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## Merger of Port Companies, Impact on Concentration/ Deconcentration and Strategy Towards Post Covid-19 Pandemic: Cases of Indonesia and Japan

### **Abstract**

Prior to the covid-19 pandemic, there had been a trend of port mergers and cooperations with ports challenged by increasing ship size, the establishment of ship alliances and other factors. A number of Japanese ports experienced a merger process in 2016 and 2014, for example, Keihin Port and Hanshin Port. More recently, during the pandemic, the merger of port companies took place in Indonesia, where four of the country's state-owned port operators were merged into one company, Pelindo Port. Various motives lie behind the merger process and port mergers is an emerging topic in the maritime transport literature. In the business, organisation and management literature, successful merger and acquisitions (M&A) are seen from the aspect of value creation. However, in the maritime transport or maritime economics literature, port cooperation or mergers and its relation to port concentration / deconcentration have generally not been discussed. It is not clear whether more cooperation/merger of ports or terminals leads to greater concentration in cargo volume or throughput and economic development. This paper thus explores the merger process in port companies, with a focus on ports of

archipelagic countries, using the cases of Indonesia and Japan. Furthermore, this paper examines how the covid-19 pandemic has influenced post-merger development and the establishment of strategies to confront post-pandemic challenges.

**Keywords:** *port merger, cooperation, concentration, Japan, Indonesia, covid-19*

### 1. Introduction

Cooperation or mergers in ports have been occurring for some time. Prior to the Covid-19 pandemic, at the end of 2019, global containerised trade has been growing at slower rate as a consequence of political factors such as China-US trade war and technological factors such as 3D printing. Containerised trade was measured at 6% growth in 2017 which reduced to only 2.6% in 2018 (UNCTAD 2019). Rising uncertainty in the maritime transport business makes planning much more difficult for ports. Growing vessel size also continues to challenge ports. Ever larger ships select which ports best suit their routing schedules to make operations more efficient and cost effective. The larger vessel sizes and their use by shipping alliances increases pressure on ports because they can make port calls at a lower frequency with higher volumes. Eventually, this creates cargo peaking which impacts on port operations. Port terminal operators or Port Authorities are pressured to collaborate and/or merge their operations to enable larger concentrations of cargo to be handled, instead of having increased port competition.

Evidence of terminal operators collaborating or initiating consolidation have been seen, especially in 2018 and 2019, where terminal operators not only collaborated with other terminal operators but also collaborating with liner companies (UNCTAD 2019). Motivations for port or terminal cooperation have been discussed in an emerging literature, see for example Notteboom et al. (2018).

More recent mergers of port companies have taken place in Indonesia, where four of the country's state-owned port operators have been merged into one, becoming PT Pelabuhan Indonesia (Pelindo). The whole merger preparation, process and finalisation of the legal merger occurred during the Covid-19 pandemic in October 2021. Meanwhile, in another archipelago in East Asia, Japan also experienced two mergers of its large ports. The Japanese port integration created Keihin Port which consists of the Port of Yokohama and the Port of Kawasaki in the Tokyo Bay area, and Hanshin Port which consists of the Port of Kobe and the Port of Osaka in the Osaka Bay area. These mergers occurred in 2016 and 2014 respectively.

In the business, organisation and management literature, merger, and acquisitions (M&A) have been widely discussed. Success or failure of M&A varies and can be influenced by the type of company. Studies show that approximately 60-80% of all M&As fail to create value (Marks and Mirvis 2001; Dyer et al. 2004). Unrelated companies' M&A create greater value than related ones because it pools previously separated sets of intellectual capital with divergent configurations (Brage and

Eckerstöm 2010). Studies show that value creation effects were not greater for related firms (Lubatkin 1987 cited in Brage and Eckerstöm 2010). A variety of research finds that similarities between the merging firms are more likely to create value than if they are unrelated. However, a variety of research also finds that greater value creation comes from a complementary relationship between the merging firms.

On the other hand, in the maritime transport or maritime economics literature, port cooperation or mergers and its relation to port concentration / deconcentration has not been discussed. It is not clear whether more cooperation/merger of ports or terminals leads to greater concentration in cargo volumes or throughputs and what are the effects are on economic development. Additionally, pressure from the Covid-19 pandemic which started in early 2020 has forced maritime transportation in archipelagic nations to become more efficient both operationally and in terms of time schedules in order to deliver cargo to all parts of the nation.

This paper considers merger in port companies, in order to understand the motives, identify the stakeholders involved and discuss whether company mergers or cooperation could manage the dynamics of concentration / deconcentration. It also aims to analyse the impact of mergers on port governance and whether it can solve the issues faced by Indonesian and Japanese ports. These two countries are chosen are because they are archipelagic countries which heavily rely on maritime transport for their trade. They also have, after China, the most small ports served by sub-1,000 TEU vessels (Monios 2017). With both being archipelagic countries, the dynamics of its port concentration and deconcentration are analysed in this context. Furthermore, this paper examines how the Covid-19 pandemic influenced the post-merger development and the establishment of strategy to confront post-pandemic challenges.

This paper is structured as follows. The background is described in this introduction section, followed by review of the literature on port mergers, cooperation, and concentration, managing port concentration / deconcentration, small peripheral ports and peripherality cycle, also the impact of covid-19 pandemic on ports. It is then followed by a consideration of methods used, description of the cases of Indonesia and Japan, discussion, and conclusion.

## **2. Literature Review**

### **2.1. Port Mergers and Cooperation**

Port cooperation is a growing trend in practice and at the same time is becoming an emerging topic in the maritime economic literature (Notteboom et al. 2018). Fiedler and Flitsch (2016) classify port cooperation into five categories, i.e. Memorandum of Understanding (MoU), coopetition of ports in proximity, port integration/joint venture, cooperation between seaports and inland ports and hub port cooperation. MoU are considered to be loose cooperation arrangements usually conducted to facilitate and intensify trade links, to increase port throughput, or have information exchange. Coopetition are cooperation between competing ports in

proximity, exist where the parties 'collaborate to compete' as a win-win strategy (Song 2002; Fiedler and Flitsch 2016). Port integration could be in the form of a joint venture, ports represented by one port authority, or even full integration as merger, where revenues generated are jointly distributed according to underlying legal arrangement made by the parties (Fiedler and Flitsch 2016; Notteboom et al. 2018). Cooperation between seaports and inland ports is conducted with the aim of expanding the hinterland region between the port and its customers such as industrial or trading companies (Fiedler and Flitsch 2016). Meanwhile, hub port cooperation is undertaken between liner shipping companies with terminal operators, for example having dedicated terminals, or between hub / transshipment and feeder ports to ensure these ports remain in the long-term shipping networks (Fiedler and Flitsch 2016).

