Evaluating Port Reform in Indonesia:  
A case study of the Ports of Tanjung Priok and Tanjung Emas

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This thesis is presented for the degree of Doctor of Philosophy at Murdoch University 2018
Declaration

I declare that this thesis is my own account of research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

Jasmine Kaur
20/06/2019
Acknowledgements

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Abstract

In 2008, the Indonesian government introduced the ‘2008 Shipping Law’ to develop an efficient, competitive and responsive port system that supported trade and promoted economic growth. This law was designed to remove the legislated monopoly power of the Indonesian Port Corporations (Pelindos) and separate the role of ‘operator’ and ‘regulator’. Private companies were issued with port business licenses to operate and manage ports, leading to a shift in the governance model from the traditional ‘public ownership model’ to the ‘landlord model’. It has been almost a decade since this law was passed in Indonesia. However, there has been very little analysis undertaken to assess if these reforms brought about an improvement in port performance. This research aims to contribute to the literature by providing a comprehensive analysis of the port governance framework in Indonesia and how it has evolved since the ‘2008 Shipping Law’ came into place. The research includes case studies of the Ports of Tanjung Priok in Jakarta and Tanjung Emas in Semarang.

The methodology involved in evaluating port reform is a mixed methods approach (Rao and Woolcock 2003; Rao et al. 2003). This approach provides a broader analysis of the Indonesian port reform while offsetting the weakness inherent in using only one approach. In the case of Indonesia, this methodology was useful especially as data was not readily available at the port level. The quantitative results based on both financial and non-financial indicators, show that port performance at both the Port of Tanjung Priok and Tanjung Emas has improved since 2008. However, it is difficult to argue that the improvement in port performance was only because of the ‘2008 Shipping Law’ and not other factors such as increasing cargo volumes that also affected performance. In order to improve understanding of the determinants of performance, a qualitative analysis is undertaken using the ‘Matching Framework’ (Brooks and Balthazar 2001). This framework provides a qualitative analysis suggesting that the political environment in Indonesia needs to provide more certainty to achieve the outcome of an ‘efficiency oriented configuration’ and to realise the gains from port reform. Also, the separation of the ‘operator’ and ‘regulator’ roles, has not worked well in practice. The results suggest that path dependency and the legacy of colonisation plays a critical role in explaining the trajectory of port reform in Indonesia as legal reform has not always been able to bring about institutional reform. Although the ‘2008 Shipping Law’ was the trigger for the beginning of a reform process, the results suggest that more needs to be done to implement them and realise their full potential. This includes the need for further policy changes to bring about a conducive environment for economic growth and a more flexible approach to private sector and, in particular, foreign investment, in ports.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ARTG</td>
<td>Automated Rubber Tyre Gantry</td>
</tr>
<tr>
<td>ABP</td>
<td>Associated British Ports</td>
</tr>
<tr>
<td>AUSCID</td>
<td>Australian Council for Infrastructure Development</td>
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<td>BTBD</td>
<td>British Transport Docks Board</td>
</tr>
<tr>
<td>BOT</td>
<td>Build Operate and Transfer</td>
</tr>
<tr>
<td>BPKP</td>
<td>Badan Pengawasan Keuangan dan Pembangunan</td>
</tr>
<tr>
<td>BPKM</td>
<td>Badan Koordinasi Penanaman Modal</td>
</tr>
<tr>
<td>BRI</td>
<td>Belt Road Initiative</td>
</tr>
<tr>
<td>CPA</td>
<td>Canada Port Authorities</td>
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<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
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<td>DEA</td>
<td>Data Envelopment Analysis</td>
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<tr>
<td>ECB</td>
<td>European Central Bank</td>
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<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
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<td>FTA</td>
<td>Free Trade Agreement</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GFC</td>
<td>Global Financial Crisis</td>
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<td>IDR</td>
<td>Indonesian Rupiah</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>ITF</td>
<td>International Transport Federation</td>
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<tr>
<td>IPC</td>
<td>Indonesian Port Corporation</td>
</tr>
<tr>
<td>JOC</td>
<td>Journal of Commerce</td>
</tr>
<tr>
<td>KCT</td>
<td>Klang Container Terminal Sendirian Berhad</td>
</tr>
<tr>
<td>KKN</td>
<td>Korupsi, Kolusi dan Nepotism</td>
</tr>
<tr>
<td>KNSB</td>
<td>Kontena Nasional Sendirian Berhad</td>
</tr>
<tr>
<td>KPA</td>
<td>Klang Port Authority</td>
</tr>
<tr>
<td>KPM</td>
<td>Koninjilijke Paketvaart Maatschappij</td>
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<tr>
<td>KTK</td>
<td>Konas Terminal Klang</td>
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<tr>
<td>KPK</td>
<td>Komisi Pemberantasan Korupsi</td>
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<td>LPI</td>
<td>Logistics Performance Index</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>MP3EI</td>
<td>Master Plan for the Acceleration and Expansion of Economic Development of Indonesia</td>
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<tr>
<td>NDLS</td>
<td>National Dock Labour Scheme</td>
</tr>
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<td>NPMP</td>
<td>National Ports Masterplan</td>
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<tr>
<td>OBOR</td>
<td>One Belt One Road</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<tr>
<td>PSA</td>
<td>Port of Singapore Authority</td>
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<tr>
<td>PPP</td>
<td>Public Private Partnerships</td>
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<tr>
<td>RPJMN</td>
<td>Rencana Pembangunan Jangka Menengah Nasional</td>
</tr>
<tr>
<td>RPJPN</td>
<td>Rencana Pembangunan Jangka Panjang Nasional</td>
</tr>
<tr>
<td>SBKP</td>
<td>Serikat Buruh Kapal dan Pelabuhan</td>
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<td>SBMNI</td>
<td>Solidaritas Buruh Maritim dan Nelayan Indonesia</td>
</tr>
<tr>
<td>SBPI</td>
<td>Solidaritas Buruh Pelabuhan Indonesia</td>
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<tr>
<td>SEA</td>
<td>South East Asia</td>
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<td>SFA</td>
<td>Stochastic Frontier Analysis</td>
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<tr>
<td>SGS</td>
<td>Société Générale de Surveillance</td>
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<tr>
<td>SOBSI</td>
<td>Sentral Organisasi Buruh Seluruh Indonesia</td>
</tr>
<tr>
<td>SOE</td>
<td>State Owned Enterprise</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>TPP</td>
<td>Trans Pacific Partnership</td>
</tr>
<tr>
<td>VOC</td>
<td>Verenigde Oostindische Compagnie</td>
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<tr>
<td>WBPRTK</td>
<td>World Bank Port Reform Toolkit</td>
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<tr>
<td>WA</td>
<td>Western Australia</td>
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<tr>
<td>TEU</td>
<td>Twenty Foot Equivalent Units</td>
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<tr>
<td>TPKS</td>
<td>Terminal Petikemas Semarang</td>
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<tr>
<td>USD</td>
<td>United States Dollars</td>
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Chapter 1: Introduction

“On the Continent, they regard a port as a gateway for the country’s trade, and the wider open the gate, and the smoother the road, the greater, they consider, will be the trade gain to the country.” (Owen, 1914, p. 17 cited in Heaver 2006)

1.0 Background and Context of Study

Ports have long played a critical role in facilitating trade to boost economic growth in nations. They have developed an important relationship with their hinterlands through the development of industrial activity, population centres and markets. The traditional definition of a seaport by Goss (1990a, p.208) is that of “a gateway through which goods and passengers are transferred between ships and the shore”. However, this definition has evolved with seaports today becoming critical facilitators in logistics processes and supply chains within global production networks that have to constantly adapt to technological change, institutional reforms and competition in the maritime industry (Wilmsmeier and Monios 2016).

Trade in the past had always been limited to prized commodities such as silk, gold, silver and spices because of high transport costs involved from trading over distant lands along the ancient silk route (Bernstein 2008). At other times, trade took place with goods such as sugar, tobacco or spices which could not be produced locally. However, globalization and containerization changed this by allowing manufacturers to reach markets through lower transportation costs. Globalisation brought about greater inter connectivity in economies through travel, internet and improved communications while containerization paved the way for an efficient freight transportation system that blurred the boundaries between global and domestic economies that created a global demand for goods (Donovan and Bonney 2006).
Until the 1960s, Broeze (2002) argues that cargo had always been carried as individual pieces that were packed in boxes, crates and packages for liner shipping. However, this was revolutionised with containerisation which reduced the loading time for ships and improved port productivity. This also reduced losses and pilferage and made it possible to transport the same container from ship via rail or road to the end customer. Stopford (1997) argues that trade flourished until two severe recessions in the 1970s and 1980s when growth in Western Europe and Japan stagnated. However, countries in Asia such as Taiwan, South Korea, Hong Kong and Singapore were rapidly emerging as newly industrialised economies. As these countries transitioned between their different stages of development and become wealthier, their demand for goods increased, corresponding to an increase in seaborne trade (Broeze 2002). From the 1980s, China’s economic growth started to take off gradually as it introduced the ‘Open Door Policy’ of President Deng Xiaoping in 1978. This resulted in a series of reforms that transferred power from the central to the local government and had an impact on the economy and sea port governance (Notteboom and Yang 2017).

Hong Kong was the main gateway to ports in China and Taiwan in the late 1980s when China’s container seaport system was in its infancy. As China industrialised, the nation’s Gross Domestic Product (GDP) growth averaged between 12 to 14 per cent from the late 1980s to 2008 (Notteboom and Yang 2017). This rapid growth has been due to strong growth in exports that included mechanical and electrical products, high tech products, clothing, textiles and footwear. At the same time, China accounted for nearly 78 per cent of iron ore imports making it the largest steel producer in the world compared with 10 per cent and 9 per cent for Japan and Europe respectively. After a gradual slowdown to 10 per cent in 2010, growth has averaged between 6 to 7 per cent (Notteboom and Yang 2017).
Notteboom et al. (2017) showed that worldwide container port throughput has increased from 88 million Twenty Equivalent Units (TEUs) in 1990 to 691 million TEUs in 2016. Approximately half of this throughput is handled by the 20 largest container ports. This growth in trade is being driven by emerging markets such as China that produce a large share of manufacturing output and import large amounts of natural resources and intermediate goods. India also has the potential of dramatically increasing global trade as it develops (McKinsey and Co. 2017). This increasing demand is constantly being met by increasing vessel size. In 1995, the average size of a container vessel was 4,250 TEUs while in 2017 it is not uncommon to see vessels of 20,000 TEUs. Likewise, break bulk cargo has also seen significant increases in trade over the same period of time. The large vessels enable shipping lines to benefit from economies of scale by integrating with international maritime logistics chains but also place constant pressure on terminal operators and port authorities to further invest in infrastructure.

This ever changing global trade landscape has forced port authorities to re-evaluate their governance approach as part of their efforts to ensure that they remain competitive. Historically, most port authorities were owned by government. Although some ports remained public utilities, others were forced to compete for trade, resulting in port rivalry. In the process of becoming more competitive and reducing costs, port authorities began to outsource functions or were corporatized or privatised. The 1980s witnessed the privatisation of British ports which led the process of devolution for port governance. Since then, there has been a shift towards various forms of devolution including commercialisation, decentralisation and privatisation in various ports around the world (Brooks and Pallis 2008). This has led to research into evaluating port reform. Brooks et al. (2017) summarises a selection of port reform studies that have taken place in countries globally. Some of these reforms in port governance have been successful and others not as successful.
However, Pilcher and Tseng (2017) caution that there are challenges that need to be navigated when evaluating port reform. Much of the research on port reform tends to only measure if the process has been successful or not. However, as ports evolve from their traditional role, this can add more complexity to the analysis. A first step is to clarify the meaning of key terms such as ‘port governance’. Pilcher and Tseng (2017) argue that the definition of port governance could refer to various elements other than ownership and control of port operations and these definitions can change over time. Likewise, port governance could also incorporate ‘corporate governance’.

Brooks (2016,p.129) argues that the term ‘governance’ as defined by free market economists refers to ‘… the adoption and enforcement of rules governing conduct and property rights’ and its application is not limited to corporations. However, Brooks (2016) highlights that this term usually is confused with the term ‘government’. With reference to ports, Brooks (2016) defines ‘port governance’ as the ‘legislative and regulatory rules imposed by government on a port’. This definition is extended to include the processes and structures that are chosen when such policies come into play. Distinguishing between port and corporate governance, Brooks (2016) argues that the definition of ‘corporate governance’ requires the port to have an obligation to serve the objectives of the corporation’s shareholders which include employees, customers and local community. As the port’s ownership shifts completely towards a private model, the concerns of community stakeholders can become secondary to concerns to improve profits.

Wilmsmeier and Monios (2016a, p.39) define governance as ‘the institutions, mechanisms and processes through which economic, political and administrative authority is exercised.’ Their
definition includes the role of private actors and society in designing policy. On the contrary, De Langen (2006) makes a distinction between ‘port authority governance’ and ‘port governance’ with the former seen to be linked with ‘corporate governance issues, such as shareholder influence, structure of the board of governors and corporate social responsibility’ while the latter is related to ‘cluster governance since a port consists of a variety of actors’. Therefore, Pilcher and Tseng (2017) argue that a key challenge in evaluating port governance stems from the ambiguity in the number of definitions provided which can change with time and other factors. Although there is a lot of overlap on the definition of port governance, the definition of port governance in the thesis will refer to the definition provided by Wilmsmeier and Monios (2016a, p.39)

Other challenges in evaluating port reform could be the various stages and elements of devolution, including commercialisation and privatisation. Data availability is another challenge for research in this area of port reform. Therefore, Brooks and Pallis (2008) argue that relying on one methodology to evaluate port governance reform would mean that the outcome may be skewed and limited. Also, there could also be other factors driving port performance besides the port reform process. Pilcher and Tseng (2017) argue that the reform process in a country also needs to take into consideration what measures governments in other countries have undertaken or whether their own practices have been successful.

Debrie et. al. (2013) argues that an evolutionary analysis is important when assessing port reform. This is because ports are institutional structures that have been shaped or constructed by a set of formal or informal rules which could make them more resistant to changing their trajectory. For instance, some neo classical economists are of the view that because agents are
assumed to be rational, institutions will converge to an equilibrium in which it would not benefit anyone to change the rules. These rules include routines, regulation and the institutional arrangements such as governance systems and bureaucracies that lock an institution, or ports in this case, in their pathway. However, institutional economists reject the notion of rational, utility maximising agents. They argue that institutions can change over time due to external shocks in their environment such as ‘containerisation’. This can result in stretching, layering or displacement in governance structures where port authorities see a need to develop capabilities and activities (Notteboom et al. 2013). Thus, institutional analysis can provide a better understanding of why and how port development can result in success or failure (Pyvis and Tull 2017). Although there have been many studies done on port reform in various countries, a gap in the literature still exists with limited research undertaken on the port governance and reform process in Indonesia.

The Indonesian Economy and Port Governance

Indonesia is an archipelago of approximately 17,500 islands of which 6,000 islands are uninhabited. The largest islands are the Kalimantan province of Borneo, Sumatra, Papua, Sulawesi and Java (where Jakarta is located). The nation gained independence from the Dutch in 1945 and is Southeast Asia’s largest economy. As seen in Table 1.1, Indonesia’s population in 2017 was approximately 264 million, with nearly half of the nation’s population located in Java and Sumatra where most economic activity takes place (Sandee 2016). Over the last two decades, Indonesia has transitioned from a low income country in political, financial and economic crisis to a middle income, democratic and stable country that is now a member of
the Group of Twenty (G-20) countries (World Bank 2014). The nation’s main exports consist of manufactured goods, fuels, food items, agricultural raw material and metals and ore.

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<tr>
<td></td>
<td>2012</td>
<td>2013</td>
<td>2014</td>
<td>2015</td>
<td>2016</td>
<td>2017</td>
</tr>
<tr>
<td><strong>Real GDP Growth (%)</strong></td>
<td>6.0</td>
<td>5.6</td>
<td>5.0</td>
<td>4.9</td>
<td>5.0</td>
<td>5.1</td>
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<tr>
<td><strong>Inflation Growth (%)</strong></td>
<td>4.3</td>
<td>6.4</td>
<td>6.4</td>
<td>6.4</td>
<td>3.5</td>
<td>3.9</td>
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<tr>
<td><strong>Unemployment Rate (%)</strong></td>
<td>6.2</td>
<td>6.1</td>
<td>5.8</td>
<td>6.0</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Total Population ('000s)</strong></td>
<td>248,883</td>
<td>252,032</td>
<td>255,131</td>
<td>258,162</td>
<td>261,115</td>
<td>263,991</td>
</tr>
<tr>
<td><strong>Consumer Expenditure (USD million)</strong></td>
<td>508,925</td>
<td>509,068</td>
<td>498,626</td>
<td>484,843</td>
<td>528,176</td>
<td>553,050</td>
</tr>
<tr>
<td><strong>Internet Users ('000s)</strong></td>
<td>32,631</td>
<td>34,017</td>
<td>39,530</td>
<td>51,329</td>
<td>60,009</td>
<td>69,848</td>
</tr>
</tbody>
</table>

*Source: Euromonitor (2018)*

Indonesia’s GDP per capita has also nearly tripled from US $1,343 in 2005 to US $3,614 in 2016 (UNCTADSTAT 2017). Indonesia’s economy has seen strong growth accompanied with lower unemployment and poverty rates following the aftermath of both the Asian Financial Crisis (1998-1999) and the Global Financial Crisis in 2008. Since 2012, falling commodity prices has led to a slowdown in economic growth leading to increased poverty and income disparity increase between Java and the other islands. The gains of economic growth have not been felt equally across the nation, leaving many Indonesians in rural areas still vulnerable to poverty (World Bank 2014). Figure 1.2 shows the regional disparity prevalent for goods shipped between Indonesian islands due to high transportation and logistics cost. This highlights the need to rebalance growth away from commodity production to undertake structural reforms to improve productivity in the nation. For Indonesia to transition from a
middle to a high income country, it needs an average growth rate of 7 to 9 per cent per annum till 2030 (MP3EI).

Figure 1.1: Regional disparities in prices by Indonesian provinces

Note: Red areas represent regions with higher price disparities

The World Bank provides the example where the cost of shipping a container of oranges from China to Jakarta is much cheaper than shipping from Padang in West Sumatra to Jakarta, despite the geographical proximity (World Bank 2016, p.7). Connectivity from rural areas to larger markets is important for Indonesia to improve the livelihood of its people living in rural areas and reduce poverty by improving economic competitiveness. Inefficient transport networks place a constraint on the Indonesian economy with limited shipping volumes in many parts of the country (Sandee 2016). This affects the volume of perishable goods that can be traded from Jakarta to the islands, if reliable sailing schedules are not available. Indonesia’s geographical location is also along important trade routes for commerce such as the Straits of
Malacca through which East Asia’s shipping trade occurs with Europe, Middle East and Africa (Hill 2018).

The port system in Indonesia is known to be inefficient mainly due to high logistic costs and lack of infrastructure investment (Nathan Associates 2008; Dick 2008; Sandee 2016). These logistic costs are estimated at 27 per cent of Indonesia’s Gross Domestic Product (GDP) (State of Logistics 2013, p.18). However, better connectivity can only be improved by further investment in infrastructure to enable an efficient distribution of goods to markets within Indonesia and overseas and reducing regulatory barriers. The public sector is estimated to be able to fund only a third of its infrastructure needs while foreign investment in ports is capped at 49 per cent (Ray and Ing 2016). If the infrastructure deficit remains, it will be difficult for Indonesia’s ports to be globally competitive which could impact its transition from a middle income to a higher income country.

Logistics cost in Indonesia have declined slightly between 2004 to 2011 from 27.6 per cent to 24 per cent of GDP, with transport costs making up for 50 per cent of this overall logistics costs. The lack of competition due to cabotage rules in Indonesia’s maritime sector is also a contributor to high inter island transportation costs. This rule limits an international shipper to unload cargo in Jakarta and pick up local cargo and unload it in Makassar and pick up cargo on its way back on an international trip. Without proper planning, shippers do not know when their containers will arrive, which is made worse by poor connectivity due to congested road linkages. The Indonesian government recognises the importance of efficient transport networks to promote a more inclusive growth strategy (Sandee et al. 2014).
To address this, the Indonesian government introduced the ‘2008 Shipping Law’ to improve port competitiveness. The aim of this law was to remove monopoly power from State owned ports or ‘Pelindos’ to increase competition and encourage private sector participation by separating the operator and regulator function (Shipping Law 2008). The law allowed three years to transition to the new governance model which began in 2011. It has been almost a decade since this law was passed in Indonesia. Since then, Indonesia’s current President, Joko Widodo (Jokowi) has embarked on an ambitious plan to develop Indonesia’s maritime sectors, continuing from the reforms of President Susilo Bambang Yudhoyono (SBY) (2004-2014). However, have these reforms brought about an improvement in port performance? This research aspires to contribute to the literature by evaluating port reform in Indonesia since the passage of the ‘2008 Shipping Law’. It aims to answer the following research questions.

1.1 Research Questions

The research questions this thesis aims to address are as follows:

1. Did the change in the ‘2008 Shipping Law’ result in the implementation of a ‘landlord’ port governance structure? If so, did this new governance structure result in improved port performance?

2. Did ‘institutional lock-in’ play a role in determining the trajectory of port reform in Indonesia or have other alternative pathways developed?

3. Is the ‘Matching Framework’ a useful evaluation tool for evaluating port reform in Indonesia?
1.2 Case Study Location

The two port case studies that are examined in this thesis to answer the above questions are the Ports of Tanjung Priok and Tanjung Emas in the island of Java. They are both connected to large hinterland activities as seen in Figure 1.1. The Port of Tanjung Priok has been selected for this study as it Indonesia’s largest port located in West Java, with an average container throughput of 6.08 million Twenty Foot Equivalent (TEUs) in 2017 (World Shipping Council 2017). It is managed by the Indonesia Port Corporation (IPC) or PT Pelabuhan that has four branches (Pelindo I to Pelindo IV) that are responsible for managing ports within a specific geographical location. The Port of Tanjung Priok falls under the management of Pelindo II which manages 12 ports across 10 provinces (Annual Report 2012). Formally known as ‘Batavia’, the port has long played a critical role in the Indonesian economy (Patunru et al. 2009).

Figure 1.2: Map of Indonesia

In comparison, the Port of Tanjung Emas has been selected because it is a growing port in Semarang that developed from a feeder port into an international port in January 2017. Located on the East island of Java, the port’s annual container throughput was 620,000 TEUs in 2016 (Unpublished data from TPKS). This makes it Indonesia’s third largest port after Tanjung Priok and Tanjung Perak (3.36 million TEUs). The port of Tanjung Emas has been very innovative in its use of technology through automated cranes and has plans to move towards becoming a ‘green’ terminal in the near future. It falls under the management of Pelindo III.

There are two branch offices of Pelindo III in Semarang. This includes the Tanjung Emas Branch and Terminal Petikemas (TPKS) Semarang Branch. Tanjung Emas Branch handles General Cargo and TPKS Branch handles only containers. This research will make reference to the container terminal in the TPKS Branch due to easier access to port authority personnel to undertake the field trip.

Figure 1.3 provides a detail view of the Java transportation network, showing the various ports on the island and their hinterland connectivity. Therefore, the comparison between Indonesia’s leading port and a growing port will provide a more objective and balanced evaluation of port reform. Also, the availability of data and field visits were another factor that played a part in the selection of both the ports. The next section provides background information on both case study ports.
Figure 1.3: Java Transportation Network

Source: Nugroho et al. (2016, p.4)
1.2.1 The Port of Tanjung Priok

The Port of Tanjung Priok is ranked 30th in the world, handling 6.08 million TEUs in 2017 (World Shipping Council 2017). Tanjung Priok was initially designed to handle 5 million TEUs but this capacity had been exceeded in 2013 when the port had to handle close to 6 million TEUs due to the increase in container traffic. Due to strong export growth, the port faces capacity problems and traffic congestion on the main port access road (Port Finance International 2014; Pang and Gebka 2016; Sandee et al. 2014). Prior to the ‘2008 Shipping Law’, the port was operated and regulated by the state owned monopoly, Pelindo II (Sandee et al. 2014).

Prior to port reform, Tanjung Priok was falling behind in customs clearance, ship turnaround time and port efficiency. The port handles freight from the industrial estates, especially the east of Jakarta, where the largest industrial conglomerates are located. Dwell time at the port has also been increasing steadily at the Jakarta International Container Terminal (JICT), averaging 10 days since mid 2013. The increase in dwell time is attributed to pre clearance procedures and time consuming physical inspection of goods. Agencies have found it difficult to hand over their powers to facilitate the integration of clearance facilities. Likewise, new regulations issued by the Ministry of Trade require ‘new’ importing firms to automatically be classified as red lane importers. This requires more red lane inspections causing further delays and uncertainty (Sandee et al. 2016). Investors have also been hesitant to invest in port infrastructure because of concerns of a low return on investments and the lack of a clear regulatory framework.
The port currently has four container terminals. These are the Jakarta International Container Terminal (JICT), the KOJA Container Terminal, the MTI Container Terminal and the Conventional Terminal which together handle approximately 70 per cent of Indonesia’s total container traffic (Gintang et al. 2015, p.7). The main port terminal in Indonesia is the Jakarta International Container Terminal (JICT) which is a joint venture operated between Pelindo II and Hutchinson Port Holdings (HPH). The capacity constraints of the port, which are limiting its competitiveness, have led the Indonesian government to invest in increased capacity expansion through the ‘Kalibaru’ or ‘New Priok Project’ (Annual Report Pelindo II 2016).

This project is being implemented in two phases, with the completion of phase one and two in years 2019 and 2023 respectively. The project will expand Tanjung Priok Port by adding seven new container terminals resulting in a total increase of the port’s container handling capacity to approximately 18 million TEUs by 2023. The draft of the port will also gradually increase from 14 metres to 20 metres to accommodate larger vessels up to 18,000 TEUs. Figure 1.4 provides an overview of the existing terminals and the new port expansion plan (Kuroda and Syafi’I n.d). The next section discusses the second port case study which is the Port of Tanjung Emas.
Figure 1.4: Map of Tanjung Priok's Terminal Facility and New Kalibaru Terminal

Source: IPC (n.d.)
1.2.2 The Port of Tanjung Emas

Tanjung Emas Port is located on the north coast of Central Java, in the city of Semarang. Figure 1.6 provides a detail map of the city. Semarang was formed on the 2nd of May in 1547 when Ki Pandanarang II was chosen as the regent of this city by the Sultan of Pajang kingdom, Hadiwijaya. This coincided with the period of rapid expansion of Hindu culture which ran parallel with the Islamisation in this region. Gradually, Semarang became a prominent destination for Chinese immigrants besides Batavia (now Jakarta) and Surabaya. The arrival of the Chinese immigrants was motivated by trading relationships between China and South East Asia regions. Before the Dutch arrived, the Chinese in Semarang played a critical role in collecting the taxes on imports and exports. They also monopolised the salt and rice trade (Yuliati 2014).

Figure 1.5: Map of Semarang

Source: Semarang City (n.d.)
Due to its strategic location, the Dutch colonised Semarang at the end of the 17th century after the King of Mataram Kingdom made agreements with VOC in October 1677 and 1678. The treaties signed gave the VOC power to manage the incomes of Semarang port, a monopoly in the trade of sugar, rice, textile, opium, and free taxes. These were compensation from Mataram to the VOC for defeating a rival, Trunajaya, who opposed Mataram. The inhabitants of Semarang became more diverse over time with Malay, Arabic and Indian traders arriving along with French, German, English and African traders. The port of Semarang was less suitable for trade as continuous sedimentation on the river that linked the city to the sea had resulted in ships being unable to sail. In 1868, dredging work initiated by trading companies began on the Semarang river with a new canal that enabled boats to sail from the Java sea to the centre of Semarang city. This allowed foreign ships access to Semarang port. Until the 1960s, only vessels with a maximum draft of 5 metres could anchor at the port (Yuliati 2014).

Shipping lines often complained that the high sea tides hampered the distribution activity from the port to its final destination. (Patunru et al. 2009). The port’s sailing channel is much shorter compared with Tanjung Priok because of increased sedimentation levels brought about by the two big rivers on the side of the port and is prone to flooding from the high tides. Exporters and importers were reluctant to use Tanjung Emas because there was no ship route that matched the destination of exported cargoes. The limited hinterland of Semarang did not provide the Pelindo with an incentive to improve its infrastructure unlike Tanjung Priok or the Port of Tanjung Perak in Surabaya which served as alternatives to Semarang. Patunru et al. (2009) argued that government ownership limited the port’s development. However, some degree of competition in port handling services by private companies could see improvements in competition and performance.
However, as trade in the country increased, the government allowed the port to develop under Pelindo III in 1985. Today, Semarang port is now known as the Port of Tanjung Emas and is Indonesia’s third largest container port. As a port terminal operator, it falls under Pelindo III that manages ports in seven provinces in Indonesia covering Central Java, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, Central Kalimantan and South Kalimantan (Patunru et al. 2009). Wood and Furniture are the larger proportion of goods that are exported followed by yarn and plywood as shown in Figure 1.7. The port has between 55 and 65 ship calls a month with seventy per cent of its shipment providing feeder services to either the ports of Tanjung Priok, Tanjung Pelepas or Singapore. In 2001, the terminal management was separated into a new business unit called ‘Terminal Peti Kemas Semarang (TPKS)’ to improve its performance (Patunru et al. 2009).

**Figure 1.6:** Top ten commodities exported from TPKS

**Source:** Unpublished data TPKS
In 2003, Maersk and Evergreen shipping lines began operating at the port. Pelindo III decided to develop a longer term plan to improve connectivity and infrastructure investment for the ports in 2012, especially those in Eastern Indonesia as it was a feeder port. At the TPKS terminal, container throughput has nearly doubled at the port from 350,000 TEUs in 2010 to just above 600,000 TEUs in 2016 and the port is now not just a feeder but an international port with direct services.

1.3 Research Methodology

Pilcher and Tseng (2017) argue that the methodology applied in evaluating port performance is largely dependent on the availability of data. In Indonesia, there is no reliable international database or national agency collecting specific information on indicators such as port labour and operational productivity. Indonesian port authorities also have concerns of releasing this information publicly due to benchmarking done against other ports. Thus, data provided tends to be patchy which makes it challenging to undertake a time series quantitative analysis. Also, Brooks and Pallis (2008) argue that relying on one methodology to evaluate port governance reform could result in an outcome that is skewed and limited.

Therefore, three different methodologies are used to evaluate port reform in Indonesia in this thesis from 2012 to 2016, allowing for a three year transition from 2008 to 2011. The rationale for using these three different methodologies is to approach the reform from different viewpoints using different methods and techniques and also to overcome the shortcomings present in using one method. The first methodology is an indicator approach. This approach evaluates various financial and operational indicators to assess port performance. The literature on the operational indicator approach examines productivity indicators (Richard et al. 2009);
De Langen & Nijdam (2007); Bichou (2006); Talley (2007)). However, obtaining a variety of productivity indicators from port authorities has been challenging because of concerns with benchmarking.

Financial performance indicators have been used in the literature to evaluate port reform in Singapore (Tongzon 2008), Western Australia (Tull and Affleck 2007) and Australia and New Zealand (Reveley and Tull 2001). Other indicators such as stakeholder satisfaction were also considered. However, the results of this approach used by Verhoeven (2015) to study port reform at the Port of Rotterdam suggest that there is ‘wear off’ effect when using stakeholder satisfaction which suggests it may not provide the right perspective to assess port reform. Instead, the qualitative data obtained from stakeholder interviews could provide a better assessment rather than an individual indicator.

The second methodology is a qualitative analysis known as the ‘Matching Framework’. This has been developed by Balthazar and Brooks (2001) to ascertain the ‘fit’ of the port by analysing the alignment of the ‘structure’, ‘strategy’ and ‘environment’ variables and how they change after port reform. This is a useful framework to study port reform as a governance model is exposed to its environment, strategy and structure (Wilmsmeir and Sanchez 2017). This methodology has been used to study port reform in Canada and Philippines (Balthazar and Brooks 2001), Italy (Lamonarca et al. 2007), Libya and Malaysia (Ghashat et al. 2011) and Chile (Wilmsmeir and Sanchez 2017). Therefore, it will be useful in evaluating the post reform ‘fit’.
Finally, the third methodology uses institutional analysis to analyse ‘path dependence’ in Indonesian ports. This approach has been adopted by transport geographers and economists to understand the role of embeddedness and institutional rigidity in ports and how this could affect the outcome of port reform (Debie et al. 2013; Reveley and Tull 2012; Notteboom et al. 2013; Wilmsmeir and Monios 2016; Strambach 2010). Applying this methodology over the period from 2012 to 2016 to Indonesian ports will enable a further analysis to identify if there are any institutional rigidities that are hampering port reform or has an alternative pathway developed for port reform.

1.4 Data Sources

A variety of data sources were used for this study. This includes (1) documents including reviewing economic plans for Indonesia, National Ports Masterplan, the ‘2008 Shipping Law’ legislation, Annual Reports from port authorities, (2) data collected from interview designs with relevant stakeholders including port authorities, port terminal director and economic think tanks, (3) field visits to the Port of Tanjung Priok and the Port of Tanjung Emas and (4) studying at the Centre for Maritime and Air Transport at the University of Antwerp in Belgium which allowed the author to interact and gain a better understanding of the involvement between Indonesian Port Authorities and the Netherlands Government. This opportunity has allowed for further interview data to be collected from Indonesian port authorities and government representatives, port users and investors interested in Indonesian ports. This multiple data collection technique allowed the researcher to obtain various perspectives and gain a more in depth understanding of Indonesian ports as there is no national level database or agency that collects this information.
1.5 Interview Design and Field Visits

A questionnaire was developed as part of the researcher’s interaction with the participants to gather information about port governance and reform in Indonesia. The questionnaire has been prepared with the guidelines and procedures of Murdoch University’s Human Ethics and received Murdoch Ethics approval (Project Number 2016/084) prior to field visits in Indonesia. Interviews required prior consent from the participants and economic and social risks were taken into consideration. The interviews were a means of obtaining some ground level understanding of port operations, infrastructure and port reform process. This will shed light on how policymakers can make improvement to policies around port reform. The researcher is conversant in Bahasa Indonesia but most interviewees were well conversant in English and thus interviews were conducted in English. This questionnaire can be found in Appendix 4.

The questions in the questionnaire would be slightly altered depending on the expertise of the individual and the perspective they are bringing. Field visits to Indonesia were conducted in early 2016 and involved interviews with academic staff at the Universitas 17 Augustus Semarang and interviews and site visits at the Port of Tanjung Emas and the Port of Tanjung Priok. Stakeholder interviews included those with a domestic port director at the Port of Tanjung Priok, port manager at the Port of Tanjung Emas, Port of Tanjung Emas employees, academics, port infrastructure and transport specialists at think tanks in Jakarta. Further exchanges of electronic mail correspondances have continued to take place over the duration of the research to clarify and obtain further information as required. Informal interviews were also conducted with colleagues at the University of Antwerp in Belgium over 2016 and 2017.
1.6 Chapter Outline

This thesis is structured as follows. Following this introduction, Chapter 2 provides an overview of the literature on port governance and institutional reform. It studies the various port governance models which include the public, private and hybrid model. The chapter also explores the concept of ‘commericalisation’, ‘devolution’ and Public Private Partnership (PPP) models. It also explores the constantly evolving role of port authorities in various countries as the push for cooperation between seaport authorities increases in response to market consolidation through the formation of shipping alliances. This leads onto the discussion of whether the ownership of ports should fall under the private or public sector. The chapter studies the empirical evidence of port performance in various countries to determine if there is an ‘ideal’ model for port governance. Lastly, the chapter discusses the risks of cyber security attacks as the trend towards autonomous port operations continue.

Chapter 3 provides a background of the Indonesian economy. This chapter starts by providing an overview of how Indonesia grew through trade in the archipelago as demand for Javanese products, especially spices grew. It then studies Indonesia’s economic growth after it gained independence from the Dutch in 1945 and examines both President Sukarno’s (1945 to 1965) ‘guided democracy’ rule and President Suharto’s (1966 to 1996) ‘new order regime’. Although Indonesia did experience strong economic growth during President Suharto’s rule, government policy kept on switching between a liberalised and nationalistic stance, while crony capitalism and corruption grew. The onset of the ‘Asian Financial Crisis’ in 1998-99 saw an end to the Suharto era. Presidencies that followed by B.J. Habibie (1998-1999) and Megawati Sukarnoputri (2001-2004) were relatively short and focused on fiscal management and inward
oriented policies until the presidency of the Yudhoyono government (2004 -2014). He was eventually succeeded by Indonesia’s current President Joko Widodo (Jokowi). This chapter also focuses on the various Indonesian infrastructure plans, in particular President Jokowi’s maritime plan to develop Indonesia’s port competitiveness to assist in transitioning Indonesia from a middle to high income country. The chapter concludes by analysing the role of path dependency on Indonesia’s institutions.

In Chapter 4, benchmarking of a range of logistic and port performance indicators provide an assessment of Indonesian maritime and logistic services against the performance of other South East Asian economies. Competition within the South East Asia (SEA) region is also placing pressure on Indonesian ports to improve their port performance. China’s ‘Belt Road Initiative (BRI)\textsuperscript{1}’ initiative has started to play a key role in the development of ports in the Indonesian archipelago through the ‘Sea Toll Road’. Acknowledging the constraints and challenges of Indonesia’s maritime sector, the focus shifts to providing an overview of the evolution of Indonesia’s port governance framework from 1960 until 2017. This chapter discusses the introduction of the ‘2008 Shipping Law’ which aimed to shift the port governance model to a ‘landlord model’ to improve competition and efficiency in ports through further investment in infrastructure. However, budgetary constraints and limitations on foreign investment in ports is a challenge for Indonesia to navigate in order to close this infrastructure deficit. The chapter concludes with a discussion of port labour, unions and industrial action in Indonesian ports.

\textsuperscript{1} The ‘Belt Road Initiative’(BRI) was previously known as ‘One Belt, One Road (OBOR)’. The change in name by the Chinese government was to better reflect the various networks or roads which would sound more inclusive rather than imply a single route (European Council on Foreign Relations 2017).
Chapter 5 examines the various methodologies that have been used to assess port performance and their strength and weaknesses. The chapter explores the three methodologies used in this thesis which includes the indicator approach, ‘Matching Framework’ and institutional analysis. These different approaches will allow the port reform process to be analysed from various angles to allow for a wider analysis. The indicator approach discusses the various operational and financial indicators to evaluate port performance such as dwell time, port labour, container throughput, net operating profit and financial ratios. The ‘Matching Framework’ approach has been developed from strategic management and organisation theory. It uses three key variables for analysis which include the organisation’s environment, structure and strategy to determine if it has the right ‘fit’. This framework is suitable for evaluating port reform because the governance model has the above three elements. The last approach used is the institutional analysis. This approach aims to analyse if ‘institutional lock-in’ has played a role in the port reform process in Indonesia.

The discussion in Chapter 6 will summarise the results of this thesis by examining the application of the three methodologies to the case study ports of Tanjung Priok and Tanjung Emas. First, the indicator approach is applied to both case study ports. Secondly, the ‘Matching Framework’ is used to examine the post port reform process to evaluate if it has achieved a better ‘fit’ through the alignment of the ports strategy, structure and environment. Lastly, the institutional analysis will provide an additional perspective to study the ‘lock-in’ effect that can be inherent in institutions such as port authorities and whether this impeded the port reform process or enabled other alternative trajectories to be developed. The comparison between the Port of Tanjung Emas and the Port of Tanjung Priok will also provide a contrasting comparison between the level of institutional ‘lock-in’ the leading port of Indonesia and another growing port such as Tanjung Emas, and how it determines port reform outcomes.
This will be followed by the conclusions in Chapter 7. The results from this research will provide an insight as to whether or not the performance at the Ports of Tanjung Priok and Tanjung Emas have improved as a result of the ‘2008 Shipping Law’. It will also provide policy recommendations on what further reform is required in Indonesia’s maritime sector for port authorities to achieve their maximum potential. In addition, potential areas for future research will also be identified.
Chapter 2 : Literature Review

2.0 Introduction

Successful ports around the world rarely are accidents of history. They have continuously relied on active forward planning and timely infrastructure investments. Although most ports begin their development because of their strategic location, the success of a port is never determined only by its geography. The local port environment, the governance model, strategy and capabilities of the port authority together with the global environment determine the performance of the port. In studying a port’s success, it is important to have a good grasp of the institutional framework governing the port (Wilmsmeir and Monios 2016). This can be broadly defined as the culture or ‘way of thinking’ at a port. This plays a significant role in determining how the port is governed.

A constantly evolving economic environment, technological developments and globalisation have ended a long period of stability in many ports around the world that were mostly controlled by governments (Brooks and Pallis 2012). With port authorities having minimal market power, shipping lines continue to form alliances that vertically integrate into port terminal ownership. This gives the shipping lines, the primary customer of the port, greater negotiating power for lower prices (Mooney 2017; Notteboom et al. 2017). Likewise, mega sized container vessels also place further pressures on ports by demanding specific infrastructure and further dredging to accommodate the increase in water draft (Wilmsmeir and Monios 2016; International Transport Forum 2015).
The trend is larger vessels in relation to market consolidation and the formation of alliances amongst various large shipping lines to offer joint services on key trade routes, resulting in greater investment in port infrastructure to remain competitive (Wilmsmeir and Monios 2016). Shipping lines have also become active players in the container terminal market by entering key ports via joint ventures with local or global terminal operators and forming alliances. In the past, many large carriers were not members of an alliance as they were able to achieve sufficient economies of scale, commercial independence and flexibility on their own. However, recent years have witnessed shipping lines such as Evergreen which were not part of any alliance become member of an alliance for survival and increased profit margins.

There are currently three major alliances which include ‘The Alliance’, ‘Ocean Alliance’ and ‘2M’. ‘The Alliance’ includes shipping lines Hapag-Lloyd/UASC, Yang Ming and a joint venture between Mitsui OSK Lines (MOL), Kawasaki Kisen Kaisha (K-Line) and Nippon Yusen Kaisha (NYK) Line by April 2018. The ‘Ocean Alliance’ includes French based Compagnie Maritime d’Affrètement Compagnie Générale Maritime (CMA CGM), China Ocean Shipping Company and China Shipping (COSCOCS), Orient Overseas Container Lines (OOCL) and Evergreen and the last alliance include ‘2M’ which consists of shipping lines Mediterranean Shipping Company (MSC) and Maersk Line (Notteboom et al. 2017).

These changes have placed pressure on ports to change their governance structure to adapt to changing times. There are a few variations of the port ownership model which includes the public, hybrid (public and private) and fully privatised model. The World Bank and other economists such as Baird (1995;1999) and Brooks and Balthazar (2001) have tried to categorise the different type of port ownership models. However, debate still continues on which model...
of governance, the private or public, results in better performance. The advocates for public ownership view ports as strategic national assets with a wider socio economic role to play. Advocates of privatisation argue that the private model will improve efficiency, competitiveness and investment in infrastructure but government regulation and monitoring is also essential to avoid abuse of monopoly power. Therefore, it is debatable if there is an ideal model of port governance.

This chapter begins to address this question in Section 2.1 by providing an overview of the relationship between institutional reform and port governance. In Section 2.2, the various port governance models are presented. This discussion is further elaborated in sub sections 2.2.1 and 2.2.2 on port devolution and the evolving role of port authorities respectively. Section 2.3 considers the debate for private versus public ownership for ports. Section 2.4 provides a study of trends in port governance in various countries. Finally, Section 2.5 discusses the impact of cyber security in semi and fully automated port terminals, followed by the conclusion in Section 2.6.

2.1 Institutional Reform and Port Governance

The institutional environment in a country is determined by its legal and administrative framework through which firms, individuals and governments interact. Notteboom et al. (2013, p.28) views institutions as ‘a socially constructed set of rules devised by humans that constrain or enable human interaction’. These rules can either be formal or informal. The Productivity Commission (2014) argues that the quality of institutions has a significant role to play on the competitiveness and growth of a nation. Good institutions of public decision making and competent governments enable societies to choose growth-enhancing policies and sound
development strategies which reduce the opportunities and incentives for corrupt behaviour, thus strengthening trust and institutional effectiveness.

Ports can also be viewed as institutions. In the port sector, strong and effective governance arrangements are necessary to achieve the efficient provision of port infrastructure services. Over the years, there has been a shift in the governance of ports from public ownership to partial or full privatisation models. Globalisation, increasing competition from neighbouring ports and pressure from stakeholders have seen traditional governance structure in ports change to enable ports to be more responsive to their changing environments and seize rising commercial opportunities (Notteboom et al. 2013). Port stakeholders include transport companies, port labour, customers, shipping companies, various level of government, customs and local residents, some of which are summarised in Table 2.1. In some countries, port systems are governed by national government through port authorities while other countries follow a more decentralized model and have ports managed by local governments or municipalities. De Langen (2006) argues that each of these stakeholders have different interests. For example, a transport firm may be looking at keeping costs low but for port labour, the concerns could be about wages and job security.

Table 2.1: Port Stakeholders and Interests

<table>
<thead>
<tr>
<th>Stakeholders</th>
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<tbody>
<tr>
<td>Transport firms, Port labour, Local port related manufacturing industries,</td>
</tr>
<tr>
<td>End user of ports, Local environmental groups, Local residents, Local,</td>
</tr>
<tr>
<td>regional and national government, Customs, Towage, Shippers, Freight</td>
</tr>
<tr>
<td>forwarders and third party logistics providers, Ports and sea carriers</td>
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</table>

Source: De Langen (2006); Lee and Lee (2016)
Brooks and Pallis (2012) argue that despite this shift, it is difficult to define a standard model for port management. Debrie et al. (2013) draws a contrast in how academics and institutional actors view governance. The former view it as a concept that enables the understanding of both decentralisation and deregulation while the latter view it as a framework for recommending change. Similarly, Notteboom et al. (2013) argues that transport economists and geographers have come to a consensus on how path dependence can explain the differences in port governance structures and outcomes in reform by shaping local and national differences in port governance structures and development trajectories.

In the case of seaports, path dependence can be explained by various sources such as sunk costs of infrastructure, technological lock in, historically developed routines of actors and the socio-economic structure of a country (Notteboom et al. 2013). Tongzon (2015) explains further how path dependence in institutions can also be determined by its political and social culture which lays the foundation of how institutions affect governance. Therefore, there is a tendency for the institutions to follow the existing institutional framework as it is a lot easier than having to change the rules at each stage of reform. This notion of ‘lock in’ refers to a situation where the alternative development trajectories in an institution continue, without breaking out of an existing path (Notteboom et al. 2013). However, Wilmsmeir and Monios (2016) argue that although path dependence plays a role in port development, there are possibilities that decisions and outcomes could deviate from an existing development path.

This helps to explain the development of diversity in the governance structure of ports. Notteboom et al. (2013) cites the example of how the introduction of containerization was viewed as a ‘routine breaking’ event, which many ports and transportation companies did not
anticipate. This change resulted in lock in for equipment and skills to manage containers efficiently. Reveley and Tull (2012) refer to events such as containerisation as ‘trigger points’ when studying path dependence in Australian and New Zealand ports. ‘Trigger Points’ are a reactive form that lead to other events unfolding one after another. In many institutions, once pathways are locked in, it is difficult for port institutions to adopt a different pathway which could at times affect the flexibility or growth of ports as the case of Australia or New Zealand. The reluctance to depart from the traditional trajectory can impede the growth in a port. Therefore, ‘trigger points’ put pressure on institutions to change their existing pathway.

Using this approach, Reveley and Tull (2012) explain how the deviation from path dependence took place for port regulation in Australia and New Zealand. For New Zealand, containerisation was seen as a trigger point that brought about a reactive path dependence. This resulted in introducing competition in its labour market which saw great resistance initially before undergoing a slow transformation. Australia’s trigger point came as part of the nation’s microeconomic reform process which led to improved economic efficiency. This triggered the reactive path dependence which saw improvements in the efficiency of port authorities, the creation of a more competitive commercial environment and improved labour hiring processes by limiting restrictive practices and the number of unions. Reveley and Tull (2012) argue that although economists prescribe ‘competition’ as a solution to breaking path dependence and institutional rigidity, this approach was limited by market failure and social constraints in Australia. This illustrates that even government initiatives to change path dependency can be met with resistance from existing governance and institutional arrangements.
This leads us to the concept of ‘plasticity’ which was first introduced by Strambach (2010) and applied by Notteboom et al. (2013). ‘Plasticity’ is defined as ‘a situation where a range of alternative development trajectories are possible within the overarching institutional system without necessarily breaking out of the existing path’ (Notteboom et al. 2013, p.4). This suggests the stretching of existing institutions and explains why it can be possible for an institution to develop lock in and yet create new paths (Notteboom et al. 2013; Strambach 2010). Ng and Pallis (2010) argue that as firms and institutions develop, they adopt routines that become outdated with time. These institutions become inflexible over time because they do not adapt to changes in technology, competition or shifting political processes which need to be changed as they are restricted by the firms’ governance structure. In practice, it can be challenging even for a government to break the political culture to bring about change.

Besides stretching, Debrie et al. (2013) argues that institutional reform can also occur through layering and displacement. Layering involves adding new rules or procedures to existing institutions. Displacement is the alteration of existing institutions to serve new purposes or functions. In some cases, the addition of a new layer might imply abandoning older layers, while in other cases of displacement no new rules or procedures are added, instead, existing institutions and arrangements are realigned. Port reform involves the implementation of a public policy that will change the coordination structures and specific actions at a national level. However, Debrie et al. (2013) challenges the traditional models of port reform to emphasize the role of embeddedness in port institutional reform. The argument is that as port governance is a ‘complex evolutionary process’, the outcome of the intended reform could differ from the actual reform. Therefore, port reform should be viewed not as a rigid process, but as a ‘pathway of change’ in which the process of reform could follow different trajectories depending on the country and the individual port.
Applying the concept of path dependence and institutional plasticity, Debrie et al. (2013) classifies the four port governance models generated through the trajectory of reform by drawing upon research undertaken by Mintzberg and Waters (1985) on strategic management. These models include the path follower, path adaptor, path resistant and path leader. The ‘path follower’ port is one in which local traditions are weak and it is easy to implement national changes. The second model is the ‘path adaptor’ port where local forces act as path adaptors to national reform, making it harder to implement reform homogenously across the country. The third is the ‘path resistant’ port where local conflicts delay the implementation of national reform. Lastly, we have the ‘path leader’ port. In this port, the local forces lead in national reform by implementing or proposing innovative solutions in port governance, project funding, marketing and inter port coordination. The first two models reveal a dominant top down process while the ‘path resistant’ and ‘path leader’ port models demonstrate a bottom up process, leading to the institutional divergence of port governance. Debrie et al. (2013) summarises this in Figure 2.1 to explain how the different type of port models influence the outcome of a reform process.
However, it can be challenging to assign a port neatly into one of the four categories as the port may display elements of more than one category. For instance, an example of a ‘path follower’ would be China where the national port system has been highly dependent on government policy and planning. Notteboom and Yang (2017) argue that port development in China has been led by the national government through economic planning. The first phase from 1979 to 1984 saw strong centralized decision making and control of the Chinese seaport system by the government. In the second phase from 1984 to 2004, a trend towards decentralisation continued with ports either being controlled by central and local government or just local government. This devolution process also allowed foreign investors to have a stake of no more than 49 per cent in ports. However, the government still continued to be in control of port planning and collecting revenue from port terminal operations. The final phase was from 2004 onwards with...
the ‘Port Law of 2004’ saw further decentralisation of port governance through corporatization of port authorities and removing limits on foreign investors, with port planning and policy formulation responsibility still falling on the national government and the respective provincial governments. Notteboom and Yang (2017) argue that port governance changes have resulted in more competitive port environment with the 13th ‘five year plan’ promoting Chinese enterprises to go abroad to attract foreign investment. China’s port governance has shown elements of ‘institutional plasticity’ where it has been successful in stretching its institutions without breaking out of its existing governance pathway. Although most of the reform has been top down driven, bottom up efforts in recent times from local port business groups have started to emerge.

Italian port reform could arguably fit the description of a ‘path adaptor’ model. Parola et al. (2017) argued that the Italian port reform process, which began in 1994 with the ‘landlord model’, introduced a governance approach that replaced 24 Port System Authorities (PSA) with 18 PSA. It was driven by the need for ports to operate commercially. The reform saw the transition from public to the landlord model, increase tonnage at ports and greater private sector investment. However, a short coming of the port reform was that it did not provide the port authorities with financial autonomy to undertake long term investments and expansions, leaving the Italian ports lagging behind in port performance. The reform also did not give ports the financial autonomy to negotiate their own fees. A second stage of the port reform has been announced with the 18 PSA merging into 15 PSA, which will extend over a wider geographical region. Parola et al. (2017) argues that the reform process highlights the divide between the central government’s intended reform and the emergent reform from port users. The weakness in this top down approach lost momentum when individual stakeholder requests were ignored.
The Greek ports can be an example of a ‘path resistant’ model. Port reform first took place in Greece in 1999 through the quasi corporatization of 12 ports of ‘national interest’ and the listing of Greece’s two major ports, Piraeus in 2003 and Thessaloniki in 2001 on the stock exchange. Pallis and Vaggelas (2017) argue that despite two decades of reform, the process is still not complete and without a governance framework. In the end, Pallis and Vaggelas (2017) argue that decisions on port governance were imposed externally on Greece in 2010 following the global financial crisis with a troika of international institutions observing the implementation of the imposed bailout conditions. Although path dependency created the effect of ‘lock in’, institutional plasticity had been present to develop new capabilities and activities. The reform process continued to add new layers of bureaucracy but it did not break the existing pathway.

Finally, Pyvis and Tull (2017) argue that the Port of Tauranga in New Zealand would be an example of a ‘path leader’ port. Its organizational model allowed flexibility and institutional reform that enabled the port to operate more efficiently. However, major institutional reform was only undertaken when the benefits of potential profits outweighed the thinking of ‘entrenched interest groups’. Tauranga is also a port where there is competition amongst stevedores for container handling services. Therefore, its governance structure and pressure from local forces enabled the port to benefit from market services and cost savings.

As Debrée et al. (2013) argues, an evolutionary analysis is important because it links past behaviours and inherited social factors into the present. Debrée et al. (2013) argues that conventional studies tend to ignore the embeddedness of ports within their institutional and economic domain and analyse reform from a rather static angle. Therefore, there is a need to analyse the institutional framework, the multi layered decisional chain, the geo economic dimension and socio cultural environment, to understand ports as institutions in a broader
context. Thus, when a reform process appears to be rigid and hierarchical, it could be because of this embeddedness within the institutions that creates a trajectory of resistance or ‘lock in’ to the implementation of local reform. Reveley and Tull (2012) argue that this could be seen in Australia where port regulatory reform was just the first step taken in a reform process that encountered significant inertia from existing entrenched governance structures.

Ng and Pallis (2010) argues that after a reform process, the post reform setting would still have remnants from the pre-reform process. This is because the existing institutional frameworks will provide a resistant path for the alternative trajectory. For instance, in Europe, the ‘Hanseatic’ tradition of municipal governance dominates ports around the Baltic and North Sea; the ‘Latin’ tradition of central governance dominates in France and Mediterranean countries; and the ‘Anglo Saxon’ tradition of independence can be seen in ports in the United Kingdom and Ireland (Verhoeven and Vanoutrive 2012). The influence path dependence had on the outcome of port reform can be seen with the corporatization of the Port of Rotterdam in 2004 (Notteboom et al. 2013). It resulted in stretching its governance structure to embrace globalization, competition and become more responsive to changes to its operating environment. The port left intact its historical and cultural rooted ‘Hanseatic’ ownership but outsourced its operations and developed an internationalization strategy to continue its development towards maintaining its status as a leading port (Notteboom et al. 2013; De Langen and Van der Lugt 2017).

Similarly, Dooms and Farrell (2017) argue that recent reform in African ports has reflected their colonial past of Anglophone (English speaking), Francophone (French speaking) and Lusophone (Portuguese speaking). It is common to find national port authorities controlling port services in Anglophone countries, autonomous operations in Francophone countries and a
mixed approach in Lusophone countries. Tongzon (2015) argues that the new governance model of port reform in Singapore was also shaped by values such as government intervention, market orientation and Confucian traditions. Pilcher & Tseng (2017) argue that the Latin model of port governance tends to see more central government control over port authority activities.

In the case of Indonesia, Dick (2008) argues that shipping was a monopoly operated by the Dutch owned ‘Koninklijke Paketvaart Maatschappij’ (KPM) during colonial rule. Despite their departure, the Dutch’s port management style became entrenched in the manner in which Indonesia managed its ports. After the departure of the Dutch, the failure to operate a joint venture between the state and KPM resulted in maritime transport fall under central planning by the Indonesian government. However, the Netherlands and Indonesia continue their cooperation in port development with the Port of Rotterdam Authority assisting to develop Jakarta’s port (Government of the Netherlands, 23rd November 2016).

In conclusion, the relationship between institutions and port governance is important because the governance model chosen can affect performance of the ports. This path dependency also influences the choice of governance model and determines the degree of private sector participation which is dependent on the mindset of the country (Brooks 2006, p. 407). Therefore, understanding path dependence is vital to study the port’s development as this is the basis upon which policy, planning and infrastructure investment decisions are made. The next section of this chapter studies the various port governance models.
2.2 Port Governance Model

Governments started devolving responsibility for ports from the public sector to the private sector in the 1980s. As discussed in the previous section, the outcome of port devolution is largely dependent on the governance systems. The literature on the institutional arrangement in ports identifies four broad forms of structures which includes the Service Port Model, Tool Port Model, Landlord port model and Private Sector Port Model. These models are identified in the World Bank Port Reform ToolKit (WBPRTK) and assessed for their strengths and weaknesses (WBPRTK 2007).

The Service Port model is a public model in which the Port Authority owns the land and all available assets (fixed and mobile) and performs all regulatory and port functions. All cargo-handling operations are performed by labour directly employed by the Port Authority. This model is used in many developing countries where there is usually an absence of private sector involvement in port activities. It limits competition and innovation that results in inefficiencies. This structure is very largely dependent on government funding for development. Although ports in developing countries would traditionally have fallen in this category, many former service ports are in transition towards a landlord port structure such as the Port of Colombo in Sri Lanka and the Port of Nhava Sheva in India (WBPRTK 2007).

The second model is the Tool Port model which is characterized by divided operational responsibilities. The Port Authority owns, develops, and maintains the port infrastructure and superstructure, including cargo handling equipment such as quay cranes and forklift trucks. The operation of Port Authority equipment is usually performed by Port Authority labour, but other operations are performed by private cargo-handling firms, on board vessels as well as on
the quay. The private operators are usually small companies. The Port of Chittagong in Bangladesh is a typical example of the tool port (WBPRTK 2007).

The landlord port is characterized by its mixed public-private orientation. Under this model, the port authority acts as a regulatory body and a landlord, while port operations (especially cargo handling) are carried out by private companies. The private companies provide and maintain their own infrastructure, install their own equipment and employ the stevedoring labour. The responsibilities of the port authority as a landlord include the long term development of the land and the maintenance of basic port infrastructure such as access roads, channels, berths and wharves. This approach is likely to result in increased infrastructure investment and improved efficiency, enabling it to be more responsive to changing market conditions. Examples of landlord ports are Rotterdam, Singapore and New York, Today, the landlord port is the dominant port model in larger and medium sized ports (Asian Development Bank 2000; WBPRTK 2007). Today, 85 to 90 per cent of global ports are landlord ports which account for approximately 65 to 70 per cent of global container throughput (UNCTAD 2017).

