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Research Article

The Implementation of the ISPS Code in Indonesian Ports and its Impact on National Income

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Abstract: This study aims to measure and analyze: (i) the impact of government policies on the implementation of the International Ship and Port Facility Security (ISPS) Code in ports on state revenue; and (ii) stakeholder expectations regarding the implementation of the ISPS Code in Indonesian ports. The research method used is a mixed methods approach, consisting of a quantitative approach using the 2021 Indonesian Input-Output Table and a qualitative approach through data analysis using NVivo software. Quantitative data was used to calculate the macroeconomic impact of ISPS Code implementation, while qualitative data was obtained from in-depth interviews with various stakeholders such as port authorities, terminal operators, shipping companies, and relevant government agencies. The results show that the implementation of the ISPS Code in Indonesian ports has made a positive contribution to the national economy. Quantitatively, there was an increase in macroeconomic indicators, including an increase in Gross Domestic Product (GDP) of 0.003%, worker income of 0.00003%, revenue from taxes minus product subsidies of 0.017%, and revenue from taxes on production subsidies of 0.002%. This improvement reflects the strategic role of the ISPS Code in strengthening port security, the smooth flow of goods, and the trust of international trading partners. Qualitatively, this study reveals that stakeholders' expectations regarding the implementation of the ISPS Code include the need for the government to address existing obstacles. These obstacles include the persistence of ports that comply with the ISPS Code administratively but not yet meet operational standards, weak coordination and synergy between institutions, the suboptimal role of port authorities, limited human resources, convoluted bureaucracy, and minimal use of advanced technology. This study recommends strengthening regulations, increasing human resource capacity, simplifying bureaucratic procedures, and adopting advanced technology to support the effective implementation of the ISPS Code in Indonesia.

Keywords: Input-output analysis, ISPS Code, Maritime Security, National Income, Ship and Port Facilities Security.

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1. Introduction

After the enactment of the Koda in 2004, Indonesian ports have experienced problems related to international assessments of security issues, which has become a challenge for the government in ensuring the implementation of the Koda is more serious, effective, and efficient. In 2008, Indonesia was included in the list of Port Security Advisory (PSA) 1-08 (issued by the United Coast Guard/USCG), after a visit to see the implementation of anti-terrorism security measures at port facilities in Indonesia, which has connectivity with ports in the United States. Meanwhile, quoting from the IMO Guidance to Maritime Security, since the implementation of the ISPS Code in 2011, a number of port facilities have reported a decrease in the number of incidents of theft and accidents in restricted security areas. In addition, it is also reported that in the first six months since the entry into force of the ISPS Code, there was a significant decline in cases of stowaways at United States Ports. Furthermore, the failure

in implementing the ISPS Code in a country, in general, is that there will be no foreign ships that will enter the port. Hence it affecting on trade activities between countries which has an impact on the stability of the national economy.

Research on the benefits of implementing the ISPS Code on ports has been measured by several researchers in several countries; both in terms of effectiveness and efficiency. Research by UNTAC (2007) in 55 countries in Asia and Europe found that the port performance was more efficient, the use of ICT was maximized, and crime at ports was decreasing. Meanwhile, the barriers to implementing the ISPS Code that often arise are related to the budget. A broader study conducted by Munim Z and Schram H (2018) in 91 countries shows that there is empirical evidence of the significant economic impact of the quality of port infrastructure and the logistics performance of a country. Njoku, et al., (2020) explained that there is a significant relationship between GDP and trade activities by ship transportation in Nigeria after the implementation of the ISPS Code.

In Indonesia, according to Wirawan (2022), there was the effect of implementing the ISPS Code from the side of National Security, that maritime security increased Indonesia's defense diplomacy within the framework of the World Maritime Axis. Mazaheri & Ekwall (2009) also explain that increasing the level of security at ports is the most important impact of the ISPS Code. Better control of the port area, access restrictions, and a better working environment are examples of the impact of implementing the ISPS code on port activities. The existence of maritime security encourages activities of transporting goods by sea and encourages a multiplier impact on the national economy. Based on the above background, this study aims to determine and analyze: (i) the Impact of Government Policy in the Implementation of the ISPS Code at Indonesian Ports on National Revenue and (ii) Stakeholders' expectations of Government Policy in the Implementation of the ISPS Code at Indonesian Ports.