There are various motivations behind cooperation between ports that are happening around the world. MoU's can be made between ports located far from each other, however, ports in proximity tend to have cooperation to reduce competition. Notteboom et al. (2018) summarised the main motivation behind why ports cooperate from various case studies as follows:

- Political or government initiatives.
- Pressure by the market because of the emergence of global terminal networks or large vertically integrated carriers.
- Financial and efficiency reasons.

First, political or government initiatives behind port merger. The merger of Port Authorities (PAs) has occurred in Italian ports. Ferretti et al. (2018) explained that after legislative decree no. 169 year 2016, there are 15 PAs replacing the previous 24 PAs, where these new PAs are headquartered in the ports of strategic interest at the European level, chosen by the Italian Ministry for Infrastructure and Transport as a top-down planning policy and without voluntary participation of the PAs (Ferretti et al. 2018). Similar to the Italian PAs, the Japanese port collaboration becoming Keihin Port and Hanshin Port, was initially a programme by the Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to designate 6 large Japanese hub ports facing the Pacific Ocean as 'Super Core Port' in 2014. The motivation of MLIT is to have these Super Core Port reduce port related costs by 30%, to match the levels of Busan and Kaohsiung and shorten lead times for container handling (Hoshino 2010; Shinohara and Saika 2018). Furthermore, the Japanese government makes efforts to promote links between the strategic ports and peripheral ports by increasing feeder services (Shinohara and Saika 2018). It can be seen that government initiatives for these chosen ports are meant to strengthen their large hub ports to win competition against ports from neighbouring countries in the region.

Second, pressure by the market could be the motive behind port mergers or cooperations. The emergence of global terminal networks or large vertically integrated carriers pressures adjacent ports with common hinterlands to establish

mutually beneficial cooperation strategies such as ports in the North Adriatic (Stamatović et al. 2018). Facility sharing, domestic port cooperation as well as international port cooperation occurs in Chinese ports located at regions along the Belt and Road Initiative (Huo et al. 2018; Ma et al. 2019). This also appears in the Chilean ports of San Antonio and Valparaíso, which serves the metropolitan area of Santiago, having a cooperation strategy of capacity sharing aiming to attract ships of up to 18,000 TEUs (Trujillo et al. 2018).

Third, financial benefits and operational efficiency might be another reason why ports merge or cooperate. As an example the Port of Seattle and the Port of Tacoma established an Alliance which is a 10-year agreement, in which they have established joint decision making and joint development (Yoshitani 2018). Economic efficiency and similar port characteristics drive port cooperation as in the case of Port of Houston and Port of Galveston (Galvao et al. 2018).

### **2.2. Success and Failures of Port Mergers or Port Cooperation**

Port cooperation does not always end in a merger. Furthermore, mergers do not always end successfully. According to Epstein (2005), there are six determinants of merger success. These are strategic vision and fit, deal structure, having a complete due diligence, premerger planning with good communication, post-merger integration which achieves early wins such as cost reduction and revenue growth synergies, and other external factors. More specific research on Port Authority mergers by Martino et al. (2020) describes the success of merger by its value creation in the Italian ports, La Spezia and Trieste. Value creation was analysed by comparing economic and financial performance data in 2011 and 2015 such as containers handled, EBITDA, ROI, TEUs, amount of vessels, market share, rail share, and employment data (Martino et al. 2020). Furthermore, their findings showed that there is a positive relationship between collaborative practice and performance in terms of "customer satisfaction" and "quality" (Martino et al. 2020).

There are challenges for a successful merger, and reasons for rejecting a merger could also occur. An example of a failed merger was between the Ports of Los Angeles and Long Beach (Knatz 2018). Two main reasons why their merger proposals failed are because the proposals came from outside the port administration and were not supported by an objective analysis of the benefits to accrue to both port cities from any merger (Knatz 2018). These two ports located in the San Pedro Bay instead expanded cooperative efforts to address common issues without having to merge. Another example of a failed merger are the Port of Houston and Port of Galveston, which ended up with both ports behaving more strategically, enhancing their own performance and establishing differentiation strategies (Galvao et al. 2018).

Furthermore, merger or cooperation of ports with various other companies are also trending, such as alliances between terminal operators and liner companies (UNCTAD 2019). Global port operators expand their cooperation with companies beyond countries or regional boundaries, and more private partnerships which leads to more complicated ownership of the port (Olivier 2005; Huo et al. 2018). Port

merger and cooperation therefore appears to be the way forward. Hence, more research considering the performance of port cooperation or mergers, and the value creation as an output of mergers is needed.

### **2.3. Managing Port Concentration / Deconcentration to Improve Conditions of Peripheral Ports**

It is unclear whether the success of port mergers can be seen from increasing throughput/cargo volume where the merged ports operate. Whether growth in throughput is a result of the merger/cooperation or simply because the market is growing. Furthermore, does port merger or cooperation enable the port, port authority or government to manage port concentration/deconcentration? Concentration and deconcentration of cargo traffic in ports has been abundantly studied in port economics and maritime transport studies. Initially, the dynamics of smaller ports taking away traffic from large hub ports in a particular region was brought up by Hayuth (1981) as the 'peripheral port challenge', and is a form of deconcentration. There are also studies on deconcentration looking at the rise of secondary ports as transshipment hubs in between the large container ports and small feeder ports (Wang and Ng 2011; Wilmsmeier and Monios 2013; Wilmsmeier et al. 2014). In archipelagic countries, managing the dynamics of concentration / deconcentration matters because their trade and economy rely on sea transport. Port governance which could manage concentration / deconcentration of cargo could also determine the fate of its large hub and small peripheral ports.