Baird (1995) argues that fully privatized ports are few and can be found mainly in the United Kingdom. Full privatization is considered by many as an extreme form of port reform. It suggests that the state no longer has any meaningful involvement or public policy interest in the port sector. All regulatory, capital and operating activities are provided by the private sector. However, this approach could result in an abuse of the natural monopoly position that some ports may enjoy, leading to a role for government regulation (Goss 1990c; Brooks 2004; Baird 1995).
With privatised ports, the ability of the public sector to influence economic development is diminished as there is a minimal role for the public sector to play. However, full-port privatization has not been widely adopted. Many countries still view some form of government intervention as necessary to manage strategically significant port land and the inherently monopolistic characteristics of port services. Therefore, there are many variations of a privatised model ranging from partial to full privatisation. These port governance models are summarised Table 2.2.

Table 2.2: Allocation of responsibilities under the World Bank model

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Service</th>
<th>Tool</th>
<th>Landlord</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Superstructure</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Port Labour</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Other functions</td>
<td>Majority Public</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Majority Private</td>
</tr>
</tbody>
</table>


However, Brooks (2007) argues that the World Bank’s approach does not recognise how differences in governance models may reflect differing strategic purposes of a port. Debrie et al. (2013) argues that the World Bank governance models do not capture the specificities of local environments or “embed” the changes in specific institutional and economic contexts. Baird (1995; 1999) proposed a framework to understand the different models of port privatisation by further extending the World Bank’s model. Baird’s framework was developed by separating the three essential elements involved in the functioning of ports. These elements are port regulation, landowner and operator which can be privatised either individually or collectively. These elements are summarised in the Table 2.3 with the PRIVATE/I model indicating that only the operations are privatised. The PRIVATE/II model suggests that both
the operations and land is privatised. Lastly, the PRIVATE/III model is the fully privatised model in which regulatory activities, land ownership and operations are privatised.

<table>
<thead>
<tr>
<th>Port Models</th>
<th>Port Regulator</th>
<th>Port Landowner</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUBLIC</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
</tr>
<tr>
<td>PRIVATE/I</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>PRIVATE/II</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>PRIVATE/III</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
</tbody>
</table>

Source: Baird (1999)

Further work undertaken by Baird (2002) utilised this framework to study the extent of privatisation within the top 100 container ports. The results suggest that 88 of the ports were in the PRIVATE/I model, 2 in the PRIVATE/II model, 3 in the PRIVATE/III model and only 7 in the PUBLIC model. Ports will very often exhibit a more complex mix of public and private sector roles and responsibilities and this requires closer analysis. Baird provides the example of Hamburg which is a PUBLIC port as it is owned by the State. However, there are a number of terminals leased to private companies who employ their own cargo handling personnel. This would imply that Hamburg is both a PUBLIC and a PRIVATE/I port. Therefore, although the framework provides a useful guide to the main options helping define a port’s policy, Baird (1999) warns that a degree of caution is necessary as not all ports will fit into these four models and ports might exhibit a more hybrid governance option.

Balthazar and Brooks (2001) similarly argue that Baird’s (1999) classification of port governance is oversimplified and it is difficult for a port to fit into just one category. They applied Baird’s model to assess governance in Canada and the Philippines and found it difficult to fit the data to the categories in the model. This is because ports today exhibit a combination of public, fully private or a combination of both public and private models. Building upon the
work of Baird (1999), Balthazar and Brooks (2001) separate the regulatory functions from port functions and distinguish landlord activities from day to day operating activities. This can be seen in Table 2.4. Brooks (2004) argue that the allocation between public and private responsibility will vary and will determine a particular governance model across countries but they do not separate the functions into neat categories as suggested by Baird (1999).

Table 2.4: Port Devolution Matrix

<table>
<thead>
<tr>
<th>Governance</th>
<th>Regulator Functions</th>
<th>Landlord</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Licensing, permitting, Vessel traffic safety, Customs and Immigration, Port monitoring, emergency services, Protection of public interest on behalf of the community, Determining port policy and environmental policies applicable</td>
<td>• Waterside maintenance (eg. Dredging)</td>
<td>• Cargo and Passenger handling</td>
</tr>
<tr>
<td>Mixed/Public/Private</td>
<td></td>
<td>• Marking of location</td>
<td>• Pilotage and towage,</td>
</tr>
<tr>
<td>Private</td>
<td></td>
<td>• Development strategies</td>
<td>• Line handling, facilities security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Planning</td>
<td>• Maintenance and repair</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maintenance of port access</td>
<td>• Marketing of operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Port security</td>
<td>• Waste disposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Land acquisition disposal</td>
<td>• Landside and berth capital investment</td>
</tr>
<tr>
<td>Source: Balthazar and Brooks (2001)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dooms and Farrell (2017) argue that although the end objective of port reform might be a conversion into a ‘landlord model’, it does blur the line between the role of government as an owner and the private sector. They also question how far port authorities should stretch the development of their own strategies and take on commercial risks. Therefore, while full privatization of public ports seems unpalatable to most governments today, the number of fully public ports has been steadily diminishing as governments sought to achieve greater efficiency.
from ports through new governance arrangements. The next section focuses on the greater role the private sector plays through port devolution.

2.2.1 Port Devolution

Brooks (2004) extends this discussion with an additional governance model known as ‘port devolution’. In Canada, devolution is defined as ‘…the transfer of functions or responsibility for the delivery of programs and services from the federal government to another entity’ (Rodal and Mulder 1993, p.28). This other entity could be a government, non-government organisation, community group, business or industry. This model is focused on increased service levels, increased operational efficiency, and improved allocation of public funds. Although this definition does not include privatisation, Brooks (2004) concludes that devolution could range from many stages through partial to full privatisation.

Pilcher and Tseng (2017) argue that ‘privatisation’ should be differentiated from ‘commercialisation’ as the latter allows for more government control. Commercialisation was seen as the first stage of reform in Australia (Chen et al. 2017). As terminals become specialised and integrated into global logistics chains, they adopt global approaches to management. This has been largely due to improvements in supply chains which has, resulted in greater transparency of government activities. Secondly, increasing deficits and debt have resulted in government searching for more cost effective strategies. Balthazar and Brooks (2006) reason that the intention of this devolution is to separate the regulation from the operation of ports. This is to secure the benefits of commercially driven business decision making in organisations previously run by government. This has been the impetus towards the drive for port privatisation in many countries. However, many countries have moved towards a
‘privatisation’ approach through management concessions, which is commercialisation rather than privatisation.

Public Private Partnerships (PPPs) are another form of devolution that have been emerging in recent decades as governments have to deal with budgetary pressures and expanding infrastructure quality. A PPP agreement is defined as ‘a long-term contractual relationship between a public body and a private partner (or a consortium of private firms) for the construction and operation of infrastructure’ (Araújo and Sutherland 2010, p.6). PPPs are attractive to both the private sector and government because they allow the private sector to recover their costs while the assets are still owned by government and relieve government from financing.

Over the last three decades, Public Private Partnerships (PPPs) have been emerging as a mechanism for leveraging greater private sector participation in port development. The United Nations Conference on Trade and Development (UNCTAD 2017) argues that public ports benefit from the private sector through capital and transfer of know how. A common type of PPP is the Build Operate and Transfer (BOT) model. Building, operating and maintaining a port terminal does require a significant amount of financial investment, managerial and technical skill and technology. The government usually awards concessions on a leasehold basis for 20 to 50 years for projects that involve a large amount of investment to allow the private sector to manage the risks involved to generate a return. Therefore, the private partners relieve government of the operational risks and financial burden, and are responsible for terminal operations and investment with superstructure. They are usually awarded concessions or permits so the government ultimately retains ownership of port land to safeguard public interest. Concessions allow a port authority to require a minimum guaranteed throughput which
encourages optimal usage of the facilities and terminal. If this minimum throughput is not met, a penalty is incurred which has to be paid by the terminal operator.

UNCTAD (2017) estimates that $68.8 billion United States Dollars (USD) of private investment was committed across 292 projects between 2000 and 2016. This included port infrastructure, superstructure and terminals. Most investors in port development tend to be global port management companies such as AP Moller-Maersk Group, the Port of Singapore, Hutchinson Whampoa, Bollore Group and CMA CGM, as summarised in Table 2.5.

**Table 2.5**: Leading global port investors private sector investment in ports 2000-2016

<table>
<thead>
<tr>
<th>Global Investors</th>
<th>Investment (million USD)</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP Moller Maersk Group</td>
<td>12,425</td>
<td>43</td>
</tr>
<tr>
<td>Port of Singapore</td>
<td>5,064</td>
<td>18</td>
</tr>
<tr>
<td>Hutchinson Whampoa</td>
<td>4,558</td>
<td>17</td>
</tr>
<tr>
<td>DP World</td>
<td>3,922</td>
<td>27</td>
</tr>
<tr>
<td>Bollore Group</td>
<td>3,301</td>
<td>11</td>
</tr>
<tr>
<td>Marubeni</td>
<td>2,541</td>
<td>5</td>
</tr>
<tr>
<td>International Container Terminal Services Inc.</td>
<td>2,029</td>
<td>21</td>
</tr>
<tr>
<td>EIG Global Energy Partners</td>
<td>1,858</td>
<td>3</td>
</tr>
<tr>
<td>Mediterranean Shipping Company</td>
<td>1,419</td>
<td>4</td>
</tr>
<tr>
<td>Hutchinson Port Holdings</td>
<td>1,276</td>
<td>3</td>
</tr>
</tbody>
</table>

**Source**: UNCTAD (2017, p.91)

In recent years, newcomers such as China Ocean Shipping (Group) Company (COSCO) and International Container Terminal Services have also entered the market to build up their portfolio of operating port terminals, feeder operations and other logistics and support services. Lee and Lee (2016) argues that the last two decades have seen Chinese state owned and private companies invest in transport and energy infrastructure in Africa and South America. In March 2013, the Chinese invested USD 10 billion in constructing a port in East Africa to strengthen relations with Tanzania and land locked countries such as Malawi, Zambia and Uganda. A high
speed coastal railway was also built in Nigeria. China continues to be an active component of the Brazil Russia India China and South Africa (BRICS) economic bloc that is expected to generate further cargo. In May 2017, China Ocean Shipping (Group) Company and Lianyungang Port Group agreed to acquire a 24.5 per cent stake in ‘Khorgos Gateway’, Kazakhstan’s government container transport company. With bulk cargo, apart from owning a quarry or operating terminal, further investment can be seen by bulk operators in ships carrying cargo to their markets (UNCTAD 2017).

The Financial Times (4th September 2017) reports that the first half of 2017 has seen China’s state owned company, China Merchants Port, invest into Brazil by purchasing 90 per cent stake in the Brazilian port operator and invest more than $1 billion USD to develop and operate Hambantota Port in Sri Lanka. Chinese groups have planned to invest in nine overseas projects valued at $20.1 billion USD in the year to June 2017, nearly double the investment of $9.97 billion the for the same period the year before. Although Chinese regulators tightened controls on overseas investment by private companies, this has made acquisitions by state groups easier. However, some of these commercial projects have met with challenges where doubts have been raised by government over potential military use.

However, challenges to PPPs still remain, with legal complexity being one of them. For instance, poor regulatory and institutional frameworks can act as a barrier in terms of enforcing contracts. Also, regulations in various countries can also limit the level of foreign and private sector participation in ports due to its strategic nature. Therefore, government needs to ensure that it has set up the appropriate PPP framework to address and mitigate risk and provide adequate legal, technical and managerial expertise. When awarding concessions, port authorities have also started examining private port operators carbon emissions and green port
credentials to ensure they comply with climate change policies and environmental regulation (UNCTAD 2017). The empirical evidence suggests that the median size for PPP project is around US $200 to $300 million with an average concession of 30 years. Majority of projects tend to follow the Design Build Finance Operate (DBFO) structure while the second frequent is are Build Operate Transfer (BOT) structure. However, the empirical evidence on the success of PPPs are mixed suggesting cost over runs, delayed delivery or changes to the specifications made by the public or private sectors after contracts have been awarded, resulting in increase in prices. PPPs seem to perform better for road, bridges and prison projects as compared with IT and soft services (Araújo and Sutherland 2010).

Ultimately, PPPs can bring about efficiency gains depending on how risks and responsibilities are shared and transferred from the public to the private sector to achieve a mutually beneficial outcome for both parties. In conclusion, Brooks and Balthazar (2006) stress that the decision to devolve ports partially or fully should rest on the assessment by government of its own ability to manage the port’s performance critical factors. These factors include upgrading organizational systems and capabilities to keep up with rising global standards in information processing capability, equity, ethics, and the participation of the workforce.

### 2.2.2 The evolving role of Port Authorities

We now turn to discuss the evolution of the role of a ‘Port Authority’. Since the 1980s, port reform has resulted in a change in the traditional role of the ‘Port Authority’. Historically, governments usually devolved port development responsibility to port authorities. Port authorities usually represent a public sector body established and appointed by government with a lot of bureaucracy (Goss 1990c; De Langen and Van de Lugt 2017). These bodies can
sometimes consist of people representing or being nominated by highly interested parties, such as associations of shipowners' agents, city authorities or trade unions. These parties may succeed in pursuing narrowing sectional interests rather than those of the ports’ ultimate users because of poorly defined objectives by ports. They can also be responsible to government departments headed by senior politicians, allowing politicians to take an interest in such matters.

De Langen and Van de Lugt (2017) argue that this traditional perspective of a public sector port authority does not do justice to the commercial nature of port development. They do not suggest leaving port development to private enterprise. However, if government wants to retain control of port development, port authorities should be responsible for the regulatory, infrastructure and operations. The separation of control from operations reflected in most ‘landlord models’ is not to split the government and private sector. Instead, this increase in autonomy allows the port to develop into a business model of a ‘Port Development Company (PDC)’ that focuses on creating value for the port. It also involves developing connections within the port cluster. The reason for developing the commercial value of a port is due to the intense competition for ports to attract cargo and to improve their competitive position. An increasing number of port authorities in the Netherlands have gained further autonomy in managing operations through this model (De Langen and Van de Lugt 2017).

Verhoeven and Vanourtive (2012) use a different approach by classifying a port authority into a conservator, facilitator and entrepreneur. A ‘conservator’ port authority is passive, mechanistic and traditional in its operations. A ‘facilitator’ port authority sees itself as looking beyond the traditional boundaries of ports to engage in strategic partnerships. Lastly, the ‘entrepreneur’ port authority has a more commercial approach to investing. In recent times, De
Langen and van de Lugt (2017) note that some port authorities have left out the use of the word ‘authority’ and referred to themselves as a ‘Port Development Company’ or ‘Port of Barcelona’. The removal of the term authority reforms the image of an organisation that was created by government to perform a specific function which does not involve providing commercial services in competitive environments. For instance, ‘Havenbedrijf Rotterdam’ which means ‘Port Company Rotterdam’, was established in 1932. In the Netherlands, institutional transition of port authorities has led to its four large port authorities developing into autonomous organisations despite being owned by government. These companies develop long term business plans with a focus on the company’s role and commercial objectives. This expands their role to more than just a ‘landlord model’. The number of autonomous port authorities has also increased in Italy, France, Greece, the Netherlands and Portugal (Brooks et al. 2017).

Notteboom et al. (2017) argue that the push for cooperation between seaport authorities stems from increased cooperation between shipping companies and the vertical integration of supply chains. As shipping companies cooperate to set up shipping alliances to gain larger economies of scales, it gives them greater bargaining power to negotiate tariffs. This has prompted greater port cooperation amongst European ports. Van De Voorde and Verhoeven (2017) have argued that this, for example, has been the case in Belgium. These attempts at greater cooperation between ports have also led to mergers of cross border ports such as the Copenhagen Malmo ports merger (De Langen & Nijdam 2009). However, Brooks et al. (2017) argues that attempts at having a ‘common port policy’ had limited success in the European Union because of the difficulty in reaching a consensus across various countries, interest groups and stakeholders. Reveley and Tull (2002) argue that the main reason coordination of port planning does not work at national levels is because ports policy may not align with the broader national policy
and institutional framework. This results in a weaker outcome because the objectives of the port privatisation, broader transport policy and economic policy do not align. Similarly, port cooperation in Japan has only achieved limited success in favouring public sector investment on just a few strategic hub ports that are having the potential to compete as transhipment hubs. Therefore, privatisation can bring about uncoordinated development in port development. This will be discussed further in Section 2.4 with reference to the Swedish and UK ports.

The discussion above highlights the various port authority models that could be applied in various countries. These models continue to evolve and reflect the complex nature of port ownership. However, which model is better? Is it the private, public or a hybrid model? The next section aims to answer this question by presenting the arguments for and against private and public ownership.

2.3 Private Versus Public Debate

As we have seen above, the early 1980s saw a shift in public to private investment in ports driven on the grounds of efficiency improvements and reducing public debt. The recent worldwide trend towards port devolution provides evidence of a much greater range of existing potential port governance models than had been contemplated by previous authors. As discussed previously, Brooks (2004) argues that the WBPRTK approach was too simplified as it did not provide guidance to a government on which approach to undertake when faced with pressure to devolve port administration. This section aims to analyse the advantages and disadvantages of public and private ownership.
Globalisation has resulted in greater inter-port competition to attract more customers where geographical distances between ports are minimal. For instance, this can be seen along the Straits of Malacca between Malaysian and Singapore ports. When new ports emerge, the neighbouring ports will feel the effects of competition. Carriers will seek cost reduction and operational efficiency at the ports they use (Feng et al. 2012). If ports fail to attract traffic in a context of a free competitive market, their performance will decline. Apart from geographic location, port facilities are important for economic competition. Mega ships have continued to increase the pressures on ports to dredge further to accommodate the increase in water depth requirements (International Transport Forum 2015). Therefore, service levels, external factors such as international politics, social and environment and information systems are critical. Other criteria include hinterlands networks, investments in ports, stability of port labour, safety, speed of cargo handling and documentation stability, terminal operation efficiency and adaptability to the changing market environment (Feng et al. 2012).

Cullinane and Song (2002) argue that expansion in public ports is constrained as their assets cannot be used to raise capital. Privatisation enables ports to broaden their capital base and this then provides them with the opportunity to seek and obtain capital from the most appropriate source. This source of financing can enhance development, expansion, and improvement of infrastructure in ports at a time when governments are meeting increasing taxpayer resistance and are reluctant to further increase their debt. Advocates of privatization base their arguments upon three streams of literature in economics. These are property rights, transactions cost, and principal-agent literature. Property rights literature focuses on the non-transferability of ownership claims in the public sector. Transactions cost literature analyses the decision by an economic agent, such as a firm, to make or buy a product or service (Gillen and Cooper 1995). Principal-agent literature is concerned with the problem of information and incentives. It poses
the question as to what incentives does the agent need to provide for the principal to obtain more efficient outcomes (Vickers and Yarrow 1989).

Applying these concepts, Williamson (1981) argues that public sector bureaucrats have less incentive to minimize costs or make decisions that increase the future value of an asset as they are unable to obtain appropriate gains from their efforts. Therefore, they have less incentive to undertake actions which result in improved efficiency. Furthermore, the lack of transferable property rights result in less incentives for monitoring managerial behaviour. However, in the private sector model, the future value of decisions is capitalised into the value of the firm. Therefore, the owners have a greater incentive and ability to ensure managers are working on their behalf (Gillen and Cooper 1995). Similarly, Gillen and Cooper (1995) provide a strong rationale for port privatization. They point out that governments believe that privatisation encourages and improves efficiency, makes industry more responsive to the demands of customers, reduces public debt, and forces management to face the realities of the marketplace. Vickers and Yarrow (1989) are firm supporters of private ownership. They conclude that ownership of a firm will have significant impact on its performance, given that ownership rights modify the structure of incentives available to decision-makers in the firm.

Haarmeyer and Yorke (1993) argue that public port authorities are inefficient and their management is not responsive to changes in the industry. Lacking exposure to full competitive pressures, publicly owned and operated ports have weaker incentives to efficiently allocate labour and capital resources and are more likely to be subject to extraneous political influences. Increasingly, international competitive pressures encourage shippers and ship operators to direct cargo traffic to ports which have the most cost-effective industrial bulk and non bulk handling techniques and better intermodal coordination. These tend to be ports where private
Managers have greater autonomy and incentive to adopt technological changes and efficient labour practices.

However, many researchers do not agree that full privatisation is a solution to the problems of a public port. Heaver (2006) argues that historically, port improvements were not a matter for private investment because it was viewed as a quasi public good\(^2\). He argued that simply transferring responsibility to the private sector to avoid government spending provides neither a desirable nor an economically efficient solution to meeting the transportation needs of a community. Privatization also increases the risk of a port administration disregarding its statutory ‘public service’ functions that it has been entrusted with, as private investors and operators tend to favour profit maximization and cost minimization. The lack of competition could also see that a profitable public monopoly port could turn into a private monopoly. Juhel (2001) argues that the private sector will only invest when risk is limited in return for profits. Countries that have economic and political instability often see the state or an international body absorbing the risk of port operations.

Goss (1990c) and Baird (1995) argue that ‘port regulation’ is an essential element that should not be transferred to the private sector because its nature as a quasi public good implies that the private company will be regulating itself and other competing companies in the same port area. The regulation of ports is also an essential element which combines duties and responsibilities that a port authority has to enforce as established by statute. In addition to the above, a port authority may also be expected to monitor the performance of the port, coordinate policy making with local and national government bodies, plan for future expansion, and market and promote the entire port and its facilities to users. Therefore, port regulation is the

\(^2\) A quasi public good is a good that is excludable but non rival (Hubbard et al. 2015, p.464)
one element of a port which should be least likely to be privatised, as this will imply that the port company regulates itself along with competing companies within the port area. Instead, convincing arguments have been made in favour of the retention of public port authorities to ensure the regulatory function to be effectively carried out (Goss 1990c; Baird 1995). As Baltazar and Brooks (2001, p.171) noted,

If the government opts to privatize the regulator functions, the authors believe these should not be outsourced to the port. If this happens, as it sometimes does, the fox would oversee monitoring or overseeing the chicken barn, and the potential for abuse of the natural monopoly position that ports may enjoy increases dramatically.

Regardless of whether or not there is a landlord or comprehensive port authority, Goss (1990c) argues that only a public authority can provide the necessary monitoring to protect the public against monopoly behaviour. This is because the private sector's time horizon can be relatively short compared to that of the public sector due to pressure by shareholders for quick results. This in turn results in higher prices to recover costs more quickly. However, Baird (1999; 2012) argues that the public sector has its own timeframes with politicians under pressure by their constituents as seen in the case of the port privatisation in the United Kingdom. Therefore, there is a strong argument in the literature for public authorities to retain their regulatory function (Goss 1990c; Baird 1995; Balthazar and Brooks 2006; Cullinane and Song 2002; Tull and Affleck 2007).

Opponents of privatisation argue that privatization would lead to monopolies, loss of service, reduced flexibility, and unfairness among users as well as between modes. Some view private ownership as the elevation of private greed over public interest and as a short sighted policy
that sells valuable state assets in order to finance tax cuts with no adequate safeguards for the consumer or worker (Gillen and Cooper 1995). However, Goss (1990a; 1990b) argues that a public port could still abuse its market power through excessive rent extraction by port authorities. Goss (1990c) gives the example of the discovery of oil beneath the Port of Long Beach. Its extraction provided a royalty revenue stream to the port authority. However, as these funds could only be spent on improving the port for commerce and fishing, it resulted in accumulating revenue surpluses which were held as a deposit. Goss concludes that both government and market failure is possible and perhaps port authorities should have most activities carried out by the private sector while still retaining ownership.

Similarly, Tull (1997) argues that the lack of competition amongst Australian ports in major capital cities existed because their geographical location had provided them with monopoly power over their hinterlands. This led to poor rankings of efficiency when benchmarked against international comparisons of efficiency. Tull’s analysis of the case study of the Fremantle Port Authority (FPA) in Western Australia showed that management practices at the FPA were inefficient due to over staffing and over investment. Internal promotions were also based on seniority rather than suitability for the position. Also, the price paid for office furniture was double if it had been obtained from outside the FPA. Instead of laying off surplus staff, they were employed to service the private vehicles of FPA staff. Therefore, the examples above suggest that public ports also enjoy monopoly rents if there is not sufficient competition to improve productivity and efficiency.

Likewise, a ‘landlord model’ is also susceptible to abuse of monopoly power and regulation. Verhoeven (2014) argues that this is the case of three of the four major port authorities that have been corporatized in Belgium and Netherlands, with no specialised national port
regulator. This has resulted in the National Competition Authority handling complaints involving ports or they are resolved through consultation with port users or self regulation. These complaints include disagreement on expected financial performance, state dividends and corporate taxation. Dooms and Farrell (2017) argue that although the absence of independent regulators have not hampered economic performance, there is concern over whether these conflicts will exacerbate in European courts in the future. A similar situation was highlighted for UK ports that had privatised their regulatory function (Monios 2017; Tull and Affleck 2007). This further highlights the need for the regulatory function to be independent and fall under public ownership.

Goss (1990c) argues that property rights should fall within government ownership as it gives powers to build port structures, demolish old ones and act as a freeholder. Secure property rights are necessary for port authorities to perform their functions. Public ownership also enables port planning to be carried out by the government. There is also the quasi public goods argument which views ports as providing goods that are unlikely to be provided by the market and are non rival but excludable. Therefore, a private company will not have an incentive to provide for goods from which it cannot earn revenue. On the contrary, the public sector can also levy taxes and distort the economy if it is unable to raise funds for investments in port infrastructure. Similarly, Goss (1990c) argues that negative externalities can occur within the port sector such as port congestion, pollution such as rubbish dumping and oil spills irrespective of ownership. There is also a need to agree on routes to link between the port and its hinterland to manage congestion or intermodal interference which further emphasises the need for public ownership. There is also a risk that competition might see the development of mergers, cartels and other forms of market power abuse, which can have negative effects on economic welfare.
Cullinane and Song (2002) argue that a division of responsibilities between a public port authority and private sector operators may well result in poor coordination of investments, services and operations. This could ultimately lead to reduced efficiency of hinterland operations. As a result, they may be inclined to abandon facilities and services which, although socially or environmentally essential, are less rewarding or incur expenditure rather than earn revenues. This was seen in the case of port privatisation in Sweden which will be discussed in the next section. In recent times, countries such as Greece, and Portugal have had to privatise their ports as a precondition for receiving funding from international institutions as part of the bailout conditions imposed following the ‘Global Financial Crisis’ (Brooks et. al. 2017).

Monios (2017) shows that ports in the UK system include private, trust and municipal ports. The national perspective in the UK is for ports to be self governing unlike other countries that have adopted the ‘landlord model’ approach to retain and influence port matters. Privatisation in the UK ports occurred in two phases. The first phase was when several ports came under public ownership at the end of World War II under the British Transport Docks Board (BTBD) which was renamed as Associated British Ports (ABP) in 1982. Port privatisation saw 49 per cent of shares sold in 1983 and the remainder in 1984, with ABP now the largest owner of 21 ports in the UK. The second phase began in the early 1990s with the selling of a handful of the largest trust ports. However, it should be mentioned that the Ports of Liverpool and Felixstowe had already been privatised in 1971 and 1991 respectively. Full privatisation of ports in the UK limited competition due to monopoly ownership on estuaries and on single cargo sites such as oil terminals. This potentially allowed port owners to extract economic rent from users through their combined landlord and harbour authority status with limited oversight from the government on pricing policy.
Also, full privatisation left no role for further reform initiatives. Monios (2017) argues that the abolition of the National Dock Labour Scheme (NDLS) in 1989 brought about more improvements in efficiency at ports than the change in ownership model. Thus, the UK case highlights that the choice of governance model does not necessarily relate with port performance.

Over the last twenty years, Baird (2013a) argues that the UK had witnessed private equity firms acquiring port operating groups and explores the reasons and implications of such ownership. Baird’s study focuses on major ports owned by private equity funds and excludes ownership by port operating companies. The port privatisation process in the 1980s saw former public sector port officials buying their ports at discounted prices through private equity and selling them on for higher prices once the financial markets settled. In many countries, ports are viewed as strategic assets and it is rare to have the state sell its ports. This rationale for port privatisation in the UK was due to the belief in political circles that it was the markets, and not government’s function to provide port capacity.

Baird argues that for many private equity firms, ports are a safe investment as they exist in semi protected markets and have significant barriers to entry which should result in sustainable profits. Private equity firms are also interested in the attractiveness of the asset so that in can be resold in future years to repay the borrowed capital. With increase in trade flows, seaports offer growth potential as traffic volumes and revenues will also grow. These sustainable profits allow the private equity firms to repay interest on debt from a leveraged transaction. As such,

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3 Private equity is defined as an asset class of equity securities that are not traded on the stock exchange (Baird, 2013a, p.159).
Baird (2013a) argues that private equity ownership is not focused on creating new port assets to benefit the wider community or improve competitiveness in the economy.

However, Farrell (2013) challenges the arguments Baird (2013a) makes about private equity ownership. Farrell’s (2013) argument is that profitability under private equity ownership is not any less than under other types of private ownership or public sector ports. Also, case studies have produced mixed results in terms of stability of ownership. Farrell argues that although the prices paid for the Trust Ports in the UK were low, this has created an image of the port industry as a ‘get rich quick’ scheme which was not the case. This was because the privatisation process coincided with the recession of the early 1990s which saw ports report falling profits. Port land was also undervalued and it was believed that the end of the NDLS would bring about an increase in competition. However, Farrell (2013) agrees that the privatisation process was badly structured. Ports chose their own form of privatisation, subject to the approval of the Department for Transport. However, Baird (2013) responds by arguing that private equity ownership and regulation should be avoided as it entrusts its seaport ownership in the hands of offshore investors with highly leveraged transactions based on borrowed money. Baird argues that UK has to look towards the approach used by other countries in managing seaports and other infrastructure.

Monios (2017) agrees that Baird (2013) is correct in his criticism of the high level of both debt and profits found in private equity ownership of many UK ports. However, Monios also agrees with Farrell (2013) that the lack of investment by private equity firms may not always be the end result if the right incentives are present to these operators. Monios (2017) argues that the national perspective in the UK is for ports to be self governing unlike countries that have adopted the ‘landlord model’ approach to retain and influence port matters. In more recent
times, there has been a push by the Department for Transport towards preparing National Master Plans to allow national monitoring. However, Italy and Germany have also struggled with national level coordination of port investments. Despite this, Baird (2013) and Monios (2017) argue for the need to establish a national port regulator to represent the nation’s interest and monitor port performance.

In summary, both the arguments for and against the public versus private ownership debate have merit. Most arguments against public ports are arguments against inefficiencies arising from bureaucracies, monopolies and the role of regulation. In the public arena, political interference and lack of appropriate incentives can reach the point where managers simply want to be left alone and so they merely do enough to achieve that goal. The arguments for privatisation are around improving efficiency, performance and maintaining a competitive edge. This is achieved through owners capitalising the future value of decisions into the value of the firm which provides owners and managers a greater incentive to perform. The case of the UK ports also highlight the issues around national coordination of port planning. The next section looks at the empirical evidence of whether or not there is a preferred model for governance.

2.4 Trends in Port Governance

The late 1980s and 1990s saw the first wave of port reforms through privatisation in the UK ports. Brooks and Pallis (2012) argue that the ‘new public management’ philosophy was a result of dealing with budget deficits and desire to improve efficiency of public enterprises. A growing body of empirical evidence shines some light on the governance models used and port performance. Baird (2002) identifies and analyses recent trends about privatization of the
world’s top-100 container ports. The results suggest that the most common aim or motivation behind a port seeking to bring in the private sector is to increase efficiency and lower port costs. Terminal concessions and leasehold arrangements are the most common methods used by ports to facilitate private sector intervention. Although some models such as the public port authority/private concession or lease arrangement models are used more than others, the key conclusion is that there is no single approach to port privatisation. The model and split between public/private investments depends on local laws, competition and the local ‘way of doing things’.

A key feature of port reform in many countries involved eliminating the role of state run monopolies, decentralisation and involving the private sector (Wilmsmeier and Monios 2015). As discussed in the previous section, port privatisation began in the UK with the outright sale of the port, leaving the ports with no port regulator. The process evolved in two stages with privatisation of state owned ports and railways from 1979 to 1983. This was followed by the sale of major trust ports. The reform also saw the abolition of the NDLS which allowed the ports to be more competitive. Brooks and Pallis (2012) argue that the driver behind the sale of British ports was more about removing public ownership rather than improving port infrastructure and facilities as undertaken in other countries (Brooks and Pallis 2012). Haarmeyer and Yorke (1993) argue that the outcome of port privatization in the UK resulted in more profitable and efficient ports. However, Baird (1995) argues that the privatized ports became profitable as a reflection of their low debt beginnings coupled with other advantages such as local and estuarial monopolies, real estate gains, and self-regulation of financial support for the industry. Baird concluded that many of the trust ports were sold at below real market value and had no meaningful competing bids. Despite its merits and demerits, gradually the British privatisation wave spread across the globe.
Port privatization had begun to move forward in Mexico with the country’s largest port, Veracruz, taking the first step towards privatization by franchising three private stevedoring services in May 1991 (Villa 2017). Privatisation in Malaysia also followed with its first container terminal, Port Klang, which was becoming profitable but inefficient by international standards to handle the growth of a newly industrialising economy. It had complaints about congestion, low productivity and pilferage. In 1983, the privatisation process began with the Fifth Malaysian Plan 1986-1990. The Kelang Container Terminal was initially corporatised before privatisation followed in 1992 (Tull and Reveley 2002; 2008, Ghashat et al. 2011). In 1989, Thailand's government signed contracts with CT International Lines for private management of its new ports at Phuket and Songhla and reached an agreement with striking Bangkok port workers that only the container-terminal portion will be contracted out and the government's Port Authority will operate the general cargo terminal (Haarmeyer and Yorke 1993).

In 1996, the Port of Singapore Authority (PSA), decided to privatise its port administration. Tongzon (2008) states that Singapore took a gradual path towards privatisation through corporatisation compared with other Southeast Asian ports. The driver behind privatisation was not to balance the budget, as the PSA’s financial performance was sound. Rather, it was to give the PSA greater responsibilities and autonomy over everyday decisions and commercial strategy. With growing competition, especially from Malaysia, the government felt that it was necessary to make changes to the governance structure to enhance commercial flexibility and operate and invest effectively. This gave the PSA more autonomy and ensured a level playing ground between government linked operations and private corporations.
However, the departure of two major container shipping lines, ‘Maersk’ in 2000 and the Taiwanese shipping line ‘Evergreen’ in 2002 to the neighbouring Malaysian port of Tanjung Pelepas demonstrated the threat regional competition could pose to the PSA. Therefore, the PSA Corporation was restructured to cover only Singapore’s domestic container terminal operations. In December 2003, this downsized entity became a fully owned subsidiary of a new holding company, PSA International. This enabled PSA International to have a more global focus and explore international opportunities as a response to limited growth opportunities in Singapore (Cullinane et al. 2007).

The Port of Rotterdam underwent a similar corporatisation process in 2004. The reason behind the corporatisation was to provide more autonomy from the municipality with the port still being owned by the local government. In 2008, the Port of Rotterdam was the first amongst other European ports to adopt an international strategy. This model allowed the opportunity for international activities such as boardroom consultancy, management contracts and joint ventures. With limited growth in the home market, greater financial and strategic freedom enabled the port authority to broaden its focus from Rotterdam to taking equity stakes in ports abroad (De Langen and Van der Lugt 2017).

The success of Swedish port privatisation has been rather limited. Bergqvist and Cullinane (2017) argue that the Port of Gothenburg had experienced several disturbances because of privatisation. In 2013, APM terminals decided to increase tariffs by using a ‘loophole’ in the agreement that allowed them to introduce new charges. Customers were disappointed with the increase in tariffs as there had been no improvement in service levels or infrastructure investment to justify the increase. Prior to privatisation, the coordination of rail services to different terminals and freight segments was relatively easy. However, this has become a lot
more difficult as privatisation saw the separation of terminal operations and the port authority which became responsible for the overall rail coordination. This reinforces the arguments of Goss (1990c) and Baird (1999) raised in the previous section that property rights should fall within government ownership to improve coordination issues. Monios (2017) and Baird (2013) also argue that the UK ports face a similar issue with no national port regulator monitoring port performance or national interests.

Historically, ports in Australia have been publicly owned. Port reform in Australia was driven by the Federal government’s push for microeconomic reform in the early 1990s. The aim of the microeconomic reform was to improve economic performance through improvements in efficiency. In 1995, the National Competition Policy was designed to produce a co-ordinated approach to competition reforms (Reveley and Tull 2008). Port reform initiatives in Australia include the sale and transfer of ownership, sale of assets of infrastructure or services, long-term lease arrangements, corporatization and commercialization (Everett and Robinson 1998). According to Reveley and Tull (2008), port privatisation began in Victoria in 1996 when Geelong and Portland were sold. This was followed by privatisation in South Australia where all ports were sold to Flinders Ports in 2001.

Chen et al. (2017) argues that port privatisation in Australia’s major capital cities has been part of the government’s asset recycling project to fund other infrastructure and reduce debt. The resulting governance structure is a 99 year long term leasehold for the port with the private sector. The duration of a 99 year lease does appear long but the rationale for it is to attract investors with a long term perspective. However, Chen et al. (2017) argues if there is no term in the lease contract about performance management, it is possible that investors will limit port investment and maintenance, especially towards the end of the lease term. Also, under the
private landlord model, the company can exercise monopoly power through vertical integration and higher port charges which could have an impact prices of port services. This approach was undertaken at the Port of Brisbane (2010), Port Botany (2013), Port Kembla (2013), Port of Newcastle (2014) and Port of Darwin (2015). The privatisation of the Port of Darwin also raised national security concerns as it included the Darwin Marine Supply Base. The Northern Territory Government signed a $506 million deal with Landbridge Group owned by Chinese billionaire Ye Cheng for 99 years, with Landbridge taking a 80 per cent take, leaving Australian stakeholders with 20 per cent. The concerns were raised because Darwin plays host to major Navy and multinational exercises and is the centre from which the Navy conducts border integrity operations (ABC News, 15th October 2015). Therefore, these concerns of customers and communities of the privatised ports need to be closely monitored. The Port of Brisbane, New South Wales and the Port of Newcastle have no price regulation nor a formal independent statutory regulator. Ports in New South Wales (NSW) need to provide advance notice of any propose change to port charges.

However, Flinders Port in South Australia and the Port of Darwin in the Northern Territory have an independent regulatory and monitoring framework. A five yearly review of Flinder’s Port pricing regime showed that the port was already charging higher prices in 2012 compared to other ports (Lloyd’s List Australia, April 27th 2017). In a submission to the Essential Services Commission of South Australia, Meehan and Tull (2012) argue that the approach adopted by the Commission to monitor trends in the prices of Essential Maritime Services was flawed as it is measured only against changes in the Consumer Price Index (CPI) instead of adopting a CPI-x regulation which could promote efficiency and place downward pressure on prices. This is because this approach encourages a private firm to maximise its increase in price, if permitted, without having to increase its efficiency. Therefore, Cheon et al. (2010) argues
that this privatisation reform might improve the government balance sheet but not necessarily the long term performance of the port.

Ports in Western Australia have been operating under a commercialised governance model since 1999. Tull and Affleck (2007) evaluated the performance of eight WA port authorities after the regulatory regime of Western Australia’s ports had been rated as ‘poor’ by a report prepared by Access Economics for the Australian Council for Infrastructure Development (AusCID). Their results reflected that charges for services at Fremantle Port were not excessive compared with other similar ports around Australia. It was also difficult to make a direct linkage between economic regulation and superior economic performance. The findings from the report emphasised the role for a broader set of regulatory arrangements to govern the management and performance of WA’s port authorities (Tull and Affleck 2007). In 2014, the State Government decided to amalgamate seven of the eight port authorities into four regional port authorities. This was done to improve planning and port coordination across the State (Department of Transport n.d).

Rapid economic development and growing trade has led to Asian ports dominating worldwide container trade. By 2015, thirteen Chinese seaports ranked in the top 20 global ports. In China, policies of port corporatisation and privatisation have led to a much more market-oriented governance structure which has encouraged foreign investment and the diversification of ownership of port assets (Notteboom and Yang 2017). However, corruption in China continues to be a problem. Transparency International (2016), a risk based consultancy, ranks corruption in China a score of 79 out of 176 countries with a significant level of corruption presence in its
public sector. The initiatives taken to deal with corruption have intensified in China under the current President, Xi Jinping which has resulted in more rigorous administrative and reporting processes at ports.

Turning to Africa, Dooms and Farrell (2017) discuss the privatisation at the Ports of Nigeria, Ghana and Mozambique. Port reform in Ghana took place as part of the government’s wider reform programme, the Ghana Trade and Investment Gateway (GHATIG), that was initiated in 1998. This led to the port governance shift towards a national landlord port authority model which has also been partially successful. Port reform began with privatisation of stevedoring services and 20 year concessions to invite international terminal operators to manage its terminal. However, the challenge that the port authority in Ghana has to deal with is securing private sector investments through Public Private Partnerships (PPPs), timely investment in infrastructure and improving access to its hinterland. The ports in Kenya and Tanzania that still operate under the ‘tool port’ model could benefit from the privatisation lessons of the ports in Nigeria, Ghana and Mozambique.

Prior to privatisation, Nigerian ports were suffering from poor infrastructure, high dwell times, low labour productivity, high port charges, theft, customs fraud and overmanning due to nepotism and patronage. Although the privatisation process has resulted in improvements in operational efficiency at Nigerian ports, it has been held back by a lack of customs reform despite automated checks and hiring private companies to scan imported containers, corruption and high cost of port services. Terminal operators have also complained about the inadequate infrastructure at the ports. The government also banned the import of cargoes such as fish and cement that could be produced locally in response to the collapse in oil prices in 2015. This has
reduced terminal throughput without compensation for port customers (Dooms and Farrell 2017).

A further study by Sequeira and Djankov (2008) found the probability of paying a bribe at the Port of Maputo in Mozambique is nearly 53 per cent compared to 36 per cent at the Port of Durban in South Africa. Bribes at the Port of Maputo accounted for a 130 per cent increase in total port costs. At Maputo, bribery was limited to custom transactions carried out in person as private sector managers had been successful in keeping informal payments to employees in check due to its port reform process. Contrarily, automation of customs procedures at the Port of Durban found corruption greater amongst dock workers who were protected by powerful unions. The high level of corruption at Maputo has seen cargo diverted to the port of Durban. Nigeria’s corruption ranking based on Transparency International (2016) is 136 out of 176 countries while Mozambique’s ranking for corruption is even higher at 142 out of 176 countries. However, corruption ranking at South Africa is much lower at 64 out of 176 countries. Although these rankings can be subjective and should only be used as a guideline, they do support the findings from Sequeira and Djankov (2008).

In South Africa, Havenga et al. (2017) discuss the public ownership and management of the ports by the state owned company Transnet. The two operating divisions of Transnet are the Transnet National Ports Authority which is responsible for landlord functions and Transnet Port Terminal responsible for operations. As the port system in South Africa is vertically integrated and managed by the same company, port reform and regulation played a key role in mitigating pricing and institutional distortion which was necessary to achieve a fair level of economic participation and to make ports commercially viable.
Turning to Canada, Canadian ports have traditionally been owned by the Federal government and have witnessed waves of port reforms since the 1990s. These reforms were prompted by the release of the government’s ‘National Marine Policy’ document which proposed the commercialisation of ports in Canada. This resulted in the creation of Canada Port Authorities (CPA) in 1998. The federal government is still responsible for approving new construction on port-owned lands, which in many other countries is the responsibility of the local government. The commercialised port authority is responsible for operating an autonomous and financially sustainable commercial organisation.

Brooks (2017) argues that future reform towards privatisation is beginning to be discussed in Canada because of a recent review of transport policy which ‘encourages’ port privatisation. This has influenced discussions to expand capacity at the Port of Vancouver’s ‘Roberts Bank Terminal 2’ project, as part of a major container terminal expansion. The debate taking place is whether the revenue earned from the port authorities, which is a federal asset, should be reinvested into the port or used for other pressing needs. This would leave the private sector to bear the risk and finance the investment instead of the Federal Government. Although it has been argued that this expansion is not needed, this will be assessed by the level of interest the project attracts from private investors (C.D Howe Institute 2017).

Unlike Canadian ports, American ports receive subsidies from local governments. Balthazar and Brooks (2017) argue that it is difficult to allocate the United States (US) ports to a governance category. Many US ports are non-operating landlords with terminal activities managed by management leases or contractual arrangements (Brooks and Pallis 2012). Brooks and Pallis (2012) stress that the only federal role for port authorities in the US is channel and navigational aid maintenance. The ports in the US are owned by government with cargo
handling terminals outsourcing their services to the private sector. Some ports engage in strategic collaboration and have expanded their role from traditional landlord to supply chain participation (Knatz 2017). Knatz (2017) argues that, unlike other countries, the US has seen very minimal change to port governance over the last decade.

In Chile, port reform took place towards the end of the 1990s at the two main container ports, San Antonio and Valparaiso which brought about improvements in port productivity and efficiency. Prior to port reform, the ports operated on a ‘tool port’ model and intra competition between the two ports was minimal. The introduction of a concession in 2000 resulted in a private operator at each port which saw port throughput increase till 2011. However, the post financial crisis environment has seen container throughput decline due to infrastructure constraints. Although the terminals and ports operate efficiently, the reform failed to create a national port authority, leaving strategic and long term planning decisions to the Ministry of Transport and Telecommunications. Therefore, as the current governance model of concessions is drawing to an end, port planning development from the public authorities has not kept pace. The Chilean experience resulted in a new path dependence breaking out which resulted in a complete transfer of power from the public sector to private terminal operator, creating institutional weakness through over reliance on terminal operators. This can be seen when operations by private operators result in congestion or labour strikes that close the port and pose a threat to the national economy, leaving government with only a few options to address the problem (Wilmsmeier and Sánchez 2017).

Baird (2010) argues that despite evidence of significance private sector involvement in port operations and services, the results suggest that the public sector still has a strong interest in its seaport system. The leading general cargo ports of the world such as Singapore, Rotterdam and
Hong Kong are public ports and are among the largest and most efficient container ports globally. Although publicly managed, each has a significant level of private sector participation in cargo-handling operations. The updated outcome of port governance reforms in various countries is summarised in Table 2.5.
Table 2.6: Summary of trends in port governance reform

<table>
<thead>
<tr>
<th>Country</th>
<th>Date of last major reform (previous reform)</th>
<th>Port Governance Model Before and After Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2015 (1990s)</td>
<td>Port ownership models have evolved from public ownership to full privatisation (Flinder’s port) and towards a landlord model (99 year lease) models in the East Coast. However, ports in the West Coast have evolved to commercialised entities and have undergone a further amalgamation process.</td>
</tr>
<tr>
<td>Belgium</td>
<td>2009 (1999)</td>
<td>Corporatised ports owned by the municipality that are fully autonomous. The ports of Ghent, Antwerp and Ostend have become limited companies. Port authorities nevertheless remain dependent on financial support from the Region.</td>
</tr>
<tr>
<td>Brazil</td>
<td>2013 (1993)</td>
<td>In the early 1990s, a law was passed that transferred port operations to the private sector. The role of the existing Docks companies was transferred to port authorities. Further reform was introduced by the Federal Government in 2012 to establish clearer rules encouraging private participation in ports while clarifying roles and responsibilities of entities involved.</td>
</tr>
<tr>
<td>Canada</td>
<td>Canada 1998 (1982)</td>
<td>Canadian ports have been running as commercialised entities since reform in the 1990s. However, there is still discussion taking place on the future of privatisation with the recent review of transport policy.</td>
</tr>
<tr>
<td>Chile</td>
<td>2011–2015 (2004–07, 1990–1999)</td>
<td>Chilean ports have experienced a devolution process to the private sector that started in the 1990s. This was done to shift the responsibility, financing and management of port performance to the private sector.</td>
</tr>
<tr>
<td>China</td>
<td>2004</td>
<td>The Chinese ports have seen a significant change in port governance from a completely public or centralised model that shifted gradually to a joint management model for ports between central and local government between 1984 to 2004. The Port Law of 2004 saw a more decentralised port governance model which led to the corporatisation of ports and encouraged foreign investment by abolishing the 49 per cent ceiling and the need to have a local Chinese partner.</td>
</tr>
<tr>
<td>Cyprus</td>
<td>2016 (1973)</td>
<td>The ports of Cyprus have been running on public or state owned model since the 1970s and operate on a National level as there are no local port authorities. However, with a slowdown in business and profit in transhipment traffic, the trigger for port reform came in 2013 when the financial crisis engulfed Cyprus. This resulted in international creditors bailing out the State on the condition that inefficient State assets were liberalised. This saw the ports shift to a commercialise model for the Port of Limassol and the private sector taking over the management of marine services.</td>
</tr>
<tr>
<td>Region</td>
<td>Timeframe</td>
<td>Details</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>East Africa (Kenya &amp; Tanzania)</td>
<td>Kenya 2004 (1977) Tanzania 2004 (1993, 1977)</td>
<td>Reform in Africa has seen the private sector play a more influential role through participation in terminal operations. However, there are still concerns about the lack of a proper legal framework for investment and absence of an independent regulatory authorities. Following the break-up of the East African Community in 1977, Kenyan and Tanzanian ports were owned and managed by the national government. In Kenya, a landlord model was proposed in 2004 but it still operates a service port with the hope of moving to a landlord model in the longer term. Tanzanian ports were converted to a landlord port model.</td>
</tr>
<tr>
<td>France</td>
<td>2008–2011 (2004–2007)</td>
<td>In France, ports had previously operated according to the ‘tool model’ where the port authority manages the infrastructure and operations of the port. Since then, the French model of port governance has experienced two successive waves of reforms that have modified the status of ports. In 2004 ports were devolved to local authorities and the 2008 reform aimed at reorganising the financial management and autonomy of seven ports.</td>
</tr>
<tr>
<td>Greece</td>
<td>2008–current (1990–2003)</td>
<td>Port reform began in Greece with the corporatisation in 1999 with its two major ports Piraeus and Thessaloniki which were converted to government owned port corporation. This also included the quasi corporatisation of 12 ports of ‘national interest’. The 2008 financial crisis saw the call for tenders for the operation of the container terminals resulting in a Chinese state owned company, COSCO Pacific as a majority port owner.</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>-</td>
<td>In Hong Kong, port governance is largely left to the private sector to finance, develop and operate terminal facilities. The role of the government is around port planning and providing the necessary infrastructure to service the port.</td>
</tr>
<tr>
<td>Italy</td>
<td>2016 (1994)</td>
<td>Italy’s port reform began in 1994 as it transitioned from the public to the landlord model. However, port authorities were not given financial autonomy. With Italian ports at the risk of losing its position, further reform took place in 2016 which saw the consolidation of 24 port authorities into 15 port authorities with greater financial autonomy.</td>
</tr>
<tr>
<td>Japan</td>
<td>2011 (1995)</td>
<td>The Japanese ports current policy is to target public investments on a limited number of transhipment hub ports due to a shrinking budget and loss of its competition to the Port of Busan in Korea as a transhipment hub and other nearby Asian ports.</td>
</tr>
<tr>
<td>Korea</td>
<td>2010 (1996)</td>
<td>Ports in Korea are operated by the government with strong growth following the growth in the Chinese economy. Over time, this model has evolved to see more private sector participation to expands it business overseas. The Korean port governance models is best described as a mixture of public and private participation or Private/Public port.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Late 1980s</td>
<td>Port Klang was privatised as part of the Malaysian government ‘Fifth Malaysian Plan 1986-1990 and developed as a leading transhipment hub in Malaysia.</td>
</tr>
<tr>
<td>Mexico</td>
<td>2013/14 (2005, 1993)</td>
<td>Port governance in Mexico has been completely operating under a closed economy public model, resulting in a lack of infrastructure investment and competition at the ports. In 1993, the new port law improved port operations through private sector participation.</td>
</tr>
<tr>
<td>Country</td>
<td>Year(s)</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2004/2011/2013</td>
<td>The Hanseatic tradition still follows for ports in the Netherlands resulting in a corporatised model.</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1988</td>
<td>Ports were under the public ownership model. However, the Port Companies Amendment Act 1990 allowed ports to be fully privatised. The outcome was partial privatisation of Northland Port Corporation, Port of Tauranga, Southport and Lyttelton Port through listing of shares on the New Zealand stock exchange.</td>
</tr>
<tr>
<td>South Africa</td>
<td>2002 (1990s)</td>
<td>Ports in South Africa are public port models which are managed by the state owned company Transnet. It is responsible for port operations, port landlord and railroad.</td>
</tr>
<tr>
<td>Sweden</td>
<td>2009/10</td>
<td>Swedish ports have traditionally been owned by municipalities. However, greater regional involvement in the port sector influenced the process of port privatisation at the Port of Gothenburg in Sweden. According to port authorities, the Gothenburg privatisation has not been very successful and privatisation has since stalled.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>2012</td>
<td>Taiwanese ports have been owned by the government by four units that acted both as the regulator and market player. In 2012, the government decided that port efficiency needed to be increased and set out towards a landlord model in which there was privatisation but public ownership was retained.</td>
</tr>
<tr>
<td>Turkey</td>
<td>2004 (1993)</td>
<td>Turkey’s ports have traditionally been operated by the government. However, operational limits of public ports saw the need for port devolution. This resulted in a shift in governance from the service port model towards a tool port model and now moving towards a landlord model.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>United Kingdom 1990s</td>
<td>Port governance in the UK system includes private, trust and municipal ports. Privatisation in the UK ports occurred in two phases. The first phase was when several ports came under public ownership at the end of World War II under the British Transport Docks Board (BTBD) which was renamed as Associated British Ports (ABP) in 1982. Port privatisation saw 49 per cent of shares sold in 1983 and the remainder in 1984, with ABP now the largest owner of 21 ports in the UK. The second phase began in the early 1990s with a handful of the largest trust ports were sold. However, it should be mentioned that the Ports of Liverpool and Felixstowe had already been privatised before this.</td>
</tr>
<tr>
<td>United States of America</td>
<td>No substantive reform</td>
<td>The port governance in US is difficult to categorise as many US ports are non operating landlords with terminal activities managed by management leases or contractual arrangements. They still remain under public ownership.</td>
</tr>
</tbody>
</table>

**Source:** Adapted from Brooks *et al.* (2017) with additions from Reveley and Tull (2008) on New Zealand and Reveley and Tull (2002) on Malaysian ports
It can be seen from the discussion of the ports summarised in Table 2.6 that ports still have a significant level of government ownership with the level of private sector investment in ports which varies from concessions, PPPs, corporatisation and commercialisation. In countries such as the UK, it can be debated if the privatisation process brought about efficiency gains and a loss of monitoring roles for government which could be unpalatable to other governments. However, the privatisation of the Malaysian ports has seen Port Klang and the Port of Tanjung Pelepas improve performance significantly. Institutional conditions also restrict port governance choices. The Port of Rotterdam exemplifies this as it is still owned by the local government and is keen on keeping its ‘Hanseatic’ tradition but saw the importance of the role of the private sector to maintain its competitive advantage. On the other hand, countries such as Singapore have been successful at operating a ‘landlord’ model where government ownership still plays a dominant role but operations are outsourced to the private sector.

Brooks et al. (2017) argues that port reform is never easy to implement as the timeframe varies from country to country as seen in the discussion above. Some countries such as France took three years to implement their port reform while Brazil took twenty years as this process was disrupted by conflicts and lengthy negotiations. Reforms in Greece have been slow while there have not been any substantive reforms in the United States over the last decade. However, the uncertainty surrounding global events such as the 2008 global economic crisis have also made it more challenging for governance frameworks to respond appropriately. At the same time, the economic crisis also provided the impetus for many ports to transition towards the landlord model to reduce costs, improve efficiency and profits. For example, the global economic crisis saw both Korean and Taiwanese ports lose their competitiveness as transhipment centres. This resulted in both countries pursuing extensive reform to restore their former positions as transhipment hubs (Song & Lee 2017; Pilcher & Tseng 2017; Brooks et al. 2017).
Brooks et al. (2017) argues that the conclusion from scholars studying port reform is that despite governments wanting to have a more commercial focus, the results from port reform in various countries did not deliver the full benefits that were sought. One of the reasons for this is the complexity involved in the reform process which involves policy actors initiating the change, successful implementation of the reform process and the transition time, that can be affected by many variables. Flaws in the decision making or implementation process together with an inconsistent governance framework, have given rise to some unsatisfactory results. Therefore, board membership of ports can also determine the outcome of port reform. Good governance, accountability and transparency and independence of board directors also have a significant impact on the trajectory of port reform.

The empirical evidence on port reform in various countries does suggest that there is no perfect model. Tull and Reveley (2002) argue that although there can be a tendency to apply a ‘one size fits all’ approach, different forms of privatisation are needed to suit the different circumstances of individual ports. Likewise, Brooks and Pallis (2008; 2012) argue that the trends in port governance summarise the ‘public versus private’ debate that neither the public or private ownership model delivers the best result. Rather, each country has its own institutional framework, traditions and culture that best determine the appropriate model of port reform, dispelling the myth of the perfect model.

This argument is further strengthened by several authors Debrie et al. (2013) arguing that the ‘myth of the ideal model’ for port governance does not exists. This is because of a lack of strong relationship between the governance framework and port efficiency. Therefore, further investigation needs to take place focusing on the relationship between time and space to gain a better understanding of the transformations that occur during various waves of port reform.
Therefore, Debrie et al. (2013) argues that the World Bank’s Port Reform Toolkit provides a very static analysis on port reform that describes the tasks of port authorities whereas a more dynamic analysis is needed to evaluate both the short term and long term evaluation of reform. This evolutionary approach discussed earlier in the chapter will provide better reasoning in evaluating the discrepancies between intended reform and realised reform. However, there is consensus in the literature that devolution of port operations does improve efficiency outcomes. Likewise, many port authorities that have adopted the ‘landlord model’ have also understood the importance of having a more commercial focus in the governance of ports. As port operations become automated, cyber security threats have started to pose a challenge to port governance. The next section discusses these security risks and measures taken to increase cyber security.

2.5 Port Automation and Cyber Security

As the shipping industry develops rapidly with mega sized container vessels and alliances, automation and digitisation has begun to disrupt the traditional ways in which cargo is handled, interaction with customer bookings and invoicing shippers. Although this is not discussed in detailed for the case study ports which have no fully automated terminals, the greater demand on the technology platforms used has meant that cyber security is starting to become a dominant issue for ports (The Maritime Executive, 22nd December 2017). The case study ports only have partially automated terminals, but industry pressure and competition is pushing for ports to invest in automation to improve efficiency, productivity and lower costs. Currently, only 4 to 5 percent of container volume is handled by fully automated terminals globally.
The challenges in protecting automated terminals from cyber attacks lies in the complexity of the network links between mechanical and data networks. These attacks tend to target vulnerabilities along a supply chain, allowing cyber criminals to attack from a number of entry points. Also, the spread of viruses on port systems with Wi-Fi is much easier. UNCTAD (2017) reports that this raises the risk of facing cyberattacks such as hacking, malware, phishing and Trojan horses that can be sent from hackers and criminals around the world. Cyberattacks aimed at stealing sensitive data can have repercussions for companies and also national security. Therefore, security measures for data protection need to be in place in the event of a partial or total disruption of facilities.