2. Theoretical Background

The research of Silber (2012) concluded that IMO can be a strong entity in providing solutions to various environmental and marine conservation problems. When used in conjunction with related efforts such as seafarer education, IMO, and the various navigational measures available to them. It is an effective forum through which coastal states can pursue great whale conservation goals without compromising the activities of shipping interests. Smith (1776) said that the key to success in a capitalist society is the division of labour. When productivity increases and businesses produce more goods than they can sell locally, they need access to a wider market, thus unlocking the power of division of labour depending on transport. Sea Transport played an important role then. The economic relationship with sea transportation is also explained from the results of research in Spain, where Artar Tura, et al., (2016) explains that compared to the large economic impact of activities related to sea transportation, the impact of cruise ship tourism expenditure is relatively low, indicating the need for a new line of business to be considered. Francou (2002) describes the relationship between marine transportation policy and macroeconomics as shown in Figure 1.

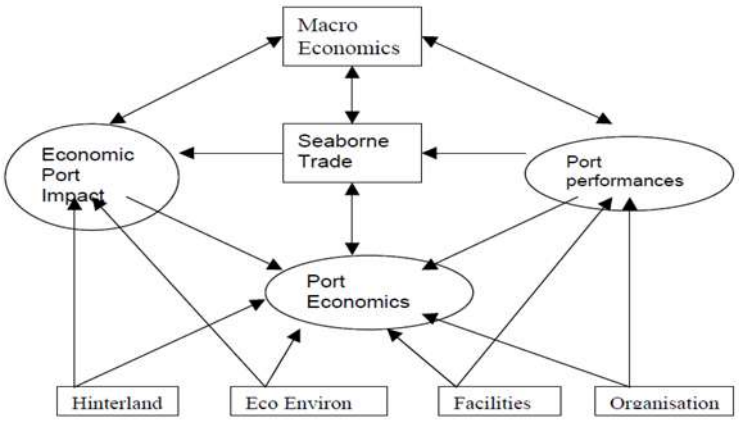

Figure 1. The relationship between sea transportation and macroeconomic activities

Source: Francou (2002)

Port performance and port economy are closely related to macroeconomics. Therefore, any changes in traffic or port operations and/or port organization must have an impact on the national economy, especially in hinterland areas (Bueger, 2014).

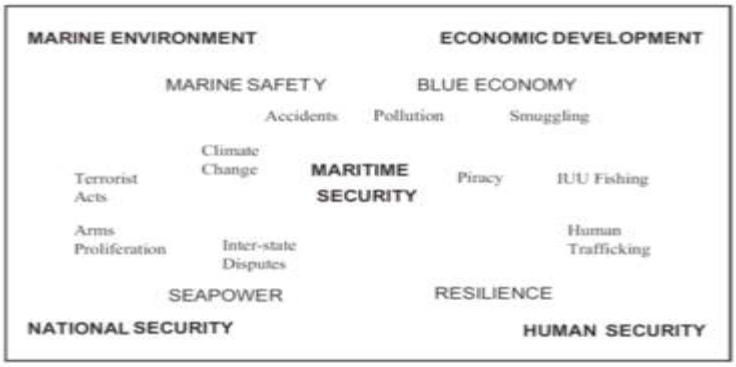

Figure 2. Marine Security Scope

Source: Bueger (2014)

Figure 2 above, shows that maritime security policy which includes port and ship security in general has an impact on various aspects namely Economic Development, Maritime Environment, National Security, and Human Security. Based on this environmental circumstance and its relationship with macroeconomic activities, this study tries to see the relationship of Maritime Security through the application of the ISPS Code to Economic Development in terms of National Income.

