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The Brazilian port infrastructure attractiveness for  
private investors

by

Marja Weschenfelder

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## **ABSTRACT**

Port reform is a result of the action of three driving forces. First, technology from the shipping industry and the increasing port competition put pressure on ports to increase productivity as well as investments. The second force is related to the acknowledgement of financial and operational benefits of private participation in developing infrastructure in a scenario of public budget constraints. The third force is associated to the emergence of global terminal operators mounted on capital and know-how. Together, the driving forces have led port reform towards a lower-state-presence system around the world.

Maritime transport chain is a highly globalized industry and its drivers of change have affected Brazil. However, the investments required to follow the market have not come in the same speed. In addition, after the end of the commodities price spree, the Brazilian infrastructure inefficiency puts extra pressure on the producers' margin. Specialists suggest that investments to improve the Brazilian infrastructure are an opportunity to unlock growth.

Besides public budget constraints, the Brazilian government have already proved itself inapt to conduct infrastructure projects after several unsuccessful attempts. The private know-how and money are crucial to get Brazil growing again. Hence, we investigated the conditions that should be fulfilled in order to enhance private investment in the Brazilian port infrastructure.

Counting on literature, case studies and expert interviews, this research found that the Brazilian policy makers should act toward creating political stability, a clear regulatory framework and a friendly business environment to attract private investors in the long-term. For the short- and mid-term, presenting a clear and public transport infrastructure master plan indicating the government priorities as well as implementing a deeper port reform aiming at reducing the political interference in the port infrastructure are policies that could result in higher flow of private investments.

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## LIST OF ABBREVIATIONS

ABRATEC	Association of container terminals located in public ports
ANTAQ	National agency for waterway transport
BOOT	Build-Own-Operate-Transfer
BOT	Build-Operate-Transfer
BRICS	Brazil, Russia, India and China, later added South Africa
BTO	Build-Transfer-Operate
CAGR	Compound annual growth rate
CAP	Port authority council
CAPEX	Capital expenditure
CEO	Chief executive officer
CESPortos	State Commission of Public Safety in Ports
CONIT	National council for integration of transportation policies
COO	Chief operational officer
EID	Electronic data interchange
EPL	Planning and logistics company
FDI	Foreign direct investment
GDP	Gross domestic product
IBAMA	Brazilian institute for environment and natural resources protection
ICT	Information and communication technology
IMF	International Monetary Fund
ISPS	International Ship and Port Facility Security Code
OECD	Organization for Economic Co-operation and Development's
OGMO	Port labour manager body
PAC	Growth acceleration programme
PDZ	Zoning and development plan
PGO	General plan for grants
PNLP	National plan for port logistics
PNLT	National plan for logistics and transports
PPP	Public-private partnership
SEP	Special Secretary of Ports
SPU	Union property bureau
SPV	Special purpose vehicle
TCU	Federal accounting auditor
TEU	Twenty-foot equivalent unit
TUP	Private-use terminal
UNCTAD	United Nations Conference on Trade and Development
USA	The United States of America



## 1. INTRODUCTION

---

### 1.1 BACKGROUND AND PROBLEM STATEMENT

According to the United Nations Conference on Trade and Development (UNCTAD), “80% of the global trade by volume and over 70% of global trade by value are carried by sea and are handled by ports worldwide” (UNCTAD, 2014). In order to keep its important position in the global trade, the maritime logistics sector continuously seeks costs reduction to attract more volumes. By maritime logistics sector, we mean shipping companies, terminal operators, port authorities, port related service providers, inland transport firms, transport intermediaries and logistics service providers. This entire network receives pressure to increase productivity in order to avoid dampening the supply chain profitability and, hence, keeping a favourable environment for international trade with low transport costs.

High productivity requirements, the efficiency of private operators and public budget constraints together with the diversification and globalization of investors have led to port reforms towards a lower-state presence system (World Bank, 2003).

Alike the global trend, in Brazil the first port reform was made in the 1990’s with a wave of terminal concessions. The terminals started to be leased in 1995 and to operate at the end of 1990’s. The first Brazilian port concession programme was an extension of the previous government actions (1988) towards the import barriers reduction. They aimed at boosting competitiveness of Brazilian products through increasing their productivity by incorporating new technologies and accessing low-price inputs and capital goods in the international market (Azevedo and Portugal, 1998). Therefore, improving port infrastructure was a fundamental issue for the success of the Brazilian economic liberalization policy.

Table 1: The Brazilian total throughput (Million tons)

Period	1990	2000	2010	2014		
Throughput	360	485	834	969		
Period	1990-2000		2000-2010		2010-2014	
CAGR		3,0%	5,6%	3,8%		

Source: (Povia, 2015)

By comparing the compound annual growth rate (CAGR) of the Brazilian throughput, shown in Table 1, the first concession wave appears to have allowed the Brazilian government to achieve its goal. The Brazilian throughput growth enhanced from 3% per year in the 1990-2000 decade to 5,6% in the following period. Nonetheless, the annual growth rate dropped to 3,8% for the period between 2010-2014. Whether the throughput slowdown is a coincidence with the global crisis – which deserves further investigation and is not the proper objective of this research – the weekly magazine *The Economist* (2013) portrayed the Brazilian infrastructure as “decrepit” and suggested that investments in infrastructure is “Brazil’s opportunity to unlock growth” (*The Economist*, 2013).