In the past, there has been insufficient focus on cybersecurity from the States of the European Union due to insufficient awareness of security challenges among government, port authorities, shipping companies and telecommunication providers. Cyber threats to ships can occur through their global positioning systems that exchange data about the ships positions, cargoes, and speed. The threat to ports comes as the attackers gain access to systems to seize a ship, close a port or terminal or even get access to sensitive information such as pricing documents (UNCTAD 2017).

Even small cyberattacks can result in losses of millions of dollars for businesses. In 2001, the internet systems of the Port of Houston were attacked in the United States. This affected the entire performance of its network including the supply of tides, water depth and weather data which affected the ships’ navigation to the harbour. In 2013, the Port of Long Beach experienced several cyberattacks. The port responded by increasing its security measures, data integrity, installing firewalls and backing up key data. In June 2017, a cyberattack on Maersk shipping line affected the company’s worldwide operations and cost the company nearly
US$300 million. This resulted in a logistical catastrophe, delayed shipments, closure of terminals in several worldwide ports including the Port of Rotterdam, Netherlands, Jawaharlal Nehru Port in India and terminals in the United States. The attack involved ransomware which takes control of a computer and demands online payment to gain access to data and systems (UNCTAD 2017; The Maritime Executive, 22nd December 2017).

In response to the cyberattacks, the Baltic and International Maritime Council (BIMCO) has advocated the need for guidelines to deal with cyber security threats (The Maritime Executive 22nd December 2017). Also, blockchain technology has started to develop as a security response to these cyberattacks. Blockchain is a distributed database that creates multiple copies of records on different computer systems using cryptography and other techniques to create secure records of transactions. This technology has been trialed in finance with the introduction of the bitcoin and other digital currencies. Although in its early stages, the use of blockchain technology has been recommended for maritime shipping for the transfer and sharing of data, including the status of shipments and pilot studies that have been used in logistics and supply chains of the transport and maritime industry. Some shipping companies have also been trialling the use of blockchain for developing electronic alternatives for traditional paper based documents. However, some challenges remain with the use of blockchain. This include interoperability, legal issues and devising mechanisms to incorporate substantive maritime contract clauses (UNCTAD 2017). Therefore, regulatory frameworks for the maritime sector should reflect these cybersecurity concerns and ensure compliance and enforcement of these cybersecurity regulations. In the context of the case study ports in Indonesia, this is not explored in detail as they are not fully automated. However, this may become a growing issue in the future following global trends in port automation that increase cyber security risks and demand more skilled labour.
2.6 Conclusions

In conclusion, seaports as institutions have been shifting governance from public ownership to models of corporatisation, landlord ownership and full privatisation. The governance model a port adopts is strongly linked to the cultural or institutional environment in each country. Ports as institutions can then develop institutional lock in or path dependency where the port will continue to exhibit behaviour in the same manner unless there is a major trigger for reform. Therefore, the outcome of port reform will depend largely upon whether a port authority is an entrepreneur, facilitator, adapter or leader. This institutionalised thinking influences the level of privatisation in the new port governance model.

However, most port authorities have started to have a more commercial focus. Opponents of privatisation argue that government should provide port services as they view seaports as strategic assets managed by the government in the interest of the public. The counter argument is that efficiency gains can be achieved through greater private contracting and the flexibility with which the private sector can use resources. However, when ports are partially privatised, a determination must be made as to what role should be retained by the public sector or public port authority in terms of limits on private operators and safeguards to prevent abuses. Effective regulation may be required where natural monopoly power exists. As discussed, there can be market failure in seaports in the processes of planning, controlling externalities and promoting competition if these are left wholly to the private sector.

The empirical evidence on the trends in port governance in Section 2.4 remains inconclusive to answer the question if there is an ideal model for port governance. Different countries have chosen to go ahead with different governance models with various drivers for port reforms.
Some of these drivers include improving the ports efficiency, balancing budgets, 2008 financial crisis bailout and retaining a port’s competitive edge. As these forces change, they place pressure on the existing governance model to evolve. However, apart from the UK’s full privatization approach, there is consensus amongst most governments to want to retain the ownership of ports. Some of the most efficiently managed ports such as the ports of Hong Kong, Singapore and Rotterdam are managed by government through a landlord model. These ports have undertaken substantial efforts in port reform to increase their performance through increasing private sector participation.

From the above cases, we can draw some broad conclusions. The timing of these reforms varies from country to country. Along with governance factors, the right legal and statutory framework, financial capability, balance of power with government and proactive management culture in port authorities also influences port performance (Verhoeven 2010). The general trend in the political environment towards privatization and liberalization has also had its influence on the port industry. It is also vital for a port to have active economic policy, forward planning and timely infrastructure investment to be successful. Port reform is an ongoing rather than a one time process.

However, even though fully privatizing the regulatory or monitoring role is unpalatable to many governments, privatization can be seen to have a larger role to play in port governance today (Brooks and Pallis 2012). The most popular governance model appears to have elements of public ownership but has devolved the operations to the private sector through commercialization, corporatisation or adopting the ‘landlord model’. Therefore, government ownership is still a key feature of port governance. As observed, it is a challenging task to try and fit a port’s governance model into the WBPRTK. Instead it might be easier to define
governance models into public, hybrid (public and private) or fully privatized mode. Ultimately, the appropriate governance structure for a port is one where the balance of private and public responsibilities leads to improving port performance.

Therefore, it is difficult to prescribe a ‘one size meets all’ model when there is no ‘perfect model’ of port governance (Brooks and Pallis 2012). The governance model will vary from country to country depending on both its internal and external environment. It is essential that global ports ensure they have institutional flexibility to respond to external challenges through medium and long term strategic planning. Brooks et al. (2017) argues that despite the diverse trajectories in port reform, there still is inconclusive evidence on which governance model is the best (Brooks 2007; Brooks and Pallis 2012).

Although port reform processes have been documented extensively in the academic literature in both developed and developing countries, there is a gap in the literature as there has been limited research undertaken for port reform in Indonesia. In 2008, the Indonesian government undertook port reform to improve the competitiveness of its ports since 2008. The literature review set out in this chapter will provide a basis to analyse port reform in Indonesia to evaluate its performance and choice of governance model. Before delving further into the analysis, it is imperative to have a better understanding of the Indonesian economy to place the port reform in context. The next chapter provides an overview of the Indonesian economy and its maritime sector.
Chapter 3 : An Overview of the Indonesian Economy

3.1 Introduction

The previous chapter discussed the various governance models and trends in ports around the world. Before evaluating port reform in Indonesia, this chapter aims to provide a background on the Indonesian economy and a context for better understanding port reform. Indonesia is the world’s largest archipelagic country, consisting of more than 17,000 islands that are spread over 5,000 kilometres from east to west as seen in Figure 3.1. As an archipelago of 17,000 islands, intra, inter and international connectivity are critical between land and sea networks and supply chains (Sandee 2016).

Figure 3.1: Map of Indonesia

Source: Lonely Planet, n.d.

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The population of Indonesia, estimated at 264 million in 2017 is unevenly distributed across the archipelago (Euromonitor 2018). Most of the population is concentrated on the Island of Java with Sumatra and the surrounding islands having lower population densities. Since its independence from the Dutch in 1945, Indonesia has been a young democracy that has been achieving economic growth through strong export growth, generated by high commodity prices (World Bank 2014). It is the third largest democracy after India and the United States and has industrialised rapidly since the 1970s from a poor nation to a member of the Group of Twenty (G-20) (Dick and Mulholland 2016). However, despite being the largest economy in Southeast Asia, Indonesia’s port infrastructure has been suffering from low investment, delays and inadequate port facilities, leading to high logistics costs (Nathan Associates 2008; State of Logistics 2013; OECD 2012a; Worldbank 2014;2017).

Shekhar and Liow (2014) cite the example of how it costs more than three times to ship a container within Indonesia from Padang to Jakarta than from Singapore to Jakarta, despite the geographical proximity. These high logistics costs to move goods and people across the nation have constrained the nation’s economic growth (Negara and Das 2017). Also, the concentration of economic activity and population in Java leads to unbalanced trade between Java and the other islands of the archipelago, driving up the costs of trade. Many ships leave fully loaded from Java to their destinations elsewhere in Indonesia but return almost empty. As a result, these transportation costs can be a substantial part of the overall supply chain costs, resulting in inter regional price differences (Aswicahyono and Hill 2015).

Sandee (2016) argues that inter island connectivity within the archipelago needs to be improved as Indonesia relies more on the production and export of manufacturing products, which require more sophisticated and time-sensitive logistics systems. Therefore, more needs to be done to
link ports on different islands and connect Indonesia internationally to other regions to remain competitive. For an archipelago nation such as Indonesia, an efficient and well run sea freight transport system is a crucial element of economic competitiveness. Investment in infrastructure has a critical role to play in driving transport infrastructure costs down but,

To borrow a local term, Indonesian infrastructure is to a large extent *jalan di tempat* (showing no progress): just as fast as new infrastructure comes online, existing capacity is lost elsewhere (Prakasa 2014, p.6).

In the past, Indonesian ports have been operating through a monopoly of State Owned Enterprises (SOEs) or ‘Pelindos’ according to the 1992 Shipping Law and its supporting regulations. Their legal and regulatory environment restricted inter and intra competition amongst ports. This was one reason why, Indonesia’s main port terminal, Jakarta International Container Terminal (JICT), was shown to be the least efficient when benchmarked against other Southeast Asia terminals on productivity and unit costs in 2003 (Nathan Associates 2008). Secondly, trends in the maritime industry of building larger shipping vessels to benefit from greater economies of scales is placing pressure on Indonesian ports to invest further in infrastructure as these vessels require deeper channel draft, faster cranes and enhanced cargo handling facilities. Lastly, there is an established trend for increased private sector investment in developing and operating container terminals in developing countries where the public sector was unable to finance investment and expand capacity (Nathan Associates 2008; UNCTAD 2017).

After four years of development, the government introduced a new Shipping Law in 2008 to increase competition and private sector participation at Indonesian ports known as ‘Shipping
Law 17 of 2008’. This law consists of approximately 355 articles on maritime issues such as shipping, navigation and maritime accidents amongst many others. Under this new law, the port governance administration model will transition to a ‘Landlord Port’ model. This will result in the government or port authority taking on a regulatory role with regards to regulating port land, waters and infrastructure while the port operator or ‘Pelindo’ leases these facilities and provides port services on a long term contract or concession basis. The new regime was given until 2011 to be fully implemented (Nathan Associates 2008). This reform was aimed at improving port performance. In 2014, the incoming President Joko Widodo (Jokowi) also announced a vision to develop the maritime sector in Indonesia through the ‘Global Maritime Axis’ which will be discussed later in the chapter. With intense competition from other Southeast Asian ports in the ‘Straits of Malacca’, there is pressure on Indonesia to develop and invest in its port facilities to remain competitive.

This chapter begins with Section 3.2, which provide a background to the key features of trade and economic development. Subsection 3.2.1 discusses the President Suharto’s rule of thirty years while Section 3.2.2 discusses the effect of fiscal decentralisation in Indonesia after the fall of President Suharto and Asian Financial Crisis. In Section 3.2.3, the focus shifts to Indonesia’s economic growth following the aftermath of the Asian Financial Crisis. Section 3.3 turns to identify possible policy initiatives to assist Indonesia out of its middle income trap to transition into a higher income country. This leads into Section 3.4 which outlines Indonesia’s economic development plans. President Joko Widodo’s (Jokowi) focus on developing the maritime sector in Indonesia is discussed in section 3.4.1 while Section 3.4.2 focuses on the role of Private Public Partnerships (PPPs) and Foreign Direct Investment (FDI) for investment in infrastructure in Indonesia. However, corruption poses a big challenge

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4 Article 67 to 115 of the ‘2008 Shipping Law’ are reproduced in Appendix 3.
towards economic growth and development in Indonesia and is discussed in subsection 3.4.3. Finally, section 3.5 discusses the role of path dependence in Indonesia’s economic development before the conclusion in section 3.6.

3.2 History and Macroeconomic Environment

Trade in the Indonesian archipelago began centuries ago. The expansion of China from the tenth to thirteenth century, had a profound effect on trade in the Javanese economy which saw a huge demand for Javanese produce and an archipelago trading network that led to changes in Javanese agricultural practices. Rice was a major commodity exported in the eleventh century along with black pepper, beans, fennel, salt and sugar. By the twelfth century, Java was China’s major supplier. (Wade 2009). Portugal was the first European country to arrive in the archipelago in 1511, followed by Spain a few years later.

In the early 1600s, as the Netherlands began to industrialise, the Dutch East India Company or the ‘Verenigde Oostindische Compagnie’ (VOC) began to colonise the archipelago of Indonesia. Its motives were to monopolise trade in Indonesia against the countries such as Britain who were their competitors and to find trade opportunities, especially spices such as nutmeg which fetched a high value on the Moluccan islands. The concept of Indonesia as one country did not exist at that time as there were only local kingdoms scattered around the islands (Adiputri 2014).
However, Negara and Wihardjia (2015)\textsuperscript{5} argued that there was a perception that Indonesia had been colonised by the Dutch for 300 years. However, only four ships arrived and stayed in the Indonesian archipelago in 1602 with the motivation to find trade. The Dutch only resumed authority in Java in 1815, after the Napoleonic Wars ended. The Dutch occupied the Mollucas (Spice Islands) initially as the source of export commodities before moving their central government administration to Batavia, today known as Indonesia’s capital ‘Jakarta’. This was due to its proximity to the ocean and its navigable waterways, being located on the estuary of the Ciliwung River (Aswichyono & Hill 2015). In the early nineteenth century, the VOC was replaced by the Dutch crown and by 1910 had its own military force, the Royal Netherlands Indies’ Army (Koninklijk Nederlandsch-Indische Leger) to impose rust en orde (tranquility and order) (Anderson 1990).

During the Dutch occupation, the Dutch exploited their colony’s natural resources and labour force in Indonesia through the ‘Dutch Cultivation System’. Under this system, peasants and farmers were forced to grow commercial crops for the Dutch and were levied with taxes. This left peasants very vulnerable with very little or no fertile land for their own subsistence farming (Silean and Smark 2006). Profits from this system were remitted to the Dutch Treasury and accounted for half of total national revenues during the period 1851-60 (Negara and Wihardjia 2015).

The 1870s saw the beginning of a liberal era that allowed private capital to flow into the colony. Chinese middleman were used to collect taxes from the local population which resulted in a long term resentment among the Javanese population against the Chinese. Very little was done to improve the welfare of the people. From the 1900s until the 1920s, the Dutch introduced the

\textsuperscript{5} The argument used is from a review of Thee (2013) ‘Colonial extraction in the Indonesian archipelago’
‘Ethical Policy’ as they felt responsible for exploiting the Indonesian people. However, this failed to achieve any outcome for the welfare of Indonesians, as only 7.4 per cent of adults were literate by 1930s (Negara and Wihardjia 2015). The 1930s and 1940s saw very little growth in infrastructure in Indonesia. Although transport to the important parts of Java was well served, McCawley (2015) argues that transport infrastructure started declining even more in the 1950s. This added to the huge cost of transporting basic commodities such as rice by carts, carrying poles and bicycles to the main cities in Java. Waterways were, however, a valuable means of transport in Sumatra and Kalimantan.

When the Netherlands was invaded by the Germans in 1940, the Dutch correctly feared that Japan would conquer Indonesia. The Japanese came to Indonesia in 1942 and supported the Indonesians fight for freedom from the Dutch. The Japanese occupation from 1942 to 1945 allowed for national groups who resented Dutch imperialism to form and grow. The Japanese surrender in 1945 led to President Sukarno declaring independence on 17 August 1945. The Dutch could not accept this upon their return from the Netherlands and clashes and fighting continued until the United Nations Security Council called for an end to hostilities in 1948. Without the Japanese occupation, Indonesia would have taken a longer time to gain independence (Negara and Wihardjia 2015). President Sukarno (1945-1967) established a guided democracy in Indonesia in 1945 (Adiputri 2014).

3.2.1 President Suharto’s era

President Sukarno, aware of the infrastructure condition, announced major infrastructure plans during the 1950s and 1960s along with a nationalisation agenda. However, many of these
ambitious infrastructure plans did not materialise because they were not supported with the required resources. Sukarno’s ‘guided democracy’ enabled him to follow his preferred alignment with nationalist or communist parties (Adiputri 2014). The United States (US) did offer Indonesia much needed foreign aid to improve the nation’s deteriorating economic conditions and relations between the US and Indonesia. However, this eventually came to a halt in 1965 with Sukarno choosing politics through his alignment with communist parties over economics which led to his political collapse in 1965 (Negara and Wihardjia 2015). This paved the way for Indonesia’s second President, President Suharto, to lead the nation from 1967 to 1998. Suharto’s regime was termed as the ‘New Order’ with the aim to boost economic development to achieve macroeconomic stability. Suharto’s leadership can be divided into three phases. The first phase if from 1966 to 1973, the second phase is from 1973 to 1983 and the third phase is from 1983 to 1996 (Negara and Wihardjia 2015).

The first phase (1966 to 1973) was about economic recovery, stabilisation and partial liberalisation of the economy. The Foreign Direct Investment (FDI) Law in 1967 allowed foreign money to help finance its domestic budget deficit, a reversal of Sukarno’s hostile policy towards FDI. Economic growth averaged over 7 per cent per annum from 1967 to 1973. In the mid to late 1970s, Indonesia relied on the revenue from the exports of resource intensive commodities such as petroleum (Hill 2000). As exports earnings increased, this enabled Indonesia to qualify for additional loans which helped fund road and infrastructure programs in the 1970s and 1980s (McCawley 2015). With US loans and Korean construction expertise, 1978 saw the opening of the country’s first toll road known as ‘Jagorawi’ and the first roll road

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corporation Jasa Marga. Although this toll road was a success and was expected to be replicated in Semarang, Medan, Jakarta and Surabaya, the early 1980s recession slowed this process (Davidson 2015). The second phase (1974 to 1983) was a period of rapid economic growth with rising commodity prices and increased government intervention. Once the government succeeded in economic recovery, it reversed its liberal and free market policies to support more inward looking, nationalistic policies which were supported by oil revenues. From 1974, foreign direct investment could only enter Indonesia through joint ventures with a ‘Pribumi’ (native Indonesians) majority ownership. As oil revenues fell further, it led to import substitution policies to reduce dependence on oil exports.

Finally, the third phase (1984 to 1996) of Suharto’s regime witnessed a period of slower economic growth compared with the oil price boom in the earlier two phases. As oil prices fell more steeply, this led to the re-introduction of liberal reform packages as part of the non oil export drive including unifying the exchange rate, opening up the capital account and welcoming foreign investment (Pangestu et al. 2015). Other reforms also included encouraging exports, developing the capital market and banking sector, improving customs clearance procedures and reducing investment permit requirements. These reforms helped accelerate economic growth in Indonesia and raised the productivity of Indonesia’s manufacturing sector. It also resulted in Indonesia strongly supporting an ASEAN free trade area in 1992 (Patunru and Rahardja 2015).

By the end of the ‘New Order’ regime, Suharto’s children had become major players in Indonesia’s economy under his centralised and authoritative rule. Suharto’s children were of age and his older daughter, known as ‘Tutut’ had embarked on a strategy of capital
accumulation. By the 1990s, their trading enterprises had proliferated into vast conglomerates, securing profitable government contracts, joint ventures with established cronies of their father and amassing great wealth that Indonesia’s toll road industry had become so synonymous with Suharto’s children. Tutut took control of the lucrative Jakarta Inner Ring Road based on their connections and other people’s capital and expertise. Preferential treatment did not end there with tariffs on the palace children’s road remaining higher than on other routes. But their deep involvement in that sector did not bring the efficiency or innovative gains to the sector (Davidson 2015).

The middle class outcry that greeted this new pricing saw President Suharto respond by issuing regulation to set initial rates and approve subsequent increases (Davidson 2015). However, Davidson (2015) argues that government officials were also concerned about the perception that they were spending scarce state resources on a road that only the rich would use, as millions in Jakarta clung to subsistence levels. They were reassured by President Suharto that the benefits would be shared with Jakarta’s neighbouring areas. Eventually, resentment began to grow among native businessmen against the stronghold that the Sino Indonesian conglomerates had on the economy. In response, Suharto’s children divided the megaproject into many concessions with ‘pribumi’ contractors to spread the wealth. However, the project was brought to a halt by the Asian Financial Crisis in 1997-98.

Crony capitalism resulted in economic activities favouring the elite class with certain business groups given the authority to manage State Owned Enterprises (SOEs) with limited oversight. Patunru and Rahardja (2015) argue that this included several government projects that were given to companies that had links with President Suharto’s family. Negara and Wihardjia
(2015) also argue that deregulation of the financial sector in the late 1980s also resulted in a weak banking system because of the lack of prudent enforcements. These policies eventually contributed to poor investment decisions by local companies that eventually brought down the banking sector and the economy at the onset of the Asian Financial Crisis in 1997-98. This eventually ended President Suharto’s three-decade rule and led to a sharp depreciation in the value of the rupiah, which significantly affected the revenue flows and balance sheets of businesses and government.

As the financial crises intensified, Suharto asked the International Monetary Fund’s (IMF) for help which opened the door for reformers to start curtailing the privileges and business empires of his children and other cronies. The IMF and other reformers set their sights on monopolies and projects that under Suharto were distributed without public tender and revealed illicit practices such as over pricing of contracts, illegal granting of credit, tax and import facilities, the sale of state assets at unjustifiable prices and compensation of intermediary activities. (Davidson 2015).

However, the International Monetary Fund’s attempt to run budget surpluses were also unsuccessful and efforts to operate deficits ran into financing constraints as conditions for promised programme lending were not met. By 2000, public debt in Indonesia had risen to almost 100 per cent of Gross Domestic Product (GDP) (Baird and Wihardja 2010). Also, attempts by the World Bank were also unsuccessful in imposing fundamental institutional changes. Joseph Stiglitz, who was the Chief Economist at the World Bank, argued that without strong institutions, unconstrained rent seeking and privatisation programmes would simply convert state monopolies into the hands of well connected private and business oligarchs. In the end, the collapse of Suharto’s regime was well received because it was expected to bring
about demand for reform. However, apart for the liberalisation of the press, no further reforms actually took place. In May 1998, President by B.J. Habibie was greeted with widespread cynicism as Habibie carried the legacy of the old regime. His family had partnerships with Suharto and Chinese conglomerates. However, the end of the ‘New Order Regime’ had not signalled a clean break from the past. The system of arbitrary power and predatory markets continued (Hadiz and Robinson 2004).

3.2.2 Fiscal Decentralisation in Indonesia

The 1998 economic crisis intensified the demand for revenue sharing from resource rich regions. Kannan and Morris (2014) argue that this caught the political attention of the central government which believed that unless this was resolved, the national unity of Indonesia would be at stake. The strongest theoretical argument in favour of decentralization was that it would improve the accountability and responsiveness of government by altering its structure (Faguet 2014). There was a high expectation that fiscal decentralisation policy would lead to an improvement in the welfare of local people (Wibowo 2011). This resulted in former President B.J. Habibie (1998-1999) passing two laws of decentralisation in 1999 that encompassed both administrative and fiscal decentralisation. These were Laws No. 22 and 25 of 1999. Under these new laws, resource rich regions received a greater share of revenues from natural resources and taxes that had been extracted from their jurisdictions.

The controversy was about balancing power between local and central elites interest. Local elites were strong supporters of the decentralisation process as it would provide them with direct autonomy over revenue sources (Hadiz 2003). The OECD (2016 p.31) argued that the implementation of this policy saw Indonesia devolve substantial funds and authority to local
As part of decentralisation in 2001, local governments took up more responsibilities in managing provincial and district infrastructure network (World Bank 2014). However, due to the lack of capacity and financial expertise, many regional governments in Indonesia struggled to spend all their annual budget allocations. A lot of local governments used up their infrastructure budget for building new infrastructure but failed to allocate enough money for maintenance because they did not see maintenance as a form of infrastructure. This hampered the central government both in its attempts to pursue national priorities such as improving infrastructure and to provide fiscal stimulus during the economic slowdown (OECD 2016 p.31).

While the law provided a framework for decentralisation, little was done to ensure its implementation. In the previous centralised model, there was never a need to develop capacity in financial management for local government. Most financing was administered through special purpose grants from the central government, with minimal attention paid to the actual expenditure of local governments. Therefore, it would have been important for the central government to address this gap in preparation for decentralisation by having a proper budget management system (Ahmad and Mansoor 2002). The new ‘Fiscal Balance Law of 1999’ created further imbalances as the sources of oil and gas revenue are concentrated in only a few provinces and districts as shown in Figure 3.2. This exacerbated the horizontal fiscal imbalance with GDP per capita in states such as East Kalimantan which received more than four times the average of the remaining 21 provinces (OECD 2016).
The decentralisation process was optimistically aimed to end corruption, collusion and nepotism (Korupsi, Kolusi dan Nepotism, KKN) by empowering local governments across the nation. Although the objective of granting greater local responsibility was achieved, the 325 districts and 91 cities in Indonesia have very different development needs. The more remote districts tend not to have the expertise and revenues and are managed by local elites and former allies of Suharto’s regime (Transparency International 2012). The impact of decentralisation can be summarised in Figure 3.3. It can be seen that the central government can manage its own revenue and spending. With limited revenue raising capacity, the regional areas have struggled to provide sufficient revenues to meet their expenditures which has worsened since 2001 with the decentralisation process.
Decentralisation also added further complexity, uncertainty and increased challenges of co-ordination in Indonesia. It has become more difficult to implement and coordinate infrastructure projects across the nation because of this diffusion of authority across multiple levels of government (OECD 2016; Faguet 2014). Today, decentralisation is viewed as a challenge rather than an opportunity for Indonesia. However, Prakasa (2014) and Baird and Wihardja (2010) argue that the previous central provision model was also not always effective either. Although decentralisation brought the government closer to the people, inter regional disparities still exist. Therefore, central government projects that cut across these district lines require much more planning and coordination.

Source: Adapted from Ahmad and Mansoor (2002, p.12)
3.2.3 Indonesia’s Economic Growth Post Asian Financial Crisis

Following the Asian Financial Crisis, presidencies that followed were relatively short, with weak economic growth rates. The three successors after President Suharto were B. J. Habibie (May 1998–October 1999), Abdurrahman Wahid (October 1999–July 2001), and Megawati Sukarnoputri (July 2001–October 2004) (Lindblad 2015). In 2002, President Megawati revoked Suharto’s 1997 decree, freezing spending on large scale infrastructure projects, except the building of the Cikampek Bandung expressway. Megawati’s administration also failed to provide government funds to support PPP projects. Her government had insufficient trust in the private sector. Only towards the end of her term did liberalising statutory reform take place. Therefore, this did not bring much investment (Davidson 2015).

The Megawati government was eventually succeeded by President Susilo Bambang Yudhoyono in 2004. In his first term, Yudhoyono made upgrading infrastructure a priority for the country and organised an infrastructure summit. However, the uncertain environment towards foreign investment meant the summit did not gain much support from investors (Davidson 2015). Eventually, the government tried to restore its credibility by passing new laws on public financial management and reforming the Ministry of Finance. Tight controls were also placed over the budget deficit to reduce public debt. By 2009, public debt had been reduced to thirty per cent of GDP. Indonesia avoided the 2008 Global Financial Crisis (GFC) with a proactive response from authorities to allow the exchange rate to adjust. The government also introduced a responsive fiscal stimulus package that focused on tax adjustment and having in place a contingent financing facility (Baird and Wiharjda 2010).
The Budget had provisions to adjust spending in response to a crisis, allowing twenty four hours for parliamentary approval. This crisis preparedness made Indonesia better equipped to deal with the GFC (World Bank 2014). There were also arguments that Indonesia was not as badly affected during the Global Financial Crisis (GFC) because of its inward oriented policies that were less engaged in foreign investment. The Yudhoyono government responded to the GFC with a modest stimulus package of tax cuts and spending measures (Baird and Wihardja 2010).

Contrarily, the second term of President Yudhoyono saw the introduction of protectionist policies following the GFC. Although commodity prices started to rise, new import restrictions were imposed to protect vulnerable domestic industries from competition. This included a ban on the import of rice which led to higher rice prices and an increase in the poverty rate. Minerals were also targeted with limits imposed on foreign ownership and a ban on ores for export purposes (Aspinall 2016). Other protectionist measures, such as various ministries imposing tighter controls over imports, distribution of imported goods and adding new products to the list of those that required permits to perform economic activities, were also adopted. Dialogues on bilateral Free Trade Agreements (FTAs) with Australia, the European Union and South Korea were also put on hold (Patunru and Rahardja 2015).

However, policies of increasing domestic value in an economic sector to support output used by another sector domestically are not effective in a globalised environment. One of the factors for the re-emergence of protectionism was Indonesia’s experience with the IMF during the Asian financial crisis. Indonesia had a history of implementing nationalistic and protectionist policies to protect its economy from foreign competition. However, the IMF rescue packages following the 1997-98 crisis forced the country to open up its economy to foreign investment.
and trade. The stigma against the IMF’s economic prescriptions for Indonesia still remained (Patunru and Rahardja, 2015, p.10).

In recent times, Indonesia’s economic growth has been relatively modest. This is because of a slower global economy and lower commodity prices following China’s economic slowdown. Inflation which was above the Bank’s headline inflation rates due to increase in food and administered prices, has now fallen within the Bank of Indonesia’s target range of 4 to 6 per cent (OECD 2016). This has resulted in the Bank of Indonesia reducing its benchmark interest rate to 7.0 per cent in 2016 from 7.5 per cent in 2015 (Ray and Ing 2016). Figure 3.4 summarises Indonesia’s Gross Domestic Product (GDP) growth from 1965 to 2017.

**Figure 3.4:** Annual GDP (Real) Growth in Indonesia from 1965 to 2017

The growth in mining, oil and gas and manufacturing gave rise to the services sector in urban areas which had been the driver in reducing poverty through job creation. Poverty rates
decreased from 24 to 12 per cent from 1999 to 2012. However, growth in Indonesia has not been inclusive as the opportunities from growth not being shared widely across the population. The World Bank (2014) states that close to 65 million Indonesians are vulnerable to poverty as they hover around the official poverty line. This population demographic is vulnerable to price increases for food, natural disasters and health shocks.

The commodities boom in Indonesia has also played a role in widening the income gap as the rise in commodity prices would benefit the portion of labour force involved in the resources sector. The boom in commodity prices also led to a significant wealth effect that saw mining assets increase in value. The World Bank (2014) reports that out of the 21 billionaires in the Forbes 2010 list of Indonesia’s 40 richest people, 16 owned assets linked to the coal and palm oil sector. This rise in asset prices supported income growth for the rich compared with the sluggish growth in real wages of the poor (World Bank 2014).

At the same time, Indonesia’s economic growth has also seen rapid deforestation and environmental degradation. Indonesia has 91 million hectares of forest cover, making it the third largest after Brazil and the Democratic Republic of Congo. Deforestation in Indonesia averaged around 0.92 million hectares per year from 1990 to 2012. The extent of deforestation was the greatest in Sumatra and Kalimantan. Tension’s over Indonesia’s forests between the protection of environmental value and the revenue and employment generated from valuable commodities such as timber, palm oil and pulpwood continue (Alisjahbana and Busch 2017). The air pollution from the 2015 El Nino fires caused schools and airports to close and damaged crops. Fires also spread to nearby Singapore and Malaysia and were estimated to cost $16
billion, greater than the $12 billion revenue generated from Indonesia’s palm oil production in 2014. Deforestation is also responsive to upward movements in agricultural commodity prices.

Due to the devastating El Nino effect, President Jokowi, Indonesia’s current President, issued a moratorium to prohibit land clearing even when a concession license was in place. Prior to Jokowi, the Yudhoyono administration had a similar moratorium in place for two years. However, it was not effective because it was only limited to new concessions and did not affect licenses granted before or outside the concession areas. Indonesia has made a commitment to reduce environmental damage and move towards more sustainable economic development by becoming a signatory to the Paris Agreement and committing to reduce greenhouse gas emissions by 29 per cent by 2030 from their current trajectory. The European Parliament in 2017 has also called on the European Commission to obtain a commitment from the European Union to obtain 100 per cent of its palm oil from ‘sustainable supply chains’, eliminating deforestation in the process (Alisjahbana and Busch 2017).

3.3 Middle Income Trap

We now turn to discuss Indonesia’s transition from a middle to high income country. Aswicahyono and Hill (2015) have argued that Indonesia has not been able to grow as fast as some of its neighbours. The geographical nature of Indonesia with its many islands and the uneven distribution of the population places enormous challenges in developing infrastructure and tackling regional disparities. The World Bank (2014) reports that Indonesia is at risk of being trapped in the ‘middle’ unless its growth strategy focuses on boosting labour productivity and structural reform. To escape this middle income trap, Indonesia needs faster economic
growth of 7 to 9 per cent per annum to reach a high income status by 2030 (per annum capita income of US $12,000).

Despite various policy initiatives, progress on infrastructure has been slow due to challenges around implementation and coordination. Indonesia’s infrastructure investment declined from an average of 7 per cent prior to the Asian Financial Crisis (1997-1998) to around 3 to 4 per cent of GDP in 2008/2009. This is much lower when compared with neighbouring countries such as Thailand and Vietnam where investment in infrastructure exceeds 7 per cent of GDP and 10 per cent of GDP in China (World Bank 2014). Figure 3.5 shows GDP per capita for of developing economies in Asia. It can be seen that Vietnam is starting to catch up with Indonesia. However, GDP per capita of Indonesia is still below from that of China.

Figure 3.5: Comparison of countries in Real GDP per capita in USD

A study by the Asian Development Bank Institute (ADBI 2017) argued that countries continuing to rely on the same strategies that transitioned them from lower to middle income might be faced with challenges. This is because those strategies may not be effective in allowing them to compete with high income countries. Therefore, these countries need different growth strategies to improve productivity and innovation which are required to maintain growth and diversifying exports as rising labour costs make low costs exports less competitive.

Chan (2014) argues that unless Indonesia considers structural reform in its economy, there is a high likelihood of the country being stuck in a middle income trap. Also, achieving a target of 7 to 9 per cent growth per annum would require major top down efforts to drive reform (MP3EI 2011). This can only happen when the regulatory climate becomes more favourable to foreign investment and when the policy environment does not swing back and forth towards protectionism. If Indonesia fails to boost productivity and continues growing at 5 to 6 per cent annually, it is forecast to only reach half the income levels of the BRIC (Brazil, Russia, India, China) economies. However, Felipe et al. (2017) rejects the concepts of the ‘middle income trap’. Instead, their research argues that it is the speed of transition that distinguishes economies in their transition from middle to high income.

These challenges and the need for economic reform have become more prevalent since the global economic slowdown, the decline in commodity and energy prices, and the slowdown in China’s economy. Muhammad et al. (2016) argues that economic reform in Indonesia tends to be supported by politicians if it strengthens their political position and rejected when it comes to liberalising the economy. On the other hand, bureaucrats would rather maintain the current state of affairs as they are aware that political leaders come and go and have concerns that such reform might reduce their power to earn more income. The media and civil society have been
significant proponents in eradicating corruption and improving institutions. We turn to discuss corruption later in this chapter.

Garnaut (2015) argues that Indonesia’s first decade of growth coincided with a strong commodity boom. Despite this growth, there was little investment from this revenue for public provision of education, health and agricultural services. This commodity boom continued for the eight years after 2003 due to strong growth in China which witnessed high terms of trade for exports. However, since the boom retreated in 2011, the nation has been facing major challenges that need to be addressed through economic reform. Short term measures that protect the economy such as encouraging domestic processing of minerals may lead to strong domestic investment but impair long term competitiveness. Therefore, further microeconomic reform needs to take place to improve productivity instead of relying on commodity boom cycles (Garnaut 2015).

Middle income countries such as Indonesia need to change their growth strategy to transition to high income status. They require strategies for sustaining high growth for a long period in time. In the case of Indonesia, the country needs to increase its investment in human capital and education, infrastructure and innovation in economic activities. There has also been a lack of innovation in the Indonesian economy with few new products being sold in the export markets. The transition to a high income country is possible only if such economic reform can be successfully implemented (Muhammad et al. 2016). There have been growth bottlenecks because of a large concentration of the labour force in the agriculture sector whereas growth has been driven by other capital intensive sectors such as utilities and communication. Indonesia also needs to address the problems of corruption, lack of capacity in formulating and
implementing policies and uncertainty in the regulatory environment. At the same time, Indonesia’s infrastructure has not been able to keep pace with economic growth. This has resulted in congestion problems, poor logistics performance and loss of productivity and competitiveness. The government has been trying to close this infrastructure gap through a kaleidoscope of infrastructure plans which are discussed in the next section (Muhammad et al. 2016).

3.4 Indonesia’s Economic Development Plan

The Indonesian government has been relying on the National Long Term Development Plan 2005-2025 to transform Indonesia from a developing country into a developed country by 2025. These development plans are drawn up together with the annual budget and determine the budgets to line ministries. The National Long Term Development Plan (RPJPN)\(^7\) 2005-2025 was endorsed and became the basis for development programs for a period of 20 years commencing from 2005 to 2025. The vision of the plan was to ‘establish a country that is developed and self reliant, just and democratic and peaceful and united’. The RPJPN is divided into four five year stages known as the National Mid-term Development Plan (RPJMN). The first stage is 2005 to 2009, the second stage is 2010 to 2014, the third stage is 2015 to 2019 (current) and the fourth stage from 2020 to 2025. Figure 3.6 provides an overview of the 20 year long term plan (RPJPN) and the individual 5 year plans (RPJMN)\(^8\) (Bappenas 2014).

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\(^7\) Rencana Pembangunan Jangka Panjang Nasional(RPJPN)
\(^8\) Rencana Pembangunan Jangka Menengah Nasional(RPJMN)
Figure 3.6: Hierarchy in development plans for Indonesia’s economy

Each plan provides a foundation for achieving the next stage of mid-term development plan objectives. The RPJMN is elaborated into the Government Work Plans (RKP) followed by the national annual strategic plans of the Ministries. The RPJMN (2015-2019) has identified significant gaps in Indonesia’s transport sector where demand exceeds supply, resulting in congestion. There are also significant regional disparities relating to the access and cost of transportation. Although, there has been a legal framework in place to support reform, implementation has been slow (Prakasa 2014; Bappenas 2014).
The National Logistics Blueprint set out in Presidential Decree 26/2012 focuses on the domestic integration and global connectivity for economic development and improving welfare. It provides a long terms strategy to strengthen to strengthen the nation’s transport network. This blueprint has been prepared with experts in government, private sector, think tanks and universities. However, success in implementing this blueprint has been limited because of the coordination between public, private and local government agencies. (Sandee et al. 2014)

Despite the kaleidoscope of plans, the Yudhoyono’s government realised that more had to be done to meet international commitments, competitiveness and increase private sector participation in economic development due to limited fiscal capacity. To achieve this, the Yudhoyono government introduced yet another plan known as the Master Plan for the Acceleration and Expansion of Economic Development of Indonesia (MP3EI9 2011). This is a working document that complements the other existing documents such as the Long Term and Medium Term Development Plan for both the national and regional level. The aim was to reach a growth of 7 to 9 per cent a year and achieve the Indonesian vision to create an ‘independent, well developed, equitable and prosperous society with a focus on acceleration and expansion’.

This plan had three goals which are developing the regional economic corridors; strengthening national connectivity locally and internationally; and strengthening human resource capacity and national science and technology (State of Logistics 2013; Bappenas 2014).

Baird and Wihardja (2010) emphasise that a recurring theme in these plans was the importance of ‘connecting Indonesia’ to enable the benefits of economic growth to be widely shared. Sandee (2016) breaks down these connectivity challenges into intra island, inter island and

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9 Masterplan Percepatan dan Perluasan Pembangunan Ekonomi Indonesia (MP3EI)
international connectivity. There is also a lack of hinterland connectivity through road and rail infrastructure to ensure a smooth transition of cargo along a logistics supply chain (Oxford Business Group 2014). Improved international connectivity will enable domestic products to enter foreign markets at competitive prices and domestic manufacturers and consumers obtaining imports and consumer goods at affordable prices.

Ray (2014) argues that while the RPJMN is focused on new investment in infrastructure, there is also a major issue with current productive infrastructure assets rapid depreciation and failure. There also needs to be performance based incentives offered to ensure there is one party responsible for building, operating and maintaining the assets. Also, greater engagement with the private sector is needed to fill the infrastructure funding gap. However, government also needs to play a facilitating role to improve institutional coordination, address land clearance problems and provide leadership. Therefore, the RPJMN 2015-2019 should not only be addressing issues in the next five years but planning needs to take place for the longer term. There is also a need to improve efficiency through removing monopolies in the public and private sector to increase competition.

In 2016, Indonesia’s GDP growth averaged 5 per cent as seen in Figure 3.4. This is still behind the annual economic growth target of 6 to 8 per cent as laid out in the government’s National Medium Term Development Plan 2015-2019 (Bappenas 2014). Although blueprints have been developed for more reliable logistics by various government agencies, their implementation has been weak (Sandee 2016). Similarly, Ray (2014) argues that these plans lacked a coherent strategy for planning and delivery. Indonesia already has various master plans that layout a strategy to address this problem of connectivity, regulation, infrastructure investment,
bottlenecks and establish institutions (McCawley 2015). However, they do not appear to be very effective.

In the past, the nation has seen promises, under fulfilment, delays and cancellations. The various infrastructure industries also operate in silos with little coordination (McCawley 2015). Therefore, for these plans to be implemented effectively, there must be a greater push for improving coordination and communication with agencies. The next section aims to discuss if these plans were implemented under the Jokowi administration and the nation’s maritime strategies.

3.4.1 Jokowi’s Administration and Indonesia’s ‘Global Maritime Axis’

President Joko Widodo (Jokowi), formed his administration in October 2014 with just 37 per cent minority support in the national parliament. Jokowi’s economic programs were focused on infrastructure, deregulation and reducing bureaucracy (Warburton 2016). The KPK and the Financial Transaction Reports and Analysis Centre played a role in assessing cabinet ministers for corruption prior to selection (OECD 2012c). His cabinet excluded candidates that were deemed to have a perceived level of corruption risk (Damuri and Day 2015). Prior to the election, he had set out his Vision and Mission statement and action plan in Jokowi’s ‘Visi Misi dan Program Aksi’ (Jokowi Jusuf Kalla 2014).

A key objective of President Jokowi’s global maritime axis is to improve inter island connectivity and upgrade port infrastructure within the Indonesian archipelago. The impetus for this was that many of these islands have operated as self sufficient economies and have
been unable to contribute to the national economy (Shekhar and Liow 2014). Therefore, one of Jokowi’s aims is to transform Indonesia’s port sector into a global hub by drawing attention to the importance of the sea to the country. As Sambhi (2015) argued, this was a bold foreign policy doctrine that no President since Suharto had proclaimed. Saha (2016) argues that Indonesia’s maritime potential is estimated to contribute up to US $1.2 trillion to its economy. As outlined in the quote below from President Jokowi’s inaugural speech below,

We’ve turned our back on the seas, oceans, straits and bays for far too long. It is time for us to realize ‘jalesveva jayamahe,’ ‘in the ocean we triumph,’ a motto upheld by our ancestors in the past.” (Jakarta Globe, 20th October 2014)

Upon winning the election, Neary (2014) argues that President Jokowi set out a more detailed version of his strategy at the ASEAN Summit in Naypyitaw, Myanmar. He broke down the concept of the ‘Poros Maritim Dunia’ (World Maritime Axis) into five pillars. The first pillar was to rebuild Indonesia’s maritime culture. The second was to maintain and manage marine resources. Thirdly, he wanted to prioritise the development of maritime infrastructure and connectivity by constructing ‘sea highways’. This project aimed to enhance connectivity between the islands and enhance port infrastructure in the country. It also aims to reduce price disparity between Java and islands around it to boost trade and commerce in Indonesia. This will play a critical role in positioning Indonesia as a hub for international trade in the broader ASEAN and Indo-Pacific regions.

This Sea Toll Road project which began in November 2015 is illustrated in Figure 3.7. The project aims to connect five major ports which include Belawan in North Sumatra, Tanjung Priok in Jakarta, Tanjung Perak in East Java, Makassar in South Sulawesi and Sorong in Papua
New Guinea and several smaller ports all over the country. The aim is to reduce logistics costs and improve connectivity between the remote islands in Indonesia. However, Negara and Das (2017) have argued that the main focus of Indonesia’s maritime strategy has been inward, especially with the Sea Toll Road project and that more attention needed to be given to outward connectivity.

Figure 3.7: Sea Toll Road Project (Pendulum Nusatara)

Source: State of Logistics Indonesia, 2015, p.23

Fourthly, President Jokowi wanted to eliminate conflict over illegal fishing, breaches of sovereignty, territorial disputes, piracy and environmental concerns. The final pillar focuses on building up Indonesia’s maritime defence strategy to support maritime sovereignty and its role in maintaining safety of navigation and maritime security. This strategy also involves improving connectivity between islands which is crucial in developing Indonesia’s maritime industry (Neary 2014). Jokowi’s plan, which seems rather ambitious, was to upgrade or construct 24 ports over 5 years to improve domestic connectivity.
However, the implementation of this ambitious project requires a huge capital investment of about IDR 700 trillion (US $53 billion). Negara and Das (2017) emphasise that this amount is unlikely to be funded by the government and that Indonesia has to consider foreign investment funding options. Jokowi’s administration has undertaken further steps to invest in infrastructure through allocating budget expenditure from energy subsidies on fuel and electricity towards capital spending on projects such as the New Priok Port at Tanjung Priok in Jakarta (Ray and Ing 2016).

The MP3EI did not have a coherent strategy for coordination which saw the planning document forgotten, despite the time and effort put to develop it. Unlike his predecessors, President Jokowi’s approach to pushing the infrastructure agenda focuses more on injecting funds into State Owned Enterprise (SOE) and assign them with important infrastructure projects. However, this does raise the issue of whether this approach has the possibility of crowding out private investment that is more competitive and efficient in providing the infrastructure. (Ray and Ing 2016). Although the acronym MP3EI is not used by the Jokowi administration, The Asan Forum (22nd February 2016), an online publication for the Asia Pacific region, reports that similarities between Yudhoyono’s ‘sea pendulum’ concept and Jokowi’s ‘sea toll road’ (MP3EI 2011, p.31) existed. This suggests that President Jokowi’s infrastructure agenda seems to be the ‘old thing in a new package’. The key difference was the Yudhoyono’s administration focused on land connectivity while President Jokowi’s focus is on maritime connectivity.

President Jokowi’s first year in office included conflict with cabinet members and a disruptive opposition. In particular, tensions occurred with Megawati Sukarnoputri, the Chair of the Indonesian Democratic Party of Struggle (PDI–P). This meant Jokowi did not have the
unanimous support of the political party of which he was a member (Warburton 2016). By the end of 2014, it was clear that the President needed to expand his governing coalition to deal with slowing economic growth and rising inflation. To consolidate power, Jokowi had to be accommodative of vested interests, negotiate deals with oligarchs, expand his governing coalition, and reshuffle his cabinet in July 2016. The previous Yudhoyono government secured political stability by allowing parties to extract and exploit state resources which left the President beholden to the interests of such parties. However, Jokowi’s leadership differs as he allows for a broader support base but ensures a lower level of indebtedness to his coalition partners (Warburton 2016).

According to Hamilton-Hart & Schulze (2016), the cabinet reshuffle in July 2016 saw Jokowi bringing in nine new people and reassigning thirteen portfolios. This included changes to ministerial positions in charge of economic policy, finance, trade, transmigration, administration and bureaucratic reform, industry, energy and mineral resources, agrarian affairs and transport. The reshuffle also saw the return of Sri Mulyani Indrawati as Finance Minister from her role as a Senior Vice President at the World Bank. She was Indonesia’s Finance Minister from 2005 to 2010. Warburton (2016) argues that reinstating Sri Mulyani Indrawati to a role in which she was widely respected, demonstrated President’s Jokowi’s commitment to fiscal management. Hamilton-Hart & Schulze (2016) argue that the strong commodity boom from 2003 to 2011 resulted in high rates of economic growth and income, but since then, economic growth has slowed. The end of the commodity boom has left Indonesia with a challenge for government to deliver macroeconomic stability and improve competitiveness as tax revenues fall. This has created budgetary challenges for the Jokowi government.
The new Finance Minister cut ‘non essential’ expenditure to allow for greater spending on infrastructure, while still maintaining the 3 per cent budget deficit limit. The government also passed the ‘Law 11/2016’ on Tax Amnesty that was implemented in the second half of 2016. This involved a voluntary disclosure of assets that had not been reported by individuals in previous annual tax returns. Individuals disclosing unreported assets were promised that overdue penalties would be waived and the taxpayer will not be audited. This Tax Amnesty aimed to raise Rp 165 trillion of which current revenue raised is estimated at less than 60 per cent of the official target. This is, nevertheless, a strong result in the short term.

The Minister for SOEs, Rini Soemarno, also has a critical role to play in Jokowi’s cabinet. She headed the transition team after the 2014 election to design Jokowi’s first cabinet. However, she was disliked for her distributions of the cabinet positions by PDI-P and her closeness to the President Jokowi was a sore point for the party’s matriarch, Megawati. Megawati had continuously demanded ‘Rini’s’ removal from cabinet which Jokowi refused and instead gave her a strategic post to manage state resources and direct key government policies. In 2015, the government allocated $3 billion of additional state funds to SOEs to merge and streamline the enterprises through the establishment of a large holding company. The aim was to increase efficiency, raise capital and use it as a vehicle for Indonesia’s development (Warburton 2016).

It has also been argued that many of the infrastructure projects for investment under the Jokowi administration were identified in the MP3EI plan by the Yudhoyono government. However, Jokowi was able to make a more aggressive commitment to these projects through reallocating the removal of fuel subsidies of Rp 290 trillion to infrastructure. Given the budgetary challenges, the President is aware that his infrastructure plans require substantial private sector
capital and foreign investment to close this gap. Therefore, Indonesia’s reluctance to borrow to maintain fiscal balance, could hurt longer term economic growth (Negara and Das 2015).

3.4.2 Public Private Partnerships (PPPs) and Foreign Direct Investment (FDI)

PPPs were only formally introduced in Indonesia in 1998 and were defined in Presidential Regulation Number 38 of 2015 as a;

cooperation between government and a business entity in infrastructure provision for the public interest in accordance with a specification previously determined by the minister/head of institution/head of region/state owned enterprise/region owned enterprise, which partially or fully uses a business entity’s resources, with particular regard to the allocation of risk between the parties (Siagian 2017,p.73).

Davidson (2015) argue that during Yudhoyono’s first term, he had held several infrastructure summits in 2006 to attract foreign and domestic investors into projects on power, toll roads, railways and seaports. This saw Indonesia reverse its policy towards private sector investment in infrastructure projects. Regulations were enacted and institutions established to promote Public Private Partnerships (PPPs). In 2010, the government passed Presidential Regulation No. 13/2010 to support the implementation of PPP. However, it failed to attract investors because of the unfavourable investment climate and the lack of trust foreign investors had in the government’s policy that had swung between regulation and deregulation.

The MP3EI was launched to offer 99 PPP projects to boost investment. However, due to a lack of funds and institutional capacity, only three projects were initiated. As a result, the SOEs come across as a corporate conglomerate that have been assigned numerous projects but lack
financing ability. The government has also undertaken regulatory and policy reforms to create a more conducive environment to encourage private sector participation into PPPs. Regulation 38/2015 does this by expanding eligible sectors for PPP and offer a more favourable legal framework (Davidson 2015).

Indonesia’s national planning agency ‘Bappenas’ (2017) also provides a list of 22 projects that have been listed as PPPS as seen in Appendix 1. Despite these efforts, the uptake of PPPs has been minimal. According to the Asian Development Bank, Indonesia has received a low ranking for its uptake of PPPs, considering its population and size of the country. This is because of a fragmented legal framework for PPPs, complex procedures in land acquisition and insufficient fiscal support for PPPs. Another reason is also because SOEs perform both a regulator and operator function, and also do act as a private counterparty in bids, resulting in conflict of interests (Davidson 2015).

Ray and Ing (2016) argue that President Jokowi has also reassigned important projects that were meant for the private sector to SOEs since he came into office. These include the Trans-Sumatra highway, the Soekarno-Hatta International Airport rail link in Jakarta, the Makassar New Port in South Sulawesi and private management of small airports. Therefore, the question is whether these funds that are injected into SOEs are being used effectively. SOEs also receive guaranteed funding through international financial institutions. However, Ray and Ing (2016) argue that Indonesia’s infrastructure needs are too large to rely solely on SOEs funding and private sector capital is necessary.
This has also been addressed by the past coordinating minister for economic affairs, Sofyan Djalil (2014-2015). The Ministry of Public Works and Housing has also emphasized that the Trans Sumatra Toll Road will require partnership with the private sector to be completed. SOEs have the advantage in obtaining finance through competitive bidding or by direct appointment. The lack of competition causes inefficiency and is a significant downside risk in the SOE dominated infrastructure development. The Jakarta Post (9th October 2017) reports that the government has started to respond to these risks by improving the PPP scheme for joint ventures. However, such partnerships will require vigorous due diligence on the SOEs and their projects. The government allocated $3 billion of additional State funds in 2015 to SOEs to merge and streamline the enterprises through the establishment of a large holding company. The aim was to increase efficiency, raise capital and use it as a vehicle for Indonesia’s development (Warburton 2016).

Indonesia offers multinational enterprises a lot of opportunities as overseas production locations. However, there has always been concerns as to why Indonesia never attracted more Foreign Direct Investment (FDI). This is because FDI performance has been linked to its nationalist aim of controlling inflows of foreign capital by policymakers. Although post colonial Indonesia did not attract FDI during Sukarno’s leadership, Suharto’s regime did radically restore the FDI climate temporarily in the third phase of his rule, resulting in improved economic growth. With deregulation from 1986 onwards, this made Indonesia an attractive target for foreign investors (Lindblad 2015). By the 1990s, a government regulation permitted 100 per cent foreign equity in joint ventures for large scale investments in remote locations in Indonesia. As much as foreign investors looked favourably upon this change, the government took steps in the opposite direction to tighten some regulations by applying the ‘Negative Investment List’ (Lindblad 2015).
The OECD (2016) survey of Indonesia argues that although FDI inflows have picked up substantially over the last few years, they still remain lower than in other countries. The report argues that this is due to excessive and overlapping regulation across various levels of government that has made it difficult for foreign investors to invest. Compared with neighbouring Southeast Asian (SEA) countries, restrictions on FDI remain higher in Indonesia as shown in Figure 3.8. Although the Negative Investment List opened up foreign ownership to 35 sectors within the economy, FDI in ports still remains capped at 49 per cent, limiting economic growth.

**Figure 3.8:** FDI Regulatory Restrictiveness Index, 2015 (Open = 0, Closed = 1)

Source: OECD 2016, p.34

Note: The ASEAN 9 include Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

### 3.4.3 Corruption in Indonesia

Despite its economic growth, institutionalised corruption continues to be a political challenge that undermines the Indonesian economy, the distribution of resources and its public administration. Corruption can result in a loss of economic efficiency with increased
transaction costs, inefficient investment and poor allocation of resources. This can be exacerbated by the high degree of centralised control (ECB 2016). According to Transparency International (2016), a risk based consultancy, corruption undermines the working of markets by reducing tax collections, developing barriers to entry and weakening the legitimacy of the nation (Transparency International 2016).

Dick and Mulholland (2016) argue that Indonesia’s society operates on a patronage system as a way of sharing wealth and power amongst a set of oligarchs. Suharto’s New Order government enraged the public when reports of corruption showed how his children leveraged upon his political power to secure monopolies for example, toll roads, power plants and television stations. Corruption in Indonesia is driven from a number of factors such as vested political interests and networks, poorly paid civil servants, officials with significant discretionary power, resources allocated with poor levels of accountability and enforcement, and a weak judiciary system. The level of corruption also depends on the level of economic development and the openness of the economy. Indonesia ranks 90 out of 176 countries in Transparency International’s Corruption Perception Index in 2016. This is a moderate improvement from its position of 110 out of 176 countries in 2010. Dick and Mulholland (2016) caution that these rankings are only indicative as they measure perceptions which can be subjective.

Transparency International (2012) argues that the Indonesian police and the judiciary are viewed as the most corrupt institutions and thus create a challenge to control corruption as their role is that of law enforcement. This erodes trust in the public of the legitimacy of the government. Corruption is also encountered in Indonesia’s political system and through
customs and tax services (Transparency International 2012). This is represented in the 2016-17 ‘Global Competitiveness Report’ which identifies corruption as a major barrier to doing business in Indonesia as shown in Figure 3.9.

**Figure 3.9:** The most problematic factors in doing business in Indonesia, 2016

![Bar chart showing the most problematic factors in doing business in Indonesia, 2016.](image)

*Source: World Economic Forum (2016) : Global Competitiveness Report 2016-17, pp.204*

The first anti-corruption measure was introduced in Indonesia in 1960 in the Sukarno administration with the enactment of the Law 24/1960 on the Prosecution, Investigation and Examination of the Crime of Corruption (Transparency International 2012). However, the report argues that corruption in Indonesia has been documented from the beginning of Suharto’s New Order regime. Suharto operated based on a patronage system to ensure loyalty from his subordinates, members of the national elite and critics in exchange for business or political opportunities.
His centralized rule made it more predictable for investors and business to know how much exactly to keep aside for bribes. This was also prevalent in local government where governors and local army commanders had the same privileges but were aware of repercussions from higher authority if they pushed too far. After thirty two years of an authoritarian regime which ended in 1998 during the Asian Financial Crisis, Indonesia made the transition to a democratic nation. However, Hadiz and Robinson (2004) argue that the crisis failed to remove the interests and factors that were embedded in Suharto’s regime. They argue that the root cause of the problem was not the centralised system of rule; rather, it was the rise of powerful business families linked to politicians. The end of the Suharto era and fiscal decentralization saw this process of bribe taking becoming fragmented and unclear. The nation’s decentralisation programme also led to increased opportunities for corruption by increasing the number of decision layers in the policy making process. As transparency, accountability and strong institutions are still lacking, this poses a challenge for the fight against corruption in Indonesia (Indonesia Investment 2017; Transparency International 2012).

To tackle corruption, the Indonesian Corruption Eradication Commission (Komisi Pemberantasan Korupsi or KPK) was established in 2003. Efforts were also intensified further after the government ratified the United Nations Convention against Corruption 2003 (Transparency International 2012; OECD 2012c). Since its establishment, the KPK has prosecuted high level politicians, ministers and government officials. There has also been an increased scrutiny and transparency to make it clear that at least in principle, no one is immune from the process (OECD 2012c).

In recent years, high profile cases have been brought to the KPK. The Yudhoyono administration (2004-2014) came into power by demonstrating its support for anti corruption.
This was especially with the Yudhoyono’s government ministers, high ranked police officials, judges and the Treasurer of Yudhoyono’s Democratic Party. However, the resignation of Indonesia’s Finance Minister from 2005 to 2010, Sri Mulyani Indrawati, had an impact on the Yudhoyono government. The Finance Minister had a reputation of integrity and was in charge of reforming Indonesia’s corrupt tax and customs office. Despite being successful, she made enemies with those who had high political connections and this led to her resignation. She eventually left Indonesian politics to join the World Bank as a Managing Director. Although the Yudhoyono term began with a promise to target corruption, it did not end this way (Indonesia Investment 2017). This contributed to a fall in his approval ratings towards the end of his presidential term (Indonesia Investment 2017).