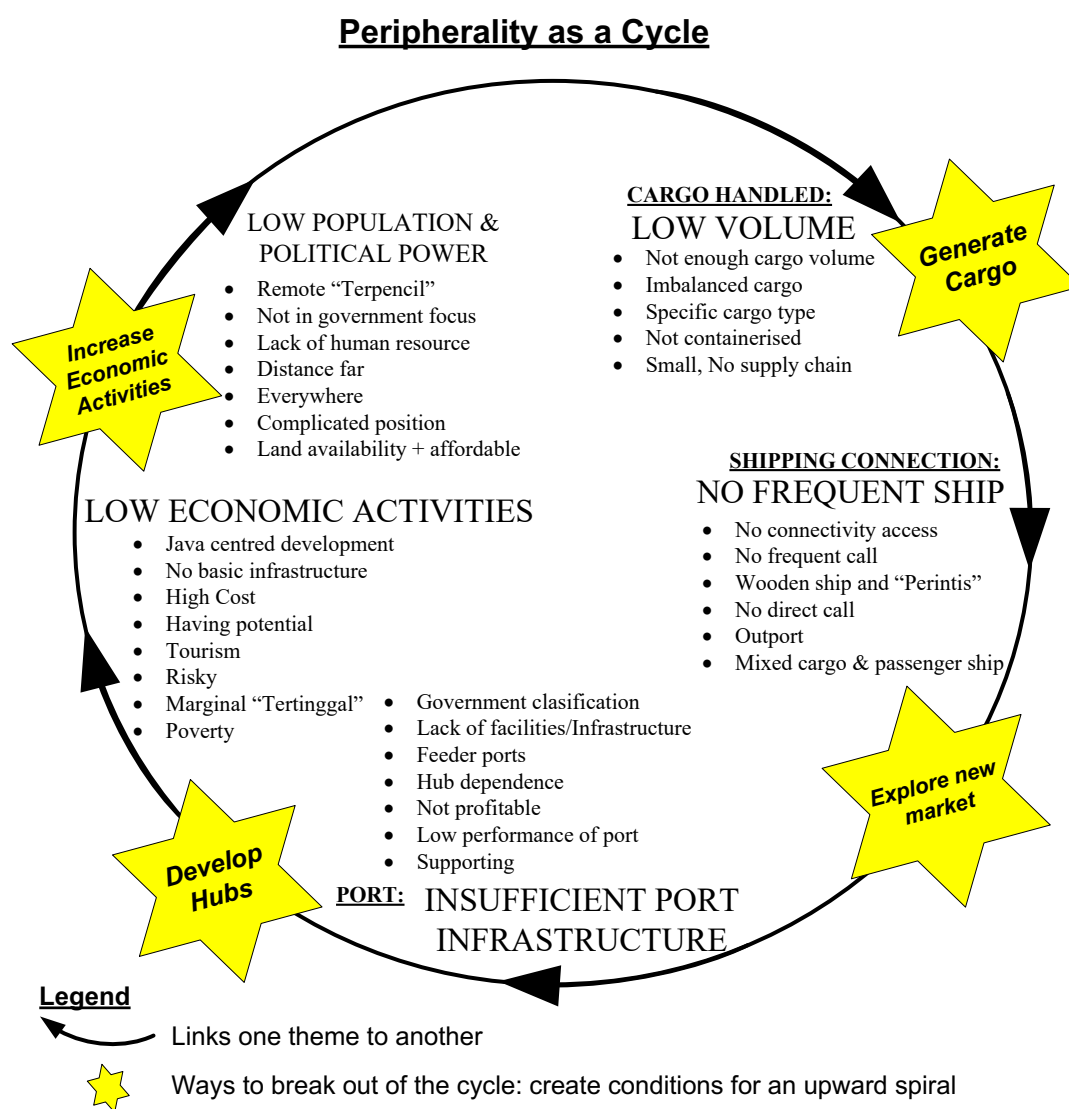
Wiradanti et al. (2018) conducted an extensive review on factors causing port concentration and port deconcentration. Updating the review by Ducruet et al. (2009), Wiradanti et al. (2018) describes how these factors emerge in certain periods across three time periods, between 1970-1990, 1990-2008 and post-2008. However, port merger or cooperation has not been discussed as a factor that causes port concentration or deconcentration.

In cases where there are many small peripheral ports, managing port concentration/deconcentration is critical. The governments of archipelagic countries need to give extra care and attention to small peripheral ports to fulfil the needs of their citizens living there and to improve economic disparity. In the literature, peripheral ports are identified as having characteristics and issues as follows: handle cargoes below 300 million tonnes, predominantly not containerised, driven by domestic cargo and less connected to global level hub ports (Feng and Notteboom 2013). Some also mention them as regional ports, which are in less central geographical locations at country level, however, still remaining important for regional development (Debie et al. 2007; McLaughlin and Fearon 2013; Sakalayan 2014). They are unable to reach economies of scale, with inefficient shipping operations, having high freight cost, having issues of imbalanced cargo and empty containers repositioning (Monios and Wang 2014; UNCTAD 2014). They need physical infrastructure development and institutional government initiatives, hence, mentioned as 'double peripherality' (Monios and Wilmsmeier 2012). On the other hand, they are also overshadowed by over-capacity and over-investment, having competition with other hub ports in proximity surrounding the island (Dunbar-Nobes

1984; Wilmsmeier et al. 2010; Wu 2011).

Furthermore, a more extreme form of peripheral ports are ports which represent a sovereign island country; these are 'Small Islands Developing States' (SIDS). UNCTAD (2014) explained the SIDS terminology as countries having small trade volumes, imbalanced cargo, and small populations, challenged geographically, economically and environmentally. SIDS are vulnerable to natural disasters such as extreme weather, high seismic activity and prone to climate change. There are 4 main regions of SIDS in the world, which are: the Caribbean, the Indian Ocean, West Africa and the Pacific.

Improving conditions of peripheral ports, alongside managing port concentration/deconcentration, could be done by looking at peripherality as a 'cycle' (Wiradanti 2019), described in Figure 1.



**Figure 1 - Peripherality Cycle**  
Source: Wiradanti (2019)

Wiradanti (2019) conducted qualitative research using in-depth interviews to explore what 'peripherality' is in Indonesia's maritime transport sector. Interviews were conducted with around 60 respondents, from various background including port operators, shipping lines, cargo owners, logistic companies, central and local government officers, and financial institutions. This cycle starts with having low cargo volume, low shipping connections, insufficient port infrastructure, low economic activities, low population and political power, which feeds back in to low cargo volumes. To break out of the cycle, there are conditions that need to be established, with the analogy of breaking out the peripherality cycle in an upward spiral. These conditions are by generating cargo volume, exploring new market, developing hubs and increasing economic activities (Wiradanti 2019).

### **2.4. Impact of Covid-19 Pandemic on Ports**

The Covid-19 pandemic which began with the first outbreak at the end of 2019 has impacted almost every sector of transportation. Notteboom and Pallis (2021) conducted a survey on the impact of Covid-19 to port authorities and port operators around the world during April 2020 to April 2021, which was published by the International Association of Ports and Harbors and World Ports Sustainability Program (IAPH-WPSP). Results of the survey are summarised in a dashboard, which can be detailed by different types of impacts and by location. One of the impacts are declining percentage of vessel calls at a port compared to normal conditions. For container vessels, there was a decline of around 41% in early April 2020 and started to improve into 28% in early September 2020. On other cargo vessels, there was a decline around 41% in early April 2020 and started to improve into 33% in early June 2020. Meanwhile on passenger vessels, there is a significant decline of around 77% in early April 2020 and started to improve into 53% in mid-April 2021. Overall, the pandemic led to cancelled sailings and declining port throughput in the first half of the analysis period, which then fed into issues of container availability, tight vessel capacity and terminal congestion in the second half of the analysis period (Notteboom and Pallis 2021).