The article also pointed out some reasons for the Brazilian poor infrastructure. One of them is the government’s lack of competence to manage long-term projects. For instance, in 2007, the Brazilian government launched an ambitious public investment plan called Growth Acceleration Programme (PAC) as an attempt to develop the country’s

infrastructure. Six years later, two-thirds of the programme's biggest projects were delayed and over budget (The Economist, 2013). The effects of the Brazilian government's incompetence to manage such projects can be seen on the country's low position in the infrastructure pillar of the Global Competitiveness Index report. In the 2014-15 edition, Brazil was ranked at the 76th position out of 144 countries (Porter, Sachs, et al., 2014) in spite of being the 7th biggest economy of the world (World Bank, 2014).

The market forces are not restrict to a period in time, they continuously act on the port sector. Technology evolves and causes ups and downs in the world's economy. Hence, the market dynamics might require deeper port reforms, which seemed to be the case in Brazil. In this sense, a new port regulatory framework was enacted in June 2013. The new law enabled private companies to invest in port sector beyond concession schemes, by abolishing the "own cargo" requirement – which had prevailed since 2008. In other words, the new regulatory framework allows a terminal operator to build the required infrastructure and superstructure to handle third-party cargos outside of public port zones.

The new law came accompanied with the promise of the Brazilian President, Ms. Dilma Rousseff, to auction "some entirely new projects and to re-tender around 150 contracts in public terminals whose concessions had expired" (The Economist, 2013 p. 12). Nonetheless, due to many inconsistencies found on the bid books and technical projects, the Federal Accounting Auditor (TCU) had interdicted the auction process. The act also allows port administration concessions to private entities, but few talks about this topic were made.

Almost two years after The Economist's article publication, Brazil is facing what KRR analysts coined as a "perfect storm" (Mcvey and Villa, 2015). After a neck-to-neck election, Ms. Rouseff started the new four-year mandate under huge pressure from society, inflation rising above the central bank's target range, growing budget deficit and expectation of a negative GDP growth for 2015. All these factors led the Brazilian President to replace the former minister of finance for a Ph.D. in Economics at the University of Chicago and former head of Brazil's treasury, Joaquim Levy. The new minister, with the President support, announced a fiscal austerity policy for 2015. The public budget constraints make the private sector participation in the infrastructure development even more important. Whether Brazil will succeed to attract this investment depends on the ability of the government to fulfil certain conditions.

## **1.2 RESEARCH OBJECTIVES**

Regarding government's lack of funds to invest and its failed attempts in improving the country's infrastructure by itself along the last years, The Economist's article states that "private know-how and money will be vital to get Brazil moving again" (The Economist, 2013 p. 15). Hence, the question that emerges and we would like to answer in this study is ***What are the conditions to be fulfilled in order to enhance private investment in seaport infrastructure in Brazil?***

In order to answer the research question, we need to address at least six additional sub research questions.

1. Why should public sector attract private investors to port infrastructure?
2. Why is port infrastructure an interesting business for private sector?

3. What are the state-of-the-art conditions for private investors in port infrastructure projects?
4. At what stage is Brazil in the port development?
5. What is the present policy to boost private investment in the Brazilian port sector?
6. What should be done to stimulate private investments?

According to the well-known Port Reform Toolkit, published by the World Bank, Port Infrastructure “means all infrastructure located within the Seaport or in the land and sea accesses containing Basic Infrastructure, Operational Infrastructure and Superstructure” (World Bank, 2003 p. 5).

- Basic Infrastructure consists of nautical infrastructure (breakwaters, channels and manoeuvre basins) and inland access (primary roads to and from the ports, railway tracks, pipelines and buffer-zones situated at the borders of the port). Here we can also include inland waterways access.
- Operational infrastructure “means port facilities and constructed works dedicated to commercial handling of sea-going and inland vessels such as quay walls, piers, jetties, roll-on roll-off facilities, berthing aids and also secondary connecting roads within the port area, including all appurtenances and components” (World Bank, 2003 p. 5).
- Superstructure is compound of buildings and equipment.

In this research project, we concentrate on the basic and operational infrastructure, since it is in this field that Brazil is historically deficient and where it is harder to find private investors. Such investments are expensive and usually cannot be recovered within normal repayment period of commercial bank loans.

In addition, this research focuses on cargo flows, not cruises or other passenger commercial transport. However, we do not make any distinction between type of cargo or terminal, since basic and operational infrastructure can be commonly shared, with a few exceptions.

### **1.3 RESEARCH DESIGN**

Investment is a decision taken in the present that might be rewarded only in the future. Present is well known, but future is uncertain. Hence, investment decision counts with a considerable level of uncertainty (Hirshleifer, 1965). Daniel Kahneman won the Nobel Prize in 2002 by stating that in an uncertain environment people apparently do not take into account calculus of chance or the statistical theory of prediction in their decision taking. They rely on past experiences or accumulated knowledge instead (Kahneman quoted in Fox, 2015).

In this sense, this research could rely on quantitative or qualitative methods to answer the research question. Quantitative methods can successfully capture how decision takers (investors) respond to certain conditions. Their results are basically represented by averages based on historical data. On the other hand, qualitative methods explore the experiences, reasons, opinions of people – the researcher learns to see the world from their perspectives (Rubin and Rubin, 2011).