Dick and Mulholland (2016) argued that highly prized positions within parliament such as chairs of parliamentary committees, require ministers and senior bureaucrats to negotiate the handling of hearings by distributing payments according to power and influence. These payments flow back to the head of the party who has control based on their fundraising power. They argue that such a situation cannot be described as a good government but nonetheless is a sustainable democracy. As Negara and Wihardja (2015, p.43) quote from the work of Thee (2013)

Institutions and practices of extraction, leading to regressive distribution of assets, income and wealth, have been sustained during the postcolonial era. ... The abuse of public resources by rent-seeking elites (including those during the Soeharto era), has been a constant factor in Indonesian history and the Dutch colonial rule set the example in its most extreme form.

Corruption in Indonesia continues to persist due to a lack of transparency and clarity regarding regulations and lengthy bureaucratic processes (OECD 2012c). The ‘National Strategy for
Corruption Prevention and Eradication’ (Government of Indonesia 2012) developed by the Indonesian government has a long term vision (2012-2025) of creating an anti-corruption nation. The government aims to prevent corruption through educational activities to develop the view that corruption is ‘evil’. Further measures taken to eradicate corruption can also result in improved tax collection. This includes establishing proper frameworks to monitor the efficient use of public resources which were overlooked through the decentralisation process.

Transparency International (2012;2016) argues that although recent anti corruption efforts through the KPK have led to the conviction of high ranking public officials, poor institutional capacity, a weak rule of law and poor regulation, still create fertile grounds for corruption. However, Warburton (2016) and Negara and Das (2017) argue that building a transparent and clean government and human rights have slipped off Jokowi’s political agenda. At the start of his campaign, Jokowi aligned himself with the KPK and sought their assistance in fighting corruption. He had also requested the KPK to vet the status of his selected ministers.

In 2015, President Jokowi and his energy minister, Sudirman Said, undertook energy reform including the removal of petroleum subsidies and organising a team to investigate corruption in the mining and oil and gas sector. However, Jokowi’s appetite for reform was lost in six months as Sudirman’s technocratic governance earned him many enemies, including Luhut Panjaitan who was Jokowi’s loyal strategist. Sudirman and Luhut had many disagreements with regards to Indonesia’s mining contracts. Sudirman also challenged and criticised another close ally of Jokowi, Rini Soemarno, who was responsible for the state own electricity provider. These conflicts were very disruptive to the President and his cabinet, especially after the ‘Freeport Grasberg’ scandal.
Freeport Grasberg, a large copper and gold mine had a concession with the Indonesian government ending in 2021; the company wanted to renew its contract till 2041. Freeport was given assurance by Setya Novanto, a past parliamentary Speaker, that the company’s contract would be renewed. He used this as a basis to try and extort business opportunities and shares out of Indonesia’s largest foreign mining company. Sudirman went public with a recording in which Luhut’s name was mentioned to secure presidential support for an early extension of Freeport’s contract and he also led charges against Setya. Although the recording did create a media frenzy, the casualty was none other than Sudirman as Luhut and Setya proved themselves politically useful to Jokowi (Warburton 2016).

Setya was forced to step down from his position as a parliamentary speaker but enjoyed President Jokowi’s backing as the Chair of the Golkar party. Luhut was appointed as the Coordinating Minister for Maritime Affairs and Natural Resources portfolio. This gave him complete oversight over the Ministry of Energy and Mineral Resources and the Freeport contract. He also won his case in the Constitutional Court on the grounds that the recording was undertaken by a ‘private citizen and not at the behest of law enforcement’ and was cleared of all wrongdoings by the parliamentary committee. According to Warburton (2016), Jokowi’s view on criminalizing corruption after the Freeport Scandal in December 2015 appears to be that it is bureaucratic and slowed down development projects. Courts and police had been instructed not to investigate leaders involved in infrastructure projects where there was an oversight. Although Jokowi did attempt to bring about institutional reform, the political risk was too high and his attention shifted towards the groundwork for re election in 2019. The next section discusses the role path dependence has played in influencing Indonesia’s economic and leadership development (Warburton 2016).
3.5 Path Dependence in Indonesia’s Leadership

The ‘Guided Democracy’ and the ‘New Order’ leadership of Sukarno and Suharto respectively, inherited a highly centralised system and authoritarian style leadership from the Dutch. The Dutch created additional layers in society by distinguishing between pure blood of Dutch as the highest rank, then mixed blood who were Eurasians, followed by Chinese and Arabic merchants and lastly, the native Indonesians. This discrimination resulted in Indonesians only registering for low positions in government services (Adiputri 2014).

Anderson (1990) argues that the VOC operated initially as a business in Indonesia in the 17th century in the Indonesian archipelago with its base in Batavia. This was formally replaced by the Dutch crown which saw Java and some parts of Sumatra transform into a colonial society. By 1910, the colonial state played a key role in establishing military, law and order, mineral exploitation, irrigation, agricultural improvements and education. In 1928, twenty percent of the revenue generated was from the profits of state owned mines and plantations, with the remainder from corporate tax (10 per cent), land rent (6 per cent), income tax (9 per cent) and various regressive and indirect taxes. Therefore, a large source of the revenue for the colonial state was from its own monopoly operations and efficient exploitation of human and natural resources. Likewise, Suharto’s regime derived most of its revenue from military controlled monopolies, state resource companies and institutional corruption. Therefore, Anderson (1990) argues that there were strong resemblances between the Dutch colonial state and the modern state of Indonesia.

Similarly, the Indonesian Parliament, replicated some of the features of the Dutch parliament which operated as an ‘Executive Committee’ that was not open to the public and did not have
any debates. The Indonesian Parliament resembles the Dutch as it articulates for rules of procedure that tends to avoid voting to reach a solution. The Indonesians, like the colonial government, maintained an authoritarian regime especially during the terms of President Sukarno and Suharto. Therefore, the culture inherent in the Indonesian parliament today is not a legacy of Suharto’s authoritarian regime but continuing a path dependence inherited from the Dutch. Although attempts were made to achieve democracy after the departure of the Dutch, the institutional forces for change remained weak and path dependence continued (Adiputri 2014). Also, in the 31 years of President Suharto’s rule, there were no ‘Chinese’ cabinet ministers nor were there any generals or civil servants of Chinese ancestry. This is in spite of the widely held belief in Indonesia that the Chinese dominate the domestic economy with state protection and financial backing from other Asian countries (Anderson 1990).

Similarly, Hadiz and Robinson (2004) argue that Sukarno’s ‘guided democracy’ set out as a framework of self reliance that saw the foreign companies nationalised to create a new national and industrial based economy to replace the old colonial system. This path dependence also influenced the role of SOEs and private sector investment into the country. Davidson (2015) argues that infrastructure projects during Suharto’s regime, such as toll roads, were funded by SOEs that were free from profit making pressures. This led to SOEs playing a central role in the national economic agenda as they were insulated from competition. The experience demonstrated the authoritarian path dependence approach within institutions. Davidson (2015) argues that because of the lack of reform in institutions of Indonesia’s new democracy, the old institutional forces from interested oligarchs and rent seeking individuals persisted. President B.J. Habibie (1998-2000) who replaced President Suharto did not bring about any institutional reform to break out of this path dependence (Hadiz and Robinson 2004).
This path dependence has carried on throughout the remaining presidencies and can play a role in explaining the nation’s view towards foreign investment and attempts at liberalising the economy. Therefore, to achieve economic success, Indonesia needs to move away from its ‘colonial period mentality’ that relied on revenues from natural resources and protectionist policies (Negara and Wihardja 2015).

3.6 Conclusion

This chapter provided a general overview of the history and key economic trends and development in the Indonesian economy from the 1500s until 2017. The Dutch established a monopoly trade in Indonesia in 1602 before colonising it in 1815. The departure of the Dutch saw a new era of nationalism and entrenched institutionalised behaviour in Indonesia that was inherited from the Dutch. President Sukarno, the first President, did very little to upgrade or invest in Indonesia’s infrastructure which hampered the nation’s economic growth. Economic growth was largely driven by rising commodity prices. It was not until Indonesia experienced a slump in commodity prices in 1986, that the government swung the pendulum towards liberalisation (Dick 2008). The rule of President Suharto from 1967 to 1998 also saw a high degree of crony capitalism and a high degree of corruption, which contributed to the Asian Financial Crisis in 1998.

As the nation recovered from the crisis, there was a shift towards protectionist measures. Indonesia’s reform was well placed to survive the Global Financial Crisis in 2008. However, poverty levels had declined significantly as the gains from economic growth have not been felt equally across the country. The benefits have accrued more towards the island of Java than
other regions and in certain employment sectors such as manufacturing and oil and gas. This has left many other Indonesians still being vulnerable to poverty, especially in the rural areas (World Bank 2014). Under the Yudhoyono government, policies including deregulation began to develop to raise the nation from a middle income to a developed nation status. They included the ‘RPJPN’ which was the long term plan for the nation supported by four short term five year plans from 2005 to 2025. The MP3EI was also introduced to accelerate the growth in Indonesian economy.

Many of Indonesia’s current problems are a result of past policy failures and Indonesia needs to free itself from the mindset inherited from the colonial period if it wants to escape the middle income trap and move forward. Similarities can be found between the colonial economy and Indonesia’s current economic situation, one of which is Indonesia’s dependence on its natural resources for revenues (Negara and Wihardjia 2015). Indonesia’s policymakers also do not fully embrace liberalisation competition and switch ‘easily’ between introducing restriction to relaxing them on trade on industries. However, protectionism and inward oriented policies are going to be counterproductive for Indonesia in today’s globalised environment. Instead of pursuing interventionist policy, the government needs to consider a structural reform of the economy looking at areas of infrastructure, logistics and rules and regulations. The transition to a higher income country will also require innovation, investment in education and infrastructure which will result in improved productivity. In the past, Indonesia’s policies have been characterised as ‘bad times that lead to good policies’. Plunging oil revenue in the 1980s pushed the government to implement broad-based economic reforms that boosted industrial development in Indonesia. However, these were reversed in the next decade.
Despite the kaleidoscope of economic plans, economic growth has not reached the levels for Indonesia to transition to a developed economy nation by 2030. Decentralisation has further exacerbated the coordination between central and local government, making it difficult to plan. The reduction of trade barriers within the region and abolishing tariffs is likely to bring an influx of imports and exports to and from Indonesia. The organisation of an efficient logistics system is a crucial factor in the socio-economic development of Indonesia (World Bank 2013). In particular, efficient maritime infrastructure is essential for Indonesia to remain competitive with neighbouring countries (Nederland Maritiem Land 2015). Infrastructure continues to be a key priority for President Jokowi’s government. However, further policy changes are needed to accelerate the investment in infrastructure. These includes developing pipelines for project investment funds, transparency in procurement processes, minimising changes in policy and reducing the regulatory burden. At the same time, government needs to reduce the reliance on SOEs as they do not always have the management capacity of funding for the allocated tasks.

Although macroeconomic stability has been achieved, further microeconomic reform is needed to increase efficiency and competitiveness in the economy and to reduce corruption. If there is a period from which Indonesia could learn from, it would be the non oil export drive from the mid 1980s that resulted in liberalisation bringing about stronger economic growth. Corruption and the government’s view towards foreign investment is also another challenge. However, without improving freight logistics and increasing infrastructure investment, the archipelagic nation will miss out on opportunities from greater internal and international economic integration (Aswicahyono & Hill 2014).
In 2008, the Indonesian government introduced the ‘2008 Shipping Law’ to increase competitiveness in its port sector by splitting the role of ‘regulator’ and ‘operator’. In 2014, President’s Jokowi’s ambitious maritime agenda focused on constructing 24 container ports, which consist of 5 hub ports and 19 feeder ports across the archipelago. The investment required has been estimated at US $81 billion. Historically, Indonesia’s ‘policy pendulum has swung between regulation to deregulation’ (Dick 2008, p.385). Given the uncertainty in the political and economic environment, has port reform improved port performance or will ‘protectionism’ continue to impede the development of an efficient logistics and infrastructure investment? The aim of the next chapter examine Indonesia’s logistics system and port governance framework, an essential prerequisite before answering this question.
Chapter 4: Logistics and Port Governance in Indonesia

‘The ship must not wait at the quay, but the quay must wait on the ship.’ (Stevens 1999 p.87)

4.0 Introduction

In the previous chapter, this thesis provided a brief overview of Indonesia’s economic history and macroeconomic growth. Since independence, Indonesia has been transitioning towards a middle income country. However, to make the leap from a middle income to a higher income country, Indonesia has to overcome several challenges, including increasing productivity through investment in infrastructure and innovation, liberalising its economy, microeconomic reform and combating corruption to improve its competitiveness as a nation. Within the transport sector, logistics can play an important role to bring about increases in productivity. Improved logistics supply chains and infrastructure are needed for Indonesia to remain competitive amongst neighbouring countries in Asia. With regards to ports, these logistical facilities that make up the supply chain include ‘container terminals and parks, seaports, freight, airports, rail terminals and multi modal freight transfer terminal’ (Oakden and Leonate, p.16).

Patunru et al. (2009) argues that distribution efficiency also plays a key role in improving port productivity. Therefore, port logistics, competitive pricing for port services, reliability, port infrastructure, information platforms, good intermodal connectivity to the hinterland and time in port are all important factors in port selection (Notteboom et al. 2013; Nugroho et al. 2016). Talley (1994) argues that ports are not only concerned with whether they can handle cargo but also whether they can compete for cargo. A port can become more cost efficient by improving its logistics to reduce the time spent in port.
The State of Logistics\textsuperscript{10} report for Indonesia identifies the need for Indonesia to reduce its logistics costs. (State of Logistics 2015). Figure 4.1 shows total port traffic increasing steadily in Indonesian ports from 2000 to 2014. The growth in container traffic over this period has been strong, increasing three folds from 4 million TEUs in 2001 to 12.4 million TEUs in 2016.

\textbf{Figure 4.1:} Annual Container Port Traffic in Indonesia (TEUs)

![Annual Container Port Traffic in Indonesia (TEUs)](image)

\textit{Source:} Worldbank Data (2001-2016)

As demand for container cargo throughput continues to intensify, the competition within surrounding Southeast Asian ports such as Singapore and Malaysia increases. Other developing nations such as Thailand, Vietnam and Philippines are also actively competing for cargo from Indonesia, thus placing pressure on Indonesian ports. Therefore, infrastructure investment is critical for Indonesia. This thesis aims to evaluate the performance of Indonesia’s first and third

\textsuperscript{10} This report is produced collaboration with the Centre of Logistics and Supply chain, Institut Teknologi Bandung (ITB), Asosiasi Logistik Indonesia, STC-Group and the World Bank.
largest container ports, the Port of Tanjung Priok in Jakarta and the Port of Tanjung Emas in Semarang.

Before analysing the port case studies, this chapter provides an assessment of Indonesia’s logistics and port governance framework. Section 4.1 provides a benchmark of Indonesia’s logistics performance against neighbouring Southeast Asian countries. In Section 4.2, this thesis examines competition for containerised cargo at various Asian ports. Section 4.2.1 analyse China’s BRI initiative while Section 4.2.2 gives details of the various projects in Indonesia that are related to the BRI project. Section 4.3 delves into port governance in Indonesia and how Indonesia’s governance structure has evolved since gaining independence from the Dutch and the introduction of the ‘2008 Shipping Law’. Section 4.4 discusses the level of private investment in Indonesia’s ports. Turning to Section 4.5, this section focuses on port labour and industrial relations since independence from the Dutch with Section 4.5.1 discussing the Belawan Harbour strike and Section 4.5.2 progressing this discussion further for the Port of Tanjung Priok. Finally, Section 4.6 provides the conclusion to the chapter. The performance of these two case study ports are examined in more detail in Chapters 5 and 6.

4.1 Indonesia’s Logistics Performance

The ‘State of Logistics’ (2013) report argued that logistics performance plays a key role in a nation’s economic growth and its competitiveness against other nations. Therefore, there is a need to implement coherent and consistent policies to foster smooth supply chain operations as an engine of growth. Efficient logistics connects firms to domestic and international markets through reliable supply chain networks. Conversely, countries with low logistics performance
face higher costs because of unreliable supply chains and transport costs, thereby increasing the cost to businesses. In 2013, logistics costs made up to approximately 27 per cent of Indonesia’s GDP (State of Logistics 2013). This is higher than logistic costs in Thailand and Vietnam and far behind Malaysia and Singapore. These costs are summarised in Table 4.1. It can be seen that Indonesia has the largest logistics cost at 27 per cent of the nation’s GDP compared with Vietnam and Thailand at 25 and 20 per cent of their GDP respectively. However, when compared with the logistics costs of Singapore at 8 per cent and Malaysia at 13 per cent, Indonesia’s costs are relatively high.

<table>
<thead>
<tr>
<th>Country</th>
<th>Logistics Costs (% of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States of America</td>
<td>9.9</td>
</tr>
<tr>
<td>Japan</td>
<td>10.6</td>
</tr>
<tr>
<td>South Korea</td>
<td>16.3</td>
</tr>
<tr>
<td>Singapore</td>
<td>8.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>13</td>
</tr>
<tr>
<td>Thailand</td>
<td>20</td>
</tr>
<tr>
<td>Indonesia</td>
<td>27</td>
</tr>
<tr>
<td>Vietnam</td>
<td>25</td>
</tr>
</tbody>
</table>

**Source:** State of Logistics 2013, p.18

To gain a better understanding as to why these logistics costs in Indonesia are so high, we analyse a range of indicators. The first is the ‘Logistics Performance Index (LPI)’ developed by the World Bank which ranks the logistics performance of 160 countries on six dimensions of trade (World Bank Logistics Performance Index 2007-2016). This include customs performance, infrastructure quality, ease of arranging competitively priced shipments, quality of logistics service, ability to track and trace consignments and the timeliness of expected
delivery times. The LPI uses standard statistical techniques to aggregate the data into a single indicator or scorecard that can be used for cross-country logistic comparisons. This scorecard has been produced in 2007, 2010, 2012, 2014 and 2016. Using this scorecard, Figure 4.2 provides an overall logistics performance of Indonesia against other developing Southeast Asian economies (SEA). The results suggest that Indonesia has made some progress over the years with logistics performance. However, despite being a middle income country, Indonesia’s score is comparable to a lower income country like Vietnam. Comparing these results with other SEA countries, Indonesia’s performance is still lagging behind neighbouring competitors such as Thailand and Malaysia.

**Figure 4.2**: Overall Logistics Performance Index Scores (1= Low, 5 = High)

![Graph of Logistics Performance Index Scores](http://lpi.worldbank.org/international/global/2007)


The next indicator is the quality of logistic services compared across Southeast Asian countries as seen in Figure 4.3. The results show that logistics quality and competence in Indonesia has fluctuated between a score of 2.5 and 3 out of 5, with very slight improvement over 2007 to 2016. Vietnam and Philippines display a similar trend with Cambodia lagging behind. Malaysia’s logistics quality and competence leads with a score close to 3.5.

Figure 4.3: Quality of Logistic Services (1=Low, 5=High)


Isolating the impact of infrastructure on the scorecard, Figure 4.4 shows that Indonesia’s infrastructure has not improved significantly since 2006. This can be compared with Cambodia which has seen its infrastructure scorecard increase to nearly the same levels of Indonesia in 2016, despite starting from a low base. The infrastructure of Vietnam and the Philippines share a very similar scorecard in 2016 which is close to the scorecard achieved by Indonesia. This indicates that further investment in infrastructure is required in Indonesia to improve its competitiveness in logistics.
Finally, the scorecard on international shipments which looks at the ease of arranging competitively priced shipments, also suggests that Malaysia has a significant lead in attracting international shipments as shown in Figure 4.5. At the same time, Vietnam and the Philippines have been outperforming Indonesia when competing for international shipments.

Therefore, although Indonesia’s logistics performance is catching up with its neighbours, its score remains lower than countries such as Malaysia, Thailand and Vietnam. The quality of infrastructure also remains weak resulting in loss of time due to congestion, poorly maintained roads, ports and airports (Sandee et al. 2016).

Besides the ‘Logistics Performance Index’, The World Economic Forum also produces the ‘Global Enabling Trade Report’. This report generates a key indicator in measuring efficiency and transparency in border administration. The rankings are represented in Table 4.2. Although the reporting variables have changed over the last eight years, Indonesia ranked 79 out of 136 countries for efficiency and transparency in border administration in 2016. This is an improvement from its 2008 score of 91 out of 118. However, the ranking of effectiveness and efficiency of clearance has worsened from the 43rd in 2008 to the 70th position in 2016. Similarly, the customs services index has also fallen from 22nd to 28th position from 2008 to 2016. On the upside, Indonesia’s position with regards to irregular payments for exports and imports as seen an improvement from a ranking of 110 in 2008 to 80 in 2016.

Table 4.2: Efficiency and transparency in border administration

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2008 Rank 91/118</th>
<th>2016 Rank 79/136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burden of customs procedure</td>
<td>91</td>
<td>-</td>
</tr>
<tr>
<td>Customs service index</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Effectiveness and efficiency of clearance</td>
<td>43</td>
<td>70</td>
</tr>
<tr>
<td>Time for import</td>
<td>77</td>
<td>-</td>
</tr>
<tr>
<td>Irregular payments in exports and imports</td>
<td>110</td>
<td>80</td>
</tr>
<tr>
<td>Corruption Perception Index</td>
<td>104</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: World Economic Forum Global Enabling Trade Report 2008 and 2016. Some variables have changed and are no longer included in the 2016 survey.
The World Economic Forum also produces an annual country benchmarking report titled ‘The ‘Global Competitiveness World Economic Report’. According to this report, Indonesia’s position for port infrastructure ranking has improved from 97th in 2006-07 to 75th position in 2016-17 as seen in Table 4.3. This measures the results from the second pillar of the survey which is infrastructure, specifically port infrastructure. Similarly, Philippines, Vietnam and Cambodia have also seen a slight improvement in port infrastructure ranking from 2010-11 to 2016-17. However, Thailand’s ranking has seen a further deterioration from the 43rd position in 2010-11 to the 66th position. Malaysia’s port infrastructure leads with the 17th position and Singapore at the 2nd position.

Table 4.3: Quality of Port Infrastructure Ranking

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>97</td>
<td>96</td>
<td>75</td>
</tr>
<tr>
<td>Malaysia</td>
<td>na</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Philippines</td>
<td>na</td>
<td>131</td>
<td>113</td>
</tr>
<tr>
<td>Thailand</td>
<td>na</td>
<td>43</td>
<td>66</td>
</tr>
<tr>
<td>Vietnam</td>
<td>na</td>
<td>97</td>
<td>77</td>
</tr>
<tr>
<td>Cambodia</td>
<td>na</td>
<td>82</td>
<td>76</td>
</tr>
<tr>
<td>Singapore</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>


Although it can be difficult to draw definitive conclusions from the above surveys as they are indicative and subjective measures, the overall results do provide a guide to suggest that moderate improvement in logistics performance for Indonesia has taken place over the last decade. However, it is also evident that Indonesia’s logistics performance has started to fall behind other developing SEA countries such as the Philippines, Vietnam, Thailand and Cambodia. Many logistics challenges still remain, especially in infrastructure investment as other developing nations catch up with Indonesia’s performance.
The lack of logistics quality and infrastructure could discourage investment, increase inventories and storage cost within the nation (World Bank 2014). Malaysia’s performance in the above indicators could also be linked to its lower score on the FDI Regulatory Restrictiveness index being lower than Indonesia and Thailand as discussed in Chapter 3. The index suggests that the economies of Vietnam and Cambodia are even more open to foreign direct investment. However, Table 4.4 below suggests that Malaysia still has the least restrictive FDI policy, with FDI investment in maritime transport allowed up to 69 per cent, compared with 49 per cent in Indonesia (OECD 2014).

Table 4.4: General restrictions on transport FDI in eight ASEAN member states

<table>
<thead>
<tr>
<th>Countries</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>None</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Maximum Maritime Investment in International and Domestic sea transportation is &lt;49 %.</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>The Government reserves the right to participate in the shareholding of air and sea transport companies, as well as in infrastructure construction companies. A joint venture with the Government may be required.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>FDI&lt;70% in Malaysian shipping companies.</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Only joint ventures in marine passenger and freight transport and in local and international aviation services.</td>
</tr>
<tr>
<td>Philippines</td>
<td>The Constitution restricts ownership of any transport company to Filipinos and to Filipino companies (FDI&lt;40%).</td>
</tr>
<tr>
<td>Thailand</td>
<td>Air, surface, maritime: FDI&lt;49% but may be allowed up to 75% with approval.</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Rail, maritime, air (FDI&lt;49%); Road (FDI&lt;51%).</td>
</tr>
</tbody>
</table>

Source: OECD (2014, p.16-17); Presidential Regulation 4/2016

This could provide an explanation for the quality of port infrastructure and logistics at Malaysian ports. In Malaysia, the phenomenal growth of port throughput has led to an expansion of port facilities, maritime services and the establishment of new shipping lines to
cope with the growth in freight traffic and trade development. Malaysian ports have invested heavily in port infrastructure and port capacity expansion projects in anticipation of increasing container volumes (Jeevan et al. 2015). As suggested by the international logistics surveys in the previous section, the maritime industry in Malaysia has made progress since the 1970s through the government’s plan to transform Malaysia. In 1971, GDP in Malaysia reached 7 per cent as the nation adopted an ‘export led’ growth policy as part of its New Economic Policy (NEP). However, transport costs remained high, especially port costs that were responsible for transporting 90 per cent of Malaysia’s international trade. Malaysia’s ports had struggled to cope with the strong increase in traffic following its economic growth and were suffering from dilapidated infrastructure, lack of handling equipment, congestion and low productivity (Tull and Reveley 2002; Ghashat et al. 2011). Therefore, to remain competitive, these costs had to fall.

Port Klang is the nation’s main port and it is located on the West Coast of Malaysia, at the mouth of the Klang River. In 1983, government policy in Malaysia shifted from promoting public enterprises to embracing privatisation. Port Klang was chosen for privatisation because it was profitable and not politically sensitive and secondly, because it was inefficient by world standards due to congestion, poor productivity and pilferage. In the same year, a new company Klang Container Terminal Sendirian Berhad (KCT) was established and private sector companies came to bid to acquire 51 per cent of KCT’s shares. The winning bid was from a joint venture company including Konas Terminal Klang Sendirian Berhad (KTK). This was a joint venture between Kontena Nasional Sendirian Berhad (KNSB) which owned 80 per cent of the shares and P&O Australia which owned the remaining 20 per cent. In 1986, P&O Australia purchased its share in the Klang container terminal. To minimise opposition to privatisation from employees, workers were offered a choice of redundancies or remained
employees of the Klang Port Authority with no change to terms and conditions. They were also guaranteed security for employment for the first five years (Tull and Reveley 2002). In 1992, Kontena Nasional was unable to find a partner to privatise the remainder of the port. In the end, the remaining operational services such as pilotage were sold to the Nationally owned, Kontena Nasional.

The Klang Port Authority (KPA) was eventually corporatized and retained regulatory power and responsibility for port planning and development. Unlike many corporatized ports, it was granted rights to license the companies carrying out cargo related commercial activities, set performance standards and approve tariff changes. The successful privatisation of Port Klang led to the privatisation of other Malaysian ports such as Johor (in 1993 and 1995) and corporatisation of Bintulu in 1993. Kuantan port was privatised in 1998 without the corporatisation stage and Tanjung Pelepas in 2000 (Tull and Reveley 2002). In conclusion, the Malaysian port privatisation experience could play a role in explaining why it outperformed other Southeast Asian ports and is a possible model for Indonesia to emulate.

4.2 Competition amongst South East Asian Ports

Following from the previous discussion, we now turn to look at competition in the container trade in Asia. Container throughput in the SEA Ports (SEA) has been increasing steadily and with ports located within close vicinity of each other, competition is inevitable. Port rankings are summarised in Table 4.5. The port of Singapore ranks second place behind Shanghai with a total container throughput of 30.9 million TEUs in 2016. This is followed by Malaysian ports, Port Klang and Tanjung Pelepas, in the position of 11th and 19th respectively. Thailand’s Laem Chabang port holds the 21st position at 7.2 million TEUs with Tanjung Priok falling from the
27th position in 2015 to the 30th position in 2016 at 4.95 million TEUs. Although the Port of Tanjung Emas is not ranked in the top 50, its volumes have nearly doubled from 0.43 TEUs in 2011 to 0.62 million TEUs in 2016 and is ranked as Indonesia’s third largest port.

Table 4.5: Ranking of Top 50 Container Ports in Asia and the Port of Tanjung Emas

<table>
<thead>
<tr>
<th>Rank</th>
<th>Port</th>
<th>Volume 2012 (Million TEU)</th>
<th>Volume 2013 (Million TEU)</th>
<th>Volume 2014 (Million TEU)</th>
<th>Volume 2015 (Million TEU)</th>
<th>Volume 2016 (Million TEU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shanghai, China</td>
<td>32.53</td>
<td>33.62</td>
<td>35.29</td>
<td>36.54</td>
<td>37.13</td>
</tr>
<tr>
<td>2</td>
<td>Singapore</td>
<td>31.65</td>
<td>32.24</td>
<td>33.87</td>
<td>30.92</td>
<td>30.9</td>
</tr>
<tr>
<td>3</td>
<td>Shenzhen, China</td>
<td>22.94</td>
<td>23.28</td>
<td>24.04</td>
<td>24.2</td>
<td>24.2</td>
</tr>
<tr>
<td>4</td>
<td>Ningbo-Zhoushan, China</td>
<td>15.67</td>
<td>16.77</td>
<td>19.43</td>
<td>20.62</td>
<td>21.6</td>
</tr>
<tr>
<td>5</td>
<td>Hong Kong, S.A.R., China</td>
<td>23.12</td>
<td>22.37</td>
<td>22.28</td>
<td>20.1</td>
<td>19.6</td>
</tr>
<tr>
<td>6</td>
<td>Busan, South Korea</td>
<td>17.05</td>
<td>17.69</td>
<td>18.68</td>
<td>19.47</td>
<td>19.45</td>
</tr>
<tr>
<td>7</td>
<td>Guangzhou Harbor, China</td>
<td>14.74</td>
<td>15.31</td>
<td>16.62</td>
<td>17.63</td>
<td>18.9</td>
</tr>
<tr>
<td>8</td>
<td>Qingdao, China</td>
<td>14.5</td>
<td>15.52</td>
<td>16.62</td>
<td>17.51</td>
<td>18.01</td>
</tr>
<tr>
<td>9</td>
<td>Jebel Ali, Dubai, United Arab Emirates</td>
<td>13.27</td>
<td>13.64</td>
<td>15.25</td>
<td>15.6</td>
<td>15.73</td>
</tr>
<tr>
<td>10</td>
<td>Tianjin, China</td>
<td>12.3</td>
<td>13.01</td>
<td>14.05</td>
<td>14.09</td>
<td>14.5</td>
</tr>
<tr>
<td>11</td>
<td>Port Klang, Malaysia</td>
<td>10.00</td>
<td>10.35</td>
<td>10.95</td>
<td>11.89</td>
<td>13.2</td>
</tr>
<tr>
<td>19</td>
<td>Tanjung Pelepas, Malaysia</td>
<td>7.70</td>
<td>7.63</td>
<td>8.50</td>
<td>9.10</td>
<td>8.28</td>
</tr>
<tr>
<td>21</td>
<td>Laem Chabang, Thailand</td>
<td>5.83</td>
<td>6.04</td>
<td>6.58</td>
<td>6.78</td>
<td>7.23</td>
</tr>
<tr>
<td>26</td>
<td>Ho Chi Minh, Vietnam</td>
<td>5.06</td>
<td>5.54</td>
<td>5.37</td>
<td>5.79</td>
<td>5.6</td>
</tr>
<tr>
<td>30</td>
<td>Tanjung Priok, Jakarta, Indonesia</td>
<td>6.2</td>
<td>6.59</td>
<td>5.90</td>
<td>5.2</td>
<td>4.95</td>
</tr>
<tr>
<td>35</td>
<td>Manila, Philippines</td>
<td>3.71</td>
<td>3.77</td>
<td>3.81</td>
<td>4.0</td>
<td>4.52</td>
</tr>
<tr>
<td>38</td>
<td>Haiphong, Vietnam</td>
<td>0.96</td>
<td>3.02</td>
<td>3.45</td>
<td>3.87</td>
<td>4.10</td>
</tr>
<tr>
<td>45</td>
<td>Tanjung Perak, Surabaya, Indonesia</td>
<td>2.84</td>
<td>3.02</td>
<td>3.1</td>
<td>3.12</td>
<td>3.31</td>
</tr>
<tr>
<td>na</td>
<td>Tanjung Emas, Semarang, Indonesia</td>
<td>0.46</td>
<td>0.50</td>
<td>0.58</td>
<td>0.61</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Source: World Shipping Council (2017), unpublished data from Tanjung Emas Container Terminal

Note: Transshipment containers are counted twice in Asia. (Journal of Commerce (JOC) Group, 5th September 2016)
The ports of Vietnam and Thailand have been competing closely with Tanjung Priok in terms of container volumes. The port of Tanjung Perak in Indonesia is at the 45th position. Congestion between the ports and their hinterland are slowing the efficient movement of cargo as the development of inland transportation seems unable to match the increase in cargo volumes. There are also concerns about custom procedures by importers, exporters and freight forwarders in Thailand. Likewise, the Port of Manila in Philippines faces the challenge of port and traffic congestion. This is largely due to the lack of infrastructure investment resulting in bottlenecks as container throughput increase from 3.71 million TEUs in 2012 to 4.52 million TEUs in 2016 (Hongkong Polytechnic University 2014).

In Vietnam, the three largest ports are the Ports of Saigon, HaiPhong and Da Nang. However, only HaiPhong Port and Da Nang Port have good connections to their hinterlands. Therefore, goods need to be transhipped from other major ports such as Hong Kong and Singapore which increases transportation costs. Vietnam’s logistics and infrastructure still requires a significant amount of investment, as it does not have the same size and depth to accommodate larger vessels (Hongkong Polytechnic University 2014). However, container throughputs at the Vietnamese ports have been increasing steadily from 2012 to 2016.

The driver behind this intensifying competition in the shipping industry is the trend towards larger and more powerful alliances amongst shipping lines (Notteboom et al. 2013) The influx of larger ships also increases demand for costly dredging. Therefore, with the current container port competition in Southeast Asia, the response of port authorities to the changing market environment in which they operate will have a critical impact on the ports performance. Although the Port of Singapore still remains the leading port in the region, it faces intense competition from neighbouring transhipment hubs. As demand for container throughput is
forecast to fall due to slower economic conditions, analysts have warned that competition in Asian transhipment hubs is expected to intensify further (JOC Group, 15th September 2016).

**Figure 4.6:** Map of Straits of Malacca and Neighbouring SEA Ports

![Map of Straits of Malacca and Neighbouring SEA Ports](image)

*Source:* Dang and Yeo (2017)

As discussed in the previous section, Malaysia had made substantial progress since the 1970s through the government’s plan to transform Malaysia and can be seen as a leader in port privatisation with Port Klang attaining the 11th position. With intense competition for volumes, Tull and Reveley (2002) argue that the Asian financial crisis resulted in coercive attempts from the Malaysian authorities to divert cargo from Singapore to Malaysian ports by using the threat of law. As 80 per cent of the shippers were either foreign owned or Singapore companies, this did not bring about a favourable response. In March 2000, the Port of Tanjung Pelepas (PTP) started to operate as a transhipment port with its location at the southern tip of the Malaysian
Peninsula. The location of major Malaysian ports along main trade lanes such as the Straits of Malacca has become a motivating factor for the ports to provide all the services at competitive rates. This stiff competition saw the Port of Singapore’s major customer, Maersk Sealand, shift its operations to the Port of Tanjung Pelepas in 2000 by taking a 30 per cent stake in the port.

Cullinane et al. (2007) argued that this saw an immediate financial loss of 10 per cent or 2 million TEUs of container throughput to Singapore. This was followed by Evergreen moving its operations to Tanjung Pelepas in 2003 (Tull and Reveley 2002; Jeevan et al. 2015). Cullinane et al. (2007) argues the presence of the Port of Tanjung Pelepas was already becoming strong in the region. The Port of Singapore responded by locking in customers with new long-term contracts that provided flexibility, discounted rates and berthing priorities in return for guarantees on minimum throughput. The Port of Singapore Authority (PSA) also responded by establishing PSA International in 2004 to diversify its portfolio of container terminal operations on an international scale.

In 2017, the Port of Singapore Authority (PSA) International has also announced a joint venture with CMA CGM, a French container and transportation shipping company, to operate four container berths. This will have an impact on transhipment business from Malaysian ports as PSA tries to rein in Evergreen shipping line from Tanjung Pelepas. Evergreen joins the CMA CGM and COSCO in the Ocean Alliance that use Singapore as their hub (JOC Group, 2nd January 2017). The PSA’s competitive advantage as transhipment hub has been in shipping connectivity despite its handling charges being higher when compared with neighbouring port such as the Port of Tanjung Pelepas. The PSA is staying ahead of its competition by building the next generation mega container terminal which is expected to be fully automated to handle large volumes of cargo more efficiently and engage in research and development (Lam 2016)
The Journal of Commerce (JOC Group, 2nd January 2017) also reports intensifying competition in Southeast Asia ports as container terminals undercut on pricing to attract volumes. There are also major port developments taking place in the Straits of Malacca which includes capacity expansion projects at Singapore’s Tuas development, Tanjung Pelepas and Port Klang. Tongzon (2011) argues that China’s strong economic growth has seen the Port of Shanghai surpassed the PSA as the world’s top container port while the top 10 ports have been dominated by Chinese ports as seen in Table 4.5. The main ports in China near the Yangtze Delta are the ports of Shanghai and Ningbo. The Ports of Shenzhen and Guangzhou are located near the Pearl River Delta while the Ports of Dalian, Tianjin and Qingdao are located at the Pan-Bohai Rim. China also has projects in the pipeline as it seeks to create alternative ports along the Straits of Malacca to secure demand by investing into a four million TEU facility in Tanjung Sauh Port on Indonesia’s Batam Island, which is located close to Singapore. Chinese investment is also seen in the Port of Kuantan on the east side of the Malaysian peninsular facing the South China Sea.

4.2.1 China’s Belt Road Initiative

China is also develop establishing the ‘Belt Road Initiative’ that consists of the ‘Silk Road Economic Belt’ and the ‘21st Century Maritime Silk Road’ The maritime version of the Silk Road will stretch from southern Chinese ports to the Port of Piraeus in Greece and include sensitive maritime routes such as the Malacca Straits and the Suez Canal along with port facilities within the Indian Ocean (Das 2017; Ploberger 2017). This is very much like the ancient trade route that linked the Roman Empire in the West to the East with the Chinese Empire where trade began in the first century for wool, silver and gold.
In 2013, President Xi Jinping unveiled his initiative for greater economic integration in a visit to Kazakhstan and Indonesia. This can be seen in Figure 4.7. Cai (2017) discusses that the various levels of Chinese government, the national economic planning agency and provincial universities are heavily involved in BRI. Cai (2017) argues that the rejection of the Trans Pacific Partnership (TPPs) agreement by the United States helped China sell its BRI more effectively. Das (2017) highlights that the TPP involved an agreement among 12 major trading countries which had been advanced but faced uncertainty with the President of the United States.

Figure 4.7: Belt Road Initiative

Source: Notteboom and Yang (2017, p.9)

Ploberger (2017) discusses if BRI is an attempt from China to enhance its economic integration from Asia to Europe or if it is part of China’s grand strategy. This strategy could see China leverage its geopolitical interests to influence and reshape its power within Asia from a rule follower to a rule marker. Ploberger (2017) argues that China views the BRI as a means of securing access to Central Asia’s regional resources and supply routes and an export market
for Chinese products. Also, it will give China more power and influence over Russia in the region.

Although some have viewed the BRI as China gaining political leverage over its neighbours in the region, China claims the BRI is a means of addressing the nation’s regional disparity in income between its inland western region and the wealthier eastern coastal cities as its economy industrialises. This has become a huge challenge for the ruling party with cities such as Shanghai becoming wealthier compared with the inland provinces such as Gansu. Therefore, China is hoping that this will spur infrastructure development within the regions. Xinjiang is also a large Turkic speaking muslim population that has grown frustrated with Beijing’s rule and wants to gain greater autonomy. It has also become the main source of terrorism within China and the ruling party believes that the underlining cause is poverty and underdevelopment, which it is trying to address as part of the BRI. With 60 countries participating in the ‘BRI initiative’, China is still seeking the participation of more countries. This is critical for the success of the BRI (Cai 2017).

Das (2017) argues that some of the projects that have been approved by China’s National Development and Reform Commission cover the building of expressways and rail routes through Chinese provinces such as Anhui and Xinjiang. A freight train route has also been launched to link Anhui to Central Asia. Although the improved connectivity and trade is expected to bring about economic benefits, concerns on national strategies and regional security remain.
However, China’s strategic initiative is not welcomed by countries such as India. India, a growing economic power, has its own geopolitical ambitions and is showing a strengthening its relationship with the US and with the ASEAN region with member countries such as Vietnam, Thailand, Myanmar and Indonesia (Ploberger 2017). China intends to pass a node to Nepal by passing a railway through Tibet that leads to Qinghai in China. This would benefit Nepal’s economy substantially especially its agriculture and tourism sectors. However, given Nepal’s links with India and the flow of trade through India, the Nepalese government has responded to the proposal with caution. Likewise, China’s relationship with Bhutan has been evolving with diplomacy. Bhutan has a good relationship with India which it wants to maintain, making the BRI less attractive. Recent developments between China and India have not achieved cooperation with regards to the BRI or other issues. India has also not shown interest in the BRI because of security and strategic concerns (Das 2017).

However, for a landlocked country such as Afghanistan, concerns around terrorism, security and long term stability means the BRI could play a significant role in its economic development and connectivity. The BRI is strongly supported by Pakistan. The proposed corridor aims to connect Kashgar in Xinjiang in China’s far west with the Port of Gwadar in the province of Baluchistan in Pakistan. The proximity to the Persian Gulf could see it as a transshipment point for commercial purposes and for China’s energy supplies instead of going through the Straits of Malacca in Southeast Asia. The port is deep enough to accommodate submarines and air craft carriers (Cai 2017). The China-Pakistan corridor and relationship could also pose as a threat to India as military clashes in Kashmir continue. Therefore, India also has to consider her own strategic interests which should not be overlooked when assessing the willingness of other countries to participate.
The financing of the BRI projects is coming from China’s Silk Road Fund (SRF), the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB). However, bankers and Chinese financers have raised concerns with regards to the risks associated with overseas loans due to political instability and economic feasibility of BRI projects. Das (2017) argues that two emerging economic powers, China and India, are exerting their economic influence in two different strategic pathways. China’s focus has been on developing infrastructure in South Asia through the BRI while India has been an integral part in South Asia’s connectivity initiatives, albeit on a smaller scale. Ploberger (2017) argues that economic cooperation is what China is seeking rather than a ‘grand strategy’ to leverage its power. Thus, the BRI may shadow other connectivity projects that are initiated by emerging countries such as India’s agreement with Iran to develop the Chabahar Port in Iran. This will develop India’s trade link with West and Central Asia by avoiding the land route in Pakistan and the Chinese controlled Gwadar Port in Pakistan. Therefore, the BRI does present an economic environment for growing regional trade and development. However, challenges such as national security, terrorism, geopolitical relations, cooperation with other countries and funding still pose a risk to its development.

4.2.2 Indonesia and the BRI

Indonesia’s involvement in the BRI is taking place through high speed rail and its ‘sea toll road’. China is also investing in high speed railway technology to establish this route and marketing this high speed rail to Thailand, India, Indonesia and Malaysia who are strategic partners in BRI. In Indonesia, this includes the building of 142 kilometre of high speed rail line that connects the Indonesian capital, Jakarta to Bandung in West Java. China won the bid from Japan by offering to fund the project itself. Cai (2017) argues that although the deal is not
profitable for China, it is aimed at persuading foreign countries to accept Chinese standards and technology. According to PWC (2016), Indonesia has signed a Memorandum of Understanding of US $20 billion with the China Development Bank (CDB) in June 2015 to finance infrastructure through SOEs and finance the planned Jakarta-Bandung High Speed Rail Line. A summary of these BRI projects can be seen in Table 4.6 below.

**Table 4.6**: Selected Transport Infrastructure Projects Tied to BRI in Southeast Asia

<table>
<thead>
<tr>
<th>Project</th>
<th>Investment (USD million)</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans Sumatra Toll Road</td>
<td>27,000</td>
<td>Pre construction</td>
</tr>
<tr>
<td>Sunda Strait Bridge</td>
<td>24,000</td>
<td>Planning</td>
</tr>
<tr>
<td>Jakarta Bandung High Speed Rail</td>
<td>5,100</td>
<td>Awarded</td>
</tr>
<tr>
<td>Central Kalimantan Coal Railway Network</td>
<td>2,300</td>
<td>Tendering</td>
</tr>
<tr>
<td>West Coast Expressway</td>
<td>2,000</td>
<td>Project signed</td>
</tr>
<tr>
<td>Kertajati Airport</td>
<td>1,800</td>
<td>Tendering</td>
</tr>
<tr>
<td>Soekarno Hatta Airport Train Express Line</td>
<td>1,800</td>
<td>Design</td>
</tr>
<tr>
<td>East West MRT</td>
<td>1,700</td>
<td>Planning</td>
</tr>
<tr>
<td>Balikpapan-Samarinda Toll Road</td>
<td>875</td>
<td>Planning</td>
</tr>
<tr>
<td>New Yogyakarta International Airport</td>
<td>700</td>
<td>Awarded</td>
</tr>
<tr>
<td>Surabaya Monorail</td>
<td>558</td>
<td>Planning</td>
</tr>
<tr>
<td>Kalibaru, First container terminal</td>
<td>393</td>
<td>Project signed</td>
</tr>
<tr>
<td>Manado-Bitung Toll Road</td>
<td>330</td>
<td>Planning</td>
</tr>
</tbody>
</table>

**Source**: Das (2017, p.4)

These projects, along with the ‘Sea Toll Road’ have been part of Indonesia’s involvement with the BRI. Figure 4.8 shows the key Indonesian ports involved in the BRI. The ASEAN Post (22nd September 2017) reports that a handful of Indonesian ports are included because there is not enough traffic at all ports.
Therefore, Indonesia’s Investment Coordinating Board (BPKM) is concentrating infrastructure projects in a number of regions to increase Chinese investment. Indonesia has identified three provinces which are North Sulawesi, North Sumatra and North Kalimantan as projects to be part of the BRI. North Sulawesi and North Sumatra will see investment in infrastructure development including seaports, airports and toll roads while North Kalimantan focus’s on investment in energy and processing industries (Jakarta Globe, 14th May 2017). However, Indonesia has only received USD $5 to $6 billion in infrastructure investment from China. This is significantly smaller than the amount received by Pakistan and Malaysia of USD $62 billion and USD $32 billion respectively. The aim is to receive funding for its toll roads, sea ports, airports and power plant. However, Indonesia is open to investment from countries such as Japan and the US, which can also play a critical role in developing Indonesia’s infrastructure (Jakarta Globe, 14th May 2017).
4.3 Port Governance in Indonesia

We now turn to focus on the port governance framework of Indonesian ports. In an archipelago nation such as Indonesia, shipping is the key mode of inter-island transport and most islands are economically dependent on connections through ports. Almost 90 per cent of trade in Indonesia is via sea with most of the non bulk trade being shipped via Singapore or Malaysia due to cost competitiveness. Therefore, connectivity plays a critical role in reducing costs and further diversifying production and exports in Indonesia. Despite its critical importance to the national economy, Indonesia does not have a competitive ports system due to the lack of private sector investment and competition among ports (Nathan Associates 2008). In 2008, Indonesia had approximately 1700 ports of which 111 ports are commercial and 614 are non-commercial. There are also about 1000 special purpose ports that served the mining, oil and gas, fishing and forestry industries. These ports were controlled by the four state owned Indonesia Port Corporation (thereafter Pelindo).

As discussed in Chapter 3, the departure of the Dutch saw Indonesia experience an economic decline until the mid-1960s. Before independence, inter island shipping which included shipping to and from Singapore, was the virtual monopoly of the Dutch owned KPM (Koninklijke Paketvaart Maatschappij). The departure of the Dutch saw the failure to establish a joint venture between Indonesia and the KPM (Dick 1987). Dick (2008) argues that once the KPM withdrew its ships, the Indonesian government was quick in ordering vessels from other countries to replace the KPM. In 1957, the assets of the KPM and other Dutch enterprises were seized by the Indonesian government and inter island shipping became less reliable (Dick 1987).
The new Indonesian government established its state owned inter island shipping corporation known as ‘Pelayaran Nasional Indonesia’ and regulated tariffs and operating conditions. Although shipping capacity increased, the fleet consisted of unfamiliar type of ships, some of which were old and did not suit Indonesian conditions. This resulted in more ship companies being registered even though they were not running in profit. Instead of focusing on efficient operations, the focus of the government on shipping was nationalization and removing traces of a colonial heritage which resulted in a deterioration of shipping services after 1957-58 (Author Unknown 1966). The new Minister of Shipping in the Sukarno government began to impose regulations on the maritime sector. The rationale behind this was that the government needed to determine the commercial guidelines for the maritime industry in relation to the number of firms, shipping routes and capacity, allocation of vessels to routes and freight and passage rates (Dick 2008).

In the 1960s, the port environment was characterised by high costs and inefficiencies. McCawley (2015) argued that competition and regulation have been central to the policy discussion of shipping in Indonesia. There were delays in loading and unloading ships due to rigidities in labour supply and lack of infrastructure. This had a significant impact on ship turnaround times. It was also difficult to assign responsibilities for loss of goods (Author Unknown 1966). In the late 1960s, costs, prices, and competition arrangements all contributed to high levels of inefficiency in the shipping industry.

Lobby groups such as the Indonesian National Shipowners Association (INSA) that had pushed during the late 1970s and early 1980s to preserve the ‘rights of pribumi’ (indigenous Indonesian) companies while giving no support to the expansion of strong and progressive companies. Regulation within the shipping industry also resulted in efficiency losses. Dick
(2008) argues that the path dependence seen in Indonesia’s central planning, monopoly approach to maritime followed the Dutch style of managing institutions as discussed in Chapter 3. However, it did have perverse outcomes as ship owners came to the understanding that to conduct business and get around inconsistent regulations, bribes could be offered. Dick (2008) argues that this resulted in bureaucrats collecting their bribes and industry operating in the manner they wanted. Indonesia was not quick to upgrade its port infrastructure which resulted in losing cargo to other ports such as Singapore.

The Indonesian government then went on to establish eight state owned enterprises called Perusahaan Negara Pelabuhan (I to VIII), today known as the Indonesia Port Corporation or ‘Pelindo’, in 1960 to operate ports. This corporation was tasked with managing port operations across the country. Between 1964 and 1992, further changes were made to the structure of the ports and responsibilities. In 1983, the port structure was further divided into four operational areas and placed under the supervision of the Ministry of Transport (Dick 2008; Indonesian Investments n.d). As discussed in Chapter 3, the second phase of Suharto’s rule (1973 to 1983) saw deregulation policy take effect in 1981 when oil prices collapsed leading to a balance of payment crisis. Dick (2008) argues that the 1980s saw the government deregulate the highly protected and inefficient shipping industry to facilitate growth in trade and inter island shipping. Cabotage restrictions, which serve as a protectionist policy in many countries to regulate and restrict domestic cargo by national flagships, were abolished in Indonesian ports (Dick 2008). Shipping companies had the opportunities to expand their operations and it was no longer necessary to secure good connections with government officials to secure a profitable trade. As a result, shipping costs fell and global trade grew, facilitating the expansion of labour intensive manufacturing and lower unemployment.
Corruption in customs clearance in Indonesia was extremely high during Suharto’s presidency which led to the outsourcing of custom functions to a Swiss firm Société Générale de Surveillance (SGS) in 1985 (Dick 2008). However, these deregulation measures did not last very long. By 1988, customs began urging the government to cancel the SGS contract because they claimed the company was performing poorly in processing documents and anti smuggling operations. In 1992, a new shipping law (Law 21/1992 on Shipping) was introduced that strengthened regulatory power as the reforms came under pressure from rent seeking agents. Once non oil exports started performing, President Suharto allowed the new Director General of customs, who was his son in law, to restore the customs services to its former role (JOC Group, 13th September 1989). The Asian Financial Crisis and the end of Suharto’s government in May 1998, saw many elements of the former maritime regulatory regime restored under the Habibie government. The deregulation of inter island shipping that was introduced in 1988 was overturned by President Habibie during 1999 in the last few weeks of his presidency. Also, long term lobbying efforts by the Indonesian National Ship owners Association (INSA) and the DG of Sea Communications, resulted in restoring cabotage restrictions in 2005 by the Megawati government. The crisis saw a return of economic nationalism that restored the old protectionist devices. (Aspinall 2016; Dick 2008).

The legal structure of the port authority transformed further from multiple individual entities into a single public corporation called ‘Perusahaan Umum’ (Perum) and became limited to managing commercialized ports. In 1992, the public corporation was changed into a Limited Liability Company and the names of its entities were changed into Indonesia Port Corporation (IPC) I to IV, otherwise known as ‘Pelindo I to IV’. The ports administered under each of the Pelindo’s are illustrated in Table 4.7.
Table 4.7: Ports Operated under Pelindo (year)

<table>
<thead>
<tr>
<th>Port Corporation</th>
<th>Coverage (Provinces)</th>
<th>Ports Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelindo I</td>
<td>Aceh, North Sumatra, Riau</td>
<td>Belawan, Pekanbaru, Dunai, Tanjung Pinang, Lhokseumawe</td>
</tr>
<tr>
<td>Pelindo II</td>
<td>West Sumatra, Jambi, South Sumatra, Bengkulu, Lampung, Jakarta</td>
<td>Tanjung Priok, Yanjing, Palembang, Teluk Bayur, Pontianak, Cirebon, Jambi, Bengkulu, Banten, Sunda Kelapa, Pangkal Balam, Tanjung Pandan</td>
</tr>
<tr>
<td>Pelindo III</td>
<td>Central Kalimantan, South Kalimantan, West Nusa Tenggara, East Nusa Tenggara</td>
<td>Tanjung Perak, Tanjung Emas, Banjarmasin, Benoa, Tenau/Kupang</td>
</tr>
<tr>
<td>Pelindo IV</td>
<td>Sulawesi, Maluku, Irian Jaya</td>
<td>Makassar, Balikpapan, Samarinda, Bitung, Ambon, Sorong, Biak, Jayapura</td>
</tr>
</tbody>
</table>


The Pelindo controlled the management of commercial ports in Indonesia by acting as a regulator and operator. As the port authority, it had monopoly control over freight and shipment in ports. There was also no incentive to perform financially as only Pelindo II and Pelindo III recorded profits and subsidised the other two port corporations (Pelindo I and Pelindo IV) that incurred losses, as reflected by the low maintenance and investment in port infrastructure. The Pelindo also control tariffs to users. Patunru et al. (2009) argues that these tariffs did not reflect efficiency levels because of the lack of competition inside the ports and the cross subsidy system. Patunru et al. (2009) argues that shipping companies, freight forwarders and stevedoring companies had lodged several complaints against Pelindo for the loss of time due to poor infrastructure and inefficiency in port operations.

After four years of development, the Indonesian Government introduced ‘Shipping law no. 17 of 2008’\textsuperscript{12}. The law aimed to provide a comprehensive reform of the maritime industry to align it with Indonesia’s port sector vision for the country’s ports to be efficient, competitive and responsive (Shipping Law 2008, p.33 Article 67 of Part VII).

\textsuperscript{12} Relevant sections of the legislation have been included in Appendix 3.
This Law removed the Pelindo’s monopoly of port services and opened up the port to private operators, increasing competition and putting downward pressure on prices. As part of the port devolution process, the role of the regulator and operator was separated. Under existing regulations, the Indonesia Port Corporation consisting of the four Pelindos, would have regulatory authority over other ports within their geographical regions of control. With the new law, the regulatory authority at the port level will be vested with the newly formed port authorities. Therefore, in this ‘landlord’ model, the government is represented by the port authority that owns, provide and regulate access to port land, water and infrastructure. The port operator (Pelindo) leases these facilities to the private sector through a long term contract or concession and provides port services such as mooring, towage and cargo handling. According to interview responses by an industry participant\(^\text{13}\), these concessions are to make sure that all parties are protected under the law in order to ensure smooth flow of logistics services in every Port of Indonesia.

This law allowed for a radical transformation of Indonesia’s port system but the concern that arose was whether Indonesia’s port authorities would have the technical and financial expertise to undertake these responsibilities. This is because the law initially allows only public servants to staff the port authorities, restricting its recruitment abilities to attract more skilled staff. Also, Indonesian ports operating environment has had little competition. For instance, in the late 1990s, two concessions for its JICT and Koja terminals were sold to Hutchinson Port Holdings (HPH) (Nathan Associates 2008).

Also, depending on the relationship port authorities have with the incumbent Pelindos, this could shape discriminatory behaviour against new investors such as unfair access to key

\(^{13}\) Interview conducted on 19\(^{\text{th}}\) January 2017 while visiting the Port of Tanjung Emas TPKS terminal
facilities and services or discriminative pricing. Lastly, prior to port reform, basic infrastructure was provided by the Pelindos. Under the new structure, port authorities need to be able to fund the provision of basic infrastructure. Therefore, they would require their own sources of funding which could be concessioned by the port authorities through a Build Own Transfer (BOT) basis. Although the new shipping law allows port operators to set their own tariffs, the wording in the legislation suggests that this can be determined by the government, contradicting the role between regulator and operator. Cabotage continues to remain in the ‘2008 Shipping Law’ despite the law seeking to achieve competitiveness and efficiency (Nathan Associates 2008).

Under this new structure, the Port Authority is responsible for the individual port masterplan, the provision of basic infrastructure and also to determine and regulate port operator access to facilities (Shipping Law 2008). This new model of port governance will see Indonesia transition towards a ‘Landlord Port’ governance model as discussed in Chapter 2 (World Bank 2004; Nathan Associates 2008). In February 2012, it was finally decided that for budgetary reasons, there would be only four port authorities which include Belawan for Pelindo I, Tanjung Priok for Pelindo II, Tanjung Perak for Pelindo III and Makassar for Pelindo IV (OECD 2012). The final governance structure is summarised in Figure 4.9.
The 2008 ‘Shipping Law No. 17’ laid the foundation for the Company known as the Indonesian Port Corporation (IPC) which manages Pelindo I to IV, to focus more on its role as an operator. In the past the IPC’s responsibilities included port related regulations. The company was established as a limited liability, profit making company with the central government retaining control of tariffs that are set at a national level. The IPC controlled cross subsidization between ports controlled by each Pelindo. The Company is governed by a ‘Board of Commissioners’ who act as a representative of the government (Annual Report 2012). The IPC then reports to the Ministry of State Owned Enterprise.
A critical supporting document meant to assist with the transition was the ‘Draft National Port Master Plan’ (Nathan and Associates 2012). This was the key policy document developed by the Ministry of Transport which determined the location and hierarchy of current and planned ports. The plan also aimed to minimize the number of ports that have direct international shipping linkages to address the issues of smuggling and cabotage. Initially, the law required each port authority to prepare a master plan for ports under its area which would be linked to the National Ports Master Plan (NPMP) (OECD 2012d). Although the responsibility of major ports rests with the central government, the shipping law has a clear role assigned to local governments for developing collector and feeder ports. However, the issues of central coordination also failed as local governments did not always consult the central government. This reflected the problems brought about by the fragmented fiscal decentralisation process discussed in Chapter 3. (OECD 2012d). The new shipping law also continues to provide subsidies to the remote archipelago regions. However, the new structure does not detail if there will be a change in the structure of financial support offered and on what basis decisions on subsidy allocation will be made, suggesting difficulties in national coordination (OECD 2012d). Therefore, the draft plan is ambiguous with regards to central planning for port development (OECD 2012).

The current arrangements have port authorities established as operating units with the Ministry of Transport. However, a better structure as suggested by the OECD (2012d) would be for port authorities to operate outside of the public service as corporate entities with a Board of Directors that have a substantial degree of autonomy which is essential in operating as a landlord port. The relevant Pelindos and the Finance and Development Supervisory Board (BPKP) have been discussing the transfer of assets from the Pelindos to the Port Authorities. The OECD (2012d) argues that basic infrastructure should be transferred to the port authority
while operating equipment should be retained by the Pelindos (OECD 2012d). The timeline in Fig 4.10. summarises how the structure of Indonesia’s port governance system has evolved with from the 1960s to 2017.
Figure 4.10: Evolution of Indonesian Port Structure from 1960 to 2017

1960 – Post Independence
Increased Regulation

After the departure of the Dutch, the Indonesian Government established 8 state owned enterprises called ‘Perusahaan Negara Pelabuhan’ to manage port operations.

1964 – Regulation Continues

The ports legal structure was merged from eight individual entities into a single public corporation called Perusahaan Umum (Perum).

1983 – Commercialisation (De-regulation)

The port structure was further divided into four operational areas and placed under the supervision of the government’s Transportation Ministry.

1992 – Re regulation

In 1992, the public corporation was changed into a Limited Liability Company and the names of its entities were changed into Indonesia Port Corporation I to IV (Pelindo I to IV).

2008 onwards – Mild Liberalisation (Port Devolution)

A new shipping law was introduced in 2008 by the Indonesian Government to provide a comprehensive reform of the maritime industry in Indonesia. This law removed long held legislated monopoly power at ports and replaced it with a more competitive and responsive system. This saw the governance structure of the ports begin to evolve towards a Landlord model with the separation of the operator and regulator role.

2017- Transition towards landlord model

Pelindos have been adapting to the new structure. However, the transition towards the landlord model still has elements of central government control, lack of foreign competition and regulatory constraints. Foreign investment in ports is still limited at 49 per cent.

Source: Dick (2008); Ray (2008); Annual Report (2012); Author Unknown (1966)
4.4 Private Sector Investment

The level of private investment in Indonesian ports is still limited to 49 per cent of foreign ownership based on the ‘negative investment list’ in 2008. This remained unchanged at 49 per cent after a review of limits on foreign investment in 2016 (Presidential Regulation 4/2016). Table 4.8 shows the level of foreign ownership in terminals in Indonesia terminals. The Asian Financial Crisis in 1998-99 led to foreign investment in Indonesian ports exceeding the limit of 49 per cent. This was due to a shortage of government funds. Hutchinson Port Holdings (HPH) operated the Jakarta International Container Terminal (JICT) at a 51 per cent interest. Although this contract has been renewed, the new terms result in HPH’s ownership reverting back to 49 per cent. This will be further discussed in Chapter 5. Similarly, Dubai Ports(DP) World operated the terminal at Tanjung Perak in Surabaya with a 51 per cent stake (OECD 2012).
Table 4.8: Ownership of key container terminals in Indonesia

<table>
<thead>
<tr>
<th>Container Terminal</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jakarta International Container Terminal (Tanjug Priok)</td>
<td>Joint venture between Pelindo II and Hutchison Port Holdings (HPH), with HPH holding a 51 per cent interest in the operating company till 2019. This reverts back to 49 per cent with the new contract till 2039.</td>
</tr>
<tr>
<td>Koja Terminal (Second largest container terminal in Tanjug Priok)</td>
<td>Operated by joint venture between Pelindo II and Hutchison Port Holdings (HPH) with Pelindo having a holding interest of 52 per cent.</td>
</tr>
<tr>
<td>Terminal 003 and 009 at Tanjug Priok, Jakarta</td>
<td>Both terminals operated by Singapore-based Portek under operating agreements with Pelindo II.</td>
</tr>
<tr>
<td>New Priok Container Terminal 1 (NPCT1)</td>
<td>Newly built joint venture in Kalibaru to accommodate modern containerisation. The company is owned by four shareholders which include Pelindo II, Mitsui Co. Ltd., PSA International and Nippon Yusen Kabushiki Kaisa (NYK Line). This terminal began operation on 18th August 2016. (IPCa n.d.)</td>
</tr>
<tr>
<td>PT. Terminal Petikemas Surabaya in Tanjung Perak</td>
<td>Operated as a joint venture between Dubai Ports World (DPW) and Pelindo III, with Pelindo III holding a controlling interest of 51 per cent. However, this contract has not been renewed further because of differences over renewal terms (The Financial Times, 18th September 2017)</td>
</tr>
<tr>
<td>Makassar International Container</td>
<td>Operated by International Container Terminal Services Incorporated (ICTSI) under a 10-year co-operation agreement with Pelindo IV. This has now been renewed for another ten years till 2023 (Port Strategy 2012).</td>
</tr>
</tbody>
</table>

Source: OECD (2012)

Although the shipping goals of efficiency, competitiveness and development are recognised in the ‘2008 Shipping Law’, these goals are overridden by nationalistic concerns as seen in the restrictions of foreign ownership in Indonesia’s maritime sector (Dick 2008). Similarly, the government has committed to increasing trade while its logistics and infrastructure systems require further upgrade. Ray (2008) argued that despite the new laws, corruption continues to exist in berth assignments with informal payments made to reduce queuing time stemming from a lack of infrastructure facilities. These informal payments are in addition to other
payments required at customs. The insurance premium on cargo shipments from Indonesia is 30 to 40 per cent higher than cargo from Singapore because of sea piracy and organized crime at ports. Therefore, Dick (2008) describes the attempts to liberalise the port sector to the ‘swing of the policy pendulum from regulation to deregulation and back to regulation’. It has been close to a decade since this new law came into place and it provides an opportunity to evaluate the effectiveness of Indonesia’s new port governance framework.

4.5 Port Labour and Industrial Unrest Post Independence

Along with political unrest, there was also a surge in industrial unrest following independence, with workers demanding better conditions at the Javanese ports of Jakarta, Semarang and Surabaya and the Port of Belawan in Sumatra (Ingleson 2016). Workers, unions, employers and government officials, struggled to develop a new industrial relations framework. In 1948, a report by a Labour Inspectorate survey showed that dockworkers not only worked for low wages but under difficult conditions that involved long hours of work, lack of drinking water and poor sanitation facilities. Workers having no paid sick leave or a social security net, had to struggle to work on the job while sick instead of losing their jobs. The report recommended establishing a minimum wage, improving in-kind allowances, regulating the maximum working hours, rest days, overtime work, improving access to sanitation and drinking water and providing medical care for sick workers (Ingleson 2016).

The unions that emerged for dock workers in the late 1910s and early 1920s were small and ineffective. There were no major unions for Indonesian dockworkers until late 1939 which saw the creation of ‘Persatuan Sekerja Paketvaart Bumiputera’ (Association for Native Shipping Workers) for KPM workers and ‘Sarekat Pelajar Bumiputra’ (Union of Native Sailors) for non-
KPM workers, but both ceased to function with the Japanese occupation in March 1942. Unions for dockworkers emerged again after the declaration of independence in August 1945 and operated under constrained conditions in Dutch controlled ports. ‘Serikat Buruh Kapal dan Pelabuhan’ (SBKP, Union of Ship and Dockworkers) had been formed in Jakarta in April 1948 as an amalgamation of several small Jakarta unions. In March 1950, it joined the communist led union ‘Sentral Organisasi Buruh Seluruh Indonesia (SOBSI)’ (All Indonesia Federation of Labour Unions). The second union with national aspirations was the Serikat Buruh Lautan dan Pelajan (SBLP, Union of Dockworkers and Seamen) which had its headquarters in Surabaya (Ingleson 2016).

Colonial mindsets took a long time to change and acknowledge that the race based coercive power of the State had ended. European employees earned much more than Indonesians and had better employment conditions and received a higher percentage of bonuses. In February 1950, the dominant shipping company, KPM, dismissed union demands to end race discrimination. The unions challenged the existence of the path dependence colonial structure where Europeans were ‘tuan besar’ meaning ‘the master’. Some of the disputes were planned strikes and others were spontaneous actions by workers (Ingleson 2016).

4.5.1 The Belawan Harbour Strike

The process of collective bargaining was triggered in Indonesia with the beginning of strikes at the Belawan Harbour, located on the east coast of Sumatra. On December 29, 1949, five hundred permanent and casual workers at three small stevedoring companies went on strike two days after sovereignty was transferred to the state. The strike was a demand from workers for better pay and employment conditions, including paying permanent workers Rp.5 a day and overtime for Sundays and national holidays and a free meal instead of a subsidised meal.
They only received Rp.2 a day with subsidised rice, salt and palm oil for a 48 hour, 6 days work week. This modest uproar that started as a small action from workers ended up as a three week strike. Initially, employers were convinced that the industrial action could be stopped by making an offer to double wages and improving conditions. However, the workers refused and continued the strike. They continued to load and unload ships but refused to move goods from the warehouses (Ingleson 2016).

Finally, on January 19, 1950, employers reached a deal with the SBKP for a daily wages of Rp. 4.75 and a premium per ton for goods loaded and unloaded and a 48 hour week. Workers would also be paid an extra ninety cents for overtime and paid a full day’s pay for working on Sunday. There was also provision for sick pay and free health care for workers and their families. This collective agreement that the Shipping Employer’s Association negotiated with the SBKP formed the framework for union demands at the ports of Java in Jakarta, Semarang and Surabaya. The two major unions, SKBP and SBLP developed their strategy to focus on one harbour at a time to maximise the impact of industrial action. However, management continued delaying improving wages and conditions until further industrial action was taken (Ingleson 2016).

4.5.2 Port Labour at Tanjung Priok

The Dutch shipping group KPM, Rotterdam Lloyd and the Netherlands Shipping Company, owned housing complexes or ‘Unie Kampung’ in Jakarta, Surabaya and Belawan. The ‘Unie Kampung’ at Tanjung Priok housed 4,800 dockworkers and their families, that made up of about the quarter of the daily labour force. Casual labourers were employed by labour contractors who had contacts with their home villages. The demand for labour varied
depending on the number of ships in the harbour. Clerks would inform the foremen of labour requirements on a daily basis and they would be paid according to the number of workers in their ‘gangs’. In the 1950s, wages at the Jakarta Harbour of Tanjung Priok for a day shift of between eight to twelve hours ranged from Rp 2.35 to Rp 4.50 and for casual workers between Rp 2.35 to Rp 2.65. Overtime was not always paid and not all companies provided a free midday meal. Bonuses at the end of the Ramadan fasting month varied from companies (Ingleson 2016).

Following the Belawan Port strike in Sumatra, workers unrest began in Tanjung Priok on 1 April 1950 due to the widening gap between wages paid by stevedoring and shipping companies in the same harbour. The industrial dispute with the shipping companies resulted in increased wages and improved conditions of Indonesian sailors and administrative workers, including the creation of a pension fund. This angered the workers in the Unie Kampung in Tanjung Priok who had made attempts previously to attain improved employment conditions (Ingleson 2016).

Their demands included a reduction in the work day by an hour, overtime pay outside the standard eight hour work day, a 50 per cent wage increase, improved food and water for consumption and sanitation, ending restrictions on the use of electricity in the evenings and company payment of burial costs. To maintain support of the workers, the SKBP increased pressure on KPM by threatening to organise a strike until their demands were met. On April 3rd 1950, the SKBP organised a strike of nine thousand workers that brought the Port of Tanjung Priok to a standstill. The strike lasted until the 4th of April and the conclusion of a multi union agreement from SBKP, SBLP and SBKPM and the Shipping Employer’s Association (Ingleson 2016).
The outcome included a 43 hour work week, a minimum wage for casual workers of Rp 3.50 which included a mid-day meal and 500 grams of rice while Unie Kampung workers received Rp. 3 a day plus three free meals and a rice allowance for their wives. The strike showed employers would only improve employment conditions after a strike. Eventually, the three unions merged into a single union to gain more bargaining power over Jakarta, Surabaya and Belawan. Therefore, Indonesia’s transition to independence saw the beginning of collective bargaining between unions and employers and an end towards the discriminatory and exploitative wages and employment conditions that were inherited from the colonial era (Ingleson 2016).

However, Irfan (2001) argued that the transition in leadership to Suharto witnessed the port being controlled by the military. This prevented workers from striking. On the 29th of June 2000, the ‘Solidaritas Buruh Maritim dan Nelayan Indonesia (SBMNI)’ consisting of four unions was established. These were the ‘Solidaritas Buruh Pelabuhan Indonesia’, SBPI (Dockers Union) which had 3,000 members. The second was the ‘Solidaritas Buruh Transportasi Pelabuhan Indonesia (SBTPI)’ (Container Transport Workers Union) that had 12,000 members and the ‘Solidaritas Pelaut Indonesia (SPI)’ (Seafarer Union) consisted of 100 members. Lastly, the ‘Solidaritas Nelayan Indonesia (SNI)’ (Fisherman Union) that had 2000 members.

The SBMNI is an independent and democratic union that is registered with the Ministry of Manpower and have the strongest base at the Port of Tanjung Priok in Jakarta with ports in Semarang and Surabaya also building union bases. On November 9th and 10th in 2000, the port of Tanjung Priok saw its largest strike in decades with 3,000 dockers and 7,000 truckers demanding an improvement of wages and refusing the government decision to stop oil
subsidies as increases in oil prices would have a significant impact on drivers. Workers also wanted permanency rather than remaining as contract workers, pensions, abolition of illegal money for the officers and reform of the port management to make loading and unloading more efficient. This was because corruption at ports was rife with truckers having to pay bribes at every gate which included, taxes, customs and bribery of security and military which could easily costs Rp. 30,000 in a day. Also, the arrival of international terminal operators such as Hutchinson Ports Holding (HPH) has seen increasing levels of automation that have resulted in job losses. In the 1980s, there were 12,000 employees at the Port of Tanjung Priok. Automation resulted in a loss of 5,000 jobs, leaving a workforce of only 7,000 employees towards the late 1990s (Irfan 2001).

Therefore, port unions have seen significant transformations since gaining independence from the Dutch. Although the unions were never seen as an impediment to port operations, their poor working conditions and unity gave them a strong voice to strike to negotiate better pay and working conditions with their employers. However, during Suharto’s era, unions did lose their power with ports being controlled by military personnel. This left dock workers with no opportunity to strike. The end of the Suharto era resulted in HPH owning a 51 per cent stake in the port and increasing automated operations resulted in further job losses. As the trend for terminal operators is to move towards fully automated operations, this would eventually reduce union power and employment for dock workers significantly. On the upside, it could also see the upskilling and retraining of maritime labour for jobs in the digital industry.
4.6 Conclusion

Ports today can no longer be viewed in isolation to the rest of the transportation system and play a critical role to the economic development strategy of a nation. Therefore, the organisation of an efficient logistics system, equipped with infrastructure investment is a requirement for Indonesia to unlock the potential in its maritime sector and make the transition from a middle income to a high income country. Infrastructure development needs to go hand in hand with regulatory reform that allows traders, freight forwarders, manufacturers, and others to make optimal use of the available and expanded infrastructure.

However, it is evident from the data that Indonesia’s port performance is still lagging behind that of major SEA ports and countries such as Vietnam and Philippines are catching up more rapidly. The port capacity in Indonesia’s largest port, Tanjung Priok, has been limited to approximately 5 million TEUs due to capacity constraints. Expansion at the Kalibaru Terminal will see annual capacity increase to 18 million TEUs once completed. However, ports around the region such as Thailand and Singapore are also working simultaneously on ambitious expansion plans (World Bank 2014). This stiff competition amongst neighbouring ports places enormous pressure on Indonesia to further invest in infrastructure in order to remain competitive. As discussed, the performance of ports in attracting cargo is determined by many factors. This includes the local port environment, its governance model, and the port’s strategies and capabilities.

The departure of the Dutch resulted in Indonesia’s port system evolved with the Indonesian government establishing its own State owned inter island shipping corporation known as
‘Pelayaran Nasional Indonesia’. Their approach to managing the ports did bear resemblance to the Dutch rule of central planning, authoritarianism and monopoly. Further changes were made to the structure and responsibilities of the ports from 1964 to 1992, which divided the Indonesian Port Corporation into four entities known as Pelindo I to Pelindo IV that managed ports within the specified geographical regions and were both operators and regulators. Unions at Indonesian ports also gained a stronger voice and demanded better working conditions once the Dutch left. However, their role was suppressed once again during Suharto’s ‘New Order Regime’. Gradually, this port governance structure resulted in inefficiencies in port operations with high dwell times, a lack of infrastructure investment and congestion which resulted in increased transportation costs and regional price disparities. After four years of development, the Indonesian government introduced the ‘2008 Shipping Law’ to increase competition and efficiency in the port sector by separating the role of ‘operator’ and ‘regulator’.

It has been close to ten years since the ‘2008 Shipping Law’ came into practice which gives sufficient time to evaluate its impact on port performance. The successful application of this law depends critically on how the reform process is implemented. This law was introduced as part of the comprehensive reform of the maritime industry in Indonesia with the goal of increasing competition in port services. The next chapter aims to evaluate the performance of these reforms using the ports of Tanjung Priok and Tanjung Emas in Indonesia as case studies. This will be done using a range of indicators to assess if port performance has improved. In Chapter 6, the ‘Matching Framework’ will then be applied to the ports to evaluate their performance since the introduction of the new shipping law. This framework will assess the structure, strategy and environment to assess if the reform process has resulted in the best fit for the port.
Chapter 5 : Methodology

5.0 Introduction

Recent decades have witnessed extensive port reforms that have challenged the conventional models of port organisation. As discussed in Chapter 2, governments of both developed and developing countries have devolved port operational responsibility through corporatisation, commercialisation and privatisation. Niekerk (2005) argues that the main reasons behind reforms include improving productivity and efficiency, management capability, diminishing the role of government in the operations of ports to landlord functions and redeeming debt obligations following the GFC. Although some of these reforms can be measured by financial and economic gains, some public ports also have socio economic functions to fulfill. Therefore, the choice of a reform process is never straightforward. In some ports, the public sector still plays a supervisory and monitoring role despite devolution. However, there are extreme cases such as that of the United Kingdom, where ports have been completely privatised with no national port monitoring agency (Brooks and Pallis 2008).

In Indonesia’s case, the process of port reform officially began with the passing of the ‘Shipping Law No. 17’ in 2008 as explained in Chapter 4. Although the focus of Indonesia’s government is on getting the reform underway, the success of port reform is crucially dependent on the post reform governance model it implements. Everett (2003) argues that a framework with poor implementation could result in numerous problems such as adverse principal agent effects or rent seeking behaviour (Everett 2003). Therefore, it is necessary to evaluate the reform in Indonesian ports to assess if these reforms have been successful and identify scope for further reform to take place to assist in the transition of Indonesian ports to the ‘landlord’ model. Global experience with port reform has shown that results are not always
satisfactory. This is because of the difficulty of linking port reform to port performance (Brooks and Pallis 2008; Brooks et al. 2017; Pilcher and Tseng 2017). Performance can be measured at the level of individual ports or terminals but also relates to operations and logistics, market trends and structure, environment and societal integration, socio-economic impact and governance.

The challenge in port evaluation is not just about adopting the right appraisal methodology or performance matrix. There may also be instances where collection and analysis of quantitative data is limited. For instance, data on port performance may not be collected before or after reform and this makes it difficult to evaluate port performance before and after reform. Therefore, it can be desirable to adopt a mixed methods approach that combines various methods to provide insights that neither approach would produce on its own (Rao and Woolcock 2003: Rao et al. 2010).

This chapter provides an overview of the mixed method methodology approach to evaluate port reform in Indonesia. These mixed methods approach uses three multi disciplinary methodologies to evaluate port reform which include an indicator analysis approach, the ‘Matching Framework’ developed in strategic management literature that analyses the alignment of the strategy, environment and structure and institutional analysis approach to study the effect of path dependence and institutional ‘lock-in’ on port reform. Acknowledging the challenges of linking port reform to port performance, it intends to provide an assessment into the performance of the Ports of Tanjung Emas and Tanjung Priok pre and post reform. The findings will provide policy recommendations for current and future port governance reform in Indonesia. In this chapter, section 5.1 explores the various methodologies in the literature that have been used to study port performance challenges and limitations. Section 5.2 discusses
the first methodology used and the selection of port performance indicators and section 5.3 discusses the literature on the matching framework methodology. Section 5.4 discusses the third methodology used in this research, which is the institutional approach, and its application to the case study ports in Indonesia. The discussion on how data is collected for this case study is in section 5.5 with the conclusions in section 5.6.

5.1 Port Reform Evaluation Methodologies Literature

National governments are constantly making decisions and implementing policies that have the potential to impact on all aspects of the economy and society. However, the Australian Competition and Consumer Commission (ACCC 2010) argues that it can be difficult to measure the impact those decisions have on society. Therefore, tools of evaluation can provide an assessment for governments on where further action is needed. However, Pilcher and Tseng (2017) argue that evaluating reform is not without difficulties. They argue that evaluation of port reform is challenging because of ‘defining key terms and their ambiguity, aspects of time and geography and issues of methods and context’ Pilcher and Tseng (2017, p.2).

Various quantitative methods such as cost benefit analysis, productivity studies, and econometric studies have been used to analyse port reform. The existing literature measuring port performance has been relying heavily on Stochastic Frontier Analysis (SFA) methodologies. These models measure inputs and outputs in a port to investigate whether the ports are technically efficient. This is done by measuring if their throughputs are at their maximum level using the available resources. These frontier statistical models use data
envelopment analysis (DEA) techniques to derive efficiency ratings on ports. DEA techniques make no assumptions about the stochastic properties of the data but relies on panel data to calculate port efficiency (Talley 2007; Pilcher and Tseng 2017). Other approaches include econometric models that help forecast volatility and future prices changes in the dry bulk and tanker markets (Pilcher and Tseng 2017).

Other studies such as Cheon et al. (2010) test whether a port authority with a more decentralised corporate structure and administration is more efficient in its terminal operations. Using the Malmquist Productivity Index (MPI)\(^\text{14}\), Cheon et al. (2010), however, do not find evidence for this hypothesis. Despite this, there is still limited quantitative research dealing with the economic impact of port authority reform. This is because isolating the impact of specific port reform from the wider reform package can be challenging. Also, performance indicators related to increased output and revenue do not provide an indication of productive efficiency.

However, Pilcher and Tseng (2017) argue that the MPI would not be able to include other qualitative aspects such as corruption or the number of aged employees in port authorities. Therefore, simply relying on such quantitative approaches could result in only a partial picture. Brooks and Pallis (2008) question the validity of these models by decomposing port performance into efficiency and effectiveness. They argue that past studies using DEA and SFA have attempted to capture port performance by relying only on operational efficiency indicators. Although empirical methods such as DEA can measure terminal efficiency, effectiveness is measured relative to the objectives being sought and cannot be determined through these empirical methods but through qualitative approaches.

\(^{14}\) The Malmquist Productivity Index (MPI) is an efficiency measure for input combinations that allow for obtaining the outputs between two periods of time. This methodology can be used in the presence of institutional reforms, ownership changes and measuring technological progress (Cheon et al 2010).
Brooks and Pallis (2008) argue that indicators on effectiveness such as ‘user satisfaction’ or ‘quality of service’ are critical performance indicators that need to be assessed as well. Port authorities that are effectiveness oriented also tend to be more customer focused by developing and retaining customers that are profitable. Therefore, there is a need to broaden the indicators to measure effectiveness. Brooks and Schellinck (2013) identify three user groups to measure effectiveness, namely cargo interests, shipping lines and supply chain partners.

Likewise, Ha et al. (2017) argues that studies on port performance management have not taken into account new challenges faced by ports. The current literature has focused on terminal efficiency studies, while port effectiveness studies have been limited to customer satisfaction indicators which are qualitative in nature. Therefore, Ha et al. (2017) intends to fill the gap in the literature through using a multi dimensional approach to assess port performance. This is done through developing the modelling of interdependent port performance measures and their respective weights through qualitative and quantitative evaluations from multiple stakeholders. Using this approach, the performance of container terminals in four major ports in South Korea is evaluated. This is then aggregated to measure port performance which port managers can use to benchmark the performance of different terminals in the same port. However, the challenge with this approach is that port authorities and other stakeholders do not respond to surveys as they do not want data released (Brooks and Pallis 2008: Verhoeven and Vanoutrive 2012). In the case of Taiwan, Pilcher and Tseng (2017) argue that there was not much improvement in ship numbers and operational efficiency after the reforms of 2012. Thus, it is difficult to isolate the outcomes or gains from the reform process as they might have accrued to the wider community.
Bilodeau et al. (2006) developed a statistical approach to measure the impact of corporatization on Canadian government agencies. This methodology compared the performance before and after corporatization, allowing for a structural break to provide time for the corporatization process to run its course. De Langen and Heij (2014) analysed performance effects of the corporatisation of the Port of Rotterdam Authority by comparing a series of performance indicators for the port authority prior and after corporatisation. They found that, in terms of yearly growth rates before and after corporatisation, improvements were most significant for market share, turnover per employee, operating costs and Earnings before Interest, Taxes, Depreciation and Amortisation (EBITDA). Verhoeven (2014) cautions that reforming the port authority should not be a goal in itself. Rather, the aim should be an improvement in the competitiveness of the port.

Pilcher and Tseng (2017) argue that a structural break allows the transition period of the reform programme to be completed. If the transition is not complete, it would be difficult to evaluate if the current situation is a result of reform or previous policy. However, it can be difficult to pinpoint when the transition has ended. Therefore, the time series data should be sufficiently long to cover before and after reform. However, this analysis could still be limited by data availability or data being biased. There could also be times when insufficient time, perhaps five years have passed to enable a large enough dataset to be assembled for quantitative analysis. Also, port reform does not take place in a vacuum. Instead, there can be other government policy changes that are implemented and global economic conditions that can affect the pace of reform such as the ‘Global Financial Crisis’ in 2008. Therefore, Pilcher and Tseng (2017) argue that evaluation can be a challenging task, given that many internal or external factors can influence the competitiveness of a port.
The discussion above highlights the challenges in developing methodologies to evaluate port performance. Therefore, the complexity of port operations makes it difficult to find a single methodology for performance measurement. However, some of these challenges can be overcome by focusing on the reasons behind the port reform and having a benchmark period to compare before and after performance. It is also vital to understand the process of how the reform was delivered and devised to measure its effectiveness. Considering the above challenges, this thesis uses three different qualitative approaches to evaluate port reform at the case study port of Tanjung Priok and Tanjung Emas. This includes an indicator approach that discusses various operational and financial indicators relevant to the port authority, the ‘Matching Framework’ to assess the ‘fit’ of the new governance model and the institutional approach to study the role of path dependence and institutional ‘lock-in’ in Indonesia’s port reform.

5.2 Methodology I: Performance Indicators Approach

Ports can use a series of indicators to evaluate their performance. These indicators provide an insight into the port management (De Langen et al. 2007). Talley (2007) argues that the selection of indicators will depend on the port’s ultimate economic objective which could be to maximize profits or deliver a service. However, port operating objectives can differ depending on whether it is a private or public port. A private port will be concerned with its objective to maximize profits while a public port may focus on the broader economic gains apart from maximizing throughput.

Pilcher and Tseng (2017) argue that the methodology applied in evaluating port performance is largely dependent on the availability of data. For instance, there is no reliable international
database collecting specific information such as labour on ports, nor is there a national port monitoring agency in many countries including the UK, leaving the public sector with only a supervisory and monitoring role. Brooks and Schellinck (2013) argue that although it may be easy for an individual port to identify and collect data on its own efficiency improvements, this only happens in a few countries such as Australia where port performance indicators have been collected since 1989 by the Australian Bureau of Infrastructure, Transport and Regional Economics Annual Waterline Report. On the other hand, Canada does not share such data publicly but sets efficiency measures for ports to track their own performance using these indicators. The literature review also found no consensus on appropriate methodologies for evaluating port performance.

Bichou (2006) argues that measuring port performance is difficult due to the complexity of interactions of port missions, institutions and functions. This raises the question of whose perspective (regulator, operator or customer) one has to consider when undertaking performance benchmarking. Port authorities may have different or conflicting objectives. Furthermore, if an external institution such as a shipping line acts as a port operator, a port’s performance is often equated to ship’s efficiency at berth or in port hence blurring the boundaries between the objectives of the shipping line as a customer and those of the port as a service provider. On the other hand, a port where job generation and environmental sustainability are the primary missions may find its performance manifesto and objectives being fundamentally different from those of a profit focused port or terminal. In this respect, it is worth noting that many performance studies tend to overlook this dimension when undertaking benchmarking exercises of ports with different missions or functions.
Productivity is another indicator of interest to ports and is usually measured through port operations. Indicators such as berth productivity between a ship’s arrival and departure from berth, with no adjustments for labour or equipment down time, is a common measure of productivity. The methodology behind this benchmarking study was to calculate a standard measurement unit of gross moves per hour. With this common reference point, terminal productivity could be compared across regions and countries (Tirschwell 2014). Although terminals do have other metrics of measurement, this data can be difficult to obtain as there has been reluctance to share operating data for benchmarking purposes.

Talley (1994) sets out a criterion for selecting performance indicators for ports by comparing a port’s actual throughput against its optimum throughput. Since it can be difficult to obtain reliable estimates, Talley suggests selecting performance indicators related to the port’s economic objective to evaluate its performance. Stevedoring performance indicators include number of ships and cargo handled, cargo handling rate, containers handled per crane and units per man ship. Shipping line performance indicators include dwell time and delay in ships to berth.

Lastly, port authority indicators measure port facility utilisation and throughput and include truck turn time, tonnage handled and facility utilisation. However, the difficulty in this approach is evaluating the outcome when numerous indicators have been selected. This is because some indicators could improve over a period of time while other indicators may deteriorate, making it difficult to conclude if the overall performance has improved or deteriorated. Thus, Talley recommends using a single, overall indicator to address this issue. However, De Langen & Nijdam (2007) argue that although port throughput is usually seen as
a variable of obvious choice, it is not the port authority that is directly responsible for handling operations (De Langen & Nijdam 2007).

Verhoeven (2014) argues if cargo or passenger volume is selected as a proxy variable for output, then this assumes that the corporatised port authority has powers to increase the efficiency of terminal operators and that it can attract more business to the port. Other indicators such as labour input, capital, land, revenues and expenditure could also be relevant. Talley (1994) argues that the selection of output and input variables may generally have to be linked to the economic objectives of the port authority. However, with the trend towards full terminal automation, in future some of these variables such as labour may be a less useful indication (UNCTAD 2017).

According to UNCTAD (2017) report, port performance benchmarking is expected to increase in the next five years as port users become engaged in improving their own competitiveness and creating value for customers. The report acknowledges similar challenges in assessing port performance such as the number of parameters involved, lack of up to date and reliability of data and interpreting results. Also, they differentiate between the needs of users such as policymakers, port customers, managers of port authorities and political and maritime economists. For instance, a policy maker may be interested in cross national performance and explanations for performance quality, while a port customer would be more interested in operations and financial measures relating to cargo. Policymakers may also want to assess the environmental impact of port operations, socioeconomic returns, quality of competition and the economic benefits of port activities. Port users seek information that has a direct impact on their business and the commercial decisions that they make. Therefore, their focus would be
more on operational factors such as dwell time or labour productivity. Likewise, port authority managers may be focused on the volume of cargo they are attracting and the port’s competitive position. Therefore, the UNCTAD scorecard assesses the four key performance areas which include financial, operational, human resources and customer dimensions. However, the challenge still exists with obtaining operational data as operators do not willingly share key data for commercial reasons (UNCTAD 2017).

In 2010, the European Union funded the ‘Port Performance Indicators: Selection and Measurement’ (PPRISM) project that was managed by the European Sea Ports Organisation (ESPO). The aim of this project was to identify port performance indicators to measure and assess the impact of the European port system on society, environment and the economy. However, one of the challenges in developing a common set of indicators was the reluctance of ports to share certain data with others due to commercial sensitivity (UNCTAD 2016). Following the ‘PPRISM’ project, the European Union funded the ‘PORTOPIA’ project coordinated by the Free University of Brussels in 2013. The aim of the project was to build upon the ‘PPRISM’ project and focus on ‘effectiveness’ indicators to develop a port performance scorecard. This was undertaken with the intention of creating an integrated knowledge management system of port performance to improve the sustainability and competitiveness of the European Port System.

The ‘PORTOPIA’ project aims to modernize data collection and assessment on six dimensions from more than fifty European ports which voluntarily submit this data through the European Seaport Organisation’s (ESPO) platform. This include market trends and structure, socio economic indicators, environmental and occupational health, safety and security indicators,
logistics chain and operational performance indicators, governance indicators and user perception on port quality indicators. After four years, the project completed in November 2017 and will provide benchmarking of ports in the European port industry (European Port Industry Sustainability Report 2017). We now turn to discuss the range of financial indicators that have been used to assess port performance.

**Financial Indicators**

Accounting measures are the most common and readily available means of measuring a port’s performance (Richard *et al.* 2009). These include variables such as cash flow from operations, earnings before interest and tax, market share and return on equity and assets. However, financial indicators need to be interpreted with caution as financial performance may not improve immediately with reform. Tongzon (2008, p.116) argues that this was the case in interpreting financial indicators when analyzing port reform at the Port Authority of Singapore (PSA). After corporatisation, it was expected that the average rate of return on assets and profit margin would increase. However, between the period prior (1991-1997) and post (1998-2004) corporatisation, the average rate of return of assets went from 12.9 to 12.1 percent over this period. The average profit margin fell from 45.7 per cent to 37.8 per cent over the same period. This fall in financial performance was attributed to the significant rebates and discounts provided by the Port of Singapore Authority (PSA) to attract shippers from competitors. Therefore, these indicators did not see any improved financial performance when measured as net profit after tax. Therefore, it is necessary to have a range of indicators and consider the competitive environment as well before reaching a conclusion.

Tull and Affleck (2007) used various indicators to assess the performance of the eight port authorities in Western Australia. This included measuring financial performance indicators.
such as return on assets, profit margin per cargo tonne, dividend payout, operating profit and
debt to equity ratios. Pricing indicators included revenue and cost per unit of cargo. Their
assessment also included productivity indicators such as berth occupancy, turnaround times
and cargo throughput. Performance indicators from stakeholders at various ports included
service quality, community service obligation and employment. The results for Western
Australia showed a maximum return on assets of 15 per cent which do not suggest monopoly
rents. Tull and Affleck (2007) conclude that this result was consistent with Fremantle Port’s
position as a major mixed cargo port that handles containers. We will now discuss the
operational and other performance indicators. This methodology was also previously been
employed by Reveley and Tull (2001) to evaluate the performance of selected Australian and
New Zealand ports.

**Operational Indicators**

Operational indicators also provide insights into how certain performance is achieved. Ports
have traditionally evaluated their performance by comparing their actual and optimum
throughputs. However, in an environment in which ports are not in competition with one
another, a port should not only be concerned with whether it can physically handle cargo, but
also whether it can compete for cargo. In a competitive environment, dwell time costs, in
addition to port charges incurred by shippers and carriers, are important determinants in port
selection. This includes operational indicators such as dwell time, berth utilization and labour
productivity (UNCTAD 2003; De Langen et al. 2007). There are still many other indicators
that can be used to measure port performance.
Other Indicators

Brooks and Pallis (2008) find that ‘customer-led’ ports where port authorities that leverage off their core competencies and understand the needs of their stakeholder, are more likely to succeed. These ports include variables such as customer satisfaction, value added, environment and intermodal connectivity. Although not an exhaustive list, Table 5.1 provides a summary of the above discussed indicators.

Table 5.1: Port Performance Indicators

<table>
<thead>
<tr>
<th>Port Performance Indicators</th>
<th>Performance</th>
<th>Operating</th>
<th>Other</th>
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<tr>
<td></td>
<td>Cash flow from operations, Earnings Before Interest and Tax (EBIT), Market Share, Net Operating Profit, Return on Equity, Return on Investment, Current ratio, Debt to equity ratio, Revenue or cost per ton of cargo,</td>
<td>Dwell time, Berth Utilisation, Inland carrier vehicle loading and unloading service rates, annual average port dues per gross tonnage, Time ocean carrier spent in port, Annual average number of strikes, Crane utilization, gate throughput, Number of gangs employed,</td>
<td>Customer satisfaction, Valued added, Environmental indicators, intermodal connectivity</td>
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</tbody>
</table>

Source: Talley (2007); Verhoeven (2014); ACCC – WP (5); Brooks and Pallis (2008); UNCTAD (2003; 2016), Richard et al. (2009), Kaplan and Norton (1992); Verhoeven (2014); Affleck and Tull (2007); De Langen and Sharypova (2013)

Therefore, it can be observed from the Table 5.1 that no single measure provides a clear measurement of performance. This is because traditional financial accounting measures such as ‘return on investment’ or ‘earnings per share’ can give misleading signals for improvement (Kaplan and Norton 1992). Customer or stakeholder satisfaction is also another important measure as it indicates what operational changes need to be made to meet customer needs. However, Verhoeven (2015) does highlight the ‘wear-off’ effect when using stakeholder satisfaction indicators while evaluating port reform at Rotterdam Port Authority. The evidence
from the evaluation of port reform at Rotterdam showed that customer satisfaction effect gradually wore off as the time elapsed after a new governance structure was put in place.

Thus, it is essential to provide a broad and balanced measure of indicators when measuring performance. Talley (2007) states that the advantage to a port in having individual performance indicators to evaluate its performance over time is that the performance of its various services and service areas can be evaluated. This will enable the port authority to observe where performance is improving or declining. This list of performance indicators will also evolve with time as issues such as environment and automation become more important.

In summary, the limitations in undertaking such evaluation studies include data availability, identifying economic goals of port reform, linking port reform to performance when port reform is often part of a wider reform package, as was the case with microeconomic reform in Australia (Verhoeven 2014; Reveley and Tull 2012; Niekerk 2005; Talley 2007). Although data can be gathered from a variety of primary and secondary sources, measures of the preferred indicators are sometimes not available and the use of proxy indicators may be necessary (ACCC WP. 2). Brooks and Pallis (2008) also argue that performance evaluation should also factor time lag for the change to be implemented. However, Talley (2007) cautions that although it can be tempting to compare the performance of one port to another, consideration must be given to the fact that ports operate in different economic, social and fiscal environments. Therefore, such comparisons can be misleading (Patunru et al. 2009).
5.3 Methodology II: The Matching Framework

As interest in the economic performance of ports in Indonesia continues to grow, it is important for government to assess the port devolution process. The ‘Matching Framework’ is an analytical tool that has been developed from strategic management theory and it focuses on the alignment of three key variables which are structure, strategy and environment to evaluate performance. The more aligned these three variables are with each other, the greater the performance or ‘fit’ of the organisation. This methodology has been used to study port reform in Canada and Philippines (Balthazar and Brooks 2001), Italy (Lamonarca et al. 2007), Libya and Malaysia (Ghashat et al. 2011) and Chile (Wilmsmeir and Sanchez 2017). It is a useful methodology to evaluate the post port governance ‘landlord’ model in Indonesia as a governance model does have interaction with its environment, strategy and structure, allowing for an assessment of an appropriate ‘fit’ (Wilmsmeir and Sanchez 2017). Before applying this framework to study Indonesian port reform, it is important to understand the theoretical background behind this framework.

Structure

Burns and Stalker (1961) argue that a relationship exists between the structure of an organisation and its performance. In their seminal paper, Burns and Stalker (1961, p.119) outline two key organisational structures which are the ‘mechanistic’ or ‘organic’ structure. Mintzberg (1989) defines the mechanistic organisation as a configuration that is highly specialised with centralised decision making, focusing on routine operating tasks and has a bureaucratic administration structure. Roles and routines and formally embedded in the structure and management functions can operate in silos. Due to the layers of bureaucracy, senior management is also separated from the reality of global changes that prevents the
organisation from responding well to sudden changes in the environment. Therefore, this structure is more suitable for a stable environment.

Contrarily, the ‘organic’ structure is better suited to an uncertain environment. The organic structure is usually described by an absence of a formal hierarchy, lack of rigid procedures to empower employees to promote communication and teamwork in multidisciplinary teams. Decision making is decentralised and less formal within the organisation. The organisation functions as a group of specialists in function units which can be deployed to smaller project teams to complete their tasks (Mintzberg 1989, p.105). Although the organic structure is not hierarchical in the same sense as a mechanistic structure, positions are still differentiated according to seniority. The lead is taken by seniors while project responsibility is assigned to whoever shows themselves to be the most informed and capable. This makes an ‘organic’ structure more suited to a dynamic environment as it can more readily adapt to changing conditions.

Strategy

Strategy represents how an organisation chooses between product and its market scope to maintain its competitive edge. Depending on the structure, Porter (1980) argues that the organisation may choose a cost leadership strategy or a differentiation strategy to respond to the environment. The former is an efficiency strategy while the latter is focused on innovation. A cost leadership strategy focuses on providing an efficient delivery of a basic service at a low cost whilst the differentiation strategy focuses on developing products for which customers are willing to pay a market premium. Porter (1980) links strategy with the structure of the firm by arguing that a ‘mechanistic’ firm will tend to focus on cost leadership or efficiency strategy. This will enable the firm to produce efficient and low cost products. Due to its less rigid
structure and rules, the ‘organic’ structure will instead focus on a differentiation or effectiveness strategy to create a unique product.

In the case of ports, Balthazar and Brooks (2006) argue that the two dimensions of strategy that are relevant to economic performance include the competitive emphasis on product and market scope. This refers to the range of specific products and services an organisation offers and the markets to which it makes these offerings. For ports, the market choices include where the port decides to compete such as cruise, transhipment or the automobile handling market. The facilities provided would then depend on how firms differentiate themselves from their competitors. This occurs either through a cost leadership or differentiation strategy. For example, a basic product for ports would be a berth or dredged channels. Therefore, a firm offering superior performance in the basic product would be required to become more efficient than the average competition or, as Porter (1980) phrases it, a ‘cost leader’.

Hence, Balthazar and Brooks (2006) argue it will be important for a port that is providing a basic product or service such as available berths or dredged channels to be able to provide this more efficiently than its competitor. Alternatively, the port could focus on products beyond the basic product such as repair facilities, specialised cranes or twenty four hours stevedoring labour that would be provided by the private sector to differentiate their offerings from other ports. An example is the Port of Singapore Authority that is competing with other ports based on its higher premium services. However, the opening of a lower priced option at Tanjung Pelepas in Malaysia resulted in Singapore losing two of its key clients, Maersk in 2000 and Evergreen in 2002, together with a loss of container throughput. Cullinane et al. (2007) argues this move has been attributed to various factors including lower costs at Tanjung Pelepas, investment in the Port of Tanjung Pelepas to influence control and the Port of Singapore not
granting dedicated terminals for berthing. Instead of lowering pricing to match Tanjung Pelepas, the Port of Singapore decided to reduce the uncertainty in its environment by offering customers the option of a dedicated or joint venture terminal in exchange for long term leases. These strategies allowed the organisation to cope and adapt to its environment.

**Environment**

The strategy adopted by an organisation is ultimately a response to its environment. The environment plays a critical role and consists of a myriad of complex combination of factors. Mintzberg (1989) defines the environment to refer to characteristics outside of the organisation such as markets, political climate and economic conditions, government, industry or technological change. The industry environment includes factors that affect an industry’s participation and profitability. The internal environment or sources of changes could be culture, knowledge or changes in organisational resources.

Therefore, any organisation operating in a globally competitive environment must be able to adapt to the forces that impact the environment. Uncertainty evolves from change that occurs in the operating environment and the best way to deal with uncertainty is by adjusting the organisation structure (Burns and Stalker 1961; Ghashat *et. al.* 2011). The operating environment also consists of factors that an organisation interacts with on a regular basis. This includes competitors, buyers, sellers and potential new competitors. The operating environment has the greatest influence on organisations (Balthazar and Brooks 2006). However, Ghashat *et al.* (2011) argue that although a change in strategy is the solution to facing uncertainty, there is still a need to change the organisational structure to adapt to its environment.
As argued by Burns and Stalker (1961), the more certain an organisation’s environment, the more likely for its structure to be hierarchical and formal. Contrarily, an uncertain environment will benefit from a structure which is more horizontal and less rigid to promote flexibility to adapt to changing conditions (Mintzberg 1980, p.108). Uncertainty arises in an environment due to the complexity of various elements that are continuously changing. Therefore, the combination of structure, strategy and environment helps to configure the matching framework to understand how this match or fit affects an organisation’s performance. Margretta (2012, p.141) highlights the importance of ‘fit’ in Porter’s strategy (Porter 1980). The ‘fit’ refers to how the activities in a chain work with one another. It increases a firm’s competitive advantage of a strategy by lowering costs or raising customer value. The more focus a company has on fit, the harder it is for rivals to copy their strategy. The better fit will result in an improved performance while the poorer fit would lead to an unfavourable performance. This framework is summarised in Figure 5.1.

**Figure 5.1: The Matching Framework**

![Diagram of the matching framework](image)

**Source:** Balthazar and Brooks (2001, p.3)
In summary, the configuration theory can be divided into an efficiency oriented or effectiveness orientated configuration. Therefore, if an organisation’s environment is highly certain, it would perform better if it adopted a cost leadership strategy with a mechanistic structure. Contrarily, if an organisation’s environment is highly uncertain, a differentiation strategy in a organic structure would be more suited. This is summarised in Table 5.2. However, Brooks and Balthazar (2001) highlight that regardless of the configuration, some minimum level of both efficiency and effectiveness is critical to organisational survival.

Table 5.2: Configuration in the Matching Framework

<table>
<thead>
<tr>
<th></th>
<th>Efficiency oriented configuration</th>
<th>Effectiveness oriented configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Low uncertainty</td>
<td>High uncertainty</td>
</tr>
<tr>
<td>Strategy</td>
<td>Narrow product market scope with focus on delivery of the basic product.</td>
<td>Broad product market scope with a focus on differentiating products and services</td>
</tr>
<tr>
<td>Structure</td>
<td>Centralised decision making</td>
<td>Decentralised decision making</td>
</tr>
</tbody>
</table>

*Source: Balthazar and Brooks (2001)*

Application of the Matching Framework

The ‘Matching Framework’ was applied by Baltazar and Brooks (2001) to ports in Canada and the Philippines to assess their ‘fit’. Port reform began in Canada with the implementation of the 1995 *National Marine Policy* in the *Canada Marine Act 1999*. Canada’s strategy was to build a financially self-sustaining, autonomous port system. Although some entities such as the airports were privatised and had greater flexibility, there was a reluctance to privatise assets which were seen as part of its national infrastructure network such as ports. Therefore, the governance structure changed and National Port Systems ports became federal agencies. The
port now had boards which had members who were appointed by the Minister. The decisions of the Board of Directors determine the strategy of the port in setting its commercial standards, functions and financing. However, appointed board members were often politicians and bureaucrats that made ‘rubber stamp’ decisions that defeated the purpose of devolution. The outcome resulted in an efficiency focused cost effective strategy in which ports operated in a very predictable manner despite changes in the environment which included globalisation, growth in world trade and containerisation (Balthazar and Brooks 2001).

In the Philippines, reform was driven by the pressure to separate port regulation from port operation. Just like Canada, Balthazar and Brooks (2001) argue that the trigger behind the devolution was to drive commercial decision making as the Philippines economy is highly dependent on trade. The Philippine Port Authority is a government cooperation responsible for the management and operation of ports in its archipelago. The strategy was to develop a network of ports to serve as hubs and spokes, with smaller ports developing as multipurpose feeder ports to transform its economy. Attempts at alternative service delivery were made along with privatisation programmes. However, leases of periods of five years did not result in significant infrastructure investment and port authorities were managed by existing staff rather than independent directors. The prediction was that devolution would fail due to the highly uncertain environment that was not matched with the right structure and strategy. Therefore, the model does suggest that a better fit was needed in Canada and the Philippines between the environment, government’s port strategy and goals to achieve better port performance.

The ‘Matching Framework’ has also been applied to the Italian port reform. The structure of the Italian port sector up till the 1990s could be characterised as having a very centralised policy and organisation. The State had monopoly control of port land, infrastructure, equipment
and financing of investment. The strategy that was adopted with this structure did not require
the ports to focus on productivity, efficiency and competitiveness. However, the environment
in which the ports were operating was continually changing with the Mediterranean basin
becoming a key hub for container transhipment, resulting in an increased demand for port
services (Lamonarca et al. 2007). The uncertainty and complexity in the environment that
brought about the 1994 port reform was meant to decentralise the powers of the ports by
separating port operations from the task of controlling and directing port activities. Although
the outcome did see decentralisation of power in most ports with more management autonomy,
the legacy of the centralised management structure did not change. This left ports with
bureaucratic administration and little operational flexibility and financial autonomy to develop
ports strategically, resulting in a poor alignment between the environment, strategy and
structure (Lamonarca et al. 2007). However, neighbouring ports such as Spain, France and
Croatia had already been undertaking port reform since 2003 to improve their port
competitiveness. This resulted in Italian ports registering lower growth rates than ports in the
region (Lamonarca et al. 2007).

Although the global financial crisis (GFC) in 2008 affected the Italian port system more than
its competitors, the political stability in the government resulted in port reform as an agenda
item for government only in 2014 (Parola et al. 2017). In 2015, a formal document highlighting
the weakness of the ports included insufficient funding, low competitiveness, poor hinterland
connectivity and sub optimal port size. In June 2016, the government decided to reduce the
port authorities from 24 to 15. However, Parola et al. (2017) argues that the outcome was
ineffective due to the widening divide between centralised and decentralised management.
Therefore, the reform process was unable to create a more flexible structure that could match the port’s changing environment.

We now turn and discuss the Malaysian and Libyan reform in more detail. Ghashat et al. (2011) also applied this matching framework to compare Malaysian and Libyan ports. Although Libya and Malaysia have very different geographical locations they are both Muslim countries that have similar cultures and have ports operating in similar environments. In Malaysia, this is the Straits of Malacca which is one of the busiest trade routes. Libya is located on the southern side of the Mediterranean basin where many ports compete to attract large transhipment volumes from the East to West shipping lines. The Libyan port sector consists of state owned enterprises that have seen strong growth in the economy since the lifting of sanctions that were imposed by the United Nations in 2000. The government announced a privatisation programme in 2003 to encourage the country’s movement towards a market economy.

As discussed in Chapter 4, the privatisation experience at Port Klang led to increased investment in the port and improved cargo efficiency that has seen Malaysian ports rise to the ranking of the top 20 global container ports in the world. The reason for Malaysia’s success was the government’s identification of the mechanistic and centralised structures that limited the development of the port. Therefore, the right ‘fit’ can transform and improve port performance. Malaysia was well aware of the competition in the region and took steps to position itself for the competitive environment through a gradual privatisation process.

Libya’s port situation bears resemblance to Malaysian ports prior to 1986. Located in the Mediterranean basin, ports within the region compete aggressively to attract a higher proportion of transhipment cargo. Countries such as Tunisia compete by bidding for a
transhipment hub at Enfida and Algeria, by giving concession to Dubai Ports World to operate the Port of Tangier in Morocco (Ghashat et al. 2011). As the economy grew, the Libyan port strategy does suggest that the government was keen on converting some of the country’s ports namely the Ports of Benghazi and Elkhoms into hubs to compete for cargo. The government ensured that the port sector had equipment and storage areas and made attempts to reduce congestion and dwell time at ports (Ghashat et al. 2011).

The structure of the port was developed in 1985 as the Socialist Port Company (SPC) and was 100 per cent owned by government with a centralised structure that was responsible for all activities and services of the ports. Only some functions such as stevedoring were outsourced to the private sector. In 2008, the Libyan Marine Transport and Port Authority (LMTPA) was empowered and given more financial autonomy which resulted in more organised port functions. However, the role of the SPC has been limited to the operator function even though some its operator functions have been transferred to the LMPTA. However, there has been no private sector involvement in the ports, except in transportation. Although the Libyan government had made strong efforts to introduce a privatisation policy, its port sector infrastructure, management and operations had remained unchanged since the 1970s. This had led to inefficiencies and Libyan ports lagging behind other countries in the region. It has also resulted in a loss of container traffic to neighbouring ports.

Therefore, the matching framework analysis suggests that Libyan ports are a poor ‘fit’ as its structure was not adjusted to match its environment and strategy. The governance structure of the ports need to be more decentralised and privatising the port operations would be a desirable move. Therefore, following the Malaysian experience, the privatisation of container terminals on a concession basis could play a role in port development. This evidence suggests the
operating environment in Libya’s port sector could benefit from an organic instead of a mechanistic structure. Also, a key factor in the case of port success in Malaysia was government policy which encouraged private sector participation which resulted in attracting port operators that competed successfully in an uncertain environment. However, Ghashat et al. (2011) argues that the private sector can be introduced gradually into Libya through different means such as a concession arrangements with global terminal operator or shipping lines that aim to establish a dedicated terminal within the region.

Wilmsmeir and Sanchez (2017) also applied this framework in conjunction with the life cycle theory to assess performance of Chilean ports. As discussed in Chapter 2, prior to reform the Chilean ports operated as tool ports with minimal competition. The introduction of a concession scheme in 2000 to improve productivity at ports resulted in each terminal being operated by a private operator. However, the Chilean ports face challenges as container traffic grows and the need for expansion arises. The matching framework analysis suggests that the environment changed from low to high uncertainty as competition between ports increased. The structure of the terminal operators evolved from mechanistic to organic during the growth phase of the ports from 2001 to 2007 to adapt to its changing environment, with limited central decision making. This allowed for rapid development at ports. However, the GFC in 2008 and the final maturity phase (2011-2015) suggests a misalignment in the fit as the highly uncertain environment is affected by changes in liner shipping. The strategy of Chilean ports have not changed as they continue to focus on efficiency and effectiveness. The ports decentralised structure in the new environment has also started to limit growth; perhaps the government needs to adopt a more active role in port planning and development.
Analysing the outcomes of the Chilean port reform, Wilmsmeir and Sanchez (2017) argue that it was necessary to differentiate the levels of ‘uncertainty’ further from ‘high’ and ‘low’. This differentiation is necessary to provide a more accurate analysis. Therefore, Wilmsmeir and Sanchez (2017) renamed these categories to ‘more uncertain’ and ‘less uncertain’ to allow for more flexibility and precision in their analysis. Also, these configurations can also be better analysed from the perspective of the public (port authority) and private (terminal operator perspective) which could also result in different results. Wilmsmeir and Sanchez (2017) highlight that the perspective of the port industry, port authority and the private sector can produce different results and interpretations of the same configuration. The application of this framework in the case of Chile took the perspective of the public sector, identifying current and future governance challenges (Wilmsmeir and Sanchez 2017).

The maritime industry operates in an extremely dynamic environment led by globalisation, international trade, containerisation and technological change. Several factors such as time efficiency, geographical locations and services offered play a key role in port competitiveness. Thus, an effectiveness oriented strategy with an organic structure and flexibility may be better placed to implement port devolution policies to modernise terminals, increase efficiency and investment and attract greater cargo (Ghashat et. al. 2011). Hence, this framework is useful in evaluating port reform in Indonesia as the governance model exhibits exposure to elements of the variables of ‘strategy’, ‘structure’ and ‘environment’ which can change over time (Wilmsmeir and Sanchez 2017). This framework can be used to assess Indonesian port performance as the nation transitions from a public port to a landlord model.

Therefore, the matching framework application will analyse the variables strategy, structure and environment from a public sector perspective over the time frame prior reform (pre 2008).
and post reform 2012 to 2017. The timeframe from 2008 to 2011 is left out as this was the time the government provided for port authorities to transition to the new changes in the 2008 Shipping Law (Shipping Law No. 17 of 2008).

5.4 Methodology III: Institutional Approach

As discussed in Chapter 2, the institutional environment in a country is determined by its legal and administrative framework through which firms, individuals and governments interact. The quality of institutions has a significant role to play on the competitiveness and growth of a nation. Good institutions of public decision making and competent governments enable societies to choose growth-enhancing policies and sound development strategies which reduce the opportunities and incentives for corrupt behaviour, thus strengthening trust and institutional effectiveness (Productivity Commission 2014). Likewise, ports are also institutions that have seen traditional governance structure change to become more flexible to adapt to an environment of increasing competition (Notteboom et al. 2013). Path dependence can explain the differences in port governance structure and the trajectories of port reforms. In the case of seaports, this is largely due to sunk costs of infrastructure, historically developed socio economic structure or technological lock-in which results in a port ‘locked in’ to an existing pathway (Tongzon 2015).

Debrie et al. (2013) argues that an evolutionary analysis instead of a static analysis is important when evaluating port reform as it enables the examination of embeddedness within port institutions. This could then explain why the outcome of an intended reform differs from the actual reform. Thus, port reform should be studied as a ‘complex evolutionary process’ which could result in different outcomes and deviation from traditional pathways based on the country
and the individual port (Wilmsmeir and Monios 2016). This was seen in Australia and New Zealand ports with containerisation serving as a ‘trigger point’ (Reveley and Tull 2012).

In the case of Indonesia, Dick (2008) argues that shipping was a monopoly operated by the Dutch owned ‘Koninklijke Paketvaart Maatschappij’ (KPM) during colonial rule. Despite their departure, the Dutch’s port management style became entrenched in the manner in which Indonesia managed its ports. After the departure of the Dutch, the failure to operate a joint venture between the State and KPM resulted in maritime transport falling under central planning by the Indonesian government. Therefore, applying this institutional approach to the Port of Tanjung Priok and Tanjung Emas, will provide an evolutionary analysis that will better explain the outcomes of port reform at the case study ports. This approach will enable an assessment of path dependence of the level of ‘lock in’ present, whether ‘plasticity’ can be observed in the trajectory of path reform and if there is ‘stretching’ or deviation from the traditional path dependent route to adapt to a more competitive environment. It will also be able to provide further analysis into whether the case study ports are path followers, path adaptors, path resistant and path leaders. The next section discusses how data has been collected to support the analysis using the above methodologies.

**5.5 Data Collection for Case Study Ports**

The choice of using the Port of Tanjung Priok as a main port and Tanjung Emas as a growing port was to provide a broader perspective of the outcome of port reform. Also, the leading ports of Indonesia are on the island of Java. The literature argues that the challenge in evaluating port reform is due to the complex nature of ports and the approach used is largely dependent
on the availability of data. Nathan and Associates (2008) and Patunru et al. (2009) argue that it is difficult to obtain performance data on Indonesia’s main gateway port and case study ports at port level. The researcher did find challenges in collecting data on operational or productivity indicators as there is no database available that collects this information and port authorities do have concerns that this information could be used for benchmarking purposes.