Another report describing the impact of covid-19 in Asia is published by JETRO (2020), which specifically looks at Japanese manufacturing industry in China, South Korea and ASEAN. There are 7 main impacts summarised as follows (JETRO 2020): "(1) *reduced orders due to economic contraction causing a decrease in production by final goods manufacturers, with the stoppage of production having an impact on suppliers;* (2) *production stoppage due to movement & travel restrictions and factory closures as imposed by governments and local authorities;* (3) *production efficiency declines due to infection control measures at factories;* (4) *employees being unable to commute due to the suspension of public transportation;* (5) *suspension of operations by suppliers handling raw materials and parts;* (6) *transport cost increases due to flight reductions, difficulties in delivery arrangements, and difficulties in importing & exporting due to flight suspension;* and (7) *increase in length of time spent on customs clearance and the movement of goods due to the minimization of numbers of customs officers.*" JETRO (2020) also proposed policy recommendations to tackle for the long-term impact of covid-19,



which includes digitisation of trade documents and administrative documents, digitalisation of customs procedures, advancement of production and logistics using digital technology and realisation of supply chain resilience.

It can thus be seen how the pandemic brought disruption to production, trade, logistics and transport. For ports in the early stage of cooperation or merger, the pandemic could be detrimental if the collaborating ports have not established standardised operations, strong digitalisation and resilience. This will be elaborated on in greater detail in sections 4 and 5 which discuss the Indonesian and Japanese port cases.

### **3. Methods**

This paper uses case studies as its research strategy because the research question seeks to explore the 'why' and 'how' of port company mergers (Yin 2009). Furthermore, it does not require control of behavioural events and it focuses on contemporary events (Yin 2009). The port merger cases in Indonesia and Japan are chosen because the two countries have similar geographic characteristics. Both countries are archipelagos and have long coastlines, hence maritime transport is essential in their trade and economic development. Indonesia's territorial area including its waters and Exclusive Economic Zone is 7.9 million km<sup>2</sup>, of which approximately 60% is the sea (Hays 2015). Meanwhile, Japan's territorial area is 378,000 km<sup>2</sup>, which is approximately slightly larger than the United Kingdom. Indonesia has 54,716 km of coast, while Japan's coast is 32,000 km (Hays 2019).

Both countries are in Asia, a vast economically growing continent, having a dependency on intra-Asian trade, which has also been impacted by the Covid-19 pandemic. They are also challenged by this archipelagic setting, since having many islands leads to having many small ports to be managed. Not only large cities or large ports, small and peripheral cities or ports should also be considered since the whole part of the nation needs to be served equally and evenly. Japan's small-peripheral ports are mostly located on the Japan Sea coasts. Meanwhile, Indonesia's small-peripheral ports are those located on the eastern side of the country, since the nation's economy are centralised in Java Island where the capital city of Jakarta is located. Hub and spoke operations are essential in their maritime transport network. Hence, these characteristics are beneficial to look at the dynamics of its port concentration and deconcentration.

Another reason for using these two countries as a multiple case study is because of the difference in economic development. Japan is developed country, having a fully diversified economy and technologically advanced. Japan's GDP is ranked as the 3rd, with a GDP of \$5,057,758 Million in 2020 (World Bank 2022). On the other hand, Indonesia is a developing country. Indonesia's GDP is ranked as the 16th, with a GDP of \$1,058,423 Million in 2020 (World Bank 2022). Another unique difference between Indonesia and Japan is that Japan's main 4 islands are connected by tunnels or bridges (except Hokkaido). Meanwhile, Indonesian main large islands are not connected by bridges.

The multiple case study enables the researcher to see the contrast and understand the different issues and influence on their maritime transport. Qualitative approach is carried out with interviews and secondary data collection. Interviews were conducted with Indonesian and Japanese academicians and practitioners. Meanwhile, secondary data were collected from company publications, government publications, news and reports.

#### 4. Case of Indonesian Ports

Indonesian port integration is the merger of four-state-owned companies, which are Pelabuhan Indonesia I (Pelindo I), Pelabuhan Indonesia II (Pelindo II), Pelabuhan Indonesia III (Pelindo III) and Pelabuhan Indonesia IV (Pelindo IV). The word 'Pelabuhan' is the Indonesian language for port.

##### 4.1. Four companies into one Pelindo

Pelindo manages 116 commercial ports in 32 provinces (Pelindo 2021a). Prior to the merger, the country's territory was divided into four areas of operation for each of these companies. Hence, after the merger, Pelindo becomes the only state-owned enterprise in Indonesia for port services and its operations is not restricted geographically. The map of Indonesia and the port's area of operations is described in Figure 2. The merged Pelindo now contains the previous 4 companies' territories as "regions".

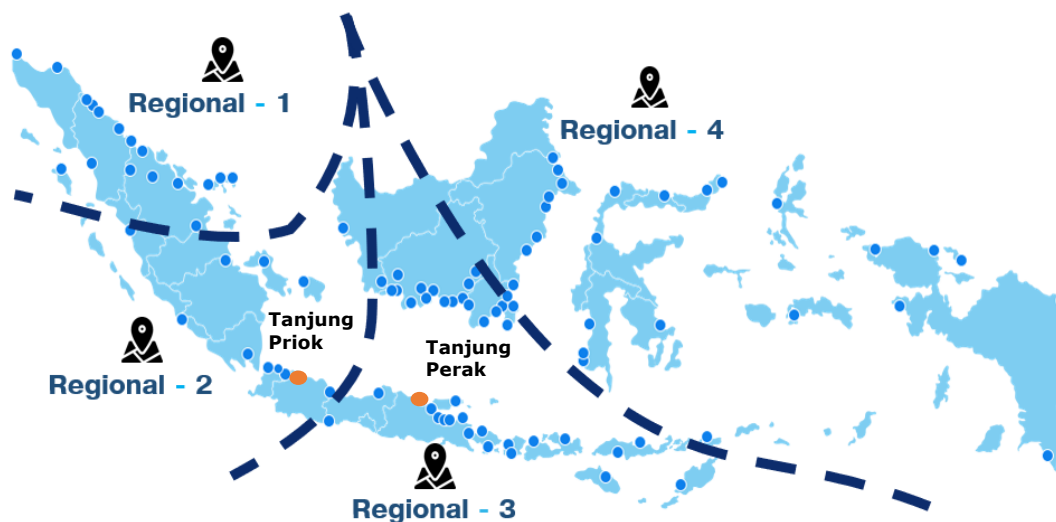


Figure 2 - The Merged Pelindo

Source: Pelindo (2021a)

The motivation to merge came from two point of views. Firstly, the Ministry of the State-Owned Enterprises (SOE) has a program to transform SOEs, such as by having development, consolidation / mergers, transfer management and liquidation (Utami 2020). The merger of SOEs in port services is one of their agendas. Secondly, it arises bottom up from the port company itself. Since the emergence of the Constitution number 17-year 2008 on Shipping, the private sector can build and operate its own

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ports. Despite each of the four company's own agendas, growing pressure to compete with newly developed private ports finally led to this merger. Discourse for merger developed from around 2009, and then became a serious consideration in 2019. The merger was proposed to the government and processed until Pelindo became a legal entity on October 1<sup>st</sup> 2021 (Pelindo 2021a).