3. Research Methodology

This research uses a mix of quantitative and qualitative methods. The data collection process is divided into 2 parts, namely qualitative data based on FGD with stakeholders and secondary data derived from Updating Socio-economic Data from the input-output table (IO table) through the Indonesian Central Statistics Agency office. Furthermore, this paper conducted a quantitative analysis to obtain forward and backward linkages, the impact of the spread, and the impact of the output multiplier, labor, and workers' income, while a qualitative analysis will use Nvivo Analysis. The informants can be seen in the following table 1.

Table 1. Informant Profiles

No.	Informant	Occupancy	Institution
1	Capt Weku Federik Karuntu MM	Director of KPLP Directorate General of Sea Transportation	Ministry of Transportation
2	Dr. Ir Ahmad, MMTr	Director of BP3IP	Ministry of Transportation
3	Ir. Andi Hartono, MT	Head of Tanjung Priok Harbourmaster	Ministry of Transportation
4	Capt Hermanta, SH, M.Mar	Head of Makasar Harbourmaster	Ministry of Transportation
5	Ir. Hernaldi Tri Cahyanto	Head of Tanjung Perak Harbourmaster	Ministry of Transportation
6	Capt. Bharta Ari, MSi	Head of Belawan Harbourmaster	Ministry of Transportation
7	Dr. Donny Arihudin	Director of PT. Don Profesional	Operator
8	Prof M. Zilal Hamzah,Phd	Public Policy Observer	Academician

Source: Authors (2022)

From Table 1, can be seen that there are 8 informants. The 8 informants will be divided into several categories, this is intended to make the mapping in the data process more concise and also for reasons of simplicity. In this case, the categories will be divided into three namely Regulators, Operators, and Academics.

4. Results and Discussion

4.1. Direct and Indirect Impact

The ISPS Code policy at the Ministry of Transportation, which is valued at IDR 661,632,591,000.00, is implemented through some sectors such as the Industrial sector of Metal, Computer, Electronic Goods, Optics, and Electrical Equipment (worth IDR 2.01 billion), sector of Transportation/Docking Equipment (worth IDR 116.14 billion), sector of Sea Transportation (worth IDR 416.47 billion), sector of Provision of Accommodation (worth IDR 12.76 billion), and sector of Government Administration, Defence, and Mandatory Social Security (worth IDR 114.25 billion).

Based on the I-O analysis, the impact of this implementation will have direct and indirect impacts on both backward and forward linkages: (i) For direct forward, the impacts is amount IDR119.42 billion affected the 5 most sectors (Rail Transportation, Transportation Equipment/Docking, Coal and Lignite Mining, Oil and Gas, and Geothermal Mining); (ii) For the indirect forward, the impact is amount IDR836.34 billion affected the 5 most sectors (Sea Transportation, Government Administration, Defence and Social Security, Transportation/Docking Equipment, and Accommodation Provision); (iii) For the indirect forward impact is amount IDR 256.48 billion affected the 5 most sectors (The Coal and Oil and Gas Refining Industry, the Food and Beverage Industry, Transportation Equipment/Docking, and the Metal, Computer, Electronic Goods, Optical, and Equipment Industry Electricity); and (iv) The indirect backward impact is amount IDR 1.044 trillion affected the 5 most sectors (The sea transportation sector, Transportation Equipment/Docking, the Coal and Oil and Gas Refining Industry sector, the Food and Beverage Industry, and Oil, Gas and Heat Mining).

4.2. Impact of ISPS Code Policy Implementation on Indonesia's National Income in 2021

As explained earlier, the Ministry of Transportation's budget allocation for the implementation of the 2021 ISPS Code Policy amount to IDR661,632,591,000.00. This allocation has the following impacts on Indonesia's national income such as: (i) Changes in Output of IDR 1.04 trillion; (ii) Increase in GDP by IDR433.33 billion: (iii) Increase in workers' Income by IDR1.99 billion; (iv) Increase in the number of employed is 194 workers; (v) Income from tax minus subsidies on products (PBB from company assets, production tax excluding VAT) of IDR139.25 billion; and (vi) Income from Tax on Production-Subsidies on Production (including VAT and subsidies on energy, fertilizer, electricity) amounting to IDR2.26 billion. Meanwhile, the impact on several sectors also can be seen, among others, in terms of Indonesia's GDP in 2021, namely, the sea transportation sector of IDR 103.23 billion, the government administration sector amounting to IDR 66.95 billion, and the transportation equipment/ship docking sector amounting to IDR 48.77 billion (see Figure 3 below)