In order to be able to point out the fundamental conditions and to understand how those conditions are expected to increase or decrease the project’s return – which is the great goal of a private investor –, as well as to offer better recommendations to policy makers,

we opted for a mix of qualitative methods. The role each one plays in this research is explained below.

### *1.3.1 Literature review*

Literature review does not only consist in looking into the published works that were already written about the topic but also giving insights to define the relevant concepts that turn up along the work (Berg, 2001). We address the first and the second sub-research questions based on the literature about maritime transportation trends and port reforms. Together, they shed light on the reasons why governments should open the port infrastructure sector to private investors. According to financial economics background and project finance theory, we examine what are the determinants that lead private investors to bet on port infrastructure projects.

### *1.3.2 Expert interviews*

The objective of the expert interviews is to validate our findings from the literature review and assist us to understand how the determinants affect the investor's willing to invest. It might update some concepts as well. As our topic is defined and our chosen interviewees usually have busy schedules, we opted for carrying out semi-structured interviews.

This category is characterized by its formality. The interview, which is scheduled in advance between the researcher and the interviewee, consists of a set of questions prepared in advance about a specific topic to be investigated (Rubin and Rubin, 2011). Even if the topic is already well defined, the questions "should still allow the interviewee plenty of scope to answer" (Rubin and Rubin, 2011 p. 137). In this sense, we decided on open questions. The main questions are showed on Appendix.

According to Rodrigue (2010), the global port operators have played a fundamental role in the strategic planning of infrastructure investments. The author identifies three major categories of investors: stevedores, maritime shipping companies and financial holdings. In this sense, our expert interviewees are executives currently working or that used to work for those sorts of companies that have port investments located in Brazil or that have already intended to invest in the country. In addition, we have complemented the list with a commercial bank professional and an agribulk trader. The former was chosen because debt instruments are indispensable to finance such capital-intensive investment. The latter because agribulk traders use to invest in their own terminals to guarantee logistics efficiency. In addition, Brazil is a big exporter of commodities – agribulk represented 18% of the total Brazilian seaborne throughput (volume) in 2014.

During this research, the transcripts of the interviews were coded in building blocks (the determinants of investment) related to the theoretical framework. The most mentioned building blocks were considered more relevant to the objectives of this study.

### *1.3.3 Case study*

Case study methods are applied to help research to bridge the gap between theory and practice. The case study permits an effective understanding of a particular person, social setting, event or group and how it operates or function (Berg, 2001). Case studies serves our research because we can better see and show the linkage of the theory with the interviewees' answers.

This research presents a case study of a port project development in Brazil, showing what were the challenges faced and that might affect private investor's appetite for the Brazilian port infrastructure. The chosen case was Porto Itapoá, a fully private terminal located in South of Brazil operational since 2011.

#### **1.4 THESIS STRUCTURE**

This work is organized in six chapters. This first one is intended to provide an overview of the subject, the problem statement, the research objectives as well as the chosen methodology.

The following chapter establishes the main concepts discussed along the research. Moreover, it also traces the driving forces that guide the maritime transport sector. By the end of the chapter, we are able to answer the first two sub-research questions.

The next chapter addresses the third sub-research question, which is the backbone for the analysis of the Brazilian port infrastructure attractiveness. It investigates the investment determinants and the state-of-the-art conditions for private investors based on financial economics approach, project finance theory and the expert interviews.

After that, Chapter 4 is dedicated to describe the Brazilian port system, including the answers for sub-research questions four and five. Next, a business case of a port infrastructure project in Brazil is discussed. Finally, in Chapter 6, we present our findings and make recommendations.