The new Pelindo, post-merger, has gone through organisational restructuring where four sub-holdings were established under the headquarters to manage all their subsidiaries combined according to its business cluster (Pelindo 2021a). The four sub-holdings are as follows: container business; non-containerised business; logistics and hinterland development business; and lastly marine, equipment and port services business. Through these sub-holdings, it is expected business development to become more focused, have better management of human resources, improve efficiency and provide the best customer services (Pelindo 2021a).

The benefits and objective of the merger were described in publications during the merger process (Antaranews 2021; Pelindo 2021b). Merger could improve coordination between the port company and government, increase revenue and dividends for the country, increase foreign direct investment, improve operational efficiency and capital expenditure, and bring stronger financial resources. It is expected to reduce logistics costs and bring value creation through its new established business clusters. It also makes Pelindo the 8<sup>th</sup> largest container terminal operator in the world (Pelindo 2021b). The merged Pelindo's vision is *to be a world-class integrated leader in the maritime ecosystem*. Meanwhile, its mission is *to realize a national maritime ecosystem network through the increment of network connectivity and service integration, to support Indonesian economic growth* (Pelindo 2021a).

### **4.2. Impact of Merger on Indonesia's Port Governance**

Prior to the merger, each Pelindo was owned 100% by the Ministry of State-Owned Enterprise as a representative of the Republic of Indonesia Government. Ownership remains the same after the merger process. Historically, after Indonesia's independence in 1945, all port infrastructure previously owned by the colonial government was then owned by Indonesian government. They were formalised in 1960 by the government into 8 state owned port companies, then in 1985 it was transformed into 4 state owned port companies (IPC 2012). Now that the 4 are merged into one, hence, the operating area of the company covers the whole nation.

Indonesia's containerisation initially started in its two largest ports, which are Tanjung Priok (in the capital city of Jakarta) and Tanjung Perak (in the city of Surabaya). Both of these ports are located on Java Island. Indonesia's economy and population is heavily concentrated on Java Island because of the long history since colonisation until now. Tanjung Priok port is ranked 22<sup>nd</sup> with a throughput of 7,600,000 TEU in 2019, while Tanjung Perak port is ranked 45<sup>th</sup> with a throughput of 3,900,000 TEU in 2019 (Lloyd's List 2020). These two ports are main hub ports for the country, especially Tanjung Perak is now the hub for domestic cargo transportation to the eastern part of the country.

Various efforts to create more economic deconcentration and generate cargo outside

Java Island and in the eastern part of the country have been attempted in every government period. Nowadays, the government has a program to support peripheral ports by providing continuous shipping services, which serves domestic trade like a pendulum, transporting back and forth between western and eastern regions of Indonesia. This program is called the "*tol laut*" meaning the highway at sea. Pelindo also supports this program.

Besides Pelindo's commercial ports, Indonesia also has many small-peripheral ports which are non-commercialised and managed by the Ministry of Transport. There are a total of 636 ports in the Indonesian Ministry of Transport's database (Ministry of Transportation Republic of Indonesia 2009) with a four level of hierarchy. The top of the hierarchy are the 'Main' ports with a total of 28 ports, followed by the 'Feeder' ports with a total of 164, 'Regional Feeder' with a total of 166, and 'Local Feeder' with a total of 278 ports as the smallest in size (Ministry of Transportation Republic of Indonesia 2009). Those peripheral ports are mainly located in the eastern part of Indonesia. Post-merger, strategic initiatives were formulated by Pelindo management to achieve the goals of Pelindo Merger. One of these initiatives is to transform a number of non-commercialised ports to become commercialised and take over dedicated terminals owned by other state-owned enterprise/private sector. The merged Pelindo has better financial strength compared to the pre-merger separated companies. The merger also enables them to have centralised planning and development, which could lead to optimal capital expenditure. Hence, it enables Pelindo to conduct development of facilities and operational improvements in peripheral ports. It could be seen that a concentration of ownership in Pelindo supports the efforts to correct regional disparities in the country.

### **4.3. Strategy Towards Pandemic and Post-pandemic**

The covid-19 pandemic made an impact on Pelindo ports starting from April 2020, which meant that volumes decreased around 10% for containers, 16.5% for non-containers and 14.7% for ships (Muhammad 2021). This was mainly caused by the decrease in market activities and mobility restrictions in some industries. Domestic container cargoes have a resilience better than international cargoes. Moreover, Pelindo's performance has shown a recovery in the second quarter of 2021 with container traffic growing at 11% (Muhammad 2021). Pelindo implemented the Covid-19 protocol diligently which minimised the impact of pandemic on its operations.

Since the Pelindo merger process happened during the pandemic and strategic initiatives were formulated to achieve the goals of Pelindo Merger, hence, these initiatives become a strategy for Pelindo ports post-pandemic as well. Besides the initiative to transform non-commercialised ports as explained in the previous section, other key initiatives are as follows: operational standardisation across Pelindo ports, digitalisation, attracting foreign investments for port development through the Indonesia's sovereign wealth fund, carrying out efforts to improve environmental sustainability in the port, integrated key account management and integrated procurement, infrastructure and equipment development including to support the development of the government's tourism hub.

One main effort during Pelindo merger in the area of technology is to deliver standardized solutions across the new entities. Those solutions include Enterprise Resource Planning

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(ERP), Customer Portal, Corporate System, Network and Infrastructure. Firstly on developing the ERP, areas that can be included are the system of financial accounting and reporting, human resources, and material procurement. The first objective is to provide the required system for the new entities. The consolidation of financial reporting and accounting largely must be changed, with the first step is to adjust the master foundation of the Chart of Account. Ideally, this adjustment became an opportunity to revisit the gap between existing accounts with the new level of required analysis that include cost and profitability analysis. However, due to limited timeline and resources, the pragmatic approach is selected by selecting the most matured implementation to be the basis of new entities implementation. This approach promised faster and tested delivery by relying that the most matured implementation among the merged companies had undergone several rounds of development, testing, and launches to arrive at the current version. Other parts in the ERP to be integrated are the Human Resource System and Procurement System.

Secondly, improving Customer Portal is critical for Pelindo, which connects the company with external parties. Besides to maintain communication to customers during merger, it also supports the digital operations that include ordering, trace and tracking, invoicing, payment, and customer service. The customer portal as a communication channel was utilized to maintain the information to customers related to new branding, new name, new operation that are impacted by merger. The challenges include different existing customer portals that must be integrated in the customer master data level, access, and branding.

Thirdly, improving Corporate System is needed to have a smooth communication within the internal parties of the company. Corporate systems like emails, employee portals are sometimes forgettable, but it is proven to be a crucial part of merger effort. Business intelligence is also developed to build Pelindo's competitive advantage in the global business environment. Lastly, improving Network and infrastructure like server, storage, data center, IT operation and support, also became targets of standardization and integration. The network and infrastructure provided the required foundation to accelerate the delivery of standardization solution on top of it. The utilization of cloud infrastructure eased the transition by providing better scaling out options of IT infrastructure and network. Strategic consolidation of IT solutions through a newly developed IT master plan should be able to provide strategic vision and mission and guideline for future system implementation.

### **5. Case of Japanese Ports**

Japanese port integration created Keihin Port which consists of the Ports of Yokohama and Kawasaki, and Hanshin Port which consists of the Ports of Kobe and Osaka.

#### **5.1. Keihin and Hanshin Port**

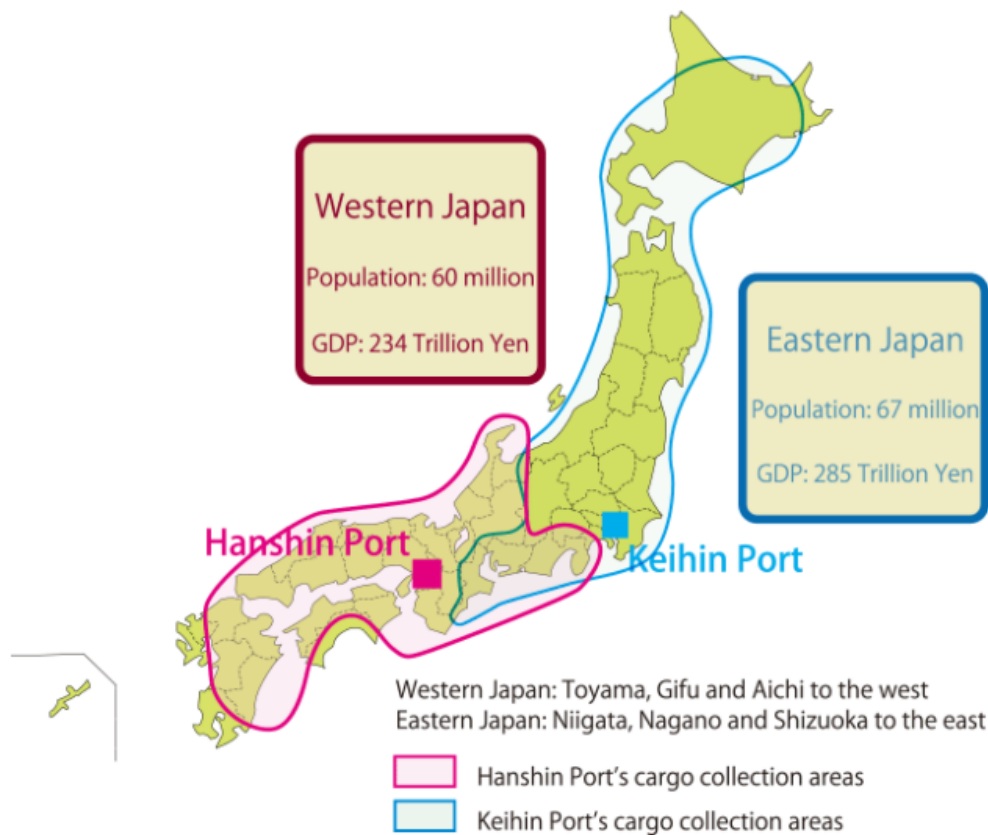
Yamamoto (2019) described that a system was established in which these ports were operated by an all-Japan conglomerate made up of the Japan National Government, Port Management Bodies (PMB) which are the local government, and private companies. Kobe-Osaka International Port Corporation was established on October 1<sup>st</sup> 2014. The

investment ratio consists of the National Government (34%), Kobe City (31%), Osaka City (31%) and Private Company (4%) (Yamamoto 2019). Meanwhile, the Yokohama Kawasaki International Port Corporation was established on January 12<sup>th</sup> 2016. The investment ratio consists of the National Government (50%), Yokohama City (45%), Kawasaki City (4.5%) and Private Company (0.5%) (Yamamoto 2019).

The initial form of Keihin International Port Corporation also includes the Port of Tokyo, which is located near Yokohama-Kawasaki. However, Tokyo Port decided to not join the Yokohama-Kawasaki International Port Corporation due to political reason (Shinohara and Saika 2018). For a similar reason, Sakai-Senboku Port also decided to not join the Hanshin International Port Corporation (Shinohara and Saika 2018).

Apart from the above movements, port managements (Port & Harbour Bureaus) of Port of Osaka and Osaka Prefectural Port were merged into one organisation with one Director General in October 2020. This was made possible thanks to a political co-allision between the Mayor of Osaka City and the Governor of Osaka Prefecture. The staff of both organisations sit together and cooperate with each other in port planning under the name Osaka Port & Harbour Bureaus. However, Kobe-Osaka International Port corporation does not take care of the operation of Osaka Prefectural Port (Sakai-Senboku) yet, as the company is only in charge of container berths of the two ports.

The map of Japan and the port's hinterland area is shown in Figure 3.



**Figure 3 -Keihin and Hanshin Port**

Source: City of Osaka (2020)

Prior to the merger, each of the Japanese ports mentioned above were managed by the local government as PMBs. Yokohama was managed by the City of Yokohama, Kawasaki was managed by the City of Kawasaki, Osaka was managed by the City of Osaka and Kobe was managed by the City of Kobe. They were based on the nation's first Ports and Harbors Act, which were drafted in 1950 by the order of the General Headquarters of the Allied Forces (Inoue 2018; Shinohara and Saika 2018). It followed the model of port management system in the United States. The Act implied that port management is largely entrusted to local governments, either city or prefecture government, with an aim to minimise central government control. Therefore, the great majority of Japanese ports have been managed by separate, geographically constrained regulatory authorities (Shinohara and Saika 2018). Port governance in Japan is dispersed, compared to the centralised approach in Indonesia.

Cooperation between the PMBs before the formal merger had been done since the late 1960s. Cooperation took place to jointly develop their ports in a harmonised way, spatially and environmentally, then widened its scope into cooperation to improve terminal efficiency and user-friendliness (Inoue 2018). Like other merger process prior to the merger, the nature of each city governments was different, and each had their own ego. Somehow, the financial incentives given by the central government smoothen the cooperation between ports and the two city mayors agreed to merge (Inoue 2018).

The vision of Keihin Port are as follows: 1) *"Maintenance of main port function of East Japan" for the purpose of maintaining freight surely of East Japan that is the main rear area;* 2) *"Realization of Japanese hub ports confronting in Port Busan" that aimed at regaining freight transported from local ports via the overseas main important port;* 3) *Make use of geographical superiority of Keihin port in North American passage, "the formation of international hub port of East Asia" aimed at expansion of international piling over again (transshipment) function* (Port of Yokohama 2020).

Meanwhile, the vision of Hanshin Port are as follows: 1) *Upgrading its functions as a gateway port supporting industries and international logistics of Western Japan (Maintain and / or increase the port call of ships on major routes);* 2) *Rebuilding functions as a domestic hub port by providing port services competitive enough with major ports in East Asia;* 3) *Serving as an international hub port in East Asia by trading a large volume of cargo that helps attract ships on major routes* (City of Osaka 2020).

### **5.2. Impact of Merger on Japan's Port Governance**

Overall, port governance in Japan has been dispersed or deconcentrated. However, historically the central government has been involved by setting out policies to manage both concentration and deconcentration in the country (Hoshino 2010; Inoue 2018; Shinohara and Saika 2018; MLIT 2022). During the Edo period in the 17<sup>th</sup> century, when Japan was an isolated country, Tokyo and Osaka were ports focused for domestic distribution. Then in the Meiji period (180-1945) when Japan was open for foreign trade and catching up with advanced western nations, the port of Yokohama and Kobe were established as major foreign trading ports. In 1873, the government was directly responsible for the improvement of the five major 'Class One Ports' while local or

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municipal government managed the class two and three ports.

In 1950, a basic Port and Harbor law was established which states that local governments are PMBs. This form is considered as a more decentralised approach. However, in the late 1960s both national and local government could not afford to finance the development of terminals so two International Marine Terminal Corporations (IMTCs) were established with capitals by the national government, respectively for the Bays of Tokyo (Tokyo and Yokohama) and the Bays of Osaka (Kobe and Osaka). This form is considered to be a more centralised approach.

In 1982, another decentralised approach was taken by having the IMTCs transformed into four local container terminal corporations and leased terminals to shipping lines as dedicated terminals. This led to financial difficulties and inability to keep up with increasing ship sizes and competition with other Asian hub ports. Small peripheral ports in the Japan Sea coast are more attracted to be connected to neighbouring country's ports, such as Busan or Shanghai, as their hub before cargoes were sent to its destination (Shinohara and Saika 2018). Cargoes from small ports prefer to be transhipped outside Japan, hence, international shipping links with Japan are dispersed compared to Indonesia which are concentrated in Jakarta and Surabaya. Therefore, another centralised approach was made in 2010 by the government which is the 'Strategic International Container Ports' Policy. These Strategic Ports are the Keihin Port (Tokyo, Yokohama, Kawasaki) and Hanshin Ports (Kobe, Osaka). The goals for Keihin and Hanshin Port were to decrease transshipment rate to half of the level at that time by 2015 and to capture Asian countries' containers for transshipment at the Japanese major ports by 2020. This led up to the legal merger of Kobe-Osaka in 2014 and merger of Yokohama-Kawasaki in 2016.

After the merger, the city governments as PMBs remain responsible for the long-term planning of their respective ports, at the same time the merged companies have a right to make proposal to both cities (Inoue 2018). The merged company is only allowed to have strategic planning in terminal facilities, marketing, operations and logistics systems which reaches out to the hinterland of both cities (Inoue 2018). Decision making for day-to-day operations are done by the executive board. However, important decisions must be consulted with other board members from both cities (Inoue 2018).

Post-merger conditions of Kobe-Osaka International Port Corporation (KOIP) were explained by Inoue (2018) which includes the benefit gained from the merger and improvement efforts carried out. The merger enables KOIP to gain cost saving with economy of scale, such as from packaging procurement contracts with vendors, installing preventive maintenance system, also upgrading existing old terminals to accommodate larger vessels. KOIP carried out efforts to further improve efficiency and increase revenue as follows: develop a port community system which enables information sharing to relevant stakeholders for smooth port operations, efforts to mitigate congestion and consolidate terminals as a respond to the establishment of shipping alliances, improve information systems and digitalisation, provide financial support for logistics providers and manufacturers to develop dedicated terminals, enhancing hinterland connectivity by



strengthening feeder services to peripheral ports in western Japan and providing financial incentives to encourage coastal shipping. One of the results are an increased number of port calls by coastal feeders by 45% in February 2017 compared to April 2014. Therefore, indirectly the merger of ports brings benefit for peripheral ports in Japan as well.

### **5.3. Strategy Towards Pandemic and Post-pandemic**

In Japan's port governance system, there is a shift from port management by local government to privatised 'bay-wide' port companies (Inoue 2018). Challenges faced by Japanese ports post-merger has been explained, such as improving efficiency and improving hinterland connectivity to small-peripheral ports as their feeder. Moreover, Inoue (2018) argues that Japanese ports should also improve foreland connectivity because a significant size of Japanese manufacturers since the 2000s had moved their production base to China and other Asian countries.

Detailed data on the impact of the covid-19 pandemic on Japanese ports has been difficult to be collected. However, Japanese firms have expanded their business and supply chains in Asia, such as in ASEAN, China, South Korea, and India, and the largest Japanese industry abroad is the automobile industries and factories' operation rate fell to only around 30% of capacity (JETRO 2020). Therefore, it could be seen that Japanese port throughput might have gone through a significant impact. Consistent strategy prior to the Japanese port mergers should also be applied during the post-pandemic to improve foreland connectivity.

## **6. Discussion**

The Indonesian and Japanese cases show that port mergers were motivated by government policy or initiatives. The Government of Indonesia aims to create economies of scale and financial strength by merging the Pelindos, while the Government of Japan aims to strengthen Japanese hub ports' position compared to other East Asian ports. From the port cooperation or merger stories, it can be seen that there are two levels of collaboration forms which are the high-level and the operational-level. At the higher level, ports collaborate through joint planning, strategic decision making and financing. Through this form, ports are enabled to manage concentration or deconcentration. On the other hand, in the operational-level, ports try to improve efficiency, create standardisation of operations and improve digitalisation.

### **6.1. Port Mergers Enable Ports to Manage Concentration/Deconcentration**

Despite geographical similarities, Indonesia and Japan are distinctive in terms of port governance and shipping connectivity. Indonesian ports are divided into 4 main regions which were operated by 4 state-owned companies which then merged into one company in 2021. Meanwhile, Japanese ports are divided into city and prefecture governments. These differences in the system have been established from historical events and path dependency are difficult to change. As the consequence, Japanese port system has a high degree of deconcentration compared to Indonesia ports.

Factors that are dominantly affecting concentration – deconcentration in their ports

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are also different. In Indonesia's case, the central government's policy and limited resources to develop the small peripheral port forms the current concentration of cargo and port hierarchy. The government trusts Pelindo as the nation's port operating company to conduct port planning, development and to generate revenues which will eventually contribute to the national income. The centralised planning and development by Pelindo should benefit small peripheral ports, enable improvements to their facilities, support domestic shipping to open new routes or generate cargo on existing routes, and also to attract more foreign investment. Pelindo should not be tempted to use its financial strength to only develop the existing large ports. Capital expenditure on existing major ports is likely to generate revenue faster in the short term and this can be easily seen as the value creation of the port merger. On the other hand, investing in small-peripheral ports might have an indirect impact and take longer period to gain return on investments. However, transforming smaller ports to have better standard facilities, ability to receive larger vessels and providing industrial areas could be beneficial for the regional and national economy.

Meanwhile, in Japan's case port competition is fierce because ports are managed and owned by the local government. The central government through the MLIT makes efforts to create greater concentration by merging Yokohama and Kawasaki in Tokyo Bay area, also Kobe and Osaka in Osaka Bay area. It is expected that domestic cargo is consolidated and transshipped there before going to their foreland destination ports. Moreover, the central government should strengthen the nation's port strategic planning. Instead of local governments competing, they should behave more strategically, let down their ego and handle cargoes based on their expertise. Similar to the case of Houston and Galveston port which uphold differentiation strategies (Galvao et al. 2018).

There is also a difference between Japan and Indonesia in terms of the definition of port manager and port operator. In Japan, port management includes planning and budgeting, meanwhile, port operator includes taking care of the port technically on a daily basis as well as port promotion. The case of Keihin and Hanshin Port conducts cooperation in port operation, where port planning is done separately. In Indonesia's case, planning and operations becomes one by the merged Pelindo. Hence, better control, coordination and strategy implementation on the country's ports should be more straightforward in Indonesia's case.

Possibilities in a change of port hierarchy or increasing deconcentration is more likely to happen in Indonesia's port system if the eastern region could increase its cargo volume, have more industries or local cargo exports. However, Japan's port hierarchy is less likely to change, considering their mature economic development and strong political reasons rooted in each city or prefectures government. Japan's International Strategic Ports Policy aiming for concentration of ports as rationalisation might not

contribute much for the country's maritime logistics. It is because Japan is a geographically long country with multi-centred economies. Therefore, hinterlands are spread from Hokkaido to Kyushu and there are numerous industrial/consumer regions, each of which needs good port services for export and import. Keihin and Hanshin are located close of each other in the central Japan on the Pacific side, thus, it is not enough to support all the local economies, which include the regions on the Japan Sea side. The policy solely focuses its eye on container trades in truck line and aims at attracting extra large ships to call at those Strategic Ports in vain. However, it should also be recognized that approximately 70% of Japan's exports and imports are with Asian countries nowadays, which simply needs smaller vessels with direct services from/to Japanese peripheral ports as shortening lead time is essential for the business. Economies of scale (hub and spokes) workable for trunk lines is not necessarily applicable to intra-Asia trades for countries with multi-centred industrial regions such as Japan.

This suggests that there are no specific ways or strategies to manage maritime transport system in archipelago countries. Government policy might be able to have effect on the market condition. Concentration or deconcentration might be able to be managed, however, over a long period.

### **6.2. Improvements in Efficiency, Standardisation of Operations and Digitalisation**

At the operational-level, merged ports carry out efforts to improve efficiency. In Indonesia's case, establishing standardisation of operations and improving digitalisation is critical since the former four Pelindos had different operational systems. Creating standardisation in operations, with digitalisation and integration is needed to produce the same service quality for customers, employees and other stakeholders. Especially ports in the highest level of the port hierarchy should be prioritised to become standardised and integrated. It is similar in Japan's case that the merged ports are improving its information systems and digitalisation.

Moreover, based on the lessons learned after the Covid-19 pandemic, the merged ports in both countries should consider developing resilience of their ports and logistics. Improving digitalization for smooth operations, better customer management and internal communications, also enhancing business intelligence are needed to tackle future challenges. Digitalisation should further aim to prepare ports for any other disaster in the future. This is in line with policy recommendations by JETRO (2020) to tackle the long-term impact of covid-19, such as digitisation of trade documents and administrative documents, digitalisation of customs procedures, advancement of production and logistics using digital technology and realisation of supply chain resilience.

Improving efficiency and generating more revenue or cost savings are one of the important goals in port mergers. However, cost savings, additional revenue generated, or increased port throughput should not be the only way to measure port

merger success. Other measures to be considered for example are the number of port calls or new shipping connection to peripheral locations. Further research on measuring forms of value creations generated from port merger is needed with advanced statistics. Future research also needs to explore the ports' value creation after merger for a certain period and investigate whether the increase in port throughput post-merger is significantly caused by the merger, by economic recovery post-pandemic or because of rising demand of transport from the hinterland.

### **6.3. Success Factors**

As explained in the literature, factors that tend to make port merger or collaboration successful are those supported through political or government initiatives, pressure from the market, and also from company financial or efficiency reasons. In both cases discussed in this study, these factors exist. Government initiatives have fueled port mergers in order to develop better coordination between the port entities, enhance standardization of port operations, and alleviate complexity in logistics with integrated systems and IT. Moreover, the COVID-19 pandemic has impacted on merger activities and success in such a way that it triggered the port entities to develop improved efficiency in operations, optimize asset use and optimize funding for investments, in a way that didn't previously exist, and in which business as usual was unable to fulfill.

In the Japanese case, port mergers led to increased port of call, especially in the more peripheral ports. This is a good sign and a way forward to improve connections between hub and feeder ports. Since the Indonesian port merger process occurred during the Covid-19 pandemic, hopefully Indonesian ports will realise improvements and wider benefits similar to those achieved by Japanese ports as the economy rebounds post the pandemic.

### **7. Conclusions**

The era of ports competing might soon end and be replaced by establishment of larger collaborations and alliances. Port companies becoming larger aims to develop economies of scale and improve efficiency. Growing containership sizes, the establishment of shipping alliances and the pressure of having limited land resources both within ports or in the immediate proximity of ports, and ports sharing the same hinterland has led to the necessity to cooperate in planning and development. Furthermore, the Covid-19 pandemic has provided new evidence that changes can happen in a short period of time, causing drops or peaks in throughput. This further triggers ports to cooperate more in operational aspects as well.

Future research is needed to explore the relationship between port mergers or cooperation with value creation as the output. For example, whether increase of port throughput is the result of the ports cooperating or whether there are other factors involved. Research using statistical modelling or simulation is needed to explore and confirm this relationship.

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