Selecting indicators to assess port performance at Tanjung Priok and Tanjung Emas had its challenges. Data on port performance and traffic is patchy and dependent on the processes and procedures of the Pelindos. As mentioned earlier, data on port operations is not public and is provided at the discretion of the port authorities. However, port authorities have been helpful in providing other forms of data such as dwell time, crane productivity and publicly available financial data in annual reports. Also, the usage of too many operational indicators can also make it difficult to evaluate an outcome as discussed in Section 5.1 and 5.2. Therefore, the indicators for Tanjung Priok are going to be based on limited operational and financial ratios. As data is not available at the port level, these ratios are approximated based on Tanjung Priok’s share of Pelindo II’s revenue. As the Port of Tanjung Emas contribution to Pelindo III’s revenue are nominal, it is difficult to calculate similar financial ratios for the TPKS container terminal at the Port of Semarang.

Although the Worldbank and OECD have access to further port data such as dwell time, these unpublished datasets have been difficult to obtain. Clearly, timely and accurate data on port trade and performance is useful for port planning and management (OECD 2012d). Therefore, this analysis will be complemented with other productivity and financial indicators and unpublished data obtained from field interviews. Therefore, a summary of the indicators to be
used to evaluate port performance at the two case study ports of Tanjung Priok and Tanjung Emas can be seen in Table 5.2.

<table>
<thead>
<tr>
<th>Performance</th>
<th>Operating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of Tanjung Priok</td>
<td>Container throughput, Net operating profit, financial ratios</td>
</tr>
<tr>
<td>Port of Tanjung Emas</td>
<td>Container throughput, Net operating profit, international and domestic boxes moved per crane per hour</td>
</tr>
</tbody>
</table>

Reliance on indicators is insufficient to provide a holistic evaluation of port reform. Thus, a qualitative analysis is required to fill in the gaps due to limited data. Therefore, a combination of field visits, surveys and detailed interviews with a selection of key stakeholders have also been conducted. Stakeholders interviewed include employees, terminal manager, academics, representatives of port authorities and economic and infrastructure policy think tank in Indonesia. Interviews were held face to face, followed by email exchanges. Qualitative data drawn from interviews provided useful information to evaluate the port reform process in Indonesia. The qualitative approach will be undertaken using a ‘Matching Framework’ approach by Brooks and Balthazar (2001). Considerable time has also been spent at the Centre of Maritime and Air Transport Management (CMAT) at the University of Antwerp to interact with a broader range of stakeholders such as academics, industry representatives who have interests in port development in Indonesia, and representatives from the Indonesian port authorities. The information gathered from these interviews and conversations provide a better understanding of the relationship between the Indonesian and Netherlands governments in ports, providing a user’s perspective of port reform in Indonesia.
5.5 Conclusions

The aim of this chapter was to discuss the challenges in evaluating port reform and to outline the methodologies that will be used. Section 5.1 discussed the key issues surrounding an appropriate methodology to evaluate port reform which were selecting a quantitative or a qualitative approach. The quantitative approaches involved methods such as the Stochastic Frontier Analysis (SFA) and Data Envelopment Analysis (DEA) that measured terminal efficiencies, and Malmquist Productivity Index and financial indicators before and after reform (De Langen and Heij 2014). However, the literature also argues that relying on quantitative analysis provides an incomplete picture as the SFA and DEA methods as they only measure operational efficiency. Therefore, there is a need to have more qualitative indicators that can measure effectiveness such as ‘user satisfaction’ (Brooks and Pallis 2008). However, Ha et al. (2017) argues that there is a need to adopt multi dimensional approaches to assess port performance such as including both quantitative and qualitative analysis.

Section 5.2 discussed the various indicators that can be used to evaluate port reform, highlighting that the methodology used is largely dependent on data availability. Some of these productivity indicators include berth productivity, port throughput, stevedoring indicators, cargo handling rate and dwell time (Talley 1994). However, the difficulty in including too many indicators is that one variable could improve and another deteriorate, making it harder to provide a clear evaluation. Therefore, where the measures of the preferred indicators is not available, the use of a proxy indicators may be necessary (Australian Competition and Consumer Commission 2010). Section 5.3 introduced the qualitative ‘matching framework’ that aims to provide another dimension to the analysis by analysing how the variables
‘structure’, ‘strategy’ and ‘environment’ have aligned after port reform to improve its performance or ‘fit’ for an ‘efficiency’ or ‘effectiveness’ configuration.

The discussion in Section 5.4 focused on the institutional approach methodology to study the effect of path dependence and institutional ‘lock in’ at the case study ports. This analysis will provide a better understanding of the port reform outcomes and whether new trajectories have developed over the course of time. Section 5.5 discussed the issues around how the data was collected for this research to evaluate port reform in Indonesia and the challenges around it. This includes selecting financial indicators from annual reports and collecting data from field visits from a variety of stakeholders including port employees, terminal managers, port authority representatives, academics and experts from Indonesian policy think tanks. Further information was also gathered from experts at the Centre of Maritime and Air Transport. The responses drawn from this method of data collection are used to supplement the results in Chapter 6.

In conclusion, analysing port reform is challenging because it is difficult to know when the transition is complete and government policy changes can influence reform. Also, it is difficult to evaluate the operational efficiency of a particular port to measure port competitiveness as other physical and institutional factors can influence productivity which makes this indicator incomparable. Although this thesis is examining the effect of port reform on two different case study ports, there is no standard to compare two or more ports on a national or international basis. Therefore, the results should be analysed on a case by case basis (Patunru et al. 2009).
Chapter 6: Results

6.1 Results for Methodology I: Port Performance Indicators

As discussed in Chapter 4, the Port of Tanjung Priok falls under the administration of Pelindo II while the Port of Tanjung Emas falls under the administration of Pelindo III. Pelindo II operates the biggest and the busiest port in Indonesia, the Tanjung Priok port. It manages 12 ports across 10 provinces. Apart from port management, the company is involved in equipment maintenance, port energy supply and port development. Through partnership with other private companies, there is also cooperation on tug boats, management of other port facilities and Terminal Operator cooperation (Annual Report Pelindo II 2017). Figure 6.1 below shows the geographical boundary of ports in Pelindo II. Although the focus of the this chapter is to evaluate the port performance at the Port of Tanjung Priok, this section aims to provide an overview of the ports in Pelindo II and discuss the outcomes of port reform to the broader port section in Pelindo II.

The key port in Pelindo II is the Port of Tanjung Priok. It is Indonesia’s largest port serving domestic and international cargo and passenger services. An expansion of the port can be seen in the new Kalibaru terminal that started operating in September 2016 as a Joint Venture with Mitsui Co. Ltd. The Port of Palembang is the largest river port in Sumatra which is central to economic growth in that region. Loading and unloading activities are dominated by dry bulk goods and containers. Port of Panjang is one of the biggest ports in Sumatra that is located at the crossing point of Sumatra and Java. Panjang Port serves ships with many kinds of goods, such as general merchandise, goods in bags, liquid bulk, dry bulk and containers. The flow of containers continue to grow each year due to growth in industrial activities, mining and
plantations in the region. In addition, agricultural land and plantations that stretched in Lampung province is very fertile for agribusiness activities (Annual Report Pelindo II 2017).

**Figure 6.1:** Geographical Boundary of Pelindo II

![Geographical Boundary of Pelindo II](image)

*Source: Annual Report Pelindo II (2017), p.188*

*Note: Portsin Figure 6.x are identified below*

01: The Port of Tanjung Priok and New Priok/Kalibaru port, 02: Palembang Port, 03: Panjang Port, 04: Pontianak Port, 05: Teluk Bayur Port, 06: Banten Port, 07: Cirebon Port, 08: Bengkulu Port, 09: Jambi Port, 10: Pangkal Balam Port, 11: Tanjung Pandan Port, 12: Sunda Kelapa

Pontianak is West Kalimantan’s main port that is supported by subports within that area. Teluk Bayur is the largest and busiest port in West Sumatra. Teluk Bayur Port branch has been equipped with modern equipment that is capable of handling various kinds of goods including bulk goods such as coal, cement, clinker, CPO and commodities using containers such as cinnamon, tea, molding, furniture and rubber, which are the main export commodities to the United States, Europe, Asia, Australia and Africa. Pontianak Port has a container terminal, equipped with 3 container cranes and other modern equipment to support optimal loading and
unloading activities. The presence of sub-ports in the vicinity, further strengthened the position of Pontianak Port as the main port in West Kalimantan.

The Port of Banten is located on the Java Island is a transit destination and trading hub for spices. Banten Port has potential to grow rapidly because it is sustained by industrial areas that are growing rapidly, such as metal processing industry, machinery, chemical, and oil palm. Banten Port has three coal terminals and a multipurpose dock equipped with loading and unloading of containers. Stevedoring activity in Banten Port is dominated by liquid bulk cargo and dry bulk (Annual Report Pelindo II 2017).

The Port of Cirebon is located towards the strategic business gateway between West Java and Central Java. Cirebon is a very strategic port as the gateway for the business activities of the broad hinterland, namely West Java province and part of Central Java province. Cirebon Port has also become very strategic since it is located close to the track lane highways and railways to all cities in Java. Cirebon Port is equipped with a container and bulk terminal that has facilities for coal and palm oil. Cirebon Port services dry bulk, liquid bulk and goods in sacks. The Port of Bengkulu is equipped with three coal loading conveyor belts to accelerate the stevedoring process.

The Port of Jambi consists of the Ports of Talang Duku, Kuala Tungkal and Muara Sabak. The Pangkal Balam Port specialises in export and import material transportation, interisland trade and commercial transport. Jambi Port hinterland produces rubber, plywood and molding, which are commodities exported to USA, Europe, Middle East, Japan and Korea (Annual Report Pelindo II 2017).
Pangkal Balam Port is equipped with various facilities, including a 787m long port, stacking facilities, passenger terminals, and a parking lot. Pangkal Balam Port serves the transportation of imported and exported goods, interisland trade, and the transportation of passengers to Jakarta by ferry boats/roll-off vessels and to Tanjung Pandan by jetfoil boats/ speedboats. Tanjung Pandan port is located on Belitung island and has a hinterland covering 80,000 hectares of palm oil plantations. To support the development of tourism, the passenger’s terminal in Tanjung Pandan Port has also been modernized to accommodate up to 200 passengers and is equipped with VIP rooms and shops. Lastly, Sundak Kelapa port is a historical port used for stevedoring inter-island ships and commercial vessels. Inter-island ships and commercial vessels visit this port, carrying commodities. These commodities include wood, essential supplies, haberdashery, and building materials, nation, and other commodities such as kaolin, granite, and quartz sand (Annual Report Pelindo II 2017).

Figure 6.2 provides an analysis of the type of cargo traffic at Pelindo II over the period from 2012 to 2017. The total cargo traffic transported in 2012 by Pelindo II was 106.9 million tons. This fell steeply and was halved to 55.4 million tons in 2016, with a slight increase to 57.2 million tons in 2017 (Annual Report Pelindo II 2017). This decline since 2015 can be seen especially for dry bulk and liquid cargo. This decline has been largely due to a combination of factors including slower global economic growth, a decline in commodity prices, rupiah currency fluctuations and a weakening of investment activity. This resulted in the weakening of trade and volume of goods that flowed through the port and ship traffic (Annual Report Pelindo II 2015).
The oil and gas industry, both in Indonesia and globally, have also experienced significant volatility in the last five years due to global geopolitical and economic factors. The United States, which was the biggest net oil importer for Indonesia, has built greater reliance on development of shale technology, leaving an oversupply for oil producing countries (PWC 2018). As such, Indonesia’s contributions from oil revenue has fallen from 14 per cent in 2014 to 3 per cent in 2016 (PWC 2018) which is reflected in the fall of liquid cargo as seen in Figure 6.2.
The data presented in Figure 6.3 shows all the international ports in Pelindo II. The major international terminals in Pelindo II are in Tanjung Priok vicinity and include the Tanjung Priok International Terminal, New Priok Terminal, TPK Koja and JICT Terminal. Tanjung Priok’s International Terminal has been experiencing an increase in container throughput from 2015 to 2017. Likewise, the New Priok terminal has seen a significant increase in container throughput from 2016 to 2017 as it gradually began operations. In 2017, the TPK Koja terminal has also seen a steady increase in container throughput while the JICT Terminal has seen a gradual decline in container throughput as excess capacity has been shifted to the New Priok Terminal. Many other smaller ports at Palembang and Panjang serve as international container terminals but their contribution is much less than the Port of Tanjung Priok.

**Figure 6.3:** Pelindo II International Container Throughput (TEUs)

![Pelindo II International Container Throughput](image)


In terms of domestic container terminals, figure 6.4 shows the various ports such as Palembang, Sunda Kelapa, Panjan and Jambi that ship domestically. The greatest contribution to domestic
container throughput comes from Tanjung Priok’s domestic terminal. Domestic container throughput at Tanjung Priok’s Domestic terminal has increased from 1.5 million TEUs in 2015 to 1.8 million TEUs in 2017.

Figure 6.4: Pelindo II Domestic Container Throughput (TEUs)

Therefore, the reason behind the choice for Tanjung Priok as a case study is largely because of its contribution to Pelindo II. This can be seen in Figure 6.5 which shows that most of the container cargo to Pelindo II is from Tanjung Priok. However, the trends from 2015 to 2017 suggest that other ports have started to gradually increase the contribution of container throughput to Pelindo II.

**Figure 6.5:** Container throughput contribution to Pelindo II from Tanjung Priok (million TEUs)

![Figure 6.5](image)

**Source:** Annual Report Pelindo II Data (2012-2017)
Obtaining time series data for operational indicators is a challenge as there is a reluctance to share this information due to benchmarking. However, a range of indicators obtained from Annual Reports suggest that there have not been significant improvements in productivity, except in container productivity which increased from 41.13 B/C/H in 2016 to 46.83 B/C/H in 2017 as seen in Table 6.1. However, as the data is patchy, it does not provide a longer term view on productivity growth and is one of the challenges of obtaining time series data on productivity for Indonesian ports.

**Table 6.1: Operational Indicators for Pelindo II**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Unit</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waiting time for pilot</td>
<td>Hours</td>
<td>0.15</td>
<td>0.15</td>
<td>0.3</td>
</tr>
<tr>
<td>Container Productivity</td>
<td>B/C/H</td>
<td>n/a</td>
<td>41.13</td>
<td>46.83</td>
</tr>
<tr>
<td>Cargo Productivity</td>
<td>T/G/H</td>
<td>n/a</td>
<td>47.64</td>
<td>n/a</td>
</tr>
<tr>
<td>Dry Bulk Cargo Productivity</td>
<td>T/G/H</td>
<td>n/a</td>
<td>258.31</td>
<td>260.70</td>
</tr>
<tr>
<td>Yard Occupancy Ratio</td>
<td>%</td>
<td>n/a</td>
<td>35.97</td>
<td>42.29</td>
</tr>
</tbody>
</table>

*Source: Annual Report Pelindo II Data (2012-2017)*

Figure 6.6 shows that container throughput from 2001 to 2017 for the Port of Tanjung Priok has started to show positive results with increasing container traffic to the port. In 2009, this was approximately 3.8 million TEUs but has nearly doubled 6.2 million TEUs in 2012 due to strong global economic growth. Prior to 2009, container traffic grew by an average of about 5 per cent, in line with Indonesia’s annual economic growth. This mainly reflected the capacity constraints at the Tanjung Priok seaport. In 2012, container throughput was 6.2 million TEUs
and increased to 6.6 million TEUs in 2013. However, this throughput has started to gradually decline to 5.2 million TEUs in 2015 and to 4.95 million TEU in 2016. This decline in container throughput was attributed to a slowing global economy which had an impact on trade and shipping. However, there has been rebound in container traffic to 6.08 TEUs in 2017 that is a reflection of stronger economic conditions. It can be argued that container throughput is a basic port performance indicator but information collected from port interviews\textsuperscript{15} reflect that port authorities do use it as a key measurement of performance.

\textbf{Figure 6.6:} Container Throughput at Tanjung Priok from 2001 to 2015 (Million TEUs)

In 2008, 65 per cent of cargo from Indonesia had to transit in Singapore because of high costs. This was brought down to 18 per cent by 2011 (Nonto, n.d.). Further interview responses suggest that since 2011, Pelindo II has been making further attempts and plans to ensure the Port of Tanjung Priok becomes an international trade hub to compete for a slice of the transshipment market from Singapore which would result in cost savings for Pelindo II.

\textsuperscript{15} Interviews conducted on 15\textsuperscript{th} January 2016
This has been achieved by streamlining activities, infrastructure investment and turning the ports into 24-hour port operations and improved efficiency in loading and unloading goods (Nonto n. d). Tanjung Priok is also expanding with a two phase redevelopment that will see its channels deepened and widened to a berth of 850 metres to accommodate ships with a draft of 16 metres from the current 14 metres. Its new terminal operated by PT New Priok Container Terminal One (NPCT1) with Japan’s Mitsui Corporation, NYK Line and Singapore’s PSA International was opened on 18th August 2016. This added an additional 1.5 million TEUs to the ports existing 6 million TEUs capacity. The next two terminals NPCT2 and NPCT3 are expected to be completed by 2019, adding a further 3 million TEUs. This will see the port’s container capacity expand close to 11 million TEUs. It also embraces elements of a ‘green terminal’ to reduce emissions and adopt environmentally friendly facilities (Reuters 13th September 2016; Annual Report Pelindo II 2016; JOC, 4th January 2018).

**Dwell Time**

Another key indicator used to measure port performance is dwell time. Dwell time measures the time from the arrival of a vessel until it leaves the port (Indonesia Infrastructure Initiative 2012). This process can be separated into three parts. Firstly, the upstream process when the ship arrives to the submission of import declarations to customs. The second process is custom clearance and the third is the downstream process from custom clearance until the ship leaves the port (Asian Development Bank 2015). Lengthy dwell times have a significant impact on logistics costs for domestic businesses, the prices paid by consumers and choice of port by shipping lines. The ‘State of Logistics Report’ (2013) finds that most delays at Tanjung Priok are caused by the pre-clearance stage. Customs clearance time is competitive by international
standards, accounting for an average of one day. On the downstream component, faster removal of the containers would require larger investments in infrastructure to improve road connections. Thus, port operators find it easier to impose delays on shipping companies than to invest in new capacity.

Time series dwell time data is difficult to obtain, especially for benchmark comparisons. However, Figure 6.7 shows the average dwell time of ships at various ports in Asia over a six month period in 2014. It is evident from the chart that dwell time in Indonesia still averaged 6 days over March to September 2014. Comparison with the port of Singapore and Hong Kong show that these ports have a third of the dwell time of Tanjung Priok. However, comparisons must be made with caution as Singapore, Hong Kong and Tanjung Pelepas in Malaysia are at a different stage of industrialisation than Indonesia and are transhipment hubs. It makes a difference if a port is a transhipment hub or a port of last call; in the former case there would be no need to undergo custom clearance, which would reduce the dwell time. In that regard, Thailand’s port, Laem Chabang, provides a more accurate comparison. The average dwell time in Thailand is a day less than the dwell time in Indonesia.
The import clearance process involves a multitude of agencies. In principle, import declarations can be submitted online via the Indonesia National Single Window (INSW). However, in many cases electronic signatures are not yet recognized requiring importers to consult agencies personally. A crucial issue for importers is the unpredictability of the import system which requires importers to complete the relevant paperwork before a container can be discharged in an Indonesian port. This can be a challenge given the short time frame it takes for the ship to travel from Singapore or Malaysia to Jakarta which makes it difficult to obtain clearances, driving up costs and uncertainty (Sandee 2016).

Tirschwell (2014) argues that international evidence on turnaround times for ships of 10,000 TEUs or more shows a delay longer than 12 hours, with nearly a quarter of ships delayed by more than 24 hours (Tirschwell 2014). However, Ray (2008) argues that another cause of long dwell time in Indonesia is unfairness in berth assignment which may not be done on a ‘first come, first serve basis’. Containers have been held up at ports for long periods of time for cases

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**Figure 6.7: Container Dwell time comparison among selected Asian ports (Mar to Sep 2014)**

![Diagram showing container dwell time comparison among selected Asian ports.]

*Source: The Economist Intelligence Unit (2015)*
of minor discrepancies in paperwork and released in exchange for an illegal fee paid to a customs official. Ray (2008) argues that this use of illegal payments to reduce dwell time arises from the lack of infrastructure, such as gantry cranes and storage spaces. These costs are in addition to other informal payments required at the port for imports and exports. This further exacerbates the corruption issue as shipping companies might find it easier to pay pilferage than be imposed with a fine. As discussed in Chapter 4, Indonesia’s ranking for ‘Efficiency and transparency in border administration’ has improved from the 91st position in 2008 to the 79th position in 2016. The biggest improvement has been in ‘irregular payments in exports and imports’ while the variables ‘customs service index’ and ‘effectiveness and efficiency of clearance’ have deteriorated.

Figure 6.8 shows the dwell time at Tanjung Priok from 2008 to 2016. In 2008, the dwell time at Tanjung Priok averaged 17 days. By 2011, this was reduced significantly to approximately 5.6 days. However, it did increase slightly to 6.2 and 6.5 days in 2012 and 2013 respectively. This was due to new regulation issued by the Ministry of Trade for ‘new’ importers, automatically classifying them as red lane importers (Sandee et al. 2016). However, in 2016 and 2017, the trend has been for dwell time to decline and has been averaging around 3 to 4 days. In terms of operations, the effort to reduce the dwell time to under 3 days was conducted through the development of the Integrated Container Freight Station (CFS) Centre at the Port of Tanjung Priok and the modernization of port infrastructure and superstructure. The President’s Post (19th September 2016), an online global business media news for the greater Jakarta areas, also reports President Jokowi raised the issue of abolishing illegal fees charged by port operators to customers which delay the development of Tanjung Priok developing into a modern port. The results suggest that there have been significant improvements in dwell time from 2008 to 2017.
Further data has also shown that the average wait time for vessels before getting access to berth averaged 2.4 hours in 2017 at the Port of Tanjung Priok (JOC 2018). This was a very similar time to the Port of Tanjung Pelepas in Malaysia and the Port of Singapore Authority that averaged 2.4 hours. This does suggest that the attempts at reducing port congestion are taking effect (JOC 2018).

Indonesia’s national logistic team has also set up various government committees to improve its logistics performance. These committees have agreed on a few initiatives including establishing an integrated clearance system to assist customs inspection, electronic payments and increase the number of importers with priority lane status. Cikarang Dry Port is also being promoted as an alternative to Tanjung Priok for imported containers. We now shift the focus to the port’s financial indicators.

Net Operating Profit

Net Operating Profit estimated for the port of Tanjung Priok has nearly doubled from IDR 1,365 million Indonesian Rupiah (IDR) in 2012 to 2,280 million IDR in 2017. However, net operating profit fell to $948.5 million IDR in 2015. This can be seen in Figure 6.9 below. The key factors for this include expenditure on the new Kalibaru terminal\(^{16}\) and slower growth in the economy. Revenue rebounded in 2016 mainly driven by ship services, terminals and containers.

\[\text{Figure 6.9 : Estimate}^{17}\text{ Net Operating Profit for Tanjung Priok (million IDR)}\]

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{net_operating_profit.png}
\caption{Estimated Net Operating Profit (million IDR)}
\end{figure}


\(^{16}\) Also known as the New Priok Container Terminal, the Kalibaru Terminal will assist in dealing with overcapacity. This terminal will bring Jakarta’s port facilities on par with the world through its deep drafts and latest equipment.

\(^{17}\) The Port of Tanjung Priok’s revenue has been estimated from the total revenue in Pelindo II’s Annual Report. The financial ratios have been estimated in a similar manner. The contribution of the Port of Tanjung Priok to Pelindo II is estimated at 70 per cent (Gintang \textit{et al.} (2015), p.7)
Financial Ratios

We now turn to analyse the financial ratios to assess the financial performance of Tanjung Priok. To derive the financial ratios, the estimated revenue for the port of Tanjung Priok have been estimated based on its share to Pelindo II. These ratios are summarised in figure 6.10 below. The current ratio measure’s the ability of a company to pay short term and long term obligations. A ratio above 1 indicates the company’s assets are greater than its liabilities. The current ratio for Tanjung Priok over the period 2004 to 2015, shows an increase from 1.18 to 8.36 as seen in Figure 6.10.

![Figure 6.10: Financial ratios for the Port of Tanjung Priok](image)

Source: Annual Report Pelindo II (2004 to 2017)

This would indicate that the Pelindo’s holding of assets is more than debt. However, from 2010 we saw a fall in the current ratio from 9.26 to 1.53 in 2013 before rising back to 8.36 in 2015, indicating that the current assets are greater than the current liability. The next ratio analysed is the debt to equity ratio which is a measure of a company’s financial leverage. This debt to
equity ratio has been less than 1, but increased from 0.56 in 2004 to 2.89 in 2015, which means that the company has been taking on more debt and a more aggressive growth strategy that requires increased borrowing. This is reinforced by the ratio of total liabilities to total assets, which increased from 2013 onwards. However, this has decreased from 2.89 in 2015 to 1.55 in 2017.

**Operational Ratios**

The analysis now shifts to operational ratios for Tanjung Priok. Using the net profit margin formula, it can be observed how much of a company’s revenue is kept as net income. Figure 6.11 summarises the key operational ratios from 2004 to 2017.

**Figure 6.11: Operating ratios for Tanjung Priok**

![Graph showing Operational Ratios from 2004 to 2017]

*Source: Annual Report Pelindo II (2004 to 2017)*

The net profit margin had seen a steady increase from 37.9 per cent in 2004 to 42.6 per cent in 2008 except for a decline in 2006. It then started to decrease in 2012 from 36.7 per cent to 17.6 per cent in 2015. Similarly, the return on equity ratio has fallen from 23 per cent in 2012 to 12 per cent in 2015. This implies that the profit the company is generating from shareholder’s equity is falling. This decline has been steeper since 2012. A possible explanation for this is
until 2011, the focus of the port was on streamlining activity at Tanjung Priok instead of huge investments in infrastructure. A long term plan was developed for the construction of Port of Tanjung Priok extension otherwise known as the ‘New Priok Container Terminal’ or the Kalibaru Container Terminal in Jakarta. This was meant to be undertaken in conjunction with the ‘Masterplan for Acceleration and Expansion of Indonesia’s Economy (MP3EI)’ to improve the nation’s national logistics. The new Kalibaru Terminal is being built as a phased project to handle increased container capacity. The first phase of the project involves the installation of container terminal infrastructure and the construction of a new petroleum product terminal. Once completed in 2019, the project will expand Tanjung Priok’s Port capacity from 5 million TEUs to 18 million TEUS. It will also be able to facilitate container ships with a 18,000 TEU capacity (Annual Report Pelindo II 2012).

The Company’s focus in 2014 was to prioritise the completion of the Kalibaru Terminal and commence stage II of terminal construction which could explain the decrease in operating profit to total asset ratio over 2014 and 2015. The Company also made further improvements to efficiency and productivity which was important to their management, including the Terminal Operating System programme that enabled matters relating with infrastructure and facilities in the port to be more thoroughly managed. The implementation of technology based port services system that connect to the Head Office at all port branches allowed a more accurate and fast data or information access. However, 2015 saw a slowdown due to slowing global growth and falling commodity prices. This resulted in lower revenues and port dues for port authorities accompanied with increased expenses for dredging related activities and other costs which had an impact on trade and operational performances. Despite the downturn, further investment into the Kalibaru Terminal construction to increase the port’s capacity and productivity is underway (Annual Report Pelindo II 2015). Since 2016, the net profit margin
and return on equity have increased reflecting increased cargo throughput with the opening of the Kalibaru Terminal.

**Labour**

Labour productivity can also be used as an indicator for port performance. A focus of the previous President of Pelindo II, Richard Lino (2009-2015), was to invest in his staff. He did this by ensuring his staff were paid higher wages compared to any other SOE, including bonuses which would be equivalent to the concept of ‘efficiency wages’ (Nonto, n.d). The concept behind the efficiency wage hypothesis is that a firm can maximise its profit by paying workers a wage rate higher than the market rate. In other words, the model suggests that effort is a function of wage and output is a function of effort holding everything else constant (Yellen 1984; Akerloff 1982). Staff from the Indonesian Port Corporation (IPC) were among the highest paid compared to any other state owned company. In order to ensure that there were skilled staff available to work at the Kalibaru Terminal when it is ready, the company recruited candidates to study logistics, port and transportation management in different international universities through a programme the company financed from its internal revenue stream (Nonto n.d).

Prior to the introduction of the new shipping law, only public servants could staff the port authorities. However, in recent times there has been the establishment of a government regulatory and supervisory agency known as Badan Layanan Umum (BLU). This is a government agency that allows more flexibility in the recruitment of professional staff. However, the Transport Ministry has made it clear that they expect the port authorities to be
staffed by a combination of Ministry officials from the Sea Communications Directorate and Port Administration offices (Nathan Associates 2008).

**Port Unions and dock workers post reform**

Although the unions were never seen as an impediment to port operations, their poor working conditions and unity gave them a strong voice to strike to negotiate better pay and working conditions with their employers following independence. However, during Suharto’s era, unions did lose their power with ports being controlled by military personnel. This left dock workers with no opportunity to strike. Port unions have continued to be active since 2012 with protests taking place from time to time due to wages, automation and job security. The labour movement in Indonesia has started becoming more active in the political arena with the appointment of a number of union leaders to parliament in the 2014 election. However, there has been no genuine representation from the working class in Indonesia’s national and local parliament for fifty years (Nugroho 2015).

Union agendas in the past involved increasing wages, freedom of association and resisting job termination as part of this framework. Post reform, unions have argued for a more effective social security system that would compensate workers for job insecurities. The focus of the demands has been to transform the social welfare system. Although many unions are conservative, national unions have progressed two strategies which involve building relations with the working class, peasants and vendors and getting involved in politics to gain broader support. This has raised major questions about the interest of the unions’ national leaders who have used the union for their own political benefits (Nugroho 2015; Ingleson 2016).
Unions continue to play a significant role at the Port of Tanjung Priok. The International Transport Workers Federation (ITF), is a global union federation that represents over 700 labour unions and more than 4.5 million union members around the world. It has a long history of promoting the employment and welfare of seafarers, stevedores and other transport workers around the world. The ITF reported (ITF 2017b) that more than 600 union members went on strike at JICT from the 3rd to the 10th of August 2017 for performance bonus and pension rights. According to the ITF President, this strike signals that there is an issue with labour relations at the port. However, Reuters (7th August 2017) reports that the strike was forced to end on the 7th of August 2017 because of ‘national interests’ and workers facing intimidation during the strike and the loss of revenue to JICT clients. Ships had been redirected for loading and unloading to other terminals due to the strike.

At the International Container Terminal Services Inc’s (ICTSI) terminal at Tanjung Priok, industrial action by the workers’ union, the ‘Federasi Serikat Buruh Transportasi dan Pelabuhan Indonesia’ (FBTPI), was taken in 2017. The International Container Terminal Services International (ICTSI) is a Philippines owned port company which operates 28 ports worldwide. It has a 15 year contract to operate the OJA terminal next to Hutchinson’s (KOJA and JICT) terminal. It employs approximately 139 people at the terminal, of which 100 are stevedores and the rest involved in administration. However, workers at ICTSI’s terminal receive a wage of US $250 per month while wages for KOJA and JICT average at around US$1,500 per month (ITF 2017a). Apart from the low wages, the union has documented concerns regarding industry practices such as illegal outsourcing of labour, illegal underpayments and refusal to conclude a collective agreement with the union at ICTSI. The Secretary General of the FBTPI, Didik Doank, reported that on March 17th 2017 workers were called by the company and asked to resign from the union or their contracts would not be
extended. Out of the eight workers who refused to resign, only three had their contract extended while those who resigned from their union, retained their jobs.

However, according to the union, workers at ICTSI have been accumulating up to 300 hours in overtime in a month to make ends meet due to their low pay, placing their lives at risk. An Indonesian worker was crushed to death at the ICTSI facility in Jakarta on the 10th of November 2017 when a refrigerated container fell onto his truck (Port Technology 2017). State regulation in Indonesia stipulates a 14 hour work day, with workers only allowed to work an additional of three hours per day. Once again, the ITF reiterated that this was the second workplace fatality in three weeks caused by extreme fatigue.

In summary, it is evident that ‘Shipping Law No. 17 of 2008’ was a clear focus for the Pelindo that acknowledged the change in the role played from ‘regulator’ to ‘operator’. Pelindo III’s Annual Report (2012) states that the IPC had engaged in significant improvements to enhance its operational and service performance. Prior to 2011, there was minimal infrastructure investment in the port of Tanjung Priok until the construction of the new Kalibaru Terminal. Therefore, we can conclude that there have been performance improvements at the port in reducing dwell time, the introduction of 24 hour operations and increased container throughput. Prior to the port moving to a 24 hour basis, there was an underutilisation of port facilities and this limited the potential for efficiency improvements. However, Nathan and Associates (2008) argues that even for ports that operate on a 24 hour basis, 6 out of every 24 hours result in losses due to rigid break periods that affect the continuous servicing of vessels.

Port labour continues to be an ongoing issue as terminals become more automated resulting in job losses and unions begin to lose the bargaining power they once had. This could possibly
explain the resentment towards privatisation by international terminal operators and why the unions took action against Pelindo II for renewing HPH concession for another twenty years from 2019 to 2039. This will be discussed further in Section 6.2. However, other ongoing industrial relations issues such as occupational health and safety standards, higher wages and collective bargaining continue to persist. The phased construction of the new Kalibaru Terminal should play a role in improving the port’s competitiveness in attracting larger ships and greater throughput. Although most of the port indicators suggest an improvement, it is difficult to attribute this mainly to the port reform process that began in 2008. We now turn to examine the port indicators of Tanjung Emas.

**Port Performance Indicators for Tanjung Emas**

Pelindo III manages five public ports in seven provinces in Indonesia. As a provider of port facilities, Pelindo III has a critical role to ensure continuity and smoothness of ocean freight to drive the nation’s economy. From 2011, Pelindo III’s role has evolved to ‘terminal operator’ as part of the shipping reform in Indonesia (2012 Annual Report). Similar to Pelindo II, Pelindo III is one of the State-Owned Enterprises (SOEs) that plays a large role in the advancement of industry and trade to support the economy of Indonesia, especially for eastern Indonesia. Pelindo III has a working area of seven provinces, covering East Java, Central Java, South Kalimantan, Central Kalimantan, Bali, East Nusa Tenggara and West Nusa Tenggara. It also plays a vital role as a terminal operator to improve the distribution of goods and services in Indonesia, particularly the Port of Tanjung Perak in Surabaya which is the second largest port in Indonesia as seen in Figure 6.12 below.
**Figure 6.12:** Geographical Boundary of Pelindo III

*Source: Annual Report Pelindo III (2012), p.19*

**Profitability**

Pelindo III is considered to have a high level of profitability with stable cash flows from the operations of various ports in central and eastern Indonesia. The strategic location of ports within the region of the Company, especially in Tanjung Perak Surabaya and Tanjung Emas Semarang, can be a mainstay for supporting the Company’s cash flows and profitability. This can be seen in Figure 6.16.
Cargo throughput remained steady in 2013 and 2014 at 100,000,000 tons before declining in 2015 to 80,000,000 tons as seen in Figure 6.13. The slowdown in 2015 and 2016 has been a challenge for Indonesia, especially with falling commodity prices. This has resulted in a fall in demand for liquid bulk. The decline in dry bulk over 2015 and 2016 has been largely due to the shipping pattern shifting more from general cargo to containers and a decrease in commodities such as steel coil, steel slab, cement and corn commodity through Tanjung Perak port. However, 2017 did witness an increase in production of soya bean, corn, raw sugar and fertiliser commodity at Tanjung Perak Port. There has also been a slight increase in coal commodity at ports at Tenau Kupang, Tanjung Intan, Gresik and Sampit ports.
Container throughput has been growing steadily for Pelindo 3 from 4.1 million TEUs in 2013 to 4.9 million TEUs in 2017, despite a slowdown in 2013 and 2014. This is seen in Figure 6.14.

**Figure 6.14: Container Throughput for Pelindo III from 2013 to 2017**

```
<table>
<thead>
<tr>
<th>Year</th>
<th>Container Traffic (TEUs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>4,130,874</td>
</tr>
<tr>
<td>2014</td>
<td>4,337,555</td>
</tr>
<tr>
<td>2015</td>
<td>4,360,669</td>
</tr>
<tr>
<td>2016</td>
<td>4,611,262</td>
</tr>
<tr>
<td>2017</td>
<td>4,919,719</td>
</tr>
</tbody>
</table>
```

*Source: Annual Report Pelindo III (2017), p.8*

Turning to the case study port of Tanjung Emas, there are two branch office of Pelindo III in Semarang as discussed in Chapter 4. This includes the Tanjung Emas Branch and Terminal Petikemas (TPKS) Semarang Branch. Tanjung Emas Branch handles general cargo and TPKS Branch handles only containers. For the purposes of this research, reference will be made to the TPKS Branch in Tanjung Emas that handles containers only. Figure 6.15 provides an aerial view of the TPKS Container Terminal in Semarang.
TPKS’s revenue is approximated to be 20 percent of Pelindo III’s total revenue. The approximate revenue for Tanjung Emas nearly doubled from $147.9 million in 2010 to $314.6 million in 2013. Once again, it is difficult to isolate the increase in revenue to the reform process. This is because the port’s throughput also increased during this time which could be attributed to stronger demand. From 2015, there has been a decline in revenue from $314.6 million in 2013 to $232.6 million, reflecting a slower economic growth which has had an impact on trade. This is seen in Figure 6.16.
Although 2015 did see a slowdown in economic growth and Indonesia’s currency crisis, this did not last long as the revenue stream for Pelindo III in 2017 increased from $1,163 billion in 2014 to $2.034 billion by 2017. For TPKS, this has been an increase from $232.6 million to $406.8 million, with net income nearly doubling over three years. Indonesia’s economic growth in 2017 was 5.07 per cent, the highest recorded since 2014 of 4.79 per cent. The increase in net income for Pelindo III is largely due to an increase in container traffic.

Figure 6.17 shows throughput nearly doubling in the port since 2010 from 350,000 TEUs to just above 600,000 TEUs in 2016. This is almost twice the throughput which the port was handling 6 years ago. However, the 2016 throughput falls short of its target forecast of 658,000 TEUs due to slower economic growth in 2016.
In 2005, turn around time at the Port of Tanjung Emas was 41 hours, or just under 2 days (Patunru et al. 2009). Figure 6.18 shows dwell time data obtained from Pelindo III on a monthly basis from 2016 to 2017. It can be seen that dwell time at the port has increased from 4.83 days in October 2016 to 5.83 days in November 2017, after a sharp increase in dwell time to 7.34 days in May 2017. Based on unpublished data obtained from interviews, the initial improvement in dwell time was driven by better coordination among customs, quarantine and terminal through greater communication and exchange of information. The port also implemented a progression tariff which was lower compared with other terminals to deter containers from staying longer in the container yard and are evaluated on a monthly basis.
Dwell time\(^{18}\) has been a challenge for Semarang for the past three years, especially since the customs in Semarang have implemented a strict red channel in April 2017. Many importers were not prepared for this as Semarang used to only have a green channel. Therefore, containers have been staying longer in the yard resulting in higher dwell time. As paperwork from some importers is not submitted prior to the vessel’s arrival, this would increase congestion and dwell time in the terminal. Therefore, a progression tariff that was introduced at the port in February 2017 to reduce this delay. The Ministry of Transportation has implemented a 3 day strict dwell time policy only at the Ports of Belawan, Tanjung Priok, Tanjung Perak and Makassar. Perhaps automation in customs in the future could support faster cargo clearance and dwell time.

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\(^{18}\) Data for Tanjung Emas is collected over field interviews on the 18\(^{th}\)-19\(^{th}\) of January 2016 with personnel from the port and updated accordingly through email correspondence.
Productivity

Productivity measures are also an important indicator used to measure port performance. It is a measurement that is closely linked to dwell time and shows port and terminals working at their best to unload a ship and get it back into sea. The data provided by the TPKS shows international and domestic boxes moved per crane per hour. The port’s goal is to aim for a movement of 25 boxes per crane per hour (B/C/H), a modest target compared to international standards. The average B/C/H for international containers varies between 20 and just below 25 boxes. Although there was a decline in productivity, this has picked up and remained close to 25 boxes per hour. Comparing the movement with the domestic containers, the productivity of the domestic and international containers is quite close. This is seen in Figure 6.19 below.

**Figure 6.19: International and Domestic Boxes Moved Per Crane Per Hour (B/C/H)**

![Bar Chart](image)

**Source:** Unpublished data from Semarang Container Terminal (TPKS)
Figure 6.20 shows international and domestic boxes shipped per hour. Productivity of boxes shipped per hour rose from 35 boxes per hour in 2007 to 49 boxes per hour in 2010. The target for the port is to move 50 boxes per hour. Domestic boxes shipped per hour averaged at 15 boxes in 2013 to 12 boxes in 2016.

Figure 6.20: International and Domestic Boxes Shipped Per Hour (B/S/H)

Source: Semarang Container Terminal (TPKS)

In an interview\(^1^9\), the port manager explained that difference in quay productivity between international and domestic containers differs because the domestic frequency is lower compared to international frequency, which affects the number of cranes deployed. As the number of containers on domestic vessels is much less than international, sometimes one or two cranes are sufficient to load and unload 50 to 75 containers per vessel. The port manager also explained that the difference between the domestic and international boxes shipped per

\(^{19}\) Interview conducted on 3\(^{rd}\) October 2018
hour is because the port is receiving more inbound vessel internationally. This spreads more equipment for international vessels and is not due to a reduction in demand.

The port has an average of 55 to 65 ship calls a month with 70 per cent consisting of feeder shipments and 20 per cent domestic shipments. According to the port authority, a feeder service is defined as ‘transportation operations in which cargoes are shipped by water in smaller vessels to or from a load-center port for loading or unloading from larger ocean-going vessels’\(^{20}\). Therefore, the domestic trade involves shipping directly from TPKS to Pekan Baru in Sumatra, Kumai, Banjarmasin and Surabaya as seen in Figure 6.21.

\(^{20}\) Interview conducted January 16\(^{th}\) 2017
Since receiving ‘international status’ in 2017, the Port of Tanjung Emas has expanded its feeder and domestic routes to include direct international shipments to Hong Kong, China and Taiwan\(^{21}\). This can be seen in Figure 6.22. In 2017, international shipments make up 10 per cent of the ship calls at the TPKS terminal. The port had already started to attract larger shipping lines such as Maersk in 2003 on its feeder routes to transhipment hubs such as Surabaya, Singapore and Malaysia. With direct international shipping routes, this has attracted other shipping lines including Evergreen, Yang Ming, Container Maritime Activities, Global Putra Indonesia Maritime, Tresna Muda and Supra Shipindo. The port is very active in its marketing strategy to attract cargo and shipping to TPKS.

\(^{21}\) Interview conducted 16\(^{th}\) January 2016
Cargo from TPKS still continues to be transhipped to Singapore despite TPKS becoming an international port. According to the port manager\(^{22}\) this is because some direct shipping vessels still face draft problems when entering the channel and basin of Tanjung Emas. If this improves in the future, the port authority is positive that more direct vessels will be coming to Semarang'. The draft of the Port of Tanjung Emas has also been deepened in 2016 to 9.3m to enable vessels up to 3,500 TEUs to berth (Terminal Petikemas Semarang 2016; Annual Report 2015 Pelindo III; Unpublished data from TPKS).

\[\text{Figure 6.22: International Trade Route for the Port of Tanjung Emas from 2017} \]

\[\text{INTERNATIONAL ROUTE} \]

\[\text{Source: Unpublished Data from TPKS} \]

Pelindo III’s port authority, Tanjung Perak, has also identified that further investment is required in addition to the development of strategic ports included in the Marine Highway Programme. This has seen Tanjung Emas undertake significant investment in infrastructure,

\(^{22}\) Interview conducted 18\(^{th}\) October 2018
especially investing US$24 million in purchasing 11 Automated Rubber Tyre Gantry Cranes in 2014 to modernise the port. These cranes started operations in 2016. This involved lengthening the quay at Tanjung Emas Port in Semarang for 105 metres more to a length of 600 metres, purchasing new equipment and expanding the container yard for another 5.4 hectares as seen in Figure 6.23. (Terminal Petikemas Semarang 29th January 2016; Annual Report Pelindo III 2015).

Investment in container cranes has allowed the port the capacity to handle the loading and unloading of three ships that dock at the same time simultaneously and significantly reduce dwell time for ships. Container throughput is forecast to increase to 800,000 and then to 1 million TEUs in the future as growth in the industrial sector in Central Java continues with the new industrial park opened in November 2016. (Terminal Petikemas Semarang 2016; Annual Report Pelindo III 2015; Unpublished data from TPKS).
Pelindo III also developed a longer term plan to improve connectivity for the ports, especially those in Eastern Indonesia. This is attributed to the newly developed Kendal Industrial Park in Semarang which is a joint venture between Indonesian property group PT Jababeka and Singapore’s Sembawang Corporation. This industrial park is an industrial zone for various low cost labour intensive sectors including manufacturing, furniture, fashion and technology as seen in Figure 6.24 (The Jakarta Post, 15th November 2016). This industrial park is located twenty five kilometres from Tanjung Emas port in Semarang and will provide additional volume for imports and exports (Terminal Petikemas Semarang, 29th January 2016; Kendal Industrial Park 2015). This is represented in the figure 5.13.
In order to improve the port’s connectivity to its hinterland, investment planning is being undertaken in phases to improve rail connectivity to the terminal in Phase 1. Phase 2 involves railway connectivity to the general cargo terminal and Phase 3 involves railway connectivity to passenger terminal. The port is also linked by a toll road and has connections to the nearby airport. Therefore, the port has developed its own long term plan to build the Tanjung Emas extension to Kendal Industrial Park which is 25 minutes from Semarang city as seen in Figure 6.25.
Following independence, the dominant union in the harbour of Semarang was ‘Gabungan Buruh Pelabuhan’ (GBP, Federation of Dockworkers), formed in 1947. In 1951, it joined SOBRI (Sentral Organisasi Buruh Republik Indonesia, Indonesian Federation of Labour Unions), the labour union federation created by the national communist Partai Murba (Proletarian Party) as a competitor to the PKI-controlled Sobsi, while in Makassar the dominant union was the ‘Organisasi Buruh Proletar Indonesia’ (Organization of Indonesian Proletarian Workers). Similar to the other ports around Indonesia, industrial action began in Semarang in late January 1950 when the GBP led a strike with casual day workers that made up half of the 6,000 port workforce. A collective agreement was reached quickly by the Shipping Employers
Association which was a win for the union. Casual wages for day workers increased three fold to Rp. 1.75 and they were eligible to receive two free meals, overtime pay for working more than the standard forty eight hour week, free medical services and lodging in camps. However, as the collective agreement only included casual workers, it triggered a further dispute with the permanent workers. This was resolved with an increase in minimum wage to Rp. 9, a six day work week and penalty rates for overtime or Sunday work. Industrial action, once again, served as the means by which poor post-colonial employment conditions could be changed (Ingleson 2016). In the past, strike actions would break out at Tanjung Priok and spread across key ports in the archipelago. However, the Suharto era saw military controls on ports and unions lost their power.

Since 2012, responses from field interviews with key port staff indicate that unions still operate and are active at the Port of Tanjung Emas. One respondent stated ‘We never experience any strikes from unions. They are very happy23.’ Strike actions have been minimal and not disruptive. Automation at the port has seen the port authority upskill and hire additional operators as they move operations from the conventional Rubber Tyre Gantry (RTG) cranes to the Automated Rubber Tyre Gantry (ARTG) crane operations. The port has also moved to a paperless system to verify documentation and has automatic gates to identify trucks and containers as they arrive in the terminal, leaving little room for levying additional fees. As the port develops it continues to modernise with advanced technology with plans to build a green terminal in the future, switching from diesel equipment to electric.

23 Interview conducted 17th January 2017 and 18th June 2017
Conclusion

This chapter sets out to evaluate port reform in Indonesia that came about as a result of the ‘2008 Shipping Law’. Deriving an indicator or performance matrix to evaluate reform can be a challenge. As De Langen (2006) argues, measuring performance is more complicated as a port is a cluster of economic activities. Moreover, the weakness in the indicator approach for Indonesia is that data is patchy and there is no public database that collects productivity and operational indicators for port benchmarking. Also, the difficulty of using this approach is that it can be difficult to conclude if the overall performance has improved or deteriorated as some indicators improved over a period of time while others deteriorated (Talley 1994). In summary, the limitations in undertaking such evaluation studies include data availability, identifying economic goals of port reform, linking port reform to performance when port reform is often part of a wider reform package, as was the case with microeconomic reform in Australia (Verhoeven 2014; Reveley and Tull 2012; Niekerk 2005; Talley 2007).

Despite that, there are still a few meaningful observations and conclusions that we can draw about the performance of the ports since their governance role has changed. In summary, both ports have been very focused on acknowledging their new governance role from a port ‘regulator’ to a port ‘operator’ in their annual reports. The data also shows increased levels of throughput into the ports. Productivity indicators at the Port of Tanjung Emas TPKS branch show that there have been moderate improvements in boxes per crane per hour and boxes shipped per hour. Likewise, dwell time data for the Port of Tanjung Priok has also shown significant improvements. The issue with Tanjung Priok appears to be with the upstream process which requires documentation clearance prior to a container being released.
From a financial perspective, it must be noted that the operating and financial ratios for Tanjung Priok and net operating revenue for Tanjung Emas are estimates that have been derived from the annual reports of Pelindo II and Pelindo III. The results for Tanjung Priok suggest a significant increase in revenue until 2012. This was accompanied with an increased in port throughput. However, the subsequent fall in revenue has largely been attributed to a slower global economy and investment in the ‘New Priok Project’ or Kalibaru terminal. Tanjung Priok’s new Kalibaru Terminal is also looking promising for the port with its increased capacity and ability to attract ships of 12,000 to 15,000 TEUs, doubling the size of the ships that can be handled at the current terminal (Annual Report Pelindo II 2012-2017).

Likewise, the Port of Tanjung Emas has witnessed its revenue doubling from 2010 to 2013. Container throughput through the Port of Tanjung Emas has also doubled from approximately 300,000 TEUs in 2010 to over 600,000 TEUs in 2016. The port is no longer a feeder port and can now handle ship calls to international destinations and has been attracting international ship lines. There has also been a great amount of investment in infrastructure at the port to lengthen the quay. The purchase of new automated gantry cranes have also assisted in improving productivity within the port. Dwell time at the port has also been nearly halved from 2016 to 2017. Although the port volumes are small compared with Tanjung Priok, Tanjung Emas is a very innovative port that is quick in adopting technologies to modernise its facility. The development of the Kendal Industrial Park and the planned hinterland investments in rail and road will better link customers and their products to their destinations (Unpublished data from field interviews).
The question that remains to be answered is whether port performance has improved as part of this reform or has it been driven by other economic factors? This can be challenging to draw out because there can be other government policy changes that are implemented and global economic conditions that can affect the pace of reform. Based on the data analysed from the Port of Tanjung Priok and Tanjung Emas, the results present a mixed view on port performance. The results suggest that there have been improvements in infrastructure investment and productivity. It is also unclear from the analysis whether the increase in port throughput has been brought about by the port authority changing its role from ‘regulator’ to ‘operator’ through the ‘2008 Shipping Law’ or because of an increase in global demand that is driving port competitiveness to attract cargo and investment. Although throughput volume is a widely used indicator in the port industry, it does not provide an insight into the impact on the port industry and wider economy (Patunru et al. 2009). Most of the long term port planning undertaken at the Port of Tanjung Emas is not directly linked to the National Ports Masterplan but around developments taking place in Semarang such as the Kendal Industrial Park.

In conclusion, the process of change is always dynamic with the performance of a reform process having influence on the next round of reform. Further reforms from government are still required to streamline upstream processes, integrate technology and operate with increased transparency. The effect of the new Kalibaru Terminal on the competitiveness of the Port of Tanjung Priok will become clear in years to come. As Talley (2007) argues, in a competitive environment, the concern should not only be on how much cargo a port can handle but it should also focus on whether it can compete for cargo and how it minimises port time related costs which are incurred by shippers. The next section aims to use the ‘Matching Framework Analysis’ to compare the structure, strategy and environment of the post port governance model.
6.2 Results for Methodology II: Matching Framework Analysis

Structure

The discussion in Chapter 4 focused on the introduction of the new Shipping Law in 2008 by the Indonesian government. As discussed, this law was aimed at removing the monopoly power from government owned ports to increase competition and private sector participation to improve performance. Under this Shipping Law, the role of the regulator and operator was separated. Previously, the Pelindo would have regulatory authority over ports in their area of control. However, this regulatory role was handed over to the port authority (Nathan Associates 2008). In the new structure, the Pelindos are structured as a ‘company’ mandated to undertake port services (Annual Report Pelindo II 2012; Annual Report Pelindo III 2012). The company is run by a Board of Directors. De Langen (2017) argues that despite implementation of the new structure, the full transition towards a landlord model has not taken place in Indonesia. Decision making is still highly centralized and remnants of the ports pre reform structure still remain in place.

This can be seen in the recent case of Pelindo II renewing Hong Kong Based Hutchinson Port Holdings (HPH) contract. Jakarta International Container Terminal (JICT) was privatised in 1999 with a 20-year concession at a selling price of US$243 million because the government needed to raise capital during the Asian Financial Crisis. This comprised of US$215 million in cash and US $28 million in kind in exchange for 51 per cent control by HPH and 49 per cent to Pelindo II. A small portion went to the Maritime Workers Cooperative (Indonesia Infrastructure Initiative, 3rd July 2015).
In August 2014, Pelindo II renewed its contract awarded to the HPH to operate the JICT until 2039, five years before it was ending in 2019. The past President of Pelindo II, Mr Richard Lino, negotiated the deal that allowed Pelindo II to increase its ownership in JICT to 51 per cent from the agreed 49 per cent in 1999. The new terms of the agreement would also have resulted in an increase in Pelindo II’s revenue, as HPH’s rent increased from US$60 million to US$120 million with a US$250 million payment in advance. The agreement also accelerated dredging and deepening work in the port’s northern dock. The office had held tenders from several global port operators such as PSA International and APM Terminal, but HPH offered the best price (GresNews 17th September 2015).

However, the Tanjung Priok Port Authority had sent a letter to Pelindo II to cancel the contract as the deal had not been approved by the transport minister. The unions had rallied against this decision and the annulment of Pelindo II’s decision to lay off two of their employees, including the head of JICT Labour Union, Sofyan Hakim. It was argued that the process behind the concession was not transparent as the shipping law required a resolution between regulators, operators and Pelindo II. Therefore, Pelindo II did not have the rights to extend the concession without approval from the Transportation Ministry (The Jakarta Post 8th August 2014). The company had ignored attempts made by the union to have a transparent negotiation process to discuss the impact of the renewal of the contract with HPH on workers (Asean Affairs 8th August 2015). The Federation of State Owned Enterprise Workers Unions were disappointed with the decisions and filed a law suit against Pelindo II because the privatisation of the company resulted in job losses for workers.
However, Pelindo II’s response (The Jakarta Post, 8th August 2014) was that the contract was renegotiated before the end of the term because Pelindo II needed additional funds to construct the Kalibaru Port in North Jakarta. There was no need to seek the approval from the Ministry because the operator owned the land where the terminal stood and this was normal business practice. In the end, the Oversight Committee\textsuperscript{24} concluded that Pelindo II acted ‘transparently and in an accountable manner, which means it was not secretive and had reported the process to all stakeholders in charge of decision making’ (The Jakarta Post, 11th August 2015). The committee considered Kalibaru Port critical in moving forward the country’s port development (The Jakarta Post, 11th August 2015). However, the Director General for Sea Transportation, Bobby Mamahit, said that future renegotiations could not take place unless the Minister for Transport had given approval. The case of the HPH negotiation to extend concessions can be studied to evaluate if the transition to the new structure for port authorities has been successful.

Under this new structure, Pelindo has the role of an operator and should be able to enter into concession agreement with other private sector participants. The ‘2008 Shipping Law’s’ aim was to separate the role of the government from an operator to a regulator. The port authority would then license the private sector and Pelindo to operate and manage ports according to the landlord model discussed in Chapter 2. Despite the law being passed, there is still not much clarity on this role as Pelindo II was trying to re-negotiate contracts in advance through a process of competitive bidding which should have fallen under its role of operator. The response from the Ministry of Transportation reflects ambiguity on the separation of the role

\textsuperscript{24} The oversight committee consisted of several prominent figures such as former deputy Corruption Eradication Commission (KPK) chairman Erry Riyana Hardjapamekas, economist Faisal Basri, Independent Research and Advisory Indonesia (IRAI) founder Lin Che Wei and Transparency International Indonesia (TII) secretary-general Natalia Soebagjo.
of operator from that of regulator. As part of the ‘2008 Shipping Law’, there was meant to be a transfer of assets between the Indonesian Port Corporations and the port authorities to reallocate assets between the two parties (Hutagalung 2015). The Ministry of Transport’s primary role needs to be clearly defined as it still overlaps onto the operational role instead of performing only the policy making and regulatory role. More clarity is needed for the relationship between the Ministry of SOE and Ministry of Transport.

A similar recurrence has occurred with Pelindo III cancelling Dubai Ports (DP World) long standing contract in Surabaya. It was due to differences with the Indonesian government over renewal terms. The Financial Times (18th September 2017) reported that DP World’s Chairman and Chief Executive Sultan Ahmed Bin Sulayem reported that they had built world class infrastructure in Surabaya to meet demands of shipping lines, manufactures, traders and consumers. This significant investment in terminal infrastructure had contributed to creating jobs and economic growth in the region. Despite a successful track record over the last twenty years, they were disappointed that their contributions to the maritime sector had not been recognised by the Indonesian government (Financial Times, 18th September 2017).

De Langen (2017) argues that the Indonesian government needs to allow the port to operate as a commercial entity by removing restrictions which enable port authorities to set tariffs and obtain funding from the private sector independently. Although Indonesian port companies have boards, many of these appointments are political connections who are civil servants without private sector experience. Thus, more independence and transparency is needed for board appointments to bring about better decision making that will improve port performance. Despite the shift in the role of the port authority towards an operator, there is still a lack of
clarity on the roles of the port authority and the Ministry of Transportation (De Langen 2017). The next section aims to evaluate the ‘strategy’ of the ports in Indonesia.

**Strategy**

The second variable analysed in the matching framework is ‘strategy’. This section on the strategy of Indonesian ports analyses if Indonesian ports have become more competitive and whether connectivity has improved since the passage of the ‘2008 Shipping Law’. In the past, there has not been a clearly defined strategy for ports in Indonesia. Although there have been various master plans laid out as a strategy such as the RPJMN and MP3EI to improve connectivity amongst ports, Kannan and Morris (2014) argue that planning had not been integrated between the different levels of local and central government. At a national level, the Masterplan for Acceleration and Expansion of Indonesia’s Economic Development (MP3EI) is an ambitious plan by the Indonesian government to accelerate the realization of becoming a more highly developed country. The administration change from the Yudhoyono to the Jokowi government has not brought about a change in the maritime strategy. Rather, President Jokowi’s vision is more focused on the nation’s maritime strategy and on implementing this strategy than his predecessor. The success of Indonesia’s port development depends to a great degree on the port sector’s ability to facilitate the implementation of these initiatives.

Pelindo II’s strategy for Tanjung Priok’s development is focused on the government’s vision of reducing logistics costs and improving the competitiveness of ports. The port operator’s strategy is relying largely on the government’s MP3EI (Master Plan for Acceleration and Expansion of Indonesia’s Economic Development) that is focused on potential economic development and strengthening national and international connectivity which was discussed in
Chapter 3. Along with the MP3EI, the ‘Pendulum Nusatara’ is also the focus of Pelindo II to improve connections from the East to the West of the archipelago. Within this strategy, ports have been identified as one of the key instruments for the growth of the Indonesian economy. Pelindo II has also been focusing on reducing logistics costs. The opening of the new Kalibaru terminal at Tanjung Priok is also part of the strategy to reduce logistics costs at the port through investment in infrastructure and better cargo handling capacities (Pelindo II Annual Report 2012 to 2017). Likewise, similar development has been seen in Tanjung Emas in Semarang. The completion of the Kalibaru terminal in Tanjung Priok will increase capacity to 18 million TEUs by 2023. The draft of the port will also gradually increase from 14 metres to 20 metres to accommodate larger vessels up to 18,000 TEUs (IPC n.d.).

The implementation of this strategy can also be seen in Medan in Sumatra with the construction of ‘Kuala Tanjung’s’ deep water port that commenced in January 2016. The Port of Rotterdam Authority signed a joint venture agreement with Pelindo 1 on the 24th of November 2016 to develop the Port of Kuala Tanjung in the Straits of Malacca (Port of Rotterdam, 24th November 2016). The ‘Sea Toll Road’ concept is also being implemented in Indonesia to reduce the disparity in prices between regions by connecting goods and services between regions (Annual Report 2016). This is expected to feed into China’s BRI investment for Indonesia. As discussed in Chapter 4, Indonesia has also agreed to participate in Beijing’s US $40 billion BRI. This has led to Chinese investment in Indonesia to build a high speed rail from Jakarta to Bandung, and the Trans Sumatra Toll Road. China has also invested heavily in port infrastructure in Kalimantan to increase the port’s capacity to produce alumina. With approximately 90 per cent of Indonesia’s trade exported by sea, the BRI could play a key role in developing Indonesia’s ports and improve connectivity as part of its maritime vision (Cai 2017).
Patimban Port, located 150 km east of the Port of Tanjung Priok, is expected to add 1.5 million TEUs by 2019 and 7.5 million TEU when finally completed in 2027 (Port Strategy, 18th July 2017). Dwell time has also been reduced from approximately 6 days in 2014 at Tanjung Priok to 3.5 days in 2017 as discussed in Chapter 5. Although, there has been progress on dwell time, costly logistics are still a problem as the government tries to reduce port fees. In order to improve inefficient and uncompetitive logistic services, The Jakarta Post (19th June 2017) reports that Jokowi’s administration reintroduced the Indonesian National Single Window (INSW) scheme in June 2017 after the implementation of this system was halted in 2007 due to a lack of ministerial coordination and cooperation. This package aims to deregulate and streamline the nation’s bureaucratic licensing requirements which involves coordination with 18 ministries within the port industry.

The 2017 package consists of general directives that need to be detailed and will require amendments of several presidential decrees and ministerial regulations. Once it is fully established, it should be able to process official export and import documentations through a single contact point. This system should also assist in reducing excessive regulation, red tape and corruption. It should also help integrate port services in sparsely populated islands into a global value chain. A response from an interview25 with a terminal director suggest that these strategic plans do act as guidelines but there are no detailed level plans for port development strategies.

The strategy for Pelindo III is similar to Pelindo II and focuses on its role as a terminal operator to improve the distribution of goods and services in Indonesia. Interview responses from port

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25 Interview conducted 15th January 2017
authorities suggest that there is a strong focus with investment in the development of strategic ports in Pelindo III’s Marine Highway Programme and integrating the maritime region from East to West to achieve better outcome for port users. This is achieved with focusing on the Company’s business as Port Terminal Operator, bringing the concept of ‘Green Port’ and Integrated Industrial Area with the Port, and modernising the loading and unloading facilities equipment such as the 20 ARTG Units in Terminal Petikemas Semarang (TPKS). During field interviews\textsuperscript{26} with Pelindo III, the question was asked if competition had increased between the Port of Tanjung Emas and the Port of Tanjung Perak. The response was that this had improved competition. Previously cargo from Central Java, Solo and Jogyakarta was handled by Tanjung Priok and Tanjung Perak. With infrastructure upgrade in TPKS, this changed the model of logistics flow. Although there is some level of rivalry between firms, Pelindo’s in most branch ports have a dominant market share for stevedoring although the stevedoring of some bulk cargo still needs improvement.

Pelindo III’s strategic development plan focuses on its Marine Highway Programme and integrating these ports into the maritime region as part of the development of the port of Eastern Indonesia. Maritime Highway is a permanent and regular sea transportation organizer that connects hub ports such as Tanjung Perak and Tanjung Emas by feeder services from Sumatera to Papua by using large-scaled ships so that the economic benefits can be obtained. The overall strategy is derived from the RPJMN 2015 to 2025 and is also part of President Jokowi’s plan to develop 24 ports, consisting of five hubs and nineteen feeder ports as discussed in Chapter 3. Their focus is also to achieve excellence in service for port users. The strategy is to focus on the Company’s business as Port Terminal Operator through port modernisation, having hub ports and focus on core competencies. Responses from port authorities suggest that there are

\textsuperscript{26} Interview conducted on 15\textsuperscript{th} January 2017
efforts underway to bring in the concept of Green Port and Integrated Industrial Area with the port. Rivalry among firms in Pelindo III is assigned as medium by the port operator as the existing Pelindo has a relatively dominant market share. However, stevedoring can be improved in general cargo, bag cargo, dry bulk and liquid commodities (Annual Report Pelindo III 2016; 2017).

The RPJMN plan from 2015 to 2025 and the maritime vision of President Joko Widodo provides the guideline for this strategy (Annual Report Pelindo III 2012; 2015). Dubai Ports (DP) World have also signed a contract with Pelindo 1 to provide technical assistance to Pelindo 1 on developing Kuala Tanjung greenfield ports and logistics zone and Belawan in North Sumatra. DP World will also advise Pelindo 1 on increasing efficiencies, training and development of employees and developing multi modal transport hubs (Port Strategy, 18th July 2017). Operations at the port of Kuala Tanjung have begun in January 2018 with Pelindo 1 trying to secure shipping companies to use the port’s services. The Indonesian government has also offered transportation infrastructure cooperation at 4th ministerial meeting in Nusa Dua, Bali on 26th to the 28th of September 2017. Some of the projects include Makassar New Port worth Rp 7 trillion, product terminal of Kalibaru Port (Tanjung Priok, Jakarta) worth Rp 9.5 trillion, Kijing Port (Pontianak) valued at Rp 5 trillion, Kuala Tanjung Port and Sorong Port (West Papua) with an investment of Rp 2.3 trillion (PWC 2017). Indonesia’s container ship trade is growing with more direct mainline services such as CMA CGM having direct services from Indonesia to Europe.

Nationally, the strategy of the state versus the private sector is still an impediment to Indonesia’s economic growth. An interview response with a representative from an

27 Interview conducted 20th January 2016
economic think tank in Indonesia stated that more private sector investment is needed in ports, along with more stable policies to attract and retain foreign investment. Saha (2016) argues that Indonesia’s Coordinating Maritime Affairs Minister Soesilo confirmed that the construction of four deep water ports had begun but financial constraints were an obstacle to new construction. Ray and Ing (2016) argue that Jokowi’s approach to the infrastructure agenda is focused at injecting large amounts of funds into SOEs and assigning important projects to them. This approach has raised concerns about the possible ‘crowding out’ of private sector investors that are more efficient and competitive. However, Indonesia’s infrastructure needs are too large to rely solely on SOEs funding and private sector capital is necessary. This has also been addressed by the past coordinating minister for economic affairs, Sofyan Djalil (2014-2015). The Ministry of Public Works and Housing has also emphasized that the completion of the Trans Sumatra Toll Road will require partnership with the private sector (Ray and Ing 2016).

The response from interviews with the port authority on their view on foreign investment is that they mostly follow the regulation and decision from Government and are not involved so much on this matter if related to Pelindo. The government has started to respond to these risks of inefficient SOEs by making attempts to improve the PPP scheme for joint ventures. The problem in the past was that risk sharing arrangements under a PPP project were done by line ministries at the early development stage, which discouraged investors from participating as risks need to be allocated to the right parties during the conceptualisation phase. Therefore, the government is now aware of these risks, allowing investors to conduct their due diligence on the SOEs and their projects to maintain corporate governance, efficiency, transparency and

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28 Interview conducted 17th January 2017
29 Interview conducted on 15th January 2017 and 1st June 2017
accountability standards. However, such partnerships will require vigorous due diligence on the SOEs and their projects (The Jakarta Post 9th October 2017). Warburton (2016) argues that the government allocated $3 billion of additional State funds in 2015 to SOEs to merge and streamline the enterprises through the establishment of a large holding company. The aim was to increase efficiency, raise capital and use it as a vehicle for Indonesia’s development.

As port authorities in Indonesia have traditionally been managed by the Pelindo through the Ministry of Transportation, Pangetsu et al. (2015) argues that Indonesia has little experience in managing ports in a competitive context. As Ray (2008) argued, this allowed the Pelindos to make full use of the regulatory power provided to them to prevent competition within their own ports. In the past, companies wishing to enter into the port construction and operation business had to enter into a joint venture with or obtain a concession from Pelindo. Private sector participation in major public port facilities had usually taken the form of a joint venture, with the Indonesian Port Corporation (IPC) controlling the ownership (OECD 2012). However, the OECD (2012) report outlines that the current governing structure of the port industry and presence of incumbent service providers, still present obstacles for the private sector participation and the encouragement of competition. Therefore, it is necessary for the Ministry of SOEs to provide performance benchmarks to monitor prices charged by Pelindos.

Despite the Indonesian government revising its ownership restrictions in transportation and logistics, foreign ownership in port management services, cargo handling and cold storage has still been capped to 49 per cent (Presidential Regulation 4/2016). However, the private sector is now allowed to own 100 per cent of toll roads compared to the previous cap of 95 per cent. This is because of national sovereignty concerns which is why the joint venture model is preferred. This decision reflects the Indonesian government views on ports being strategic.
national assets but it could also potentially be an impediment for port development (Presidential Regulation 4/2016; PWC 2016).

The OECD (2012) argues that private terminal operators are discouraged from engaging in third party cargo handling due to permits being granted for a short period of five years. This makes it difficult to obtain finance as there is a risk of contracts not being renewed. The private sector should also be allowed to handle third party cargoes and be given competitive allocation of port services licenses. OECD 2012d). Further engagement with the private sector will be useful in lifting constraints off the port sector. This will enable prices to be determined by market conditions, resulting in lower costs to port customers, as long as it is not a monopoly. Therefore, strategy development can only take place when the port authority is able to make independent decisions in relation to its organisational structure, marketing, pricing, budgeting, financing and procurement. Thus, the OECD recommends competition where possible and regulation when necessary (OECD 2012a).

Farell (2012) states that Indonesia also uses the Joint Venture (JV) model for foreign investors to invest in conjunction with the Pelindos, where regional port authorities such as Pelindo II and III have held stakes between 49 and 51 per cent in terminals at Tanjung Priok and Surabaya. This was due to a shortage of funds, following the Asian Financial Crisis which led the Indonesian government to embark on a partial privatisation process of the JICT and the Tanjung Perak container terminal to Dubai Ports (DP) World. This has resulted in improved port sector handling performance of container terminals at Jakarta and Surabaya which are now operating in partnership with leading global terminal operators (OECD 2012d). However, the issues around contract renewals with global terminal operators such as HPH and DP World with Pelindo highlights how this strategy may not work well. International Terminal Operators
play a key role in investing in infrastructure to build world class ports. The uncertainty around the renewal of their concessional agreements and the short time frame of these contracts does not send a very encouraging message to private investors.

The cabotage requirements re-introduced in 2005 appear to contradict the aim of the ‘2008 Shipping Law’ which was to improve competitiveness (OECD 2012d). As discussed previously, Indonesia had introduced policies to support its national shipping industry after the Dutch left. Many of these restrictions were removed or relaxed during the 1980s and 1990s (Dick 2008; OECD 2012). This was a reflection of Indonesia’s movement towards economic liberalisation which led to an increase in the share of domestic cargo by foreign flagged vessels to approximately 45 per cent in 2005. The OECD (2012d) argues that this policy reversal could damage the nation’s trade and economy, as it reduces efficiency compared with competition in open markets. Domestic shipping operators lack the capital to make investments that drive efficiency, limiting innovation and best practices. Reversing this policy is difficult as it has strong sectoral support and has not encountered much internal opposition (OECD 2012d). The Komisi Pengawas Persaingan Usaha (KPPU) has also been established to advocate for competition by identifying aspects of legislation that impedes competition. The KPPU can provide recommendations and comments on such anti-competitive legislative proposals directly to the President. However, their involvement has been limited in recent times (OECD 2012d).

The draft NPMP indicated that a significant level of investment is required from the private sector to invest in PPPs but the cases of HPH and DP World highlight the challenges and uncertainty encountered by private sector investors (Netherlands Maritiem Land 2015). Therefore, along with individual case study port strategy for competitiveness, trade policy also
needs to be part of a broader comprehensive strategy. The focus needs to shift from protectionism to promoting the facilitation of the flow of goods, services and people. In order to be successful in attracting private sector investment in Indonesian ports, the government needs to influence the investment environment and specify policy, regulatory and institutional measures which need to be implemented to provide an enabling environment.

**Environment**

We now turn to examine the final variable ‘environment’ in Indonesia. For a good fit, the structure needs to match up with the complexity and dynamism of the environment. As the case study ports are run by government, it is difficult to separate the ‘environment’ into Pelindo II and Pelindo III as the case study ports are influenced by national government policies. Instead, it is important to consider the context of Indonesia’s political economy, in particular the fundamental transformation that occurred in its institutions in the post Suharto era as the economy transitioned from authoritarianism rule to a volatile democracy. As discussed in Chapter 3, Indonesia’s development has largely been influenced by the global resources boom and busts, with modest investment in infrastructure (Dick 2008). These resource booms and busts led to both inward and outward oriented growth policies. The fall of Suharto’s government and the Asian financial crisis eventually pushed for fiscal decentralisation in the country which added another layer of complexity, uncertainty and increased challenges of coordination. The difficulties of infrastructure project implementation are exacerbated in Indonesia decentralisation since 2003 (Kannan and Morris 2014; Davidson 2015).

Kannan and Morris (2014) argue that this led to a reluctance in certain sectors to take key spending decisions for major infrastructure projects. They argue that there is a lack of centralized planning, with each ministry having its own plan, resulting in a confusion of
responsibilities. Coordination between ministries is slow as there are more than thirteen national agencies or stakeholders in relation to maritime affairs. Some of these agencies include the Ministry of Transportation, Ministry of Marine Affairs and Fisheries and administrative ministries. Companies trying to establish their business often face confusion and frustration navigating between these agencies (Nederlands Maritiem 2015). There have been an increasing number of institutions created for emergency measures to check on existing institutions and respond to new priorities. This institutional ‘evolution’ has led to duplications of functions. For instance, the MP3EI runs parallel to the medium and long term plans of the National Department for Planning (Bappenas). Therefore, central government intervention is necessary to build up local government capacity and streamline policy making processes (OECD 2012c). This was also articulated by a port users in an interview suggesting improvement in agency coordination and reduction of red tape to improve efficiency.

The Office of the Coordinating Maritime Affairs Minister claimed credit for the reduction in Tanjung Priok’s dwell time. These claims were, however, refuted by Tanjung Priok’s Port Authority which further highlighted the lack of coordination between government officials. The port authority has imposed a hefty fee on containers that are not cleared on time to encourage owners to process the documents required to release the containers. This new measure has started to hurt businesses and provides a greater incentive for pilferage (The Jakarta Post, March 15th 2016). However, the Coordinating Minister for Maritime Affairs commented that the government was taking measures to lower these charges (The Jakarta Post, 5th May 2017).

30 Interviews conducted 15th to 17th January 2017
Despite President Jokowi’s vision for Indonesia as a ‘global maritime axis’ and the critical role the maritime sector plays, there is still no coherent plan on how Indonesia will build its maritime power. Damuri and Day (2015) argue there is a lack of expertise around government’s capacity to assess infrastructure projects and provide certainty to the private sector. They argue that the Head of Bappenas, which is the National Development Planning Agency in Indonesia, has concerns that revised regulations to create a PPP scheme might weaken the State’s control over infrastructure. These concerns are just another example of where the current administration is providing mixed signals to the private sector to deliver its economic policies and programmes.

As discussed in Chapter 3, corruption is still a major issue in Indonesia. A report by Control Risks (2013), a specialist risk consultancy, showed that corruption is still prevalent in Indonesian ports through delays caused by discrepancies in customs documentation for imported goods. Even minor issues in paperwork could result in containers being held at ports for a long period of time, adding to costs. Hence, informal ‘payments’ are given to facilitate the process. The report further cites how one importer deals with this issue by returning goods back to their port or origin and resending them with perfect documentation. The establishment of the KPK in 2002 has led it to evolve into a fiercely independent and resilient institution prosecuting corrupt public officials. However, the report argues that the KPK only handles a small percentage (below 5 per cent) of total corruption cases. With widespread corruption in the justice system, it does not take long for police to drop an investigation, lose important evidence or charge a suspect with a lesser offence (Control Risks 2013).

On December 18th 2015, the KPK named the President of Pelindo II, Mr Richard Lino, a suspect in an alleged corruption case in relation to the procurement of three quay container
cranes in 2010. These cranes were located in Pontianak Port, West Kalimantan, Panjang Port, Lampung; and Palembang Port, South Sumatra (The KPK, 2nd February 2016). The allegations against him are for abusing his authority to appoint a Chinese company to supply quay container cranes for Pelindo II. Mr Lino denied these allegations arguing that these charges were brought about by parties trying to take over the company, due to the reforms he introduced when he was appointed as Chief Executive in 2009. These included ousting corrupt and underperforming officials (Jakarta Globe, 23rd December 2015). Mr Lino had brought Pelindo II from an operating loss position to profitable position with a net worth of Rp 18.5 trillion in cash and Rp 45 trillion in assets (Jakarta Globe, 23rd December 2015).

The Loadstar (1st March 2016), a multimodal online news for the logistics industry, reported that a source close to Pelindo II explained that the issue with the cranes began when Chinese manufacturer Wuxi Huadong Heavy Machinery (HDHM) won the tender process to deliver these three cranes. However, one of the other companies had offered a twin lift spreader crane which could pick up two 20 feet boxes simultaneously in their tender. This would significantly boost productivity at small ports. However, Mr Lino had requested HDHM to change what it was offering to a twin lift to win the contract. That resulted in a reclassification of a direct appointment rather than a tender. The source added that contrary to KPK claims, a direct appointment is not illegal and Pelindo III had paid more for a single lift crane a month later. This negates any claims of losses to the State. Moreover, no evidence had been found that Mr Lino benefited from this deal financially despite an analysis of his bank accounts.

According to the Loadstar (1st March 2016) report, Mr Lino had been appointed to improve port efficiency in Jakarta which had been a major barrier to growth. Mr Lino’s supporters claim the only reason KPK was pursuing corruption allegations was because of his leadership culture of tackling corruption and his goal to improve port efficiency. The Serikat Pekerja Jakarta
International Container Terminal (SPJICT) union had been lobbying KPK since 2013 over the 2010 HDHM crane purchase, claiming that he had benefited personally and caused state losses. His supporters claim that he is a victim of a political plot to oust his boss, State Owned Enterprises Ministers, Rini Soemarno. This is because the main party, PDIP (Indonesia’s Democratic Party of Struggle), was unhappy with her doing a good job and would benefit from any embarrassment the minister would face through Mr Lino being a corruption suspect (The Loadstar 1\textsuperscript{st} March 2016).

The KPK (The KPK, 2\textsuperscript{nd} February 2016) reports that it has reason to believe that it will win the pre trial lawsuit against Richard Lino as they have reliable evidence. During the pre trial hearing, the KPK presented preliminary evidence to establish Mr Lino as a suspect in the case of ordering cranes from a single to twin lift. He is also alleged to have intervened with the Committee for Procurement of Goods and Services to appoint HDHM despite the firm not meeting administrative and technical requirements. However, GRESNEWS (27\textsuperscript{th} February 2017), an Indonesian law and politics news portal, reports that the KPK is still having difficulty in concluding this case with Mr Lino, despite ongoing investigations since August 2016. The KPK is still collecting evidence from overseas and investigations are still underway. Although the case has not reached a verdict, it still highlights the possibility of the risks well-meaning senior officials have to deal with when they attempt to cut bureaucratic corners to get things done more efficiently (GRESNEWS 23\textsuperscript{rd} March 2017). Therefore, even though steps have been taken through Jokowi’s ambitious maritime plan with attempts to reduce dwell time, there are further elements of bureaucracy, red tape and foreign investment that require further improvement to increase certainty to investors.

**Applying the ‘Matching Framework’**
The previous section has provided an analysis of the variables structure, strategy and environment for Indonesian ports. This section looks at applying the ‘Matching Framework’ to determine if the configuration of these three variables is the right ‘fit’ for the ports in Indonesia post reform. The challenge in the application of the ‘Matching Framework’ to the Indonesian ports is the difficulty in separating each of the three analysed variables for the respective case study ports. This is because the ports in Indonesia are owned by government and their individual assessment is better assessed by the geographical boundary that they belong to such as Pelindo II and Pelindo III instead of individual case study ports as these bodies have a greater influence on port development, along with national government policies. Therefore, reference is made to the case study ports where applicable but analysis has been more broadly grouped under the respective Pelindo boundaries. Interviews were conducted with stakeholders with various perspectives such as the private sector, economic think tanks, port authorities, academics and terminal managers. However, the analysis of the variables is conducted from a public policy perspective similar to Wilmsmeier and Sanchez (2017) to evaluate port reform and the implementation of the new governance model and identify further governance challenges.

The strategic aim of the ‘2008 Shipping Law’ was meant to remove monopoly power from the Pelindos by increasing competition within the sector but there does not seem to be an overarching strategy on how this is meant to be achieved. The only policy planning document was the draft NPMP (Indonesia Infrastructure Initiative 2012) developed in 2008 under the Yudhono government which has been left in draft form. The change in administration from Yudhono to Jokowi in 2014 did see a different leadership approach being adopted. Jokowi’s maritime vision was a key focus of his election agenda. However, no further maritime planning documentation have been produced. Rather, Jokowi had initially emphasised that the MP3EI
had to be revised due to funding availability (Tempo 2014). However, it has been reported that this plan was revised to include his maritime infrastructure agenda as there are similarities between Yudhoyono’s ‘sea pendulum’ concept and Jokowi’s ‘sea toll road’. However, the MP3EI was not implemented under the Yudhoyono government because of bureaucracy, lack of political will and logistical reasons such as land acquisitions and lack of private sector investment (The Asan Forum, 22nd February 2016).

Examining the strategy of both the case study ports, it can be concluded that the strategic focus of Indonesian ports is on delivering the basic services, placing it into the configuration for efficiency in the short run. This strategy of the Indonesian ports sector can be described as a narrow product market with the aim of maximizing port throughput. Both the case study ports have been focused on reducing logistic costs and investing in infrastructure. In the case of the Port of Tanjung Priok, strict dwell time deadlines of three days also have to be adhered to. Both case study ports are also reliant on the MP3EI, RPJMN and ‘pendulum nusatara’ to guide strategy.

The structure of the ports still is very hierarchical with centralised decision making despite port reform. In the case of the Port of Tanjung Priok in Pelindo II, there were elements of an organic structure emerging under the past President of Pelindo II, Mr Richard Lino, as the shipping law was meant to separate the role of the regulator and operator. Although most decision making or ‘operations’ in this structure is now left to the Pelindos, the renewal of the HPH contract revealed that decisions still needed approval from the Ministry of Transport and Port Authority, despite Pelindo II being an operator. Therefore, a complete transition towards a ‘landlord model’ in which operator and regulator roles are separated, has not taken place. With Pelindo III, the port operator has seen more organic decision making emerging despite a mechanistic
structure with centralized planning. This can be seen from the level of investment in technology, infrastructure upgrade and attempts to attract shipping lines and becoming an international port. This could also be because of the Port of Tanjung Emas status as a growing port and not a leading port such as Tanjung Priok, which allows for more flexibility to emerge in its structure.

Lastly, the variable ‘environment’ has changed over the post reform period from 2012 to 2016. This variable can be challenging to observe separately for both ports as they are SOEs that follow national level decision making. To better reflect the Indonesian environment more accurately, the environmental uncertainty is further classified as ‘high’, ‘medium’ and ‘low’ risk as they allow for more flexibility to better represent the changes in Indonesia’s environment instead of just ‘high’ and ‘low’. The analysis for both the case study ports suggest that the environmental uncertainty has fallen from ‘high’ to ‘medium’ with regards to port development, infrastructure investment and dwell time. However, more needs to be done to provide greater certainty to attract private sector investment in ports such as reducing red tape, bureaucracy and providing certainty to foreign investors.

Budgetary challenges accompanied with falling commodity prices, have placed pressure on government to encourage private sector investment to fill this funding gap. The President views liberalization as a last resort for attracting capital; the preference is for deregulation packages to ‘modernise, not liberalise’ Indonesia (Warburton 2016, p.309). Negara and Das (2017) have argued that a strong focus of Indonesia’s maritime strategy has been inward orientation, especially with the Sea Toll Road project that began in November 2015. Despite the government’s maritime vision and a kaleidoscope of planning documentation, they argue that more needs to be done to develop Indonesia’s port strategy to increase competition.
Despite a change in administration since 2014, the uncertainty in the political environment has continue to discourage investment by foreign investors into infrastructure projects. President Jokowi was quoted by TODAY, Singapore’s online newspaper, claiming that Indonesia is not a protectionist economy and ‘the nation is open for investors’ (TODAY 17th October 2017). However, with Newmont Mining and BHP Billiton pulling out of investments in Indonesia in 2016 and DP World in 2017, it does suggest that a mixed message is being sent out to foreign investors (TODAY 17th October 2017). Fiscal decentralisation has also exacerbated the challenge of coordination between the national and local governments. Many other government agencies also operate in silos with bureaucratic processes and duplications that create more regulatory barriers.

The ‘2008 Shipping Law’ was brought about to increase competition, private sector participation and efficiency but the reversal of the cabotage policy appears contradictory to what the ‘2008 Shipping Law’ was set out to achieve. Therefore, the external environment does seem to fluctuate between regulation and deregulation (Dick 2008). Also, within the maritime industry, the competition for transshipment cargo along the Straits of Malacca continues to intensify, placing more pressure on Indonesia to improve the competitiveness of its ports. The results from the Matching Framework Analysis are summarised in Table 6.1.
Table 6.1: Matching Framework Configurations Applied to Indonesian Ports

<table>
<thead>
<tr>
<th>Pelindo II: The Port of Tanjung Priok</th>
<th>Environment</th>
<th>Strategy</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre 2008</strong></td>
<td>High Uncertainty</td>
<td>Efficiency oriented focusing on providing basic product and services. High dwell time and logistics costs. No longer term planning</td>
<td>Mechanistic</td>
</tr>
<tr>
<td><strong>2008-2011 (Transition Time)</strong></td>
<td>More complex and dynamic</td>
<td>More efficiency oriented with attempts made at increasing infrastructure investment at ports, attempts to reduce dwell time and logistic costs to better provide basic product and services. Longer term plans include RPMJN, President Jokowi’s maritime agenda and ‘sea toll road’</td>
<td></td>
</tr>
<tr>
<td><strong>2012-2016</strong></td>
<td>Medium Uncertainty</td>
<td>More efficiency oriented with attempts made at increasing infrastructure investment and having direct international shipping routes to better provide basic product and services. Longer term plans include RPMJN, President Jokowi’s maritime agenda and ‘sea toll road’ along with Pelindo III’s ‘Maritime Highway’.</td>
<td>More organic than mechanistic with decision making still centralised but allowing for the port operator to respond by upgrading infrastructure and attracting shipping lines to reduce logistic costs and improve throughput.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Pelindo III: The Port of Tanjung Emas</th>
<th>Environment</th>
<th>Strategy</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre 2008</strong></td>
<td>High Uncertainty</td>
<td>Efficiency oriented focusing on providing basic product and services. Lack of infrastructure and more dredging required to attract ships with larger drafts.</td>
<td>Mechanistic</td>
</tr>
<tr>
<td><strong>2008-2011 (Transition Time)</strong></td>
<td>More complex and dynamic</td>
<td>More efficiency oriented with attempts made at increasing infrastructure investment and having direct international shipping routes to better provide basic product and services. Longer term plans include RPMJN, President Jokowi’s maritime agenda and ‘sea toll road’ along with Pelindo III’s ‘Maritime Highway’.</td>
<td></td>
</tr>
<tr>
<td><strong>2012-2016</strong></td>
<td>Medium Uncertainty</td>
<td>More organic than mechanistic with decision making still centralised but allowing for the port operator to respond by upgrading infrastructure and attracting shipping lines to reduce logistic costs and improve throughput.</td>
<td></td>
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</tr>
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</table>
The results suggest that there is a misalignment in fit, especially between the variable ‘environment’ and ‘structure’. Although there has been a reduction in environmental uncertainty from ‘high’ to ‘medium’, a more organic structure would be better able to deal with this risk then a ‘mechanistic’ structure.

**Conclusion**

In conclusion, the ‘Matching Framework’ has been a useful methodology to evaluate the new port governance structure in Indonesia by analyzing the variables ‘strategy’, ‘structure’ and ‘environment’ post reform from 2012 to 2016. Wilmsmeir and Sanchez (2017) had adjusted the category of ‘environment’ from ‘more uncertain’ to ‘less uncertain’ while applying this to study Chilean ports to allow for more flexibility in the analysis. Likewise, the author has differentiated this category of environment to ‘high’, ‘medium’ and ‘low’ to allow for more flexibility to better fit the Indonesian case.

The results suggest that the environmental uncertainty in both case studies port has been reduced to ‘medium’ from ‘high’. Therefore, the ‘fit’ of the case study ports can be better improved by changing the structure of the case study ports from ‘mechanistic’ to ‘organic’ to better adapt to the environment. In the case study Port of Tanjung Emas, this is more prevalent with a more flexible and organic structure. For the case study Port of Tanjung Priok, the port did display elements of an organic structure under the leadership of the previous President, Richard Lino. However, the structure is still highly mechanistic.
Although an overarching plan for the development of Indonesian ports is missing, port operators do revert to the RPJMN along with President Jokowi’s Sea Toll Road. Both case study ports have a focus on an ‘efficiency oriented’ strategy with the Port of Tanjung Priok focused on reducing logistics costs through reducing dwell time and building the new Kalibaru terminal to accommodate larger vessels and capacity. The strategy of the Port of Tanjung Emas has been to upgrade its infrastructure and develop direct international shipping routes that enabled it to achieve a status of an international port in 2017. Brooks and Balthazar (2001) highlight that regardless of the configuration, some minimum level of both efficiency and effectiveness is critical to organisational survival and to reduce the uncertainty in the environment.

It is also evident that the transitioning towards a landlord model did not really result in a transfer of power but qualitative structuring. There have been several attempts made by the respective port authorities to provide a systematic strategy. However, a national port strategy to guide port reform is still missing. De Langen (2017) argues that the complete transition towards a ‘landlord’ model has not taken place and decision making is still centralised. However, the government has been very active in promoting investment in port infrastructure to lower logistics costs. Increased competition in stevedoring services could perhaps improve port competitiveness, especially in bulk ports and reduce logistics cost further through greater private sector involvement.
6.3 Results for Methodology III: Institutional Analysis Approach

The ‘matching framework’ provides a valuable insight towards the long term evolution of the structure and governance of ports. Although the transition towards a landlord model has made some progress, the discussion suggests that the governance model is still rooted in its traditional pathway which could slow down the process of reform. Likewise, the new ‘2008 Shipping Law’ has brought about minimal change in the structure of the ports, foreign investment and competition. This is because the development of the port is still constrained by the deeply embedded nationalistic concerns, resulting in the continuation of the historical pathway. Therefore, although the ‘Matching Framework’ provides a tool to evaluate reform, path dependence plays a significant role in explaining the trajectory of port reform in Indonesia.

As discussed in Chapter 2, the internal environment of port institutions represent rooted structures of power, Notteboom et al. (2013) argues that it would be in no one’s interest to change the rules (Notteboom et al. 2013; Reveley & Tull 2008). Thus, an evolutionary analysis is important because it links past behaviour and inherited social factors into the present. Conventional studies tend to ignore the embeddedness of ports within their institutional and economic domain and effectively analyse reforms from a static angle (Debrie et al. 2013). However, Reveley and Tull (2012) argue that unless various events can act as ‘triggers’ resulting in layering, stretching or displacement, it can be difficult to change the trajectory of a resistant port.

Figure 6.26 summaries the series of reforms to the maritime sector in Indonesia from 1945 to 2018 that were discussed in Chapter 3 and 4. The analysis begins from the departure of the Dutch (A) in 1945 that saw a continued path dependence of nationalization of Indonesia’s fleet
(B) in 1960. This is followed by the Suharto era where the 1980s saw a period of deregulation of policies in Indonesia (C) to welcome foreign investment as part of the nation’s non-export led growth strategy. This can be seen as a trigger point which brought about the removal of domestic cabotage policies and improved economic growth within Indonesia. Customs procedure were also outsourced to Société Générale de Surveillance (SGS) (Dick 2008). However, this did not last very long as there was a reversal in government policy to bring customs under the Director General of Sea Transportation who was President Suharto’s son-in-law. Crony capitalism continued until the onset of the Asian Financial Crisis (D). This was the trigger event that led to the partial privatization of key ports such as Tanjung Priok in Jakarta and Tanjung Perak in Surabaya.

Following this trajectory, the ‘2008 Shipping Law’ could have been seen as a major trigger point aimed at reducing the monopoly power and increasing competition at Indonesian ports. Since then, this trajectory has not changed very much (E). There have been several attempts by the current President Jokowi to attract foreign investment in Indonesian ports. At the same time, investment and operations by international terminal operators such as HPH and DP World have met with challenges. Cabotage policy still protects domestic fleet and limits on foreign investment still hold at 49 per cent. The end result (G) is providing mixed signals to investors about the government’s policy towards more open policies and foreign investment. Figure 6.26 shows Indonesian port reform exhibiting signs of a ‘resistant port’. Thus, when a reform process appears to be rigid and hierarchical, it could be because of this embeddedness within the institutions that creates a trajectory of resistance or ‘lock in’ which impedes the implementation of local reform. This reasoning can provide further insight as to why the ‘2008 Shipping Law’ has not brought about all the reform it intended.
Almost 350 years of Dutch colonial rule into the twentieth century has shaped the dominant idealogical views of an economy that was extractive, exploitative and inward looking (Hill 2018). As discussed in Chapter 2, Adiputri (2014) argues that both the ‘Guided Democracy’
and the ‘New Order’ leadership of Sukarno and Suharto had inherent features of a highly centralised system, with an authoritarian style leadership under which monopoly and corruption increased. Although there were period of economic growth during the Suharto era, there was still much protectionism on heavy industry which continues today in various sectors of the economy such as agriculture and shipping. The Suharto era saw President Suharto as the institution while the democratic era since 2000 has seen a diffusion in power with the State becoming more important (Hill 2018). However, protectionist and inward looking policies continue to be implemented. Hadiz and Robinson (2004) argue that the reform in institutions in Indonesia’s new democracy had still left old institutional forces intact which is an impediment for Indonesia’s port development to become more successful and provides an explanation on the trajectory of port reform in the two case study ports.

**Port Reform Trajectory for Tanjung Priok**

Applying this analysis to the Port of Tanjung Priok, it can be seen that much effort has been placed in reducing the logistics cost over the period from 2012 to 2017. These measures include building the new Kalibaru terminal, reducing dwell time and streamlining logistics through the ‘National Single Window’. However, there are still elements of path dependence that have prevented a complete transition to the ‘landlord model’. This can be seen especially from the angles of competition and foreign investment. The ‘2008 Shipping Law’ aimed at increasing port competitiveness but not much competition has been seen in terminal operations at Tanjung Priok. This is largely due to the remnants of port reform where the Pelindo has always operated as a monopoly. Although the port operator has made attempts to increase efficiency and invest in infrastructure, there has been resistance to introduce more competition.
Similarly, more foreign investment is needed to fund President Jokowi’s ambitious maritime plan but preference has been to use SOEs as funding vehicles instead of the private sector. The private sector also has significant capabilities and expertise which can benefit the port reform process. However, foreign investment in ports is still limited to 49 per cent due to national sovereignty, especially after Dutch colonisation. Thus, this path dependency argument could provide a reason as to why there has been resistance or an ‘oscillating pendulum’ for and against foreign investment.

Therefore, these institutional rigidities and path dependent lock in can hamper the port’s growth potential and delay the outcome of port reform. Also, being the leading port in Indonesia, the port is a major focus point of government. Although the port reform process has had remnants of path dependency, some level of stretching is visible. This can be seen with President Jokowi’s focus on ports and connectivity, the new Kalibaru terminal and greater private sector participation through joint venture in the new Kalibaru terminal. The next section analyses the port reform trajectory for Tanjung Emas.

**Port Reform Trajectory for Tanjung Emas**

Tanjung Emas is a very innovative port that is quick in adopting technologies to modernise its facility. The port reform trajectory for the Port of Tanjung Emas does bear resemblance to the Port of Tanjung Priok, especially in terms of foreign investment. However, an alternative pathway can be seen developing at the Port of Tanjung Emas despite the path dependence present of Pelindo III. Significant infrastructure investments have been made since 2012 to further modernise the port with the lengthening of the quay, purchasing new container cranes,
improving the port’s capacity in loading and unloading ships and dredging to allow larger vessels of up to 3,500 TEUs to berth in the third largest port in Indonesia. Responses from interviews with port authority personnel in Pelindo III suggest that competition has been a driver for this level of investment\textsuperscript{31}. At the same time, the port operator is very active in marketing the port to attract shipping lines with direct routes to Asia since the port received ‘international’ status, instead of a ‘feeder’ port that used to tranship cargoes to ports in Tanjung Priok or Tanjung Perak.

The Port of Tanjung Emas can be better described as a ‘path leader’ port where the process of reform is not just a ‘top down’ process that followed the ‘2008 Shipping Law’. It is also a ‘bottom up’ or emergent pathway that has developed due to the port operator’s and authorities innovation and flexibility. The comparison between the Port of Tanjung Priok and the Port of Tanjung Emas does bear resemblance to the comparison between the Port of Auckland and the Port of Tauranga discussed in Chapter 2 where institutional reform allowed the Port of Tauranga to operate with more flexibility and innovation, resulting in improved port performance (Pyvis and Tull 2017). Likewise, the Port of Tanjung Emas is showing signs of innovation and flexibility despite the challenges it faces due to its size and location. These institutional reforms could possibly allow the Port of Tanjung Emas to flourish at a quicker pace over time as compared with the Port of Tanjung Priok where institutional rigidities and path dependent lock in could limit the port’s growth potential. Also, unlike Tanjung Priok which has more government interest, perhaps being a smaller port enabled this management structure to be more effective.

\textsuperscript{31} Interview conducted 15\textsuperscript{th} January 2017
To conclude, port reform is never easy to implement and the timeframe varies from country to country as seen in the discussion above Brooks et al. (2017). Also, political and cultural traditions can influence these reforms (Ng and Pallis 2010). The Indonesian port reforms has shown signs of being impeded by a path resistant port. On the one hand, port policy is encouraging competition to improve efficiency while, on the other hand, ports are surrounded by protectionist measures and nationalism. As discussed in Chapter 4, neighbouring South East Asian ports such as Vietnam, Thailand and Philippines are also in competition to attract greater shipments. This competition could act as a trigger, providing ‘bottom up’ pressure to further stretch out the port’s trajectory to bring about reform. However, the argument put forward in Chapter 2 by Reveley and Tull (2012) suggest that the use of ‘competition’ as a solution to path dependence and institutional rigidity is limited by market failure and social constraints.

6.4 Conclusion

This chapter set out to evaluate the performance of Indonesian ports since the ‘2008 Shipping Law’ using the mixed methods methodology which includes the indicator analysis approach, ‘Matching Framework’ and institutional analysis. The results from the indicator approach of the Port of Tanjung Priok and the Port of Tanjung Emas suggest that port performance has improved. However, the misalignment in ‘fit’ suggests that further changes need to take place in the internal environment of institutions in Indonesia. Path dependence provides an explanation as to why it can be challenging to achieve the desired results of port reform (Notteboom et al. 2014). Also, protectionist policies applied by the Indonesian government are a reflection of the need to hold onto their deep, rooted culture. De Langen (2017) argue that further action is required to remove government control that restricts the port to operate as a commercialised entity. This includes allowing port authorities to operate autonomously and
obtain funding from the private sector through PPPs. Araidno et al. (2014) argued that the port reform process can be long and difficult. It needs further clarity and support from institutions, regulations and planning documents. This will prevent investors from being faced with a policy vacuum with no clarity on processes, approvals and permit and provide a more certain environment. There is also a need to develop a new growth strategy with less reliance on non-resource exports. For this, Indonesia needs to boost its level of investment in infrastructure, productivity and cut red tape that are reducing economic efficiency and investment.

The ‘Matching Framework’ has been developed with insights from Mintzberg (1985), Porter (1980) and Burns and Stalker (1962) on strategic management and organizational theory. The variables structure, strategy and environment were evaluated to assess the fit and alignment of the Indonesian port sector post reform. The results suggest that there still is a misalignment in fit between the environment and strategy against the structure of the ports post reform. Therefore, an organic structure can improve port performance by allowing more flexibility for ports to response and adjust to their uncertain environment. The Indonesian government can also play a further role by creating a more stable economic and political environment that is more conducive to foreign investment.

Indonesia also needs to make significant changes to reduce its level of regulation and corruption and create a more transparent environment to encourage competition and private sector participation within the maritime sector. Competition law and policy have played a substantial role in underpinning Indonesia's economic achievements since 1999. However, the government has been accepting only a small proportion of the KPPU’s recommendations which minimise anti-competitive impacts in proposed legislation. Although the government had
consulted the private sector prior to drafting ‘Indonesia’s Investment Negative list’, foreign investment is still limited in the port sector to 49 per cent (OECD 2012a).

Although the new shipping law promised to be simpler and have a better regulatory structure, it is still entrenched in the principles of cabotage and regulatory controls over routes and tariffs. The constant swing of the pendulum from a highly regulated to a deregulated maritime sector is a reflection of the conflict between protectionism and economic development within Indonesia (Dick 2008; De Grauwe 2017). Therefore, although the government is committed to increasing trade, further liberalization is required in the maritime sector to upgrade infrastructure and drive efficiency and competitiveness within the Indonesian economy. Although the ‘2008 Shipping Law’ reflected elements of efficiency and competitiveness, path dependence means that reform is heavily overweighed by defense, strategic and nationalistic concerns. Therefore, it can be observed that external circumstances such as weaker economic growth and political leadership are really the key drivers behind driving port reform rather than the introduction of a new law that has elements of creating a more competitive port sector but still has some elements of protectionism. Broader institutional reform needs to take place for the ‘2008 Shipping Law’ to be effective in its implementation.
Chapter 7: Conclusion

7.1 Introduction

As an archipelago of 17,500 islands, maritime connectivity plays a critical role in Indonesia’s trade and economic growth. The maritime sector’s contribution to the Indonesian economy is nearly US $1.2 trillion (Saha 2016). Intensifying competition for transhipment cargo in the Southeast Asia region has led to more pressure on Indonesia to further invest in its maritime infrastructure to remain competitive. A more competitive and efficient port sector can assist in Indonesia’s transition from a middle income to higher income country, through greater trade flows. At the same time, it can also help distribute the gains from economic growth equally among its islands to improve the livelihood of the Indonesian people. However, good logistics systems reform requires investment in infrastructure, cooperation between the relevant government agencies and reductions in regulations that impede logistics reform (Sandee et al. 2016).

This thesis sets out to evaluate the port reform process in Indonesia to determine if the ‘2008 Shipping Law’ improved port performance. The aim of the Shipping Law was to provide a separation between the operator and regulator roles to increase competition and private sector participation in Indonesian ports. The intent of the reform was for the Indonesian port governance model to transition towards a ‘landlord model’. The aim of this concluding chapter are three fold. Firstly, this chapter aims to answer the research questions posed at the beginning of the thesis. Secondly, it intends to summarise the findings from the previous chapters. Thirdly, it proposes to use these findings to suggest further policy reforms to ensure that
Indonesia’s port sector operates more efficiently and also to identify the scope for further research.

7.2 Summary

To summarise, Chapter 2 provided an overview of the role of institutional reform in port governance and analysed how ports can be viewed as institutions that have deeply rooted cultures. Hence, this can influence the outcome of the reform process and the port governance model. The chapter also discussed the various port governance models including the public sector model, a hybrid model which involves both the private and public sector and the private sector model. The discussion led to the complexities of port operations and ownership which makes it difficult for ports to fit into a particular category. The literature review further discussed the ongoing debate on private versus public sector ownership and the advantages and disadvantages of these ownership models. The empirical evidence suggest that many ports tend to adopt a landlord or hybrid port model with some element of devolution to the private sector. However, the empirical evidence was inconclusive in suggesting if there was a perfect model for port governance. The literature review revealed a gap on port governance studies in Indonesia which provided an impetus for the research in this thesis.

Chapter 3 provided an overview of the Indonesian economy and its port governance framework. This chapter set the background for understanding Indonesia’s history and macroeconomic environment. It provided an in depth understanding of Indonesia’s progress as a nation after the departure of the Dutch and its economic development as a young, democratic nation. Since its independence, the nation has witnessed policy making shift between inward
and outward oriented policies towards foreign investment. Towards the end of the 20th century, President Suharto’s rule came to an end with the Asian Financial Crisis. Laws supporting fiscal decentralisation were announced shortly after to ensure provinces received their share of revenues. A kaleidoscope of economic plans, such as the ‘MP3EI’ and the ‘RPMJN’, have been developed to assist the transformation of Indonesia from a middle income to a high income country. Despite these plans, regulatory issues, a lack of infrastructure investment, corruption and co-ordination between the different level of governments are challenges preventing the nation from making the transition to a higher income country. Although these plans have discussed the importance of the maritime sector to the Indonesian economy, it was President Jokowi who further implemented this agenda.

Chapter 4 examined Indonesia’s logistics and port governance structure. Various benchmarking studies showed that although Indonesia’s ports had made modest progress, its logistics costs were significantly higher and its port performance fell behind neighbouring Southeast Asian economies. The chapter also tabled the evolution of Indonesia’s port governance from the 1960s and how the ports in Indonesia fall under government ownership of the four Pelindos. In 2008, the government introduced the ‘2008 Shipping Law’ to remove the legislated monopoly from the Pelindos to encourage competition and efficiency within the port sector. These reforms were evaluated using case studies of the Port of Tanjung Priok in Jakarta and the Port of Tanjung Emas in Semarang using a mixed methods approach in Chapter 5 and 6.

Chapter 5 examined the various methodologies that have been used to assess port performance and their strength and weaknesses. The chapter then discussed further the three methodologies
used in the thesis which included the indicator approach, ‘Matching Framework’ and institutional analysis. The aim of using this multi method approach was to allow for a broader analysis of the port reform process and for one method to complement the weakness of the other. The indicator approach discussed the various operational and financial indicators to evaluate port performance such as dwell time, port labour, container throughput, net operating profit and financial ratios. The ‘Matching Framework’ approach was suitable for evaluating port reform because the port governance model had features of ‘strategy’, ‘structure’ and ‘environment’. This allowed the ‘Matching Framework’ to be applied to assess the new governance structure against the ideal ‘fit’. The last approach used is the institutional analysis. This approach aims to analyse if ‘institutional lock-in’ has hampered the port reform process or have new trajectories or alternative pathways developed.

The discussion in Chapter 6 summarised the results of this thesis by examining the application of the three methodologies to the case study ports of Tanjung Priok and Tanjung Emas. The results from the indicator approach show that both ports had made improvements in operation and productivity from 2012 to 2016. In Tanjung Priok, these improvements were seen with a decrease in dwell time, increased container throughput and financial performance. Major investments are also being made for the new Kalibaru Terminal. At the same time, dwell time has fallen to approximately 3.5 days at Tanjung Priok in 2016 from 17 days in 2008. In the case of Tanjung Emas, profitability and container throughput has increased significantly. The data also suggests that there have also been modest improvements in productivity. This is largely attributed to the investment in infrastructure and technology such as automated gantry cranes within the container terminal. However, one limitation of this approach was the unavailability of publicly available time series databases that could encapsulate broader productivity indicators to better assess port performance.
The results from the ‘Matching Framework’ analysis indicate that there is a misalignment amongst the structure against the environment and strategy. Therefore, to have the right ‘fit’, the structure of ports could become more organic to adapt to its medium level environmental uncertainty to see further improvements in port performance. The Indonesian government needs to provide a more certain environment towards foreign investment. Lastly, the path dependency methodology provides an explanation of the internal environment of the Indonesian ports and help explain the slow process of reform. The main reason is the level of institutional lock-in present, especially at the Port of Tanjung Priok. Therefore, the management style of the ports still bears resemblance to past institutions such as the ‘Dutch Colonisation’ and ‘Suharto era’ that have locked in the trajectory of the ports, with little commercial autonomy despite wanting to transition towards a ‘landlord’ model. This also explains why competition has not been very evident among ports in Indonesia with all ports controlled by one authority, the IPC. However, with users demanding efficiency in operations and with more competition from neighbouring ports, both case study ports have displayed some levels of stretching with the Port of Tanjung Emas displaying more innovation and flexibility compared with the Port of Tanjung Priok.

In conclusion, the results from the research indicate that port performance at both the port of Tanjung Priok and Tanjung Emas has improved since 2008 based on the financial and operational indicators that were analysed. However, it is important to draw a caution as it can be challenging to identify whether some of the indicators discussed improved due to increased demand or as a result of the ‘2008 Shipping Law’. The results from the ‘matching framework’ analysis suggest that structure of the ports need to shift towards becoming more ‘organic’ rather than ‘mechanistic’ for a better ‘fit’. Most importantly, port reform is not a ‘one off’ event and it can take a series of reforms to reach a desired outcome.
7.3 Research Findings

This thesis aimed to contribute to the literature by evaluating port reform in Indonesia since the passing of the ‘2008 Shipping Law’ as there has been limited research undertaken on port governance reform in Indonesia. The aim of this thesis was to answer the three research questions posed in Chapter 1 on Indonesia’s port reform which are listed below.

Research Questions

1. Did the change in the ‘2008 Shipping Law’ result in the implementation of a ‘landlord’ port governance structure? If so, did this new governance structure result in improved port performance?

2. Did ‘institutional lock-in’ play a role in determining the trajectory of port reform in Indonesia or have other alternative pathways developed?

3. Is the ‘Matching Framework’ a useful evaluation tool for evaluating port reform in Indonesia?

The first research question was whether port reform in Indonesia resulted in the implementation of a ‘landlord’ model which resulted in improved port performance. This was assessed using an indicator approach, matching framework and institutional analysis to assess the case study ports of Tanjung Priok and Tanjung Emas. The analysis in Chapter 6 suggested that the case study ports had made significant improvements on dwell time, cargo throughput, productivity and profitability. Tanjung Priok has already been investing in further capacity for its ‘New Priok Project’ to attract larger vessels and reduce logistics costs. Similarly, Tanjung Emas began modernising its infrastructure through using automation, building connections with its hinterland and considering the development of a ‘green’ terminal. Both operational and financial indicators have shown signs of improved port performance. However, the results
suggest that there has not been a complete transition to the ‘landlord’ model. The infrastructure
deficit in ports requires funding from the private sector and cannot be funded by the SOEs alone. The Indonesian government also needs to provide certainty and the appropriate investment climate to attract funding and allow the ports to operate as commercial entities to realised their full potential and be able to obtain private sector funding independently. More competition should also be allowed for stevedoring services.

Pilcher and Tseng (2017) argue that the methodology applied in evaluating port performance is largely dependent on the availability of data. In Indonesia, there is no reliable international database or national agency collecting specific information on indicators such as port labour and operational productivity. Indonesian port authorities also have concerns of releasing this information publicly due to benchmarking done against other ports. Therefore, the weakness in the indicator approach is a lack of public data to assess better productivity and operational indicators to measure performance. Bichou (2006) argues that measuring port performance is difficult due to the complexity of interactions of port missions, institutions and functions. This raises the question of whose perspective (regulator, operator or customer) one has to consider when undertaking performance benchmarking. Although the indicator approach showed an overall improvement, it was difficult to attribute these improvements simply to the ‘2008 Shipping Law’ or whether it was due to greater competition. Likewise, the financial indicator approach also did see profitability and other financial ratios fall and rise over this timeframe, especially for the Port of Tanjung Priok. The fall in profitability was due mostly to slower economic conditions and investment for the expansion of the new ‘Kalibaru Terminal’.
The second question was what role does ‘institutional plasticity’ or ‘lock in’ play in determining the trajectory for port reform in Indonesia and have other alternative pathways emerged? The results suggest that path dependency and the legacy of colonisation have played a critical role in explaining the trajectory of port reform in Indonesia. The manner in which Indonesian ports operate have a strong path dependence that follows from the Dutch colonisation. This has placed limits on the reform process with elements of protectionism, restrictions on private sector investment and an uncertain investment environment. Therefore, for Indonesia to make further progress, it needs to fully release itself from the mindset inherited from the colonial period to fully embrace competition in order to transition from a middle to a high income country (Negara and Wihardja 2015; Hill 2018).

Although port performance has improved, remnants of path dependence still remain in port institutions. The Port of Tanjung Emas has demonstrated signs of path leadership and innovation by leading in technological investment to attract shipping lines, despite its size and location and transitioning from a feeder to an international port. The port has demonstrated a ‘path leadership’ role due to it having lesser institutional lock-in compared with the leading port of the nation, the Port of Tanjung Priok. Although the remnants of path dependence have placed limits on the outcome of port reform, new trajectories can be seen to have emerged at the case study ports that have resulted in improved port performance from 2012 to 2016. As port reform can take many years, the results could suggest that this is a transitional stage. Port reform may not always achieve the intended outcome because of deliberate policy choices and vested interests of elite groups (Hadiz 2003). In the context of Indonesia, this can be seen over the various periods, especially over the rule of President Suharto (Hadiz 2003; Hadiz and Robinson 2004). Therefore, the challenge for port reform then is how do policy changes occur and how is power balanced between the elites.
The third question was whether the ‘Matching Framework’ is a useful evaluation tool for evaluating port reform in Indonesia? The ‘Matching Framework’ methodology was useful in evaluating the progress of port reform across the busiest port in Indonesia and a smaller port respectively. The strength in this framework is that it enabled an assessment of the new governance model by assessing key factors which are environment, strategy and structure to determine if the governance model is the right fit to successfully implement port reform. These variables play a critical role in evaluation, especially in complex environments such as the port industry which operates with varying stakeholders and private and public ownership. The results from applying the ‘Matching Framework’ in Indonesia from the timeframe of before 2008 and after reform (2012 to 2016) suggest that there is a mismatch or a ‘poor fit’ in Indonesia’s port governance structure between the ‘structure’ and ‘environment’. Although the level of uncertainty in the policy marking environment has decreased from ‘high’ to ‘medium’, an organic structure is necessary to improve the competitiveness of the case study ports. Also, more competition is needed in the strategy between ports, together with increased foreign investment.

Researchers such as Balthazar and Brooks (2001) and Wilmsmeier and Sanchez (2017) have argued about the rigidity in the categories presented in the ‘Matching Framework’. One of the weaknesses identified with this framework when examining Indonesian ports is the rigidity in the categories of environment to ‘high’ and ‘low’. The author introduced a ‘medium’ category to better reflect the change in uncertainty in the environment as ‘high’ and ‘low’ were too rigid to fit the case of Indonesia. In the case of the Indonesian ports, differentiating the strategy of the two case study ports was a challenge because the case study ports follow the national strategy of the government and there was not a huge differentiation in strategy between the two ports.
The evaluation of port reform in Indonesia was undertaken to fill a gap in the literature as limited research has been undertaken on the port governance and reform process in Indonesia. The results from evaluating port reform in Indonesia do bear some resemblance to other countries that have embarked on port reform. Brooks et al. (2017) highlights that outcome of port reform has varied in various countries and has not always delivered the full benefit. This was due to complexity in the reform process, unsuccessful implementation, transition times and flaws in decision making. In Indonesia’s case, the aim was to transition its governance structure from a public to a landlord model to improve competition and efficiency. The results suggest that this full transition has not taken place but measures have been taken by government to reduce logistic costs and upgrade infrastructure at the case study ports.

Many other ports such as the the Port of Singapore Authority (Tongzon 2008) and the Port of Rotterdam (De Langen and Van der Lugt 2017) have benefited from the landlord model which gave more flexibility to manage ports in a competitive environment. In the case of the Port of Rotterdam, the ownership is by local government whereas in Singapore it is by the national government. The results from ports that have been privatised has been mixed with ports such as Port Klang in Malaysia (Tull and Reveley 2002; Ghashat et al. 2011) having a successful outcome and while privatisation of ports in the UK (Monios 2017; Baird 2013) and Sweden have achieved limited success (Bergqvist and Cullinane 2017). The results from the Chilean port reform suggest that the results have not been completely satisfactory from a national government perspective (Wilmsmeier and Sanchez 2017).
The case of Indonesia’s port governance shows that there is still a significant level of government ownership and concern that privatisation will result in a loss in government control which is seen as a risk to national sovereignty. This was seen in the case of the ‘Negative Investment List’ that limited the share of port investment at 49 per cent. Limiting foreign investment in port reform could slow down the much needed investment in infrastructure. Malaysia’s port privatisation experience could be a model for Indonesia to emulate to further improve its port performance. The Malaysian government decided to change the port’s governance structure to improve its commercial and operational efficiency due to the competition it was facing in the port sector (Tull and Reveley 2002; Ghashat et al. 2011). This allowed foreign investment and changed the structure from a mechanistic into a more organic structure that allowed flexibility and decentralisation. This better ‘fit’ improved Malaysia’s port competitiveness and enhanced the port’s ability to compete for cargo from Singapore (Ghashat et al. 2011).

Other nations such as China (Notteboom and Yang 2017) and New Zealand (Pyvis and Tull) have also seen gains in port performance through privatisation. Chen et al. (2017) argues that port privatisation in Australia’s major capital cities has been part of the government’s asset recycling project to fund other infrastructure and reduce debt. However, the sale of the Port of Darwin to Landbrige, owned by Chinese billionaire Ye Cheng for 99 years, has raised concerns of national sovereignty because Darwin plays host to major Navy and multinational exercises and is the centre from which the Navy conducts border integrity operations. The ports of Brisbane, Sydney and the Port of Newcastle have no price regulation nor a formal independent statutory regulator (Chen et al. 2017). Ports in New South Wales (NSW) need to provide advance notice of any propose change to port charges. Contrarily, ports in Western Australia have been successfully operating under a commercialised governance model since 1999 (Tull
and Affleck 2007). Therefore, Indonesia could also adopt a gradual approach to privatisation of services such as stevedoring as it transitions towards the ‘landlord’ model.

The literature does suggest that the timeframe of port reform varies across countries. Indonesian ports were given three years from 2008 to 2011 to adapt to the new structure. The evaluation in this thesis has only been over a five year period from 2012 to 2016. During this period of time, there has been significant investment in infrastructure made at the New Priok terminal and the Port of Tanjung Emas to reduce logistics costs. More time would be required to see the full effects of port reform in Indonesia because institutions take time to change. Some countries such as France took three years to implement their port reform while Brazil took twenty years as this process was disrupted by conflicts and lengthy negotiations. In Greece, port reform has been slow while there have not been any substantive reforms in the United States over the last decade (Brooks et al. 2017). Therefore, more time may be needed to determine the benefits from these reforms.

7.5 Policy Recommendations

There are still aspects of the Indonesian governance system and political environment where further reform is necessary to reap the full benefits of port reform. Ideally, the economy needs to be less reliant on commodity boom cycles for growth opportunities and the government needs to undertake structural and microeconomic reform to improve productivity. This can play a critical role in achieving stronger economic growth, raising the standard of living and reducing the income gap and poverty in Indonesia and assist in Indonesia’s transition from a middle to high income country. There are three key policy recommendations arising from this
research which include institutional reform, further reform on port governance and greater private sector participation.

Firstly, on-going reform is required to facilitate the transition in Indonesia from a middle to high income country. As discussed by Hadiz and Robinson (2004) and Thee (2013), Indonesia needs to break away from the inherited authoritarian path dependence approach within its institutions where old institutional forces continue to persist through interested oligarchs and rent seeking individuals. Instead, it needs to embrace policies that consistently pursue competition rather than switch between regulation and deregulation policies. There is also a need to improve efficiency through removing public sector monopolies and increasing competition in the private sector (Ray 2014). Improved policy coordination between the various levels of government is required to further reduce bureaucracy and red tape. This includes further deregulation, measures to target corruption, increasing competition and improved coordination between Pelindos and the various government agencies such as the Ministry of Transport, Fisheries and Maritime Affairs (PWC 2016). Although efforts have been made to reduce corruption, it still continues to pose a challenge for businesses.

Secondly, the port governance framework could undergo further reform. The recent case of renewal of concession agreements between Pelindo II and HPH for example, have sent out mixed signals to international terminal operators. Although the ‘2008 Shipping Law’ has legislated Pelindo’s to be operators, it has still not been fully implemented in practice. International Terminal Operators can and have played a significant role by investing and operating port infrastructure that has resulted in improved port performance. Therefore, measures need to be put in place to encourage further private sector involvement and
investment. Pilcher & Tseng (2017) argue that port governance evaluation should be built into legislation for port reform. However, this may not always be the best method to evaluate port reform, especially if industry or government practice does not follow the legislation.

Although cabotage rules are practiced in many nations, they work against the outcome of increasing competition. China’s BRI can play a critical role with infrastructure funding to develop its ‘Sea Toll Road’ which can reduce the price disparity of commodities across the archipelago. De Langen (2017) argues that further action is required to remove government control that prevents the ports from operating as commercialised entities. This includes allowing port authorities to operate independently in setting tariffs with customers and obtaining funding from the private sector. Although Indonesian port companies have boards, many of these appointments are from political connections who are civil servants without private sector experience (De Langen 2017).

Lastly, the Indonesian government needs to create a good balance between State intervention and market involvement (De Grauwe 2017). There needs to be greater private sector participation in ports and infrastructure and the removal of monopolies in the public and private sector to increase competition (Ray 2014). The growing need and competitive pressures to provide modern ports with sophisticated cargo-handling facilities with terminal management and security systems has substantially increased capital and technical requirements of ports in recent years. This can be accomplished with greater collaboration between the private and public sector (UNCTAD 2017). In Indonesian ports, this can take place with greater private sector competition through a gradual removal of the foreign investment cap at 49 per cent. Many other nations such as China, New Zealand and Malaysia have seen gains in port
performance through adopting such measures (Notteboom and Yang 2017; Pyvis and Tull 2017; Ghashat et al. 2011).

SOEs should not be used as vehicles to ‘crowd out’ private sector investment or given preferential financing. Instead, the Indonesian government should encourage the use of PPPs as a first, rather than a last method of infrastructure funding. Successful PPPs should have a well-designed contract that clearly lists the distribution of roles and activities, the sharing of risk between both the public and private sector, legal and regulatory systems that are enforceable and an institutional framework to manage the process (UNCTAD 2017). Without private sector funding, it will be difficult to fund the infrastructure deficit in the ports sector with falling budget revenues from slower commodities growth. Therefore, government needs to be cautious of its intervention in the market economy as this could undermine the market’s success (De Grauwe 2017).

7.6 Further Research

Although it can be difficult to evaluate port reform in its early stages, this evaluation serves as an ongoing feedback mechanism to government as to how the reform can be improved further and the intended result of the reform process can be obtained. Therefore, as challenging as it is, it is necessary to frame the questions around evaluating port reform carefully to allow for a better assessment of the impact of port governance reform. In the case of Indonesia, data limitations made this process more challenging but nevertheless this research was able to analyse the progress made on port reform.
Avenues of further research for port performance in Indonesia could include an extension of this analysis to include stakeholder surveys from port users to assess the effectiveness of this reform (Vaggelas et al. 2017; Brooks 2007). This includes extending this case study approach to other ports outside the island of Java, including bulk ports. Ports in Sumatra and East Indonesia could also be included to provide a more comprehensive outlook of the reform process. The focus of further research could also shift towards inter island connectivity to assess the progress of the ‘sea toll road’ programme implemented by President Jokowi and the role it will play in China’s BRI.

For an archipelago nation such as Indonesia, there is also scope to undertake further research on adopting multi-dimensional measures of port performance in Indonesia to benchmark ports within Indonesia. This could be a longer term project which bears similarity to the ‘PORTOPIA’ project in Europe that benchmarks port performance across a range of indicators. These include market trends and structure, socio economic indicators, environmental and occupational health, safety and security indicators, logistics chain and operational performance indicators, governance indicators and user perception on port quality indicators. This will help enhance the competitiveness of the Indonesian port industry.

The possibility of greater consolidations amongst alliances could see vessel size increase to 30,000 or even 50,000 TEUs by 2067 (McKinsey and Company report 2017). These containers would be lifted not by quay cranes but giant gantry cranes for larger ships. The size of containers carried by trucks on land could also increase from 53 feet to taller and wider 60 feet containers. Self driving trucks, automated operations and digital customs clearance are expected to improve productivity at ports. However, this digital transformation of the maritime
industry will result in unemployment in labour intensive jobs such as dock workers but could also create knowledge based jobs in the maritime sector in data analytics, robotics and artificial intelligence. Therefore, further research could measure the impact of digitalisation on the future of the maritime labour force in Indonesia and identify policy measures government and industry can adopt to retrain and upskill their port labour force.

In conclusion, as global trade in the container market continues to evolve, ports have to constantly upgrade their infrastructure, logistics and connections to the hinterland to keep ahead of their competitors. As Southeast Asia’s largest economy, there is enormous potential and pressure for Indonesia to further improve the performance of its ports, boost economic growth and maritime connectivity. This will assist with the transition of Indonesia from a middle to high income country. For this to happen, it needs the right balance of political willpower and foreign investment.
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### Appendices

#### Appendix 1: Public Private Partnership Project Plan in Indonesia

The table below shows the summary of PPP Project Plan in Indonesia for 2017.

<table>
<thead>
<tr>
<th>Project Readiness</th>
<th>Sector</th>
<th>Project Name</th>
<th>Estimated Project Cost (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready to Offer</td>
<td>Sanitation/Water Supply</td>
<td>Bandar Lampung Water Supply</td>
<td>81.48</td>
</tr>
<tr>
<td></td>
<td><strong>Transportation</strong></td>
<td></td>
<td><strong>5996.97</strong></td>
</tr>
<tr>
<td></td>
<td>Sea Transportation</td>
<td>Development of Kabil Port (Tanjung Sauh Terminal) Batam</td>
<td>729.00</td>
</tr>
<tr>
<td></td>
<td>Sea Transportation</td>
<td>Development of Kuala Tanjung International Hub Port, North Sumatra</td>
<td>3.67</td>
</tr>
<tr>
<td></td>
<td>Sea Transportation</td>
<td>Development of Bitung International Hub Port, Bitung North Sulawesi</td>
<td>532.00</td>
</tr>
<tr>
<td></td>
<td>Sea Transportation</td>
<td>Development of Makassar New Port, South Sulawesi</td>
<td>416.00</td>
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<tr>
<td></td>
<td>Sea Transportation</td>
<td>Development of Patimban Port, West Java</td>
<td>3203.00</td>
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<tr>
<td></td>
<td>Railway</td>
<td>Batam Island Railway Project, Riau Islands</td>
<td>635.00</td>
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<tr>
<td></td>
<td>Railway</td>
<td>Urban Railway City of Medan, North Sumatra</td>
<td>477.40</td>
</tr>
<tr>
<td></td>
<td><strong>Toll Road and Toll Bridge</strong></td>
<td></td>
<td><strong>1601.00</strong></td>
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<tr>
<td></td>
<td>Toll Road</td>
<td>Sukabumi – Ciranjang Toll Road</td>
<td>103.00</td>
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<tr>
<td></td>
<td>Toll Road</td>
<td>The 2nd Jakarta – Cikampek Toll Road</td>
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<td></td>
<td>Toll Road</td>
<td>Tanjung Priok Access Toll Road</td>
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<td>Toll Road</td>
<td>Yogyakarta – Solo Toll Road</td>
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<td></td>
<td>Toll Road</td>
<td>Yogyakarta – Bawen Toll Road</td>
<td>270.00</td>
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<td></td>
<td><strong>Solid Water and Sanitation</strong></td>
<td></td>
<td><strong>121.23</strong></td>
</tr>
<tr>
<td></td>
<td>Waste Disposal</td>
<td>Final Waste Disposal Site (TPPAS) Legok Nangka</td>
<td>43.73</td>
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<tr>
<td></td>
<td>Water Supply</td>
<td>Pendok Gede Water Supply, Bekasi, West Java</td>
<td>25.00</td>
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<td></td>
<td>Water Supply</td>
<td>Pekanbaru Water Supply, Riau</td>
<td>35.50</td>
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<td></td>
<td>Water Treatment Plan</td>
<td>Sindang Heula Water Treatment Plant</td>
<td>17.00</td>
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<td></td>
<td><strong>Telecommunications and Informatics</strong></td>
<td></td>
<td><strong>318.00</strong></td>
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<td></td>
<td>Satellite</td>
<td>Government Multi Functions Satellite</td>
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<td></td>
<td><strong>Social</strong></td>
<td></td>
<td><strong>276.10</strong></td>
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<td></td>
<td>Correctional Institution</td>
<td>Nusakambangan Correctional Institution</td>
<td>51.50</td>
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<td></td>
<td>Sport</td>
<td>Sport Facility Papua</td>
<td>38.90</td>
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<tr>
<td></td>
<td>Teaching Hospital</td>
<td>Sam Ratulangi Teaching Hospital, North Sulawesi</td>
<td>28.70</td>
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<td></td>
<td>Street Lighting</td>
<td>Bandung Street Lighting, West Java</td>
<td>157.00</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>8393.88</strong></td>
</tr>
</tbody>
</table>

Source: Bappenes 2017 (p.26)
## Appendix 2: Negative Investment List for Port Investment

### J. Transportation Sector

<table>
<thead>
<tr>
<th>No.</th>
<th>Business Field</th>
<th>KBLI</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>Land-Based General Freight Transportation</td>
<td>49431</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>245</td>
<td>Land-Based Special Freight Transportation</td>
<td>49432</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>246</td>
<td>Land-Based Passenger Transportation on Scheduled Routes (Intercity and Intercity Transportation)</td>
<td>49211 49414 49213 49214 49215</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>247</td>
<td>Land-Based Passenger Transportation Not on Scheduled Routes (Taxi, Tourism Transportation, Specific Destination Transportation, Specific Area Transportation)</td>
<td>49421 49221</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>248</td>
<td>Domestic Sea Transportation</td>
<td>5011 5013</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>249</td>
<td>International Sea Transportation</td>
<td>5012 5014</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Business Field</th>
<th>KBLI</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>International Sea Transportation for Passenger (not including cabotage) (CPC 7211)</td>
<td>50121 50122 50123</td>
<td>Maximum 70% for capital investors from ASEAN investors</td>
</tr>
<tr>
<td>251</td>
<td>International Sea Transport for Goods (not including cabotage) (CPC 7212)</td>
<td>50141 50142 50143</td>
<td>Maximum 70% for capital investors from ASEAN investors</td>
</tr>
<tr>
<td>252</td>
<td>Intercity General Inland Water Transportation</td>
<td>50214</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>253</td>
<td>Intercity Pioneering Inland Water Transportation</td>
<td>50215</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>254</td>
<td>Inter-District/Intercity General Inland Water Transportation</td>
<td>50216</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>255</td>
<td>Inter-district/Intercity Pioneering Inland Water Transportation</td>
<td>50217</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>256</td>
<td>Intra-district/Intra-city General Inland Water Transportation</td>
<td>50218</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>257</td>
<td>River and Lake Transportation for Passenger with Fixed and Scheduled Routes</td>
<td>50211</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>258</td>
<td>River and Lake Transportation for Passenger with Non-Fixed and Non-Scheduled Routes</td>
<td>50212</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>259</td>
<td>River and Lake Transportation for Tourism with Non-Fixed and Non-Scheduled Routes</td>
<td>50213</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
<tr>
<td>260</td>
<td>River and Lake Transportation for General Freight and/or Animal</td>
<td>50221</td>
<td>Maximum Foreign Capital Investment 49%</td>
</tr>
</tbody>
</table>

*Source: Presidential Regulation 4/2016 (pp. 56 to 57)*
Appendix 3: Chapter VII of Law no. 17 of 2008 about Shipping

BAB VII
KEPELABUHANAN

CHAPTER VII
Port

Bagian Kesatu
Tatanan Kepelabuhanan Nasional

Part One
Order of the National Ports

Paragraf 1
Umun

Paragraph 1
General

Pasal 67
(1) Tatanan Kepelabuhanan Nasional diwujudkan dalam rangka penyelenggaraan pelabuhan yang andal dan berkemampuan tinggi, menjamin efisiensi, dan mempunyai daya saing global untuk menunjang pembangunan nasional dan daerah yang ber-Wawasan Nusantara.

(1) Order of the National Ports realized in the framework of the implementation of port reliable and highly capable, ensure efficiency, and has global competitiveness to support the development of national and regional air-Archipelago.

(2) Tatanan Kepelabuhanan Nasional sebagaimana dimaksud pada ayat (1) merupakah sistem kepelabuhanan secara nasional yang menggantubarkan perencanaan kepelabuhanan berdasarkan kawasan ekonomi, geografi, dan keuugkan komparatif wilayah, serta kondisi alam.

(2) National Ports Order referred to in paragraph (1) is a national port system that describes the planning of port based economic area, geography, and the comparative advantage of the region, as well as natural conditions.

(3) Tatanan Kepelabuhanan Nasional sebagaimana dimaksud pada ayat (1) memuat:

a. peran, fungsi, jenis, dan hierarki pelabuhan;

b. Rencana Induk Pelabuhan Nasional, dan

c. lokasi pelabuhan.

(3) Order of the National Ports referred to in paragraph (1) shall contain:

a. roles, functions, types, and port hierarchy;

b. National Ports Master Plan; and

c. port location.

Source: www.indolaw.org
Paragraf 2
Peran, Fungsi, Jenis, dan Hierarki Pelabuhan

Pasal 68
Pelabuhan memiliki peran sebagai:
- a. simpul dalam jaringan transportasi sesuai dengan hierarkinya;
- b. pintu gerbang kegiatan perekonomian;
- c. tempat kegiatan alih moda transportasi;
- d. penunjang kegiatan industri dan/atau perdagangan;
- e. tempat distribusi, produksi, dan konsolidasi muatan atau barang; dan
- f. mewujudkan Wawasan Nusantara dan kedaulatan negara.

Pasal 69
Pelabuhan berfungsi sebagai tempat kegiatan:
- a. pemerintahan; dan
- b. pengusahaan.

Pasal 70
(1) Jenis pelabuhan terdiri atas:
- a. pelabuhan laut; dan
- b. pelabuhan sungai dan danau.

(2) Pelabuhan laut sebagaimana dimaksud pada ayat (1) huruf a mempunyai hierarki terdiri atas:
- a. pelabuhan utama;
- b. pelabuhan pengumpul; dan
- c. pelabuhan pengumpan.

Paragraf 3
Rencana Induk Pelabuhan Nasional

Pasal 71
(1) Rencana Induk Pelabuhan Nasional sebagaimana

Paragraph 2
The role, function, type, and Hierarchy Ports

Article 68
The port has a role as:
- a. node in the transport network in accordance with the hierarchy;
- b. gates of economic activity;
- c. place over the activities of transport modes;
- d. supporting industrial activities and/or trade;
- e. place of distribution, production, and consolidation of cargo or goods; and
- f. realize Archipelago and sovereignty of the country.

Article 69
Serves as a port of activity:
- a. governance; and
- b. concession.

Article 70
(1) Type the port consists of:
- a. seaports; and
- b. river and lake ports.

(2) sea ports as referred to in paragraph (1) letter a has a hierarchy consists of:
- a. The main port;
- b. port collector; and
- c. feeder port.

Paragraph 3
National Ports Master Plan

Article 71
(1) National Ports Master Plan referred to in Article
dimaksud dalam Pasal 67 ayat (3) huruf b merupakan pedoman dalam penetapan lokasi, pembangunan, pengoperasian, pengembangan pelabuhan, dan penyusunan Rencana Induk Pelabuhan.

(2) Rencana Induk Pelabuhan Nasional disusun dengan memperhatikan:

a. Rencana Tata Ruang Wilayah Nasional, Rencana Tata Ruang Wilayah Provinsi, Rencana Tata Ruang Wilayah Kabupaten/Kota;

b. potensi dan perkembangan sosial ekonomi wilayah;

c. potensi sumber daya alam; dan

d. perkembangan lingkungan strategis, baik nasional maupun internasional.

(3) Rencana Induk Pelabuhan Nasional menutup:

a. kebijakan pelabuhan nasional; dan

b. rencana lokasi dan hierarki pelabuhan.

(4) Menteri menetapkan Rencana Induk Pelabuhan Nasional untuk jangka waktu 20 (dua puluh) tahun.

(5) Rencana Induk Pelabuhan Nasional sebagaimana dimaksud pada ayat (4) dapat ditinjau kembali 1 (satu) kali dalam 5 (lima) tahun.

(6) Dalam hal terjadi pembahuan kondisi lingkungan strategis akibat bencana yang ditetapkan dengan ketentuan peraturan perundangan-undangan Rencana Induk Pelabuhan Nasional dapat ditinjau kembali lebih dari 1 (satu) kali dalam 5 (lima) tahun.

Paragraf 4

Lokasi Pelabuhan

Pasal 72

(1) Penggunaan wilayah darat dan perairan tertentu sebagai lokasi pelabuhan ditetapkan oleh Menteri sesuai dengan Rencana Induk Pelabuhan Nasional.

(2) Lokasi pelabuhan sebagaimana dimaksud pada ayat (1) disertai dengan Rencana Induk Pelabuhan serta Daerah Lingkungan Kerja (DLK) dan Daerah Lingkungan Kepentingan (DLKP) pelabuhan.

Paragraf 4

Location Port

Article 72

(1) The use of certain land and water area as the location of the port specified by the Minister in accordance with the National Port Master Plan.

(2) Location port as referred to in paragraph (1) shall be accompanied by the Port Master Plan and the Regional Working Environment (DLK) and the Regional Environmental Interests (DLKP) port.
Pasal 73
(1) Setiap pelabuhan wajib memiliki Rencana Induk Pelabuhan.

(2) Rencana Induk Pelabuhan sebagaimana dimaksud pada ayat (1) disusun dengan memperhatikan:

a. Rencana Induk Pelabuhan Nasional;

b. Rencana Tata Ruang Wilayah Provinsi;

c. Rencana Tata Ruang Wilayah Kabupaten/Kota;

d. kesejahteraan dan keseimbangan dengan kegiatan lain terkait di lokasi pelabuhan;

e. kelayakan teknis, ekonomis, dan lingkungan; dan

f. keamanan dan keselamatan lalu lintas kapal.

Article 73
(1) Each port shall have the Port Master Plan.

(2) Port Master Plan referred to in paragraph (1) shall be prepared by taking into account:

a. National Ports Master Plan;

b. Provincial Spatial Plan;

c. Spatial Planning District / City;

d. harmony and balance with other related activities at the location of the port;

e. technical feasibility, economic, and environmental; and

f. security and safety of vessel traffic.

Pasal 74
(1) Rencana Induk Pelabuhan sebagaimana dimaksud dalam Pasal 73 ayat (1) meliputi rencana peruntukan wilayah daratan dan rencana peruntukan wilayah perairan.

(2) Rencana peruntukan wilayah daratan sebagaimana dimaksud pada ayat (1) berdasarkan pada kriteria kebutuhan:

a. fasilitas pokok; dan

b. fasilitas penunjang.

(3) Rencana peruntukan wilayah perairan sebagaimana dimaksud pada ayat (2) berdasarkan pada kriteria kebutuhan:

a. fasilitas pokok; dan

b. fasilitas penunjang.

Article 74
(1) Port Master Plan referred to in Article 73 paragraph (1) shall include a plan allotment of land and water use plan area.

(2) Plan designation of the land area as referred to in paragraph (1), based on the criteria of need:

a. basic facilities; and

b. supporting facilities.

(3) Plan designation of the waters referred to in paragraph (2), based on the criteria of need:

a. basic facilities; and

b. supporting facilities.

Pasal 75
(1) Rencana Induk Pelabuhan sebagaimana dimaksud dalam Pasal 73 ayat (1) dilengkapi dengan Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan.

(2) Batas Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan sebagaimana dimaksud pada ayat (1) ditetapkan dengan koordinat geografis untuk menjamin kegiatan kepelabuhanan.

Article 75
(1) Port Master Plan referred to in Article 73 paragraph (1) is equipped with the Regional Environment and Regional Environmental Working Interests harbor.

(2) The Work Environment Regional and Local Environment harbor interest referred to in paragraph (1) shall be determined by geographic coordinates to ensure seaport activities.
(3) Daerah Lingkungan Kerja pelabuhan, terdiri atas:

a. wilayah daratan yang digunakan untuk kegiatan fasilitas pokok dan fasilitas penunjang, dan

b. wilayah perairan yang digunakan untuk kegiatan alur-pelayaran, tempat labuh, tempat alih muat antarkapal, kolam pelabuhan untuk kebutuhan sandar dan oleh gerak kapal, kegiatan pemanduan, tempat perbaikan kapal, dan kegiatan lain sesuai dengan kebutuhan.

(4) Daerah Lingkungan Kepentingan pelabuhan merupakan perairan pelabuhan di luar Daerah Lingkungan Kerja perairan yang digunakan untuk alur-pelayaran dari dan ke pelabuhan, keperluan keadaan darurat, pengembangan pelabuhan jangka panjang, penempatan kapal mati, percobaan berlayar, kegiatan pemanduan, fasilitas pembangunan, dan pemeliharaan kapal.

(5) Daratan dan/atau perairan yang ditetapkan sebagai Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan sebagaimana dimaksud pada ayat (1) diatur oleh negara dan dihormati oleh penyelenggara pelabuhan.

(6) Pada Daerah Lingkungan Kerja pelabuhan yang telah ditetapkan, diberikan hak pengelolaan atas tanah dan/atau pemanfaatan perairan sesuai dengan ketentuan peraturan perundang-undangan.

Pasal 76

(1) Rencana Induk Pelabuhan serta Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan untuk pelabuhan laut ditetapkan oleh:

a. Menteri untuk pelabuhan utama dan pelabuhan pengumpul setelah mendapat rekomendasi dari gubernur dan bupati/walikota dalam kesesuaian dengan tata ruang wilayah provinsi dan kabupaten/kota; dan

b. gubernur atau bupati/walikota untuk pelabuhan pengumpul.

(2) Rencana Induk Pelabuhan serta Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan untuk pelabuhan sungai dan danau ditetapkan oleh bupati/walikota.

Pasal 77

Suatu wilayah tertentu di daratan atau di perairan

Article 76

(1) Port Master Plan and Regional Environmental Working Environment and Local Interests sea port to port specified by:

a. Minister for the main port and the port collector and the recommendation of the governor and regent / mayor will conformance with spatial provincial and district / city; and

b. governor or regent / mayor for feeder ports.

(2) Port Master Plan and Environmental Regional Occupational and Environmental Regional Interests port for river and lake ports specified by the regent / mayor.

A certain area on land or in water can be determined
dapat ditetapkan oleh Menteri menjadi lokasi yang berfungsi sebagai pelabuhan, sesuai dengan Rencana Tata Ruang Wilayah Provinsi dan Rencana Tata Ruang Wilayah Kabupaten/Kota serta memenuhi persyaratan kelayakan teknis dan lingkungan.

Pasal 78

Ketentuan lebih lanjut mengenai pedoman dan tata cara penetapan Rencana Induk Pelabuhan serta Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan diatur dengan Peraturan Pemerintah.

Bagian Kedua

Penyelenggaraan Kegiatan di Pelabuhan

Paragraf 1

Uumum

Pasal 79

Kegiatan pemerintahan dan pengusahaan di pelabuhan sebagaimana dimaksud dalam Pasal 69 diselenggarakan secara terpadu dan terkoordinasi.

Paragraf 2

Kegiatan Pemerintahan di Pelabuhan

Pasal 80

(1) Kegiatan pemerintahan di pelabuhan sebagaimana dimaksud dalam Pasal 79 meliputi:

a. pengaturan dan pembinaan, pengendalian, dan pengawasan kegiatan kepelabuhanan;

b. keselamatan dan keamanan pelayaran; dan/atau

c. kepabeanan;

d. keimigrasiian;

e. kekarantinaan.

(2) Selain kegiatan pemerintahan di pelabuhan sebagaimana dimaksud pada ayat (1) terdapat kegiatan pemerintahan lainnya yang keberadaannya bersifat tidak tetap.

(3) Pengaturan dan pembinaan, pengendalian, dan pengawasan kegiatan kepelabuhanan sebagaimana dimaksud pada ayat (1) huruf a dilaksanakan oleh

by the Minister to be the location that serves as a port, in accordance with the Provincial Spatial Planning and Spatial Planning District / City and meet the technical feasibility and environmental requirements.

Article 78

Further provisions regarding the guidelines and procedures for the determination of Port Master Plan and Regional Environmental Working Environment and Regional Interests port is regulated by the Government.

Part Two

Ports Organization

Paragraph 1

General

Article 79

Administration and exploitation activities in the port referred to in Article 69 held in an integrated and coordinated.

Paragraph 2

Government activities in the Port

Article 80

(1) The activities of government in the port referred to in Article 79 include:

a. regulation and guidance, control, and monitoring of port activities;

b. safety and security of shipping; and / or

c. customs;

d. immigration;

e. kekarantinaan.

(2) In addition to governmental activities in the port referred to in paragraph (1) there are other government activities whose existence is not fixed.

(3) The setting and guidance, control, and monitoring of port activities referred to in paragraph (1) letter a is carried out by the organizers of the
penyelenggara pelabuhan.

(4) Fungsi keselamatan dan keamanan pelayaran sebagaimana dimaksud pada ayat (1) huruf b dilaksanakan oleh Syahbandar.

(5) Fungsi kepabeanan, keimigrasian, dan kekantinian sebagaimana dimaksud pada ayat (1) huruf c, huruf d, dan huruf e dilaksanakan sesuai dengan peraturan perundang-undangan.

Paragraf 3
Penyelenggara Pelabuhan

Pasal 81

(1) Penyelenggara pelabuhan sebagaimana dimaksud dalam Pasal 80 ayat (3) yaitu terdiri atas:

a. Otoritas Pelabuhan; atau

b. Unit Penyelenggara Pelabuhan.

(2) Otoritas Pelabuhan sebagaimana dimaksud pada ayat (1) huruf a dibentuk pada pelabuhan yang diusahakan secara komersial.

(3) Unit Penyelenggara Pelabuhan sebagaimana dimaksud ayat (1) huruf b dibentuk pada pelabuhan yang belum diusahakan secara komersial.

(4) Unit Penyelenggara Pelabuhan sebagaimana dimaksud pada ayat (3) dapat merupakan Unit Penyelenggara Pelabuhan Pemerintah dan unit penyelenggara pelabuhan pemerintah daerah.

Paragraf 3
Organizers Ports

Article 81

(1) The port as referred to in Article 80 paragraph (3) which consists of:

a. Port Authority; or

b. Port Operator Units.

(2) Port Authority referred to in paragraph (1) letter a port formed in commercially cultivated.

(3) Port Operator Unit referred to in paragraph (1) letter b formed on the port that has not been commercially cultivated.

(4) Unit Operator Port as referred to in paragraph (3) may constitute the Port Operator Units Government and local government units port organizers.

Pasal 82

(1) Otoritas Pelabuhan sebagaimana dimaksud dalam Pasal 81 ayat (1) huruf a dibentuk oleh dan bertanggung jawab kepada Menteri.

(2) Unit Penyelenggara Pelabuhan sebagaimana dimaksud dalam Pasal 81 ayat (1) huruf b dibentuk dan bertanggung jawab kepada:

a. Menteri untuk Unit Penyelenggara Pelabuhan Pemerintah; dan

b. gubernur atau bupati/walikota untuk Unit Penyelenggara Pelabuhan pemerintah daerah.

(3) Otoritas Pelabuhan dan Unit Penyelenggara Pelabuhan sebagaimana dimaksud dalam Pasal 81

Article 82

(1) Port Authority as referred to in Article 81 paragraph (1) letter a is formed by and responsible to the Minister.

(2) Unit Operator Port as referred to in Article 81 paragraph (1) letter b is formed and is responsible to:

a. Minister for Unit Operator Port Government; and

b. governor or regent / mayor for the Port Operator Units of local government.

(3) the Port Authority and the Port Operator Unit referred to in Article 81 paragraph (1) is formed for 1
ayat (1) dibentuk untuk 1 (satu) atau beberapa pelabuhan.

(4) Otoritas Pelabuhan dan Unit Penyelenggara Pelabuhan sebagaimana dimaksud pada ayat (3) berperan sebagai wakil Pemerintah untuk memberikan konsesi atau bentuk lainnya kepada Badan Usaha Pelabuhan untuk melakukan kegiatan pengusahaan di pelabuhan yang dituangkan dalam perjanjian.

(5) Hasil konsesi yang diperoleh Otoritas Pelabuhan sebagaimana dimaksud pada ayat (4) merupakan pendapatan negara sesuai dengan ketentuan peraturan perundang-undangan.

(6) Otoritas Pelabuhan sebagaimana dimaksud dalam Pasal 81 ayat (1) huruf a dalam pelaksanaannya harus berkoordinasi dengan pemerintah daerah.

Pasal 83

(1) Untuk melaksanakan fungsi pengaturan dan pembinaan, pengendalian, dan pengawasan kegiatan kepelabuhanan sebagaimana dimaksud dalam Pasal 80 ayat (1) huruf a Otoritas Pelabuhan mempunyai tugas dan tanggung jawab:

a. menyediakan lahan daratan dan perairan pelabuhan;

b. menyediakan dan memelihara penahan gelombang, kolam pelabuhan, alur-pelayaran, dan jaringan jalan;

c. menyediakan dan memelihara Sarana Bantu Navigasi-Pelayaran;

d. menjamin keamanan dan ketertiban di pelabuhan;

e. menjamin dan memelihara kelestarian lingkungan di pelabuhan;

f. menyusun Rencana Induk Pelabuhan, serta Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan;

g. mengusulkan tarif untuk ditetapkan Menteri, atas penggunaan perairan dan/atau daratan, dan fasilitas pelabuhan yang disediakan oleh Pemerintah serta jasa kepelabuhanan yang diselenggarakan oleh Otoritas Pelabuhan sesuai dengan ketentuan peraturan perundang-undangan; dan

h. menjamin kelancaran arus barang.

(2) Selain tugas dan tanggung jawab sebagaimana dimaksud pada ayat (1) Otoritas Pelabuhan (one) or several ports.

(4) the Port Authority and the Port Operator Unit referred to in paragraph (3) act as the representative of the Government to give concessions or other form to the Business Entity Port to carry out activities in the port utilization as outlined in the agreement.

(5) The results obtained concessions Port Authority referred to in paragraph (4) is the country's income in accordance with the provisions of the legislation.

(6) Port Authority as referred to in Article 81 paragraph (1) letter a in its implementation must be coordinated with the local government.

Article 83

(1) To carry out the functions of regulation and supervision, control, and monitoring of port activities referred to in Article 80 paragraph (1) letter a Port Authority has duties and responsibilities:

a. provide land land and waters;

b. provide and maintain the retaining wave pool, harbor, shipping lanes, and roads;

c. provide and maintain Means Bantu-Sailing Navigation;

d. ensure security and order in the port;

e. ensure and maintain environmental sustainability in the harbor;

f. prepare Port Master Plan, and the Regional Environmental Working Environment and Regional Interests port;

g. proposed tariff to set the Minister, on the use of water and / or land, and port facilities provided by the Government as well as port services organized by the Port Authority in accordance with the provisions of the legislation; and

h. ensure the smooth flow of goods.
melaksanakan kegiatan penyediaan dan/atau pelayanan jasa kepelabuhanan yang diperlukan oleh pengguna jasa yang belum disediakan oleh Badan Usaha Pelabuhan.

Pasal 84

Untuk melaksanakan tugas dan tanggung jawab sebagaimana dimaksud dalam Pasal 83 Otoritas Pelabuhan mempunyai wewenang:

a. mengatur dan mengawasi penggunaan lahan darat dan perairan pelabuhan;

b. mengawasi penggunaan dan Daerah Lingkungan Kepentingan pelabuhan;

c. mengatur lalu lintas kapal ke laur masuk pelabuhan melalui penandu kapal; dan

d. menetapkan standar kinerja operasional pelayanan jasa kepelabuhanan.

Pasal 85

Otoritas Pelabuhan dan Unit Penyelenggara Pelabuhan sebagaimana dimaksud dalam Pasal 81 ayat (1) diberi hak pengelolaan atas tanah dan pemanfaatan perairan sesuai dengan ketentuan peraturan perundang-undangan.

Pasal 86

Aparat Otoritas Pelabuhan dan Unit Penyelenggara Pelabuhan merupakan pegawai negeri sipil yang mempunyai kemampuan dan kompetensi di bidang kepelabuhanan sesuai dengan kriteria yang ditetapkan.

Pasal 87

Unit Penyelenggara Pelabuhan sebagaimana dimaksud dalam Pasal 81 ayat (1) huruf b mempunyai tugas dan tanggung jawab:

a. menyediakan dan memelihara penahan gelombang, kolam pelabuhan, dan alur-pelayaran;

b. menyediakan dan memelihara Sarana Bantu Navigasi-Pelayaran;

c. menjamin keselamatan dan keterlibatan di pelabuhan;

d. memelihara kelestarian lingkungan di pelabuhan;

e. menyusun Rencana Induk Pelabuhan, serta Daerah Lingkungan Kerja dan Daerah Lingkungan

activities in the provision and / or service port required by service users who have not been provided by the Port Enterprises.

Article 84

To carry out the duties and responsibilities referred to in Article 83 of the Port Authority has the authority:

a. regulate and supervise land use land and waters;

b. supervise the use of the port and the Regional Environmental Interests;

c. regulate vessel traffic out through the harbor entrance pilotage; and

d. establish standards of operational performance of port service.

Article 85

Port Authority and the Port Operator Unit referred to in Article 81 paragraph (1) was given the right to manage land and water use in accordance with the provisions of the legislation.

Article 86

Officers of the Port Authority and the Port Operator Unit is a civil servant who has the ability and competence in the field of port in accordance with the criteria set.

Article 87

Unit Operator Port as referred to in Article 81 paragraph (1) letter b has duties and responsibilities:

a. provide and maintain the retaining wave pool, port, and flow-shipping;

b. provide and maintain Menas Bantu-Sailing Navigation;

c. ensure security and order in the port;

d. maintaining environmental sustainability in the harbor;

e. prepare Port Master Plan, and the Regional Environmental Working Environment and Regional
Kepentingan pelabuhan;

f. menjamin kelancaran arus barang; dan

g. menyediakan fasilitas pelabuhan.

Pasal 88

(1) Dalam mendukung kawasan perdagangan bebas dapat diselenggarakan pelabuhan tersendiri.

(2) Penyelenggaraan pelabuhan sebagaimana dimaksud pada ayat (1) dilakukan sesuai dengan ketentuan peraturan perundang-undangan di bidang kawasan perdagangan bebas.

(3) Pelaksanaan fungsi keselamatan dan keamanan pelayaran pada pelabuhan sebagaimana dimaksud pada ayat (1) dilaksanakan sesuai dengan ketentuan Undang-Undang ini.

Article 88

(1) In support of the free trade area can be field separate port.

(2) The operation of the port as referred to in paragraph (1) shall be conducted in accordance with the provisions of the legislation in the field of free trade area.

(3) The functions of the safety and security of shipping in the port referred to in paragraph (1) shall be implemented in accordance with the provisions of this Act.

Pasal 89

Ketentuan lebih lanjut mengenai Otoritas Pelabuhan dan Unit Penyelenggara Pelabuhan ditetap dengan Peraturan Pemerintah.

Paragraf 4

Kegiatan Pengusahaan di Pelabuhan

Exploitation activities in the Port

Pasal 90

(1) Kegiatan pengusahaan di pelabuhan terdiri atas penyediaan dan/atau pelayanan jasa kepelabuhanan dan jasa terkait dengan kepelabuhanan.

(2) Penyediaan dan/atau pelayanan jasa kepelabuhanan sebagaimana dimaksud pada ayat (1) meliputi penyediaan dan/atau pelayanan jasa kapal, penumpang, dan barang.

(3) Penyediaan dan/atau pelayanan jasa kapal, penumpang, dan barang sebagaimana dimaksud pada ayat (2) terdiri atas:

a. penyediaan dan/atau pelayanan jasa dermaga untuk bertambah;

b. penyediaan dan/atau pelayanan pengisian bahan bakar dan pelayanan air bersih;

c. penyediaan dan/atau pelayanan fasilitas naik turun penumpang dan/atau kendaraan;

d. penyediaan dan/atau pelayanan jasa dermaga untuk pelaksanaan kegiatan bongkar muat barang

Article 90

(1) activities in the port concession consists of the provision and / or service port and port-related services.

(2) Provision and / or service port as referred to in paragraph (1) covers the supply and / or services ships, passengers and goods.

(3) Provision and / or services ships, passengers and goods referred to in paragraph (2) shall consist of:

a. provision and / or services dock to tie up;

b. provision and / or service refueling and water services;

c. provision and / or service facilities up and down the passenger and / or vehicle;

d. provision and / or services for the implementation of activities dock loading and unloading of goods.
dan peti kemas;

e. penyediaan dan/atau pelayanan jasa gudang dan tempat penimbunan barang, alat bongkar muat, serta peralatan pelabuhan;

f. penyediaan dan/atau pelayanan jasa terminal peti kemas, curah cair, curah kering, dan Ro-Ro;

g. penyediaan dan/atau pelayanan jasa bongkar muat barang;

h. penyediaan dan/atau pelayanan pusat distribusi dan konsolidasi barang; dan/atau

i. penyediaan dan/atau pelayanan jasa penundaan kapal.

(4) Kegiatan jasa terkait dengan kepelabuhan sebagaimana dimaksud pada ayat (1) meliputi kegiatan yang menunjang kelancaran operasional dan memberikan nilai tambah bagi pelabuhan.

Pasal 91

(1) Kegiatan penyediaan dan/atau pelayanan jasa kepelabuhan sebagaimana dimaksud dalam Pasal 90 ayat (1) pada pelabuhan yang diusahakan secara komersial dilaksanakan oleh Badan Usaha Pelabuhan sesuai dengan jenis izin usaha yang dimilikinya.

(2) Kegiatan pengusahaan yang dilakukan oleh Badan Usaha Pelabuhan sebagaimana dimaksud pada ayat (1) dapat dilakukan untuk lebih dari satu terminal.

(3) Kegiatan penyediaan dan/atau pelayanan jasa kepelabuhan sebagaimana dimaksud dalam Pasal 90 ayat (1) pada pelabuhan yang belum diusahakan secara komersial dilaksanakan oleh Unit Penyelenggara Pelabuhan.

(4) Dalam keadaan tertentu, terminal dan fasilitas pelabuhan lainnya pada pelabuhan yang diusahakan Unit Penyelenggara Pelabuhan dapat dilaksanakan oleh Badan Usaha Pelabuhan berdasarkan perjanjian.

(5) Kegiatan jasa terkait dengan kepelabuhan sebagaimana dimaksud dalam Pasal 90 ayat (1) dapat dilakukan oleh orang perseorangan warga negara Indonesia dan/atau badan usaha.

Article 91

(1) providing and / or service port as referred to in Article 90 paragraph (1) at the port of commercially cultivated implemented by enterprises in accordance with the kind permission of the Port of its business.

(2) exploitation activities conducted by the Business Entity Port as referred to in paragraph (1) may be made to more than one terminal.

(3) providing and / or service port as referred to in Article 90 paragraph (1) on the port that has not been commercially cultivated implemented by the Port Operator Unit.

(4) In certain circumstances, terminals and other port facilities in the port of Port Operator cultivated unit can be implemented by the Port Enterprises under the agreement.

(5) The activities associated with the port services referred to in Article 90 paragraph (1) may be made by the Indonesian citizens and / or entities.

Pasal 92

Kegiatan penyediaan dan/atau pelayanan jasa kepelabuhan yang dilaksanakan oleh Badan Usaha

Article 92

Providing and / or service port that is implemented by the Port Enterprises referred to in Article 91
Pelabuhan sebagaimana dimaksud dalam Pasal 91 ayat (1) dilakukan berdasarkan konsesi atau bentuk lainnya dari Otoritas Pelabuhan, yang dituangkan dalam perjanjian.

Paragraf 5
Badan Usaha Pelabuhan

Paragraph 5
Port Enterprises

Pasal 93
Badan Usaha Pelabuhan sebagaimana dimaksud dalam Pasal 92 berperan sebagai operator yang mengoperasikan terminal dan fasilitas pelabuhan lainnya.

Article 93
Enterprises Port as referred to in Article 92 serves as the operator which operates the terminal and other port facilities.

Pasal 94
Dalam melaksanakan kegiatan penyediaan dan/atau pelayanan jasa pelabuhan sesuai dengan standar pelayanan yang ditetapkan oleh Pemerintah;

Article 94
In conducting the supply and / or service port as referred to in Article 90 paragraph (1) Business Entity Port obligation:

a. menyediakan dan memelihara kelayakan fasilitas pelabuhan;

b. memberikan pelayanan kepada pengguna jasa pelabuhan sesuai dengan standar pelayanan yang ditetapkan oleh Pemerintah;

c. menjaga keamanan, keselamatan, dan ketertiban pada fasilitas pelabuhan yang dioperasikan;

d. ikut menjaga keselamatan, keamanan, dan ketertiban yang menyengat angkutan di perairan;

e. memelihara kelestarian lingkungan;

f. memenuhi kewajiban sesuai dengan konsesi dalam perjanjian, dan

g. mematuhi ketentuan peraturan perundang-undungan, baik secara nasional maupun internasional.

Pasal 95
Ketentuan lebih lanjut mengenai Badan Usaha Pelabuhan diatur dengan Peraturan Pemerintah.

Paragraf 6
Pembangunan dan Pengoperasian Pelabuhan

Paragraph 6
Development and Operation of Ports

Pasal 96
Further provisions on Port Business Entity is regulated by the Government.

Article 96
(1) Pembangunan pelabuhan laut dilaksanakan berdasarkan izin dan:

a. Menteri untuk pelabuhan utama dan pelabuhan pengumpul; dan
b. gubernur atau bupati/walikota untuk pelabuhan pengumpan.

(2) Pembangunan pelabuhan laut sebagaimana dimaksud pada ayat (1) harus memenuhi persyaratan teknis kepelabuhanan, kelestarian lingkungan, dan memperhatikan keterpaduan intra-dan antarmoda transportasi.

(1) Construction of sea ports held by permission of:

a. Minister for the main port and the port collector; and
b. governor or regent/mayor for feeder ports.

(2) Construction of sea ports as referred to in paragraph (1) shall meet the technical requirements of port, environmental sustainability, and pay attention to the integration of intra- and intermodal transport.

Pasal 97

(1) Pelabuhan laut hanya dapat dioperasikan setelah selesai dibangun dan memenuhi persyaratan operasional serta memperoleh izin.

(2) Izin mengoperasikan pelabuhan laut diberikan oleh:

a. Menteri untuk pelabuhan utama dan pelabuhan pengumpul; dan
b. gubernur atau bupati/walikota untuk pelabuhan pengumpul.

Article 97

(1) sea port can only be operated after it was completed and meet operational requirements and obtain a permit.

(2) Permit operate seaports are given by:

a. Minister for the main port and the port collector; and
b. governor or regent/mayor for feeder ports.

Pasal 98

(1) Pembangunan pelabuhan sungai dan danau wajib memperoleh izin dari bupati/walikota.

(2) Pembangunan pelabuhan sungai dan danau sebagaimana dimaksud pada ayat (1) dilaksanakan berdasarkan persyaratan teknis kepelabuhanan, kelestarian lingkungan, dengan memperhatikan keterpaduan intra- dan antarmoda transportasi.

(3) Pelabuhan sungai dan danau hanya dapat dioperasikan setelah selesai dibangun dan memenuhi persyaratan operasional serta memperoleh izin.

(4) Izin mengoperasikan pelabuhan sungai dan danau diberikan oleh bupati/walikota.

Article 98

(1) Development of river and lake ports must obtain permission from the regent/mayor.

(2) Development of river and lake ports as referred to in paragraph (1) shall be based on the technical requirements of port, environmental sustainability, taking into account the integration of intra- and intermodal transport.

(3) Port rivers and lakes can only be operated after it was completed and meet operational requirements and obtain a permit.

(4) Permit operate the port of rivers and lakes is given by the regent/mayor.

Pasal 99

Ketentuan lebih lanjut mengenai perizinan pembangunan dan pengoperasian pelabuhan diatur dengan Peraturan Pemerintah.

Article 99

Further provisions on licensing the construction and operation of ports is regulated by the Government.
Paragraf 7

Tanggung Jawab Ganti Kerugian

Pasal 100

(1) Orang perseorangan warga negara Indonesia dan/atau badan usaha yang melaksanakan kegiatan di pelabuhan bertanggung jawab untuk mengganti kerugian atas setiap kerusakan pada bangunan dan/atau fasilitas pelabuhan yang diakibatkan oleh kegiatannya.

(2) Pemilik dan/atau operator kapal bertanggung jawab untuk mengganti kerugian atas setiap kerusakan pada bangunan dan/atau fasilitas pelabuhan yang diakibatkan oleh kapal.

(3) Untuk menjamin pelaksanaan tanggung jawab atas ganti kerugian sebagaimana dimaksud pada ayat (1) pemilik dan/atau operator kapal yang melaksanakan kegiatan di pelabuhan wajib memberikan jaminan.

Pasal 101

(1) Badan Usaha Pelabuhan bertanggung jawab terhadap kerugian pengguna jasa atau pihak ketiga lainnya karena kesalahan dalam pengoperasian pelabuhan.

(2) Pengguna jasa pelabuhan atau pihak ketiga sebagaimana dimaksud pada ayat (1) berhak mengajukan tuutusan ganti kerugian.

Bagian Ketiga

Terminal Khusus dan Terminal untuk Kepentingan Sendiri

Pasal 102

(1) Untuk menunjang kegiatan tertentu di luar Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan dapat dibangun terminal khusus.

(2) Untuk menunjang kegiatan tertentu di dalam Daerah Lingkungan Kerja dan Daerah Lingkungan Kepentingan pelabuhan dapat dibangun terminal untuk kepentingan sendiri

Paragraph 7

Responsibility Compensation

Article 100

(1) An individual Indonesian citizens and / or business entities that carry out activities in the port is responsible to compensate for any damage to the building and / or port facilities caused by its activities.

(2) The owner and / or operator of the ship is responsible to compensate for any damage to the building and / or port facilities caused by the ship.

(3) To ensure the implementation of the liability for damages referred to in paragraph (1) the owner and / or operator of the ship that is carrying out activities in the port shall provide a guarantee.

Article 101

(1) Business Entity Port is responsible for loss of service users or other third parties due to an error in the operation of the port.

(2) Users port services or third parties referred to in paragraph (1) is entitled to file claims for damages.

Part Three

Special Terminals and Terminal for Individual Interests

Article 102

(1) To support certain activities outside of the Regional Working Environment and Regional Environmental interests can be built special terminal port.

(2) To support certain activities in the Regional Working Environment and Regional Environmental interests can be built port terminal for its own sake.

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Article 103
Special terminals referred to in Article 102 paragraph (1):

a. set to become part of the nearest port;

b. Regions shall have the Workplace and the Environment Regional particular interest; and

c. placed government agencies that carry out the functions of safety and security of shipping, as well as institutions that perform government functions according to the needs.

Article 104
Terminal specifically referred to in Article 102 paragraph (1) may only be constructed and operated in terms of:

a. nearest port can not accommodate the principal activities; and

b. based on economic considerations and operational techniques will be more effective and efficient, and better ensure the safety and security of shipping when construct and operate a special terminal.

(2) To build and operate terminals specifically referred to in paragraph (1) shall be complied with the technical requirements of port, safety and security of shipping, and the environment with the permission of the Minister.

(3) permit the operation of a special terminal granted for a maximum period of 5 (five) years and may be extended as long as meet the requirements under this Act.

Article 105
Special terminal used for public purposes is prohibited except in an emergency with the permission of the Minister.

Article 106
Special terminal that has not operated in accordance with a license that has been granted may be submitted to the Government or returned as the original condition or proposed to change its status to a special terminal for the success of the other
menunjang usaha pokok yang lain atau menjadi pelabuhan.

Pasal 107

(1) Terminal khusus sebagaimana dimaksud dalam Pasal 106 yang diserahkan kepada Pemerintah dapat berubah statusnya menjadi pelabuhan setelah memenuhi persyaratan:

a. sesuai dengan Rencana Induk Pelabuhan Nasional;
b. layak secara ekonomis dan teknis operasional;
c. membentuk atau mendirikan Badan Usaha Pelabuhan;
d. mendapat konsesi dari Otoritas Pelabuhan;
e. keamanan, ketertiban, dan keselamatan pelayaran; dan
f. kelestarian lingkungan.

(2) Dalam hal terminal khusus berubah status menjadi pelabuhan, tanah daratan dan/atau perairan, fasilitas penahan gelombang, kolam pelabuhan, alur-pelayaran, dan Sarana Bantu Navigasi-Pelayaran yang dikuasai dan dimiliki oleh pengelola terminal khusus sebagaimana dimaksud pada ayat (1) diserahkan dan dikuasai oleh negara.

Pasal 108

Ketentuan lebih lanjut mengenai terminal khusus dan perubahan status terminal khusus diatur dengan Peraturan Pemerintah.

Bagian Keempat

Penarifan

Pasal 109

Setiap pelayanan jasa kepelabuhanan dikenakan tarif sesuai dengan jasa yang disediakan.

Pasal 110

(1) Tarif yang terkait dengan penggunaan perairan dan/atau daratan serta jasa kepelabuhan yang diselenggarakan oleh Otoritas Pelabuhan ditetapkan oleh Otoritas Pelabuhan setelah dikonsultasikan dengan Menteri.

(2) Tarif jasa kepelabuhan yang diusahakan oleh Badan Usaha Pelabuhan ditetapkan oleh Badan principal or harbor.

Article 107

(1) Terminal specifically referred to in Article 106 were submitted to the Government to change its status to the port after meeting the requirements:

a. according to the National Ports Master Plan;
b. economically and technically viable operation;
c. forming or establishing Enterprises Port;
d. got the concession of the Port Authority;
e. security, public order and the safety of shipping; and
f. environmental sustainability.

(2) In the case of a special terminal transfer to a port, the mainland and / or water, wave anchoring facilities, pools port, flow-shipping, and Means of Navigation Aids-cruise-controlled and owned by the manager of a special terminal as referred to in paragraph (1) submitted to and controlled by the state.

Article 108

Further provisions on special terminals and terminal status changes specifically regulated by Government Regulation.

Part Four

Penarifan

Article 109

Each port service tariffs in accordance with the services provided.

Article 110

(1) The rates associated with the use of water and / or land and port services organized by the Port Authority established by the Port Authority after consultation with the Minister.

(2) Rates of port services operated by the Port of enterprises established by the Business Entity Port
Usaha Pelabuhan berdasarkan jenis, struktur, dan golongan tarif yang ditetapkan oleh Pemerintah dan merupakan pendapatan Badan Usaha Pelabuhan.

(3) Tarif jasa kepelabuhanan bagi pelabuhan yang diusahakan secara tidak komersial oleh Pemerintah ditetapkan dengan Peraturan Pemerintah dan merupakan Penerimaan Negara Bukan Pajak.

(4) Tarif jasa kepelabuhanan bagi pelabuhan yang diusahakan oleh pemerintah provinsi dan pemerintah kabupaten/kota ditetapkan dengan Peraturan Daerah dan merupakan penerimaan daerah.

Bagian Kelima

Pelabuhan yang Terbuka bagi Perdagangan Luar Negeri

Part Five

Open ports for Foreign Trade

Pasal 111

(1) Kegiatan pelabuhan untuk menunjang kelancaran perdagangan yang terbuka bagi perdagangan luar negeri dilakukan oleh pelabuhan utama.

(2) Penetapan pelabuhan sebagaimana dimaksud pada ayat (1) dilakukan berdasarkan pertimbangan:

a. pertumbuhan dan pengembangan ekonomi nasional;
b. kepentingan perdagangan internasional;
c. kepentingan pengembangan kemampuan angkutan laut nasional;
d. posisi geografis yang terletak pada lintasan pelayaran internasional;
e. Tatanan Kebijaban Nasional;
f. fasilitas pelabuhan;
g. keamanan dan kedaulatan negara; dan
h. kepentingan nasional lainnya.

(3) Terminal khusus tertentu dapat digunakan untuk melakukan kegiatan perdagangan luar negeri.

(4) Terminal khusus tertentu sebagaimana dimaksud pada ayat (2) wajib memenuhi persyaratan:

a. aspek administrasi;
b. aspek ekonomi;

Article 111

(1) Activities to support the trading ports open to foreign trade is done by the main port.

(2) Determination of the port as referred to in paragraph (1) shall be based on the following considerations:

a. growth and development of the national economy;
b. the interests of international trade;
c. interests in the development of national sea transport capabilities;
d. geographical position lies in the path of international shipping;
e. Order of the National Ports;
f. port facilities;
g. security and sovereignty of the country; and
h. other national interests.

(3) certain specific terminal can be used to conduct foreign trade.

(4) certain specific terminal as described in paragraph (2) shall meet the following requirements:

a. administrative aspects;
b. economic aspects;
c. aspek keselamatan dan keamanan pelayaran;
d. aspek teknis fasilitas kepelabuhanan;
e. fasilitas kantor dan peralatan pendukung bagi
instansi pemeang fungsi keselamatan dan keamanan
pelayaran, instansi bea cukai, imigrasi, dan
karantina; dan
f. jenis komoditas khusus.

(5) Pelabuhan dan terminal khusus yang terbuka bagi
perdagangan luar negeri ditetapkan oleh Menteri.

Pasal 112
(1) Setiap orang yang melanggar ketentuan
sebagaimana dimaksud dalam Pasal 111 ayat (4),
dapat dikenakan sanksi administratif berupa denda
administratif.

(2) Ketentuan lebih lanjut mengenai tata cara dan
prosedur pengenaan sanksi administratif serta
besarnya denda administratif sebagaimana dimaksud
pada ayat (1) diatur dengan Peraturan Pemerintah.

Pasal 113
Ketentuan lebih lanjut mengenai pelabuhan dan
terminal khusus yang terbuka bagi perdagangan luar
negeri diatur dengan Peraturan Pemerintah.

Bagian Keenam
Peran Pemerintah Daerah

Pasal 114
Peran pelabuhan sebagaimana dimaksud dalam Pasal
68 dilakukan untuk memberikan manfaat bagi
pemerintah daerah.

Pasal 115
(1) Upaya untuk memberikan manfaat sebagaimana
dimaksud dalam Pasal 114 pemerintah daerah
mempunyai peran, tugas, dan wewenang sebagai
berikut:
a. mendorong pengembangan kawasan perdagangan,
kawasan industri, dan pusat kegiatan perekonomian
lainnya;
b. mengawasi terjaminnya kelestarian lingkungan di

Article 112
(1) Any person who violates the provisions referred
to in Article 111 paragraph (4), may be subject to
administrative sanctions in the form of
administrative fines.

(2) Further provisions on the procedure for the
imposition of administrative sanctions and
procedures as well as the amount of an
administrative penalty referred to in subsection (1) is
regulated by the Government.

Article 113
Further provisions on specific ports and terminals
which are open to foreign trade is regulated by the
Government.

Part Six
Role of Local Government

Article 114
The role of ports as referred to in Article 68 is done
to provide benefits for local governments.

Article 115
(1) Efforts to provide the benefits referred to in
Article 114 of the local government has a role,
duties, and authority as follows:
a. encourage the development of trade area,
industrial area, and other economic activity centers;
b. supervise ensuring environmental sustainability in
pelabuhan.
c. ikut menjamin keselamatan dan keamanan pelabuhan;
d. menyediakan dan memelihara infrastruktur yang menghubungkan pelabuhan dengan kawasan perdagangan, kawasan industri, dan pusat kegiatan perekonomian lainnya;
e. membina masyarakat di sekitar pelabuhan dan memfasilitasi masyarakat di wilayahnya untuk dapat berperan serta secara positif terselelanggaranya kegiatan pelabuhan;
f. menyediakan pusat informasi muatan di tingkat wilayah;
g. memberikan izin mendirikan bangunan di sisi daratan, dan
h. memberikan rekomendasi dalam penetapan lokasi pelabuhan dan terminal khusus.

(2) Dalam hal pemerintah daerah tidak dapat melaksanakan atau menyalahgunakan peran, tugas, dan wewenang, Pemerintah mengambil alih peran, tugas, dan wewenang sesuai dengan ketentuan peraturan perundang-undangan.

(2) In the event that the local government cannot implement or abusing the role, duties, and authority, the Government took over the role, duties, and powers in accordance with the provisions of the legislation.
Appendix 4: Interview Questions

Interview Questions

1. What was the port governance in Indonesia before the 1992 Shipping Law came in place and established Pelindos (Port Authorities)?
2. How has the governance process change with the 2008 Shipping Law directed at driving port reform?
3. What new changes has the port implemented?
4. What type of cargo does the port handle?
5. Could you provide some data on the following indicators over the last 10 years?
   - Dwell Time (The time cargo remains in a terminal's in transit storage area while awaiting shipment by clearance transportation)
   - Container Traffic
   - Berth Time
   - Revenue per ton of cargo
   - Cost per ton of cargo
6. What is the internal structure of the port authority and how has that changed as a result of port reform?
7. What is the aim of the port? (e.g., profit maximisation)
8. How does the port promote or markets itself?
9. What are some of the challenges facing the port?
10. What strategies does the port employ to remain competitive internationally?