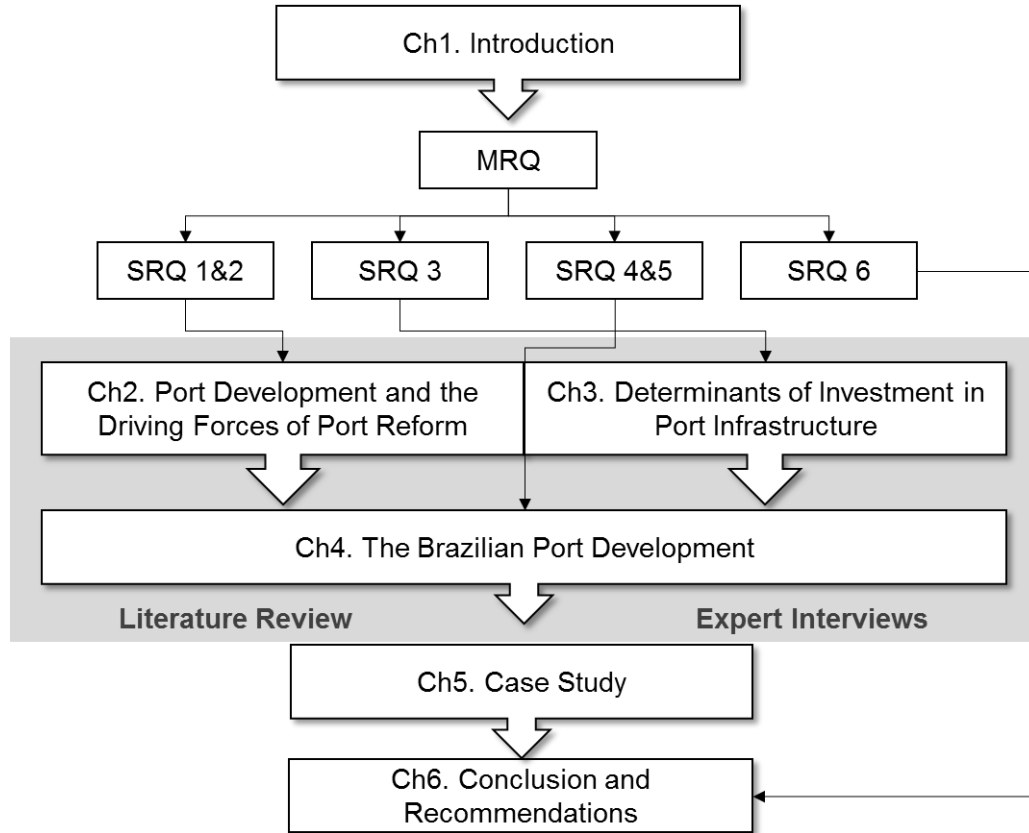


Figure 1: Research Flow

Source: Elaborated by the author.

## **2. DRIVING FORCES OF MARITIME TRANSPORT CHAIN AND PORT REFORM**

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Oxford Dictionary defines port as “a town or city with a harbour or access to navigable water where ships load or unload”. It can cause awkwardness for those not aware of the topic that port is consider a sort of city. The explanation comes from history. In the past, “every coastal city had a port and every port sustained a city” (Hall and Jacobs, 2012 p. 189). Ports have evolved and their activities no longer entirely match the cities dynamics. While scholars and policy-makers were still looking for new symbiosis between port and city, ports gained new definitions. In the last decade, ports started to be defined under the supply chain perspective:

*“a port's main function is to enable (...) the transfer of goods from sea to shore and vice versa. As such, a port is an interface between sea and land; a node in a transport chain; a point where goods change mode of transport. Cargo-handling is thus a port's core business” (Haralambides, 2002 p. 325).*

To understand the phases that ports went through, we reserve this chapter to describe the port itself, the relationship between ports and global supply chains, the main industry's trends and the drivers behind that. We intend to make clear why ports are being studied under the supply chain theory. Additionally, the sub-research questions “Why should public sector attract private investors to port infrastructure?” and “Why is port infrastructure an interesting business for private sector?” will be answered.

### **2.1 PORT STRUCTURE**

#### *2.1.1 Physical characteristics*

Physically, the port as we know today better matches the harbour definition also found on the Oxford Dictionary, it is “a place on the coast where ships may moor in shelter, especially one protected from rough water by piers, jetties, and other artificial structures”. Ports are built on the coast or in naturally protected places like bays or rivers. A port can differ in design (built on land, over water or by reclamation), however all of them require basic and operational infrastructure and superstructure, as we described on the Research Objectives section.

In a seaport, several types of cargos can be handled, being served by deep-sea, short-sea or inland navigation. Except for the basic infrastructure that is commonly shared, some cargos are not compatible, then they cannot be handled together (e.g. coal and grains or crude oil and container). They might require not only different equipment and storage facilities but also different handling location within the port area. We call these different locations within the port area “terminals”. There are also ports that are entirely dedicated for only one type of cargo, where port and terminal gain a common definition. We call them ‘single user’ ports. It happens mainly for oil and iron ore, where the great volume justifies the investment in basic infrastructure just for one cargo (Langen, Nijdam, et al., 2014).



Figure 2: Port Infrastructure description

Source: picture retrieved from (Porto Central, 2015). Subtitles made by the author.

Basic infrastructure is a high-cost and long-lived infrastructure. It serves to the whole port complex, “in which incremental benefit can only arbitrarily be assigned to individual port users” (World Bank, 2003 p. 10). In addition, its benefit might outweigh the port purpose, since it can be also useful for protecting the urban area surrounded by the port against tides and coastal erosion. For instance, Mr. Marc Aartsen, one of the experts interviewed for this research, gave Maasvlakt 2 as an example of port infrastructure that also has a utility not only to commercialize the port but also for national protection:

*“When we created the Maasvlakte 2, it was so expensive – it was a three-billion-euro project – that part of the project was not feasible. For instance, the outer dike was a very costly investment you couldn’t commercialize. You couldn’t do business with an outer dike, you just needed it to protect the land. So, the government in the Netherlands decided to invest in the outer dike because it was also a responsibility for the government of Holland to protect the country from the sea. So, they invested in the outer dike and in return they got a share in the Port of Rotterdam. That shareholdership for us was very positive because Port of Rotterdam is of national importance” (Aartsen, 2015).*

In spite of being also a costly and long-life structure, the benefit of operational infrastructure can be relatively easier attributed to individual users, since they use a specific surface of the port (terminals). Superstructure, as we discussed before, varies according to the type of cargo and it is directly accountable to the company/terminal that handle the cargo.