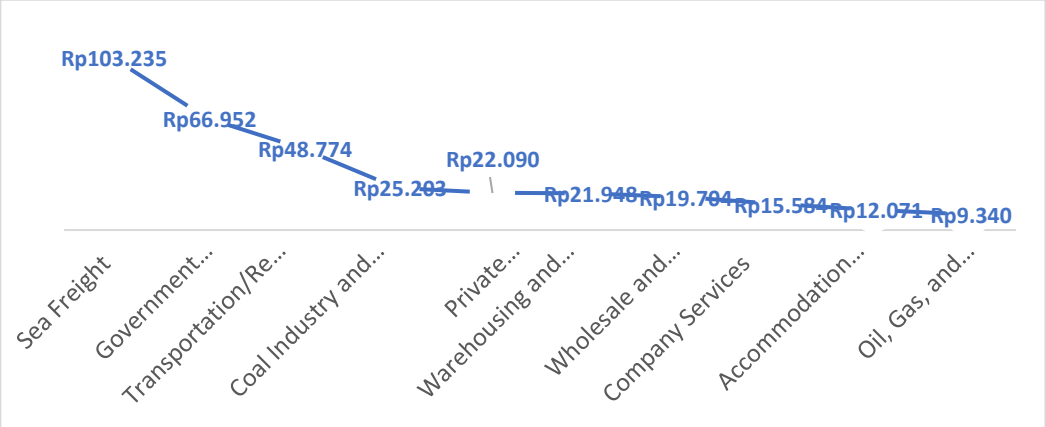

Figure 3. Most Affected Sectors from GDP's Side

Source: data processed

The impact on several sectors in terms of Indonesian workers' Income in 2021, namely the food crop agriculture sector of IDR 1.26 billion, the Wholesale and Retail Trade Sector, Non-Cars and Motorcycles amounted to IDR 0.16 billion, the Chemical, Pharmaceutical and Traditional Medicine Industry Sector of IDR 0.11 billion, and the sea transportation sector of IDR 0.08 billion. The sectors can be seen in the following Figure 4.

Figure 4. Most Affected Sectors from Worker's Income Side
Source: Data processed

For Income from Taxes minus subsidies for Indonesian products in 2021, namely the sea transportation sector of IDR 106.12 billion. The transportation equipment and ship docking sector was IDR 27.46 billion and the Coal and Oil and Gas Refinery Industry Sector was IDR 5.54 billion. The sectors can be seen in the following Figure 5.

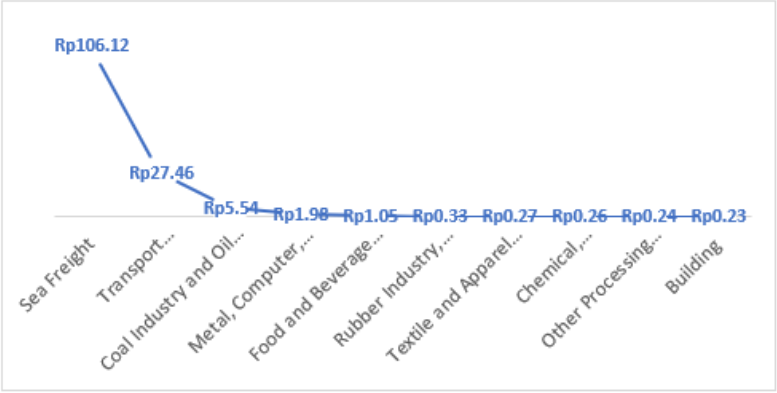

Figure 5. Most affected Sectors from Taxes minus Subsidies for products
Source: Data processed

For Income from Tax on Production minus Subsidy on Indonesian Production in 2021, namely the transportation equipment and ship docking sector of IDR 0.34 billion, Provision of accommodation of IDR 0.33 billion, and sea transportation of Rp.0.30 billion. The sectors can be seen in the following Figure 6.

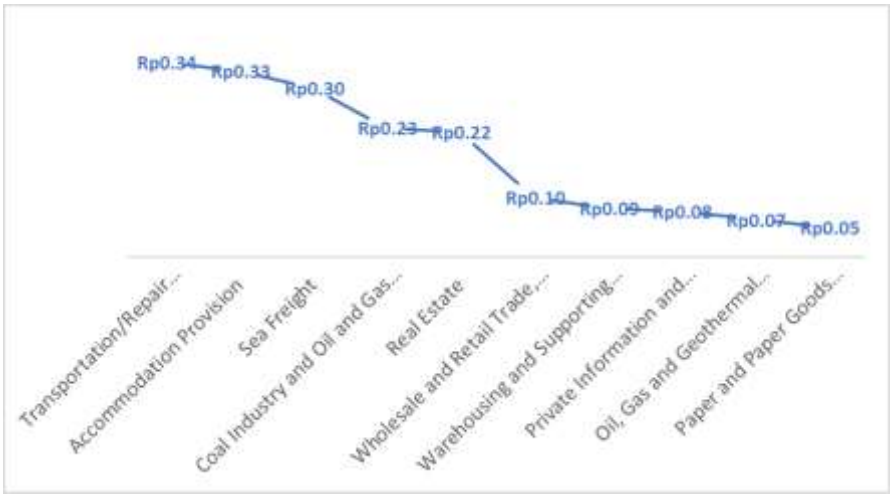

Figure 6. Most affected Sectors from Taxes on Products Minus Subsidies
Source: Data processed

4.3. Stakeholders' Expectations of Government Policy in the Implementation of the ISPS Code at Indonesian Ports

The Government and Stakeholders agreed to implement the ISPS Code for reasons of Safety, Shipping Security, & Protection of the Maritime Environment. Public trust in incidents related to the disruption of Maritime Safety, Shipping Security & Protection of the Maritime Environment is very influential on the arrival of foreign ships. Based on NVivo analysis from FGD, there are 20 nodes that have the largest discussion and contribution in the whole hierarchy according to the implementation of the ISPS Code.

Overall, both implicitly and explicitly, the need for ISPS Code implementation has been mentioned as the most reference by the informant. The other nodes, namely "Safety, Shipping Security, & Maritime Environment Protection" is the second largest references, The third is ISPS Compliance, the fourth is Public Trust, the fifth is Stakeholder Synergy, and followed by the sixth is National Income, and so on. In this case, it indicates that overall, the information obtained from all informants is in accordance with the topic or issue in this study. The 20 nodes from the informant can be seen in the following table 2.

Table 2. Reference Nodes

No.	Nodes	References	%
1	The Need for Implementation of ISPS Code	72	18.85%
2	Safety, Security of Shipping, and Maritime Environmental Protection	66	17.28%
3	ISPS Compliance	31	8.12%
4	Public Trust	37	9.69%
5	Stakeholders Synergy	30	7.85%
6	National Income	25	6.54%
7	The Role of the Port Authority	14	3.66%
8	Human Resource	16	4.19%
9	Business Activity	14	3.66%
10	International Trade	11	2.88%
11	Human Resource Qualification	10	2.62%
12	PNBP	9	2.36%
13	ISPS Code History	9	2.36%
14	Investment	7	1.83%
15	Security Culture Imbalance	6	1.57%
16	Technology Utilization	6	1.57%
17	Public Policy Concept	6	1.57%
18	Amendment of Regulation	6	1.57%
19	Compliance Imbalance	4	1.05%
20	Complicated Bureaucracy	3	0.79%

Source: Data processed by NVivo

As explained earlier, NVivo also analyzes the similarity among the stakeholders' references. There are congruences or similarity nodes in their opinions of each other:

1. Between Regulators and the Operator.

The similarities between the Regulator and the Operator are nodes (Stakeholder Synergy, ISPS Code Implementation, ISPS Code History, Investment, Public Trust, Port Authority's Role, PNBP, National Income, Role of the Transportation Sector, Utilization of Labor Absorption Technology, and ISPS Compliance) those discussed by both parties, either explicitly or implicitly. On the similarity of the Stakeholder Synergy node, things such as: Organizational Structure, ISPS Code Implementation, ISPS Code History, Law 17 of 2008, Investment, Shipping Safety & Maritime Environment Protection, HR Development, Public

Trust, International Trade, HR Qualification, The role of Port Authority, PNBP, National Revenue, Technology Utilization, and ISPS Compliance were alluded by both parties. This similarity finding can be considered by researchers so that they can conduct a more in-depth analysis of these similarities.

2. Between Operator and Academics

Furthermore, the analysis results between Operator and Academics show the similarity in ISPS Code Implementation and HR Qualifications that are alluded to by both parties (explicitly and implicitly).

3. Between Regulator and Academics

There are some issues that can become obstacles as well as drivers (between regulator and academics) that will have an impact on aspects of public trust: (i). HR Qualification. This refers to the need for HR development in the field of ISPS Code auditors. If there is a shortage of human resources, it will affect public confidence in the implementation of the ISPS Code that is already appropriate; (ii). Policy Overlap; (iii). Compliance Balance. This refers to the unequal distribution of ports that comply with the implementation of the ISPS Code which causes international trade activities to be hampered due to the perception of foreign ships regarding security; (iv). Security Culture Balance. This aspect refers to the existence of an unequal culture, especially in the community, regarding safety in shipping which will affect shipping activities; (v). Complicated Bureaucracy; (vi). Understanding Socialization. Socialization regarding the understanding of safety to the public is one way that can be taken to deal with Security Culture Balance; (vii). ISPS Compliance.

5. Conclusions

Based on the results of the study, it can be concluded that:

Emerge an increasing impact of Government Policies in the Implementation of the ISPS Code at Indonesian Ports on National Income in 2021, namely an increase in GDP, the income of workers, income from taxes minus subsidies on products, and income from Tax on production minus Subsidy. This implementation also encourages 3 other sectors in increasing National Income including in terms of Indonesia's GDP in 2021, namely the sea transportation sector, the Government Administration sector, and the transportation equipment sector/ docking. Meanwhile from the side of Indonesian workers' income in 2021, there are 4 largest sectors namely the food crop agriculture sector, Wholesale and Retail Trade Sector, Non-Cars and Motorcycles and the Chemical, Pharmaceutical, and Traditional Medicine Industry Sector as well as the sea transportation sector: and

(ii) Related to expectations among stakeholders on the Policy; a) Needs to pay attention to the implementation of the ISPS Code in the field because it is related to safety, shipping security, and maritime environmental protection, b) Port Authority and Ships need to pay attention to ISPS Compliance by synergizing between stakeholders to gain public trust, and c) The application of the ISPS Code will provide public confidence, which has an impact on investment, international trade, PNBP, and national income.

Recommendation

The paper recommended that: (i) Measurement of the benefits of implementing the ISPS Code by Ministries or Institutions is carried out thoroughly by considering the multiplier impact through other sectors; (ii) The government needs to resolve the obstacles to implementing the ISPS Code in the field including implementation compliance for Ports that have to comply through a) Enforcement ISPS Code rules in the field with full commitment from all levels stakeholders, b) Syahbandar's active role in the field by building synergy, c) mitigating the risk of failure to enforce ISPS Code rules, d) solving HR quality problems through education and training as well as socialization and quantity problems through division of tasks based on high-risk base, and e) simplification of complicated bureaucracy by re-evaluating existing SOPs, as well as the use of the latest technology such as surveillance cameras and digital information systems.

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