 5 meters wide with about 6-10 crews.

According to Jansson et al. (Jansson & Shneerson, 1978): “Dead Weight Tonnage is a carrying capacity that proven in long-ton units (2240 lbs. = 1016 kg). Deadweight tonnage = loaded displacement tonnage. Loaded displacement, is the ship’s weight itself (light ship) added with the cargo (goods or passengers), fuel, water, stores, dunnage, etc. Ship’s weight with all of the cargo will press the ship into the water until it reaches the maximum draft allowed.

Dead Weight tonnage (DWT), according to cargo safety construction certificate that published by international convention for the safety of life at sea (Smith, 1974), What is meant by Deadweight of ship (metric ton) or ton metric is weight of ship’s body itself (light ship), plus all of the cargo whether goods or passengers, plus solar fuel, diesel oil, and other oil that carried in, plus waters for drink and bath for all of the ship’s crews and passengers, logistic material such as rice, meat, vegetable, etc. that usually used to cook and eat. Dunnage and the others called as loaded displacement, so the ship with all of the cargo will press the ship’s body until reaching the allowed maximum point. If the ship with all of the cargos suppress the ship more that the allowed point or above the insurance line then if some accident occurred on the sea (the ship is sink), due to overload, then it will be hard to get reimbursement to marine cargo insurance (Lane, 1964).

Inflation

According to Jansson (Jansson & Shneerson, 1978) (1998:43): inflation is “to increase the general price in some situation or some situation where the value of money is decreased. In line with that notion, there are some authors who mentioned inflation as a process or event of the increase of the general price and deflation as the opposite, in which limited as a part of process of event of the decrease of the general price”.

Related to the value of money theory, inflation occurs due to the increase of the amount of money in circulation which is not followed by the increase of goods amount circulation or goods stock. This decreases the value of money. To determine the value of money, it is necessary to observe the velocity factor of money and demand for money. Control or fight against inflation becomes the responsibility of Bank of Indonesia as the central bank as well as several related government’s departments: department of finance, labor, social and industry or commerce.

Bank of Indonesia as a financial institution has a responsibility to keep the stability of the value and the price of the national currency. The value of the national currency, the rupiah, is inversely related to the price of goods and services in general. When the general price of goods and services increases, it means that the value of rupiah decreases. On the other hand, if the general price of goods and services decreases, it means that the value of rupiah increases. The price of the national currency or rupiah is closely related to the price of foreign currencies. To control the inflation, Bank of Indonesia issues several monetary instruments, such as the Open Market Operation, Cash Ratio or Reserve Requirement, Credit/ Loan Policy, Interest Rate Policy, Refinancing, and Foreign Exchange Rate Policy.

Other departments also issue policies related to inflation control, such as Department of Labor with its Wages Policy, Social Department with its Redistribution of National Income, and also the Department of Industrial and Commercial with its Price Policy and Rationing Policy. Therefore, the government often issues policies in a package which is a joint decree by several ministers or related departments.

There are several methods to categorize inflation depends on the purpose. First it is the weigh of the inflation, which is categorized as follows:

- A. Light inflation (under 10% / year)
- B. Medium inflation (between 10% – 30 % / year)
- C. Heavy inflation (between 30% - 100% / year)
- D. Hyperinflation (more than 100% / year)

Next, it is the categorization of inflation based on the initial cause:

- A. Demand inflation: an inflation happened because people's demand for many things are too strong, for example, demand for basic commodities because people feels anxious to stability of national politics and safety
- B. Cash inflation: an inflation happened due to the increase of production costs, such as labor costs, the increase in civil servants' salaries or fuel cost increase.
- C. Domestic inflation: an inflation happened from the country itself, for example, State Budget deficits financed by printing new money.
- D. Imported inflation: an inflation that comes from the outer country.

Unloading Activity

The activity of unloading import goods and inter-insular goods from the ship using crane and ship's sling to the nearest land that usually called port, then from the port, using Lori, forklift or stroller by put it inside and arranged in a nearby warehouse that chosen by dock administrator, while loading activity is the opposite.

The goods that disassembled from inside ship are given by the navigator to the Unloading Officer. All goods that have been unloaded from the ship would be under the inspection and responsibility of Unloading Section on the behalf of the Navigator (McArthur & Osland, 2013). Operation and warehouse functions are explained as: "warehouses or container yard for stock of unloaded goods (ex-import/inter-island) and goods (for the export purpose)"(McArthur & Osland, 2013). When the distance of the warehouse is a bit far from the ship (>_ 130 m), then it can use trucks or stroller to go to the appointed warehouse, but it will have extra cost or overbridge.

Cargodoring long distance is cargodoring job which the distance between ship and warehouse are more than 130m (Jansson & Shneerson, 1978).

When the warehouses in Line 1 are full, then unloading activity can be done by using ship's crane and sling, which will directly unload the goods into the nearby trucks. Loading activity would commence under the opposite procedure.

Direct unloading activity with the truck (truck/ losing/ loading or barge losing/ loading) is unloading activity directly from the ship onto trucks in the hull and continue with carried it out from the net (ex. tackle) also to arrange it in the truck or the opposite (Jansson & Shneerson, 1978).

There are 4 kinds of unloading activity:

- A. Stevedoring activity is a process where the cargo is being taken out from the ship to the cade with using heavy unloading tools and for export cargo which lifted from the cade into the ship
- B. Cargodoring activity is process of carry in the cargo that already on the cade into port's warehouse to stored or stockpiled and, for export goods, it will carry out from the warehouse and take to cade to be ready for loaded into ship
- C. Deliverydoring activity, a shipment cargo from harbor's warehouse to take out from port environment in order to store
- D. Received ring activity, a carriage back process from the factory/ company/ industry to send back into port's warehouse

Cargo unloading activity can be distinguished into 2 conditions:

- A. Foist is a condition where the importer will handle all of the cost from stevedoring, cargodoring and, deliverydoring. Foist condition: for big and heavy cargo will need mechanical tools to load goods from ship's deck
- B. Linear is a condition where the importer only handles some cost like stevedoring and, deiverydoring. Linear condition, for light cargo, won't need mechanical tools, so these goods will get stevedoring cost

General Cargo

The goods that loaded to inter-insular ship in the Tanjung Perak Surabaya port such as, coals, limestone, asphalt, building materials, steel, heavy machinery, aluminum, household appliances, fuel, stuff sacks like cloves, sugar, salt, green beans and other items such as plywood, wood logs, and more, cooking oil, palm oil, lubricating oil and others. Other goods that not connected from above example will consider as general cargo or other which usually taken the form of a cardboard box which contains milk cans, toothpaste, toothbrushes, detergent, pastries, syrup, candy, shirts, pants, gloves, etc.

CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESIS

Conceptual Framework

To give an overall picture of the discussed planning in this study, thus can be described with the picture in figure 1:

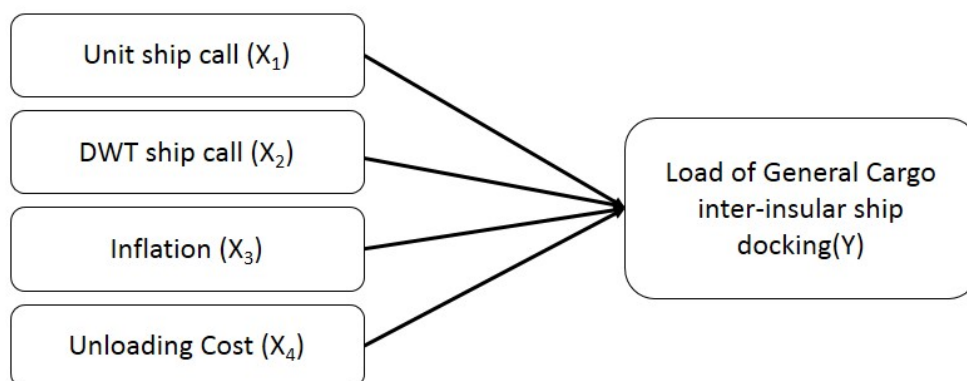


Figure 1. Conceptual Framework

Study Hypotheses

According to the posed problem and existed theory, then it can be taken such as hypotheses:

1. Unit ship's call influenced to inter-insular ship general cargo load which pass Tanjung Perak Surabaya' port

2. DWT ship's call influenced to inter-insular ship general cargo load which pass Tanjung Perak Surabaya' port
3. Inflation influenced to inter-insular ship general cargo load which pass Tanjung Perak Surabaya' port
4. Unload tariff influenced to inter-insular ship general cargo load which pass Tanjung Perak Surabaya' port
5. Unit ship's call, DWT ship's call, Inflation, Unload cost, simultaneously influenced by inter-insular ship general cargo load which pass Tanjung Perak Surabaya' port

RESEARCH METHOD

Research Concept

This research design is made to know (the reason and result) or influence of Unit ship's call, DWT ship's call, Inflation, Unload cost to general cargo load of inter-insular ship on the Tanjung Perak Surabaya' port, thus this research is included in explanatory research which a research to looking for and explain causal relation between variable through hypothesis test (Zan, 1999).

Population and sample

The population is a group that observed in the research or generalization zone that consists of object/subject that has certain quality and characteristic that have set by the researcher to be observed and be concluded. The same thing had also said by Merkurjev (Merkurjev et al., 1998) Population is "... a complete set of observation ...". About sample Merkurjev stated that sample is a sub-group which represent the observed population

Population in this research are DPC APBMI, Port administration, Indonesia's bank branch in Surabaya and, Surabaya city government. The taken data sample is time series data, from January 2002 until December 2006

Research variable

Variable identification

Variable is a symbol or number which include the value (Zaheer & Venkatraman, 1995). Another explanation of variable is object of research or what becomes attention point of a research (Suharsini Arikunto, 1995:96)

Variable from the research which will analyze is consist from independent variable (X) and dependent variable (Y). That variable can be explained, such as:

1. Independent variable, include unit ship's call (X1), DWT ship's call (X2), Inflation (X3) and, Unload tariff (X4).
2. The dependent variable, include volume from inter-insular ship general cargo load (Y).

Definition of operational and variable measurement

Variables in this research, define operationally into:

Unit ship's call (X1)

Unit ship's call is current of the arrival of the ship (ship's call) that enter to port's water, seen from unit ship which includes in scale that uses in variable of unit ship's call (ratio with measurement unit)

DWT ship's call (X2)

Deadweight Tonnage is shipped carrying capacity declared in long-ton (2240 lbs-1016 kg) unit. Deadweight Tonnage = loaded displacement tonnage. Loaded displacement tonnage is the weight of ship itself (light ship), with the cargo (goods and passengers), fuel, water, stores, dunnage, etc. Ship's weight with all of the cargo will press the ship into the water until it reaches the maximum draft that allowed in ton unit measurement.

Inflation (X3)

Increasing the amount of money in circulation while not balanced with an increase of goods circulation or goods stock will make the value of money drop. Scale that uses in inflation variable is ratio with a percent (%) measurement unit.

Unloading tariff (X4)

Charged tariffs in loading or unloading import or export cargo or inter-insular cargo from the ship with using ship's crane and sling to nearest land beside the ship that usually called by port, then moved and organized to nearest warehouse that have chosen by port administrator with using Lori, forklift or stroller, while loading activity is the opposite.

Unloading tariffs are combination of 3 kinds of tariffs: (1) Stevedoring activity is a process where the cargo is being taken out from the ship to the case with using heavy unloading tools and for export cargo which lifted from the cade into the ship. (2) Cargodoring activity is a process of carry in the cargo that already on the cade into port's warehouse to stored or stockpiled and, for export goods, it will carry out from the warehouse and take to cade to be ready for loaded into the ship. (3) Deliverydoring activity, a shipment cargo from harbor's warehouse to take out from the port environment in order to store and Receivedoring activity, a carriage back process from the factory/ company/ industry to send back into port's warehouse.

So, unloading tariffs mathematically can be written such as:

Unloading tariffs (X1.4) = STV + CD + R & D

Scale that uses in unloading variable is ratio with rupiah measurement unit.

Load volume of General Cargo inter-insular ship (Y)

Load volume of General Cargo inter-insular ship is a number of General cargo goods which loaded by inter-insular the ship. The scale which uses in load volume of general cargo inter-insular ship is ration with ton measurement.

Types and Data source

Types of data which use in this research are Qualitative and quantitative data. Quantitative data is an arranged of numbers and sourced from APBMI annual report in 2002- 2006, Port administration Surabaya annual report in 2002-2006, Indonesia's bank branch in Surabaya annual report in 2002-2006, also with the Office of Industry and Commerce Surabaya's annual report in 2002-2006. While qualitative data is data which do not contain of the number or gained information from company prospectus.

Data analyze technique

The analysis in a research with using SPSS program version 11.5. Data processing method (Smith, 1974) that use is a quantitative analysis which is an analysis of the arranged numbers of data, then made into "analysis" with using statistic formula.

- Multiple regression analysis

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + (?) e$$

Where:

Y= Load of general cargo

a= Constanta

b1= Variable regression coefficients of unit ship's call (X1)

b2= Variable regression coefficients of DWT ship's call (X2)

b3= Variable regression coefficients of Inflation (X3)

b4= Variable regression coefficients of unloading tariffs (X4)

X1= Unit ship's call

X2= DWT ship's call

X3= Inflation

X4= unloading cost

e= an error factor causes by another variable outside of the model

- F – Test

This F-test do know if unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading tariffs (X4) independent variable, simultaneously have significant influence to dependent variable (Y) of general cargo inter-insular ship's load volume.

- T – Test

T-test is test for independent partial influence significance variable of unit ship's call (X1), DWT ship's call (X2), Inflation (X3), and unloading cost (X4) to dependent variable (Y) of general cargo inter-insular ship's load volume.

RESEARCH RESULT AND DISCUSSION

In order to know unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4) influence variable to general cargo inter-insular ship's load volume in Tanjung Perak's port in 2002-2006 then it can use multiple regression analysis.

Analysis result that receive from SPSS (version 11.5) program calculation, obtained the regression equation:

$$Y = -752952 + 361,105 X_1 + 0,020 X_2 + 2765,239 X_3 + 24,854 X_4$$

Coefficient regression of Unit ship's call (X1) in the amount of 361,105 that show positive direction, where, if Unit ship's call increase 1 unit then will increase General cargo load volume in the amount of 361,15 tons. This will happen if Unit ship's call increase then ship arrival current which enters the Tanjung Perak port increase, then ship's sea freight decrease and in the end cargo's current which will load to Tanjung Perak port will also increase, especially General cargo load volume will increase too.

Coefficient regression of DWT ship's call (X2) in the amount of 0,020 that show positive direction, when if DWT ship's call increase 1 ton, it will increase General cargo load volume as much as 0,020 tons.

Coefficient regression of inflation (X3) in the amount of 2765,239 which show positive direction, when if inflation increases 1% then it will increase General cargo load volume as much as 2765,239 tons.

Coefficient regression of unloading cost (X4) in the amount of 24,854 which show positive direction, when if inflation increase Rp.1, - then it will increase General cargo load volume as much as 24,854ton. It means the increase of unloading cost will have a direct effect on the increase of unloading labors income. This will make them work even harder, then the productivity of unloading labors will also increase and, in the end, unloading volume will also increase.

According to hypothesis influence test of independent variables of unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading tariffs (X4) to general cargo load volume (Y) partially in T-test, it results:

- T calculation of unit ship's call (X1) score = 4,517, therefore T calculation (4,517) > Ttable (2,004), resulted rejected Ho and accepted Hi. This show that Unit ship's call (X1) partially have significant effect to general cargo load volume (Y) of the inter-insular ship in Tanjung Perak Surabaya port. If ship's call unit increase then sea transportation service offer will also increase and sea freight's cost decrease, then the demand for sea transportation service will increase. This will make inter-insular ship's load volume increase.
- T calculation of DWT ship's call (X2) score = 1,285, therefore, < Ttable (2,004), resulted accepted Ho and rejected Hi. Partially don't have significant effect on general cargo load volume (Y) of the inter-insular ship in Tanjung Perak Surabaya port. This is caused by general cargo which can load with any kinds of the ship and don't need any special ship. Because of that DWT ship's all fluctuation don't give any effect on General cargo inter-insular ship load volume, but it is different with cargo such as cow, horse, wood log, cars, coals that only can load with the special ship and special unloading service.
- T calculation of inflation (X3) score = 1,629, therefore, < Ttable (2,004), resulted accepted Ho and rejected Hi. Partially don't have significant effect on general cargo load volume (Y) of the inter-insular ship in Tanjung Perak Surabaya port. This is caused by port labor's unloading cost that already set by APBMI with Port administration, GPEI, GINI, INSA on every beginning of the year, so the unloading cost has already given and won't affected by inflation, therefore inflation won't influence general cargo inter-insular ship volume.
- T calculation of unloading cost (X4) score = 16,823, therefore T calculation (16,823) > Ttable (2,004), resulted rejected Ho and accepted Hi. This show that Unit ship's call (X1) partially have significant effect to general cargo load volume (Y) of the inter-insular ship in Tanjung Perak Surabaya port. If unloading labors income increased. This will make them work even harder, then the productivity of unloading labors will also increase; therefore, the opposite.

According to F-test result (simultaneous test) to multiple linear regression equations (can be seen in table 2), obtained Fcalculation in the amount of 132,534. If compare it with Ftable score (with 4 free regression degree and 55 free residual degrees) in the amount of 2,540 then Fcalculation (132,534) > Ftable (2,540). The conclusion is, H0 rejected and H1 accepted, which mean the regression equation that significantly formed or simultaneously unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4) have significant effect toward of general cargo inter-insular ship's load volume (Y) in Tanjung Perak Surabaya port.

Multiple correlation coefficients (R) score as big as 0,952. With this it can be explain if independent variable of unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4) simultaneously toward of g have strong connection and have the same direction with general cargo inter-insular ship's load volume (Y) in Tanjung Perak Surabaya port.

According to the calculation results from determination coefficient, it results determination coefficient (R²) score: 90,6%, This show if variation from general cargo inter-insular ship's load volume which can explain by independent variable of unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4). While the remaining: 100% - 90, 6% = 9,4% explain by other variable that not observe in this research.

RESEARCH LIMITATION

Researcher only observe unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4) variable in affect general cargo inter-insular ship's load volume (Y) in Tanjung Perak Surabaya port. Along with the research limitation, researcher doesn't observe other variables that may affect towards inter-insular ship's load volume (Y), such as diesel oil, the price of diesel oil and fuel oil prices, transport fares trucks (freight Organda), changes in the value of the dollar towards the rupiah, national political stability, etc.

CONCLUSION & SUGGESTION

Conclusion

According to analysis result and this research discussion, in conclusion: there are 4 independent variables and dependent variable. In other words, independent variable conclude unit ship's call (X1), DWT ship's call (X2), Inflation (X3), unloading cost (X4) simultaneously have a strong connection and same direction with general cargo inter-insular ship's load volume (Y) in Tanjung Perak Surabaya port. If unit ship's call (X1), increase, and then general cargo load volume (Y) also increase. If DWT ship's call (X2), increase, and then general cargo load volume (Y) also increase. If inflation rate (X3) increase, then the selling price of goods which sent to outer island will also increase, then merchant from Surabaya will increase their goods out of island shipment and, especially general cargo to outer island shipment will increase therefore cargo inter-insular ship's load volume will increase too. If unloading cost (X4) being an increase, it will affect to general cargo load volume (Y) to be increased.

Suggestion

1. Domestic/inter-island freight lanes served by national ships and foreign-flagged ships, such as Liner ship or Tramper ship, with significant ratio, the same as inter-insular ship's call in Tanjung Perak Surabaya port simultaneously 2002-2006: 7.986 units of domestic ships, 805 units of foreign ships, 7.466 units of domestic ships, 354 units of foreign ships, 7.956 units of domestic ships, 321 units of foreign ships, 9.369 units of domestic ships, 226 units of foreign ships, 9.139 units of domestic ships, 206 units of foreign ships. Look at the facts that in international freight lanes, Indonesia's ships are still difficult to compete with foreign ships, then Indonesia government, minister of Transportation limit the amount of foreign ships that can operate in domestic/ inter-island freight lanes.
2. In the context regional autonomy, it suggests that each regional governments to develop their port, either physically: sea lanes and port basin dredging, pier construction, Line 1 warehouse, procurement of mechanical tools (land crane, sea crane, forklift, top-loader, etc.) in order to smoother unloading activity as well as administration correction and port management, minimal in port administrator office and port master are adequate, and to make inter-island ships become certain to enter a port that the pioneering harbor status, as long as facilities and infrastructure, minimum there are already technical and administrative.

References

Jansson, J. O., & Shneerson, D. (1978). Economies of Scale of General Cargo Ships. *The Review of Economics and Statistics*, 60(2), 287-293. Doi: 10.2307/1924982

- Lane, F. C. (1964). Tonnages, Medieval and Modern. *The Economic History Review*, 17(2), 213-233. Doi: 10.1111/j.1468-0289.1964.tb00077.x
- McArthur, D. P., & Osland, L. (2013). Ships in a city harbor: An economic valuation of atmospheric emissions. *Transportation Research Part D: Transport and Environment*, 21, 47-52. Doi: <http://dx.doi.org/10.1016/j.trd.2013.02.004>
- Merkuryev, Y., Tolujew, J., Blümel, E., Novitsky, L., Ginter, E., Viktorova, E. . . . Pronins, J. (1998). A Modelling and Simulation Methodology for Managing the Riga Harbour Container Terminal. *SIMULATION*, 71(2), 84-95. Doi: 10.1177/003754979807100203
- Prof. Dr. Herman Budi Sasono, S. E. M. M. *Manajemen Pelabuhan dan Realisasi Ekspor Impor*: Penerbit Andi.
- Sasono, H. B. (2014). THE DISTRIBUTION OF COMMODITIES AMONG ISLANDS IN INDONESIA THROUGH THE HARBOUR. *E-JURNAL KEWIRUSAHAAN*, 2(1), 34.
- Shore, L. M., Tetrick, L. E., Lynch, P., & Barksdale, K. (2006). Social and Economic Exchange: Construct Development and Validation. *Journal of Applied Social Psychology*, 36(4), 837-867. Doi: 10.1111/j.0021-9029.2006.00046.x
- Smith, R. W. (1974). An Analysis of the Strategic Attributes of International Straits. *Maritime Studies and Management*, 2(2), 88-101. Doi: 10.1080/03088837400000041
- Young-Ybarra, C., & Wiersema, M. (1999). Strategic Flexibility in Information Technology Alliances: The Influence of Transaction Cost Economics and Social Exchange Theory. *Organization Science*, 10(4), 439-459. Doi: doi:10.1287/orsc.10.4.439
- Zaheer, A., & Venkatraman, N. (1995). Relational governance as an inter-organizational strategy: An empirical test of the role of trust in economic exchange. *Strategic Management Journal*, 16(5), 373-392. Doi: 10.1002/smj.4250160504
- Zan, Y. (1999). Analysis of container port policy by the reaction of an equilibrium shipping market. *Maritime Policy & Management*, 26(4), 369-381. Doi: 10.1080/030888399286808