### 2.1.2 Port services

In order to a port to work efficiently it needs not only a decent infrastructure but also to provide a range of services. We summarize the main services provided by a port in Figure 3 Figure 3: Port services according to the World Bank (World Bank, 2003 p. 9). We complemented it with an extra sort of services (last column). Information and



communication technology (ICT) services became a cornerstone due to its advanced development and the huge flow of information required to an international transaction. Both reasons made ICT a competitive advantage in port competition (Langen, Nijdam, et al., 2014).

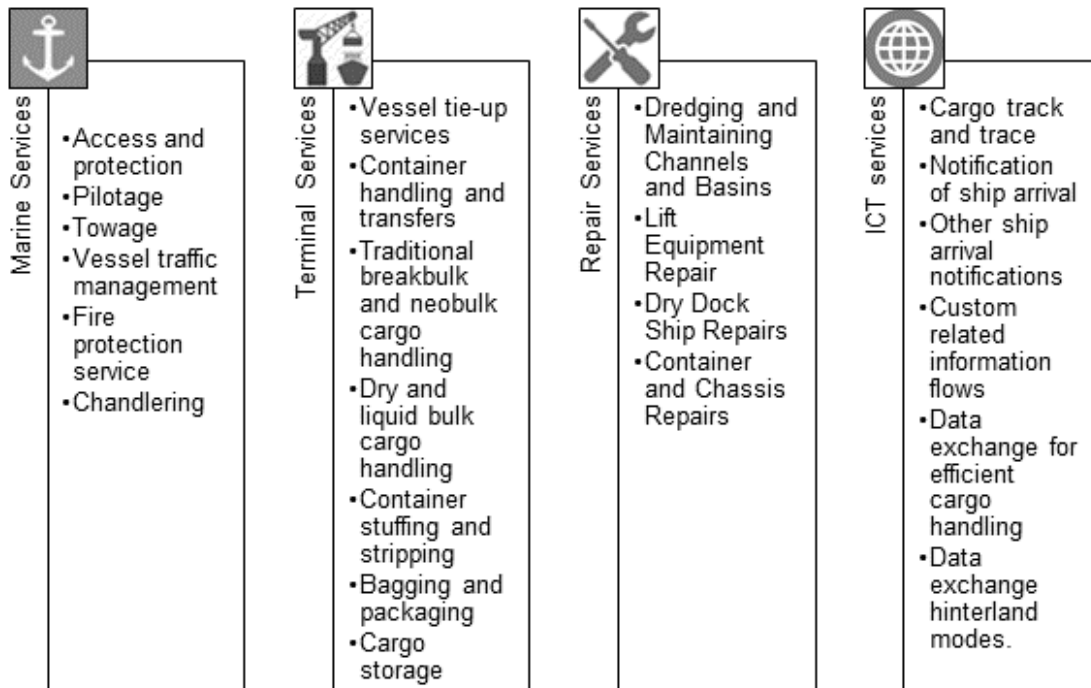


Figure 3: Port services

Source: Compiled from (World Bank, 2003, Langen, 2015).

### 2.1.3 Port's stakeholders

Stakeholders are “all actors that can affect or are affected by the achievements of the firm’s objectives” (Freeman quoted in Langen, 2006 p. 459). In this sub-section, we briefly describe all these actors and how they are connected to ports’ interests based on (but not limited to) de Langen (2006). The main actors are:

- Transport firms: These companies, or their agents, are those that bring and take the cargo from/to the port or handle it within the port area. They can be considered customers that consume the abovementioned port’s services (e.g. shipping companies, ship agents, rail and truck firms, waterway operators, terminal operators, etc.). Their main interests are low generalized<sup>1</sup> (trans)port costs, high quality of infrastructure, no (or limited) interference with logistics chain due to safety, security, product quality regulation and customs procedures;
- Local port related manufacturing industries: they are companies that due to their core business are tied with the port area (e.g. shipyards, offshore activities) or

<sup>1</sup> Generalized transport costs consist of all costs necessary to connect two places. They are not only the direct monetary costs but also time spent and risk of damage as well (Klink and Berg, Geerke C van den, 1998).

because their supply chain involve global firms and they are far from ports, it means high transport costs (e.g. Oil-refineries, chemical industry, food industry, steel industry) (Kuipers, 2015). They are also interested in the inherent benefits of agglomeration, space for manufacturing activities, level playing field regulation with regard to noise and environmental standards;

- Port labour: it involves all employees who work directly to the port administration or for companies providing services within the port area. Their interests are high wages and job security;
- End users of ports: they are the importers and exporters and the companies that work on behalf their interests, like freight forwards. Their interest is low generalized transport costs including flexibility, reliability and damage control;
- Environmental groups: they can be local, regional or national groups or institutions concerning excessive negative externalities, such as noise, pollution, environment damage and spatial occupation;
- Local residents: they are people who live around the port area interested in job creation in line with local labour market, limited traffic congestion, no reduction of 'quality of life' due to port;
- Local and regional government: their concerns are the potential contribution of ports to regional economy, contribution to regional tax income, effective transformation of port/city interface;
- National government: the interests are low generalized transport costs for residents and firms, cost recovery of infrastructure.

Port Authorities are in charge of dealing with all the stakeholders' expectations and align them with the port objectives. Although Port Authorities role can vary from country to country and model to model, the European Union Commission states all possible functions they can assume: "state, municipal, public or private body, which is largely responsible for the tasks of construction, administration and sometimes the operation of port facilities and, in certain circumstances, for security." (World Bank, 2003 p. 11). When public, they usually are linked to the Country's Ministry of Transport.

#### 2.1.4 Port administration models

The distinguished work about port reform published by the World Bank (2003, "The port reform toolkit", was fundamental to pave definitions of port management models (also referred as administration or business models), the establishment of public and private roles in each of the models. In addition, it is widely adopted by port researchers. Considering it, we follow the World Bank work to describe the main existing port administration models. They are divided in four main categories:

*Service Port* is a model where the terminal services (which are listed in Figure 3) and port infrastructure are provided by the port authority (or port administrator), which is a public entity governed by the local, regional or federal government. Ports under this model are fully controlled by the state.

In *Tool Port*, the public port authority is in charge of providing all services and port infrastructure with the exception of the terminal operation services. Private cargo handling

companies hired by the shipping companies or their agents and licenced by the port authority are responsible for the vessel loading/unloading.

*Landlord Port* is the most adopted model around the world. Here the public owned port authority is in charge of basic and operational infrastructure that is leased to private terminal operators. Thus, the tenants are responsible for developing and maintaining the superstructure and provide all range of terminal services. There are cases that developing operational infrastructure is also left for the private terminal operators.

In *Fully Privatized Port* all services and assets are owned by private entities. It can assume one of the former models, however there is no involvement of public sector regarding ownership or fund source. The port can be entirely run by only one private company, which would be a private service model. If the landlord business model is adopted, the private port administration leases a port area for a private terminal operator, then with the revenue from the leasing contract it invests in the common areas.

Public port authorities in the Service, Tool and Landlord model can opt to hire people directly and keep infrastructure to provide marine, repair and ICT services by themselves or subcontract the services from private firms, though the responsibility to provide the service is still public.

Labour force employment can also differ from model to model. In the Service Port, for example, the Port Authority directly employs all required labours. However, labours involved in cargo handling can be also organized in a separate entity, still public. In the Tool Port, the labours involved in vessel loading/unloading (stevedores) are the private cargo-handling firm employees. It is common that port labours organize themselves in unions and governments oblige private firms to contract them in public ports operations. Thus, even in Landlord model terminals, hiring stevedore from labour organization can be forced. In Fully Privatized Ports, governments usually leave a choice for the private sector.

Table 2 presents a summary covering the role of public and private sector in each port administration models. It is important to remark that private sector participation in port infrastructure is seen only in Landlord and Fully Privatized models.

Table 2: Public and private roles in port administration models

Activity Model	Port Admin.	Port Labour	Port Infrastructure				Services			
			Nautical	Inland access	Operational	Super structure	Marine	Terminal	Repair	ICT
Service Port	Public	Public	Public	Public	Public	Public	Public	Public	Public	Public
							Private		Private	Private
Tool Port	Public	Private	Public	Public	Public	Public	Public	Private	Public	Public
							Private		Private	Private
Landlord Port	Public	Private	Public	Public	Public	Private	Public	Private	Public	Public
					Private		Private		Private	Private
Fully Privatized Port	Private	Private	Private	Private	Private	Private	Private	Private	Private	Private

Source: compiled based on (World Bank, 2003) by the author.

## 2.2 SUPPLY CHAIN, MARITIME TRANSPORT CHAIN AND PORTS

Transport is the ability of carrying a product or passenger from one place to another. People demand goods or request to be taken to somewhere else to consume those goods. There is no direct demand for transport. Demand for transport is derived from the customer's demand for goods. Customer demand or customer request is the link that leads us to another definition, supply chain.

Supply chain is the combination of "all parties involved, directly or indirectly, in fulfilling a customer request" (Chopra and Meindl, 2013 p. 13). Hence, transport concerns supply chains. "Logistics is the process of managing the flow of raw materials, inventory, finished goods, services and related information from the point of origin to the point of consumption" (Lee and Song, 2010 p. 564). Hence, transport also concerns logistics. Frequently, supply chain management is misled with logistics, but it is important to remark that beyond distribution (transportation), supply chain additionally involves new product design, marketing, operations, finance and customer service (Chopra and Meindl, 2013). In other words, everything required to fulfil the customer request. In this sense, the supply chain management scope is broader than the logistics scope. Logistics is the layer concerned exclusively with the management of material handling, production, packaging, inventory, transportation, warehousing, and often security.

Global supply chains usually involve maritime transport, then ocean carriers, ports and all sort of companies in charge of bringing the cargo to the port and picking it up for transportation to inland. That is why (Haralambides, 2002) defines port as a node in the transport chain. Node in transport networks is a point where goods change modes of transport. That is exactly what happens in a port, since the cargo arrives in a ship, is transported to inland where it is transhipped to a truck, train or barge. Vice-versa is also true. A node can also be a point of access to the transport network.

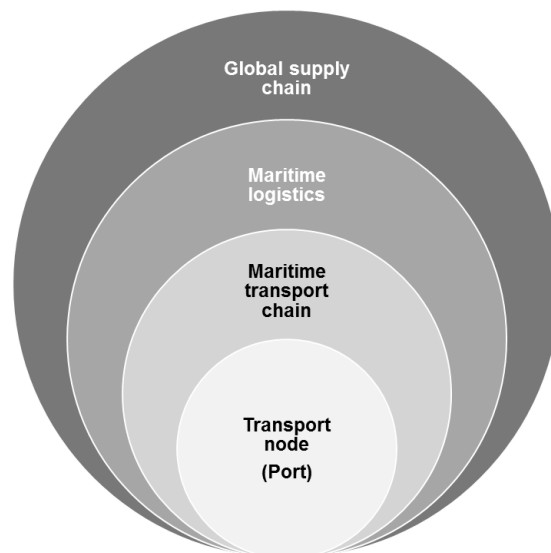


Figure 4: Global supply chain layers

Source: elaborated by the author.

With reference to Chopra and Meindl (Chopra and Meindl, 2013), the main goal of every supply chain should be to maximize the “overall value generated” or the supply chain surplus. From microeconomics, we know that the residents of a country are better off as greater as the total surplus (or in this case called supply chain surplus). It is the sum of the customer surplus and the producer surplus. The former is the value that a customer is willing to pay for the product minus the price that the customer effectively paid for it. While the latter is the product’s price minus its cost. For supply chain theory, the producer surplus is the supply chain profitability, which can be maximized by an efficient managing of the whole chain (Chopra and Meindl, 2013).

As we saw, an economy is better as long as their consumers and producers get to increase their respective surpluses or the supply chain overall value generated. A form to achieve that is by minimizing the generalized costs with transport; hence, a decent transport infrastructure plays a crucial role.

After describing all these concepts and the interconnection among them, we can advance to the explanation of the driving forces that affect maritime transport, then port infrastructure.

### **2.3 DRIVING FORCES OF MARITIME TRANSPORT**

The maritime transport drivers of change are divided in six categories: policy; demography and society; energy and environment; technology; economics; and finance. They act together and it is difficult to identify the size of the contribution of each one, even though the innovations driven by them are sensed by the whole transport chain (Rodrigue, 2010). Figure 5 summarizes the driving forces (outer layer) and the main trends that have affected the maritime transport chain, hence port sector (light-grey layer). In this section, we describe the main changes that have affected the sector, the drivers behind them and how it has influenced ports.

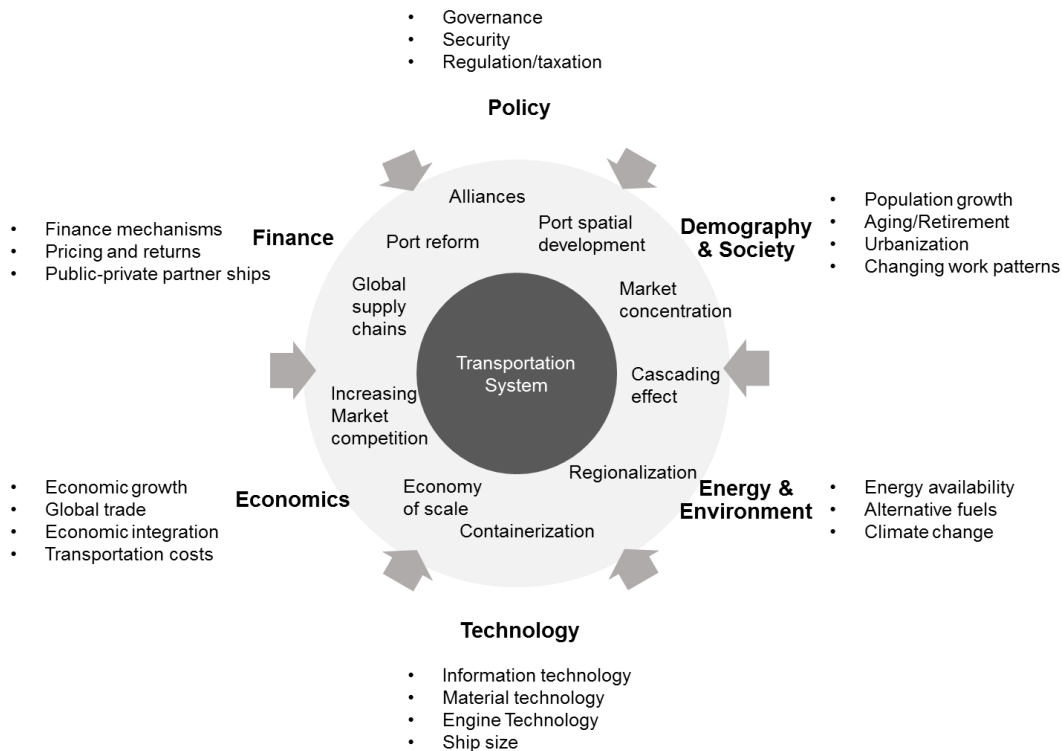


Figure 5: Driving forces and main trends in Maritime Transport

Source: Adapted from Rodrigue, J.-P., 2010. Maritime transportation: drivers for the shipping and port industries. International Transport Forum.

### *Economy of Scale*

Shipping companies are key users of ports. In this sense, triggers of shipping innovation end up affecting the port sector as well. According to (Wijnolst and Wergeland, 2009) “the major driver in shipping is economy of scale, which can be translated into ships that are larger, wider and have more draught” (p. 401). There is no doubt that the larger ships have impacted not only port design but also port competition, as we will see later.

### *Containerization*

Containerization was responsible for unlocking several changes. Container made possible the standardization of the transport services, which together with economy of scale were reflected on lower freight rates for shippers and a highly competitive market for container shipping companies.

In addition, containers made multimodality an option for shippers – before, transshipment was costly and time consuming. As a result, door-to-door replaced port-to-port concept, which was the dominant mindset in maritime transport before (Frémont, 2009).

### *Shipping companies competition*

The trick of competition among shipping companies arises from the difficulty to offer service differentiation in container maritime transport. The service of carrying boxes from one port to another seems to dispense any special feature - the technology of building ships is available for all shipping companies, the shipyards that build the ships are the same for all carriers. Thus, the competition is played in the price field.

### *Global supply chains*

The low transport cost, resulted from economy of scale and competition, increases international trade, which is connected to the emergence of global supply chains. Firms gained access to a global consumer market to explore and intercontinental suppliers network to procure. Big multinational got greater market power in such low-barrier trade environment. For instance, the group of the large companies, which represents only 0,5% of Maersk Line total customers, ships approximately half of all liner shipping volume (Reinhardt, Casadesus-Masanell, et al., 2012). Beyond enhancing the competition among liners based on price, these big companies are sensitive to friendly environment initiatives either seeking to comply with climate change regulation or to increase their market share among end customers.

### *Alliances*

The increasing fuel prices allied with the global crisis (low demand) of the last years, left liners under even greater pressure to reduce their costs. In addition, new ships ordered in the booming times were delivered right after the crisis, leading the shipping market to overcapacity. Hence, a deeper drop in freight rates took place. Shipping liners engaged in vessel sharing agreements, the called Alliances, in order to try optimizing their fleet employment. The Alliances left the shipping market even more concentrated, resulting in market power for port dues and tariff negotiation.

### *Cascading effect*

Economy of scale is an irreversible trend for shipping industry. As long as the shipping companies include new larger ships into the higher volume lanes, the older ships, but larger still, replaced the smaller vessels in the lower volume lanes. This movement is called cascading effect, which guarantees implications for all ports around the world, not just the ones on the Asia-Europe route.

### *Port competition*

In order to meet the shipping line companies' request of increasing handling productivity and physical conditions to receive large vessels, container terminals have invested in automation, bought more cranes and expanded stackyards. For ports that compete for same hinterland, these investments put the ports in a competitive advantage among their competitors. That was the case of the Port of Rotterdam in liquid and dry bulk and container shipping, for instance. Wijnost and Wergeland (2009) advocate that the Dutch port's leadership in market share among the Le Havre-Hamburg range after 1975 happened due to its investments in deep draught.

For ports located in populated urban areas where inland expansion is limited, reclamation was adopted as an option for port expansion not only to serve the large ships but also to



accommodate the increasing international trade. Nonetheless, reclamation depends on huge investments and environmental licenses, what impose some limitations.

#### *Port spatial development*

Bigger ships, increasing international trade, and port competition are some of the trends that together made ports claim for more space and then migrate to the periphery of urban areas. Bird's Anyport model explain the detachment between port and cities in three phases: setting, expansion and modernization (Notteboom and Rodrigue, 2005).

In addition to the Anyport model, we saw the emergence of hub-and-spoke network. Containerization allowed shipping companies to make transshipments without increasing the overall transport costs. This system permits carriers to gather great volumes of cargo in hubs, then transport them in large ships to another hub with a satisfactory utilization capacity (economies of density). Smaller ships (feeders) are in charge of distributing the cargo to small ports. Low-volume lanes that alone were not able to fulfil a big ship can still benefit from economy of scale in this way. Hub ports require a great staking area to accommodate great volumes, longer and stronger quays as well as constant deep draught. Such ports required large investments and strategic location to be built.

#### *Port Regionalization*

Ports around the world, even after great investments in infrastructure and technology, still face problems. On the one side, well-located ports still require more and faster investments to follow the economy of scale in shipping. On the other side, even with investments in the port area, the usual road congestions around big-economy cities tend to get worse, since the increasing call sizes impose huge fluctuations in all transport chain. In this sense, the pressure for efficiency has shifted to inland-transport.

Efficient port-inland connection has become a cornerstone to the supply chain management. Initially described by van Klink (1998) as "port network", the process of integration of ports with inland terminals emerged as a fourth phase in Bird's port development model. Years later, Notteboom and Rodrigue (2005) coined the expression "regionalization" to describe the same trend. Port network or regionalization is an "outcome and indicates a higher level of integration between maritime and inland transport systems, particularly by using rail and barge transportation, which are less prone to congestion than road transportation" (Rodrigue, 2010 p. 13). A good example of that is ECT with its European Gateway Services. They offer inland services through a dense network, which consists of inland terminals and barge and rail shuttle services.

#### *Vertical market integration*

According to Rodrigue (2010), demand and cost reduction opportunities were the main driving forces for carriers to integrate their services along the transport chains. The interest of liners in investing in terminals and inland transportation arises from 1) the opportunity to capture the margin of door-to-door services; 2) carriers have run out of strategies to increase margins in ocean transport, since their efforts with economy of scale are constantly being offset by overcapacity and fