Optimization Of Non-Tax State Revenue For Industrial Ports And Special Terminals

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Abstract: The current condition of non-tax state revenues in the marine sector, especially those obtained from industrial ports and special terminals has not been maximized. This paper aims to identify what causes the non-tax state revenues acquisition of industrial ports and special terminals to be less than optimal and to seek policy recommendations that can be implemented to increase the non-tax state revenues. From the results of the analysis, it is found that several current problems are caused by the existence of industrial ports / special terminals which is not active and has not made non-tax state revenues payments, low non-tax state revenues rates on industrial ports and special terminals when compared to state-owned enterprises BUP, the existence of tariff class differentiation, there is no SOP that regulates performance of industrial ports / special terminals and several other problems. From these problems, several policy recommendations were made, such as controlling permits and payments, strengthening harbor-master, adjusting water leases, integrating digital platforms, implementing upper limit rates, intensifying and extending efforts. The policy is mapped based on the risks and implemented gradually over a period of two years starting from the quick wins phase, the short-term phase, the medium-term phase and the long-term phase. Each phase is simulated using dynamic simulation in the form of causal loop to see the projection of the non-tax state revenues.

Index Terms: Non-Tax State Revenue Optimization, Policy Simulation, System Dynamics

1. INTRODUCTION

Sea transportation that connects inland areas and islands in Indonesia and connects Indonesia with international regions, especially for export / import goods transportation activities, has a very strategic and important role as a support for economic, industrial, development and trade activities. One of the components of sea transportation is the port. What is meant by the smaller portion of a port is a terminal. Terminal is a port facility consisting of a berth and a place for ships to dock or moor, a place for stacking, a place for waiting and boarding passengers, and / or a place for loading and unloading goods. To support certain business activities for one’s own interest, a special terminal and an industrial ports can be built. A special terminal is a ship berth facility used for the main business interests of a business entity whose position is outside the work environment / interest area of a public port. One of the important roles played by industrial ports and special terminals is the contribution to non-tax state revenues. The existing condition of industrial ports / special terminals at present are ships that come tramping, where the ship that stopped by was a large ship like the Panamax. With this condition there is a potential loss of state finances because the tariff set is a minimum tariff that is at the same level as the public port rate so that the potential for non-tax state revenues is relatively small. The problem of low revenue requires a solution so that it is necessary to review the non-tax state revenues contribution from industrial ports and special terminals. The industrial ports and special terminals rates are also lower than Pelindo’s rates, resulting in a loss of potential state income. The services of industrial ports and special terminals also need to be improved so that activities at the port also increase, it is necessary to review what components need to be improved, so that it can have a direct impact on increasing non-tax state revenues.

2 Methodology

This research went through several stages which began with reviewing the problems through the analysis of existing conditions, diagnosis related to the factors causing the lack of non-tax state revenues acquisition and recommendations which were potential solutions to the problems in this study. The method used is a qualitative and quantitative approach with a questionnaire and interactive question and answer instrument with the research subject. At the recommendation stage, this paper also carries out implementation risk management and simulations using a causal loop on policy implementation at a certain time period.

3 Literature Review

3.1 Literature Study

The writing of this paper certainly requires references from various writings that discuss topics similar to this paper. The results of the literacy study are based on [1] finding that modern ports experience inconsistencies in efficiency and effectiveness as well as balance activities with expectations of stakeholders. For this matter, the port authority must simultaneously focus on cost efficiency and coordination in a systematic manner in a very complex port system. With the results of this study, the implementation of a systematic function indicates that the role of port authorities is highly dependent on relational capabilities. In literature [2] states that the largest contribution of non-tax state revenues from the Ministry of Transportation comes from the Directorate General of Transportation, which is dominated by port services and navigation services. The literature also states that non-tax state revenues management needs to be optimal without increasing logistics costs, not hampering economic activity, not triggering inflation and not distorting economic output. Literature [3] discusses more deeply the problems faced by industrial ports/special terminals operators. Industrial ports/special Terminals operators feel that the licensing process is taking a long time. There are several industrial ports/special terminals which discontinue licensing due to burdensome policies and sluggish business activities. The management of industrial ports/special terminals by harbor-master (in Indonesia is knowns as KSOP which is Kantor Syahbandar dan Otoritas Pelabuhan) is deemed not optimal.

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because industrial ports/special terminals are spread out and lack of human resources. Through the literature [4], it is explained the effect of implementing environmental policies on the estimated costs of the benefits associated with the decision. The policy is simulated with a dynamic simulation system. The results of the simulation produce three different premises. The study also conducted studies on several different policies to get good results in policy implementation. in study [6] obtained two basic things about port governance, namely how to manage it and what the management is for. A sample of 118 studies shows that port devolution as well as port re-centralization are the main governance tools at the institutional level. Meanwhile, at the strategic level, the main tools are port cooperation, port regionalization and integration, and stakeholder management strategies. The study shows that the main objective of port governance is to increase port efficiency and port effectiveness. However, the determination of the system to increase efficiency and effectiveness is largely determined by external parties, the port's operating environment, strategy and organizational structure. Another study related to policy making was conducted in 2020 by Michas. The study presents a modeling framework for an adaptive and dynamic policy path methodology for exploring the evolution of the share of solar photovoltaics in Greece. These results suggest the potential to support adaptive policy design for evolution with social, economic, and technological contexts [7].

3.2 Non-Tax State Revenues On Industrial Ports and Special Terminals

The existing condition, non-tax state revenues on industrial ports and special terminals in Indonesia still needs to be maximized. Based on data from the Directorate General of Sea Transportation, non-tax state revenues of port services revenues in 2019 and 2020 have decreased. This decrease could be due to various problems. It could be due to inactive industrial ports / special terminals, not paying or the Covid-19 pandemic. Based on data from the Directorate General of Sea Transportation per 2020, of the four sample areas reviewed from each province with a total of 421 special terminals and 283 industrial ports the percentage of inactive either special terminals or industrial ports are still in the minimum percentage, which is in the range of 13-14%. The number of special terminals and industrial ports that have not made payments is in the range of 35-36%.

3.3 Industrial Ports and Special Terminals Rates and Services

The results of the assessment of current conditions show that there is a tariff gap between industrial ports / special terminals and also the state-owned enterprises BUP tariff. One example is the tariff for water use. In one sample area, namely in East Kalimantan (Samarinda), the water lease for the state-owned enterprises BUP reached IDR 22,000 / m3 while the water lease for industrial ports and special terminals was only IDR 2,500 / m3. From this difference, there is an effort in determining the non-tax state revenues tariff for the sea transportation sector. In determining non-tax state revenues rates for the sea transportation sector, the components that need to be considered include macroeconomics, sustainable production of service use, and fiscal sustainability. In optimizing the non-tax state revenues in the sea transportation sector, there will be an increase in several rates that are charged to industrial ports/special terminals. This increase in tariffs should not hamper activities subject to non-tax state revenues services so that it can have negative implications for the fiscal condition (The State Budget), and at the macro level does not trigger relatively high inflation and does not distort economic activity as a whole (across sectors and sectors) [2].

3.4 System Dynamics

The Simulation of the policy implementation is approached with system dynamics using the Powersim application in modeling the policy. It is also measuring its effect in time units. System Dynamics is a modeling based on a complex thinking system paradigm [8]. System dynamics are concerned with the interaction of various elements of the system over time and capture dynamic aspects and thus provide an understanding of the dynamic behavior of a system [10]. System dynamics is based on nonlinear dynamics theory and feedback control, but also refers to cognitive, social psychology, organizational theory, economics and other social sciences to analyze the behavior of complex systems [9]. Problems that can be modeled with system dynamics are those that have dynamic properties and contain at least one feedback structure. A dynamic system model that is formed because of a causal relationship, whose activities will be modeled through a stock flow diagram. Literature [5] simulates an evaluation of the impact of a major area pricing scheme in the effective mitigation of these bottlenecks. In terms of this research, system dynamics will be used for analyzing the effect of implementing various policies by considering policies that optimize the income and also aspects that reduce the income.

4 RESULT AND DISCUSSION

4.1 Existing Condition of Industrial Ports and Special Terminals

There are several problems in the field that are mostly faced by harbor-master and industrial ports/special terminals. The problem in the field based on the memorandum of the special terminal and industrial ports service in South Kalimantan and East Kalimantan is that licensing takes ± 6 months, while the validity period of the industrial ports/special terminals permit to serve goods of temporary public interest is only 1 (one) year. After that, special terminals was inactive / inoperative because the river which tug boats and barges used to transport coal along the riverbanks often collapsed. Then, the Span of control of the working area of the harbour-master, is not reachable so that it is possible to lose the non-tax state revenues in hidden areas. However, the lack of human resource still be a problem. As stated on literature [3], many industrial ports and special terminals are out of control due to lack human resource. And the last one is that the available capacity of industrial ports/special terminals should be utilized by companies that have cargo but do not have industrial ports/special terminals permits.

4.2 Optimizing Non-Tax State Revenues through the Implementation of New Policies

Broadly speaking, industrial ports/special terminals are mostly inactive in East Kalimantan. It is a straight line with the largest number in East Kalimantan. For those who have paid the majority are in the South Kalimantan area. In the four sampling areas, the total payment of industrial ports/special terminals
Based on Figure 1, the basic problems related to the optimization of non-tax state revenues and Industrial Ports revenues are preceded by the weak tabulation of the total status of industrial ports with permission and unlicensed or active and inactive status. The second problem is the differentiation of the main and other classes. The next issue is to review the current performance of industrial ports/special terminals. There are still differences in the service performance of industrial ports/special terminals with the state-owned enterprises BUP. The role of the harbour-master currently has limited oversight. Many industrial ports/special terminals are scattered, so that supervision is still lacking due to the lack of ICT technology facilities and also the competence of human resources. The role of the Harbour-master is also limited to powers that have not been protected by law. So that supervision is limited and less than optimal. With the geographic form of Indonesia which is united in the form of an archipelago, of course industrial ports/special terminals are scattered on different islands throughout Indonesia. This is certainly a challenge in the process of transferring information from one region to another. It seems that this challenge has not been properly resolved. Institutional also becomes the fundamental issue in this study. According to [1], relational capabilities to important to achieve an efficient cost and coordination in a systematic manner. Mutual control between ministries/agencies and local government should be pre-arrange to avoid any overlapping rules. In addition to increasing what is currently owned, through efforts to extend non-tax state revenues on industrial ports/special terminals will be maximized. These efforts include the addition of new services or various types of businesses, laying pipes for services within the port, starting to operate a new port, utilizing units that are no longer active and also placing human resources for the recording process in the industrial ports/special terminals inland or rural areas.

4.3 Mapping of Policy Implementation Risks

The results of the analysis resulted in seven new policies that could be implemented in order to increase the revenues. However, of course something new needs to be analyzed in terms of the risks to be implemented in an ecosystem. The assessment is obtained based on the perspectives and respondents of business actors, experts, association members, and experts.

There is a policy that is in the middle of all quadrants, namely the policy of adjusting lease waters. The policy is considered to have an acquisition value and risk that is neither too big nor too small. The digital platform integration policy is between two and four, this shows that the policy is not too high and not too low risk but has a low return value. In quadrant three, which means that it has a low non-tax state revenues value but has a high risk by implementing intensification and extensification business policies. In the last quadrant, namely the implementation of the upper limit tariff policy. The implementation of this policy carries a high risk but is offset by high non-tax state revenues.

4.4 Simulation of Policy Implementation

The image below is a Causal Loop diagram which is used to visualize each different variable in a related system. This variable is a recommendation for the implementation of the industrial ports/special terminals non-tax state revenues optimization policies which is divided into four, namely quick wins, short term, medium term, and long term. Causal Loop Diagrams are causal diagrams that help in visualizing how each of the different variables in a system are related to one another. The causal loop explains how each implementation of the proposed policies affects each other in the optimization of non-tax state revenues on industrial ports/special terminals.
resistance to policy implementation, which results in a reduction of -15%. In scenario 1, the factors that need to be done in quick wins consist of coordination between ministries / agencies at the center and harbour-master in the regions as a form of whitening against industrial ports/special terminals entities that have not been paid. The thing that needs to be done is with the whitening of industrial ports/special terminals. Finally, in strengthening the harbour-master, the points being considered are the length of time for preparing new regulations and the limited facilities of harbour-master.

a. Simulation results of Policy Implementation in Samarinda

The tables and figures shown are the results of a simulation of the implementation of the proposed policy. It can be seen that in the first stage of scenario 1 application, the quick wins were carried out by the whitening of industrial ports/special terminals so that the results of non-tax state revenues were not optimized for the first 3 months. After short-term application after 6 months, the amount was IDR 45,812,174,777. After 1 years with the implementation of the one tariff system in the medium term, it was obtained Rp. 71,218,262,165 and Rp. 119,343,478,981 after 2 years of implementing the policy implementation recommendations.

b. Simulation results of Policy Implementation in Banjarmasin

The tables and graphs shown are the results of a simulation of the implementation of the proposed policies. It can be seen that in the first stage of scenario 1 application, the quick wins were carried out by the whitening of industrial ports/special terminals so that the results of non-tax state revenues were not optimized for the first 3 months.

c. Simulation results of Policy Implementation in Palembang

After short-term application after 6 months, the amount was IDR 2,415,574,827. After 1 years with the implementation of the one tariff system in the medium term, it was obtained Rp. 4,973,362,241 and Rp. 8,162,979,023 after 2 years of implementing the policy implementation recommendations.

d. Simulation results of Policy Implementation in Kendari

The tables and graphs shown are the results of a simulation of the implementation of the proposed policies. It can be seen that in the first stage of scenario 1 application, the quick wins were carried out by the whitening of industrial ports/special terminals so that the results of non-tax state revenues were not optimized for the first 3 months. After the short-term application after 6 months the amount was IDR 488,877,325. After 1 years with the application of the one tariff system in the medium term, it was obtained Rp. 924,973,982 and Rp. 1,436,096,657 after 2 years of implementing the policy.
implementation recommendations. In scenario 2, the factors that need to be done in quick wins consist of completing the industrial ports/special terminals permit, completing industrial ports/special terminals payments, strengthening harbour-master, and the existence of supervisory technology.

a. Simulation results of Policy Implementation in Samarinda (2)

**Figure 8. Results of Policy Simulation Scenario 2 in Samarinda**

**Samarinda**

Based on the graph above, non-tax state revenues will continue to increase every year. It can be seen that in the first stage of application of quick wins which has a duration of 3 months, non-tax state revenues is obtained as much as Rp. 52,874,783,185. At that stage, it is a policy that can be carried out at that time, by controlling industrial ports/special terminals and improving supervision. After going through the quick wins policy, the short-term policy began to be implemented. At this stage the policy to be carried out is to clarify the coordination of the harbour-master institution. The planned duration of the implementation of this policy was 6 months and obtained non-tax state revenues of Rp. 77,973,391,592. The next implementation is the tariff adjustment in the medium term, after 1 year it was found that there was an increase in revenue from the previous stage to the medium-term implementation stage which gave quite significant results with a value of Rp. 99,812,174,777. This acquisition is made from the result of the determination of an upper limit tariff, adjustment of water leases, utilization of new UPPs and also reactivation of terminals that are no longer used or active. The latest implementation is a long-term policy after 2 years of obtaining revenues of IDR 141,874,783,185. This value is obtained by starting the implementation of cargo / goods tariffs, managing non-tax state revenues funds for internal and tertiary and developing new forms of business such as bunkering or ship logistics.

b. Simulation results of Policy Implementation in Banjarmasin (2)

**Figure 9. Results of Policy Simulation Scenario 2 in Banjarmasin**

**Banjarmasin**

From this simulation, non-tax state revenues will be seen by implementing policies in four different durations, starting from quick wins, quick wins + short term, quick wins + short term + medium term, and quick wins + short term + medium term + long term. When viewed from the graph above, revenues will continue to increase every year. It can be seen that in the first stage of application of quick wins which has a duration of 3 months, non-tax state revenues is obtained of Rp. 4,810,383,218. At that stage, it is a policy that can be carried out at that time, by controlling industrial ports/special terminals and improving supervision. The next implementation is the tariff adjustment in the medium term, after 1 year, it was found that there was an increase in revenue from the previous stage to the medium-term implementation stage which gave quite significant results with a value of Rupiah. This acquisition is made from the result of the determination of an upper limit tariff, adjustment of water leases, utilization of new UPPs and also reactivation of terminals that are no longer used or active. The last implementation is a long-term policy after 2 years, obtained non-tax state revenues of IDR 9,910,383,218. This value is obtained by starting the implementation of cargo / goods tariffs, managing non-tax state revenues funds for internal and tertiary and developing new forms of business such as bunkering or ship logistics.

c. Simulation results of Policy Implementation in Palembang (2)

Based on the graph below, non-tax state revenues will continue to increase every year. It can be seen that in the first stage of applying quick wins which has a duration of 3 months, non-tax state revenues is obtained amounting to Rp. 28,513,260,069. At that stage, it is a policy that can be carried out at that time, by controlling industrial ports/special terminals and improving supervision. The next implementation is the tariff adjustment in the medium term, after 1 year it was found that there was an increase in revenue from the previous stage to the medium-term implementation stage which gave quite significant results with a value of Rp. 45,256,630,035. This acquisition is made from the result of the determination of an upper limit tariff, adjustment of water leases, utilization of new UPPs and also reactivation of terminals that are no longer used or active.
The last implementation was a long-term policy after 2 years of obtaining non-tax state revenues of Rp. 62,513,260,069. This value is obtained by starting the implementation of cargo / goods tariffs, managing the funds for internal and tertiary and developing new forms of business such as bunkering or ship logistics.

d. Simulation results of Policy Implementation in Kendari (2)

Based on the graph above, non-tax state revenues will continue to increase every year. It can be seen that in the first stage of application of quick wins which has a duration of 3 months, non-tax state revenues are obtained as much as Rp. At that stage, it is a policy that can be carried out at that time, by controlling industrial ports/special terminals and improving supervision. The next implementation is the tariff adjustment in the medium term, after 1 year it was found that there was an increase in revenue from the previous stage to the medium-term implementation stage which gave quite significant results with a value of Rp 992,796,853. This acquisition is made from the result of the determination of an upper limit tariff, adjustment of water leases, utilization of new UPPs and also reactivation of terminals that are no longer used or active. The latest implementation is a long-term policy after 2 years of obtaining non-tax state revenues of Rp. 1,966,252,024 without imposing investment costs in the harbour-master. This value is obtained by starting the implementation of cargo / goods tariffs, managing non-tax state revenues funds for internal and tertiary and developing new forms of business such as bunkering or ship logistics.

5 CONCLUSION

With the results of this study, the authors have presented the results of non-tax state revenues optimization from industrial ports/special terminals. In this study, the existing conditions of industrial ports/special terminals were reviewed with field surveys and data collection for simulation data needs. This study is aimed at seeing the potential for increasing industrial ports/special terminals non-tax state revenues by recommending the implementation of policies on industrial ports/special terminals. With risk management and a dynamic system simulation approach, the potential for non-tax state revenues increase has been obtained using four sample location data, namely Samarinda, Palembang, Banjarmasin, and Kendari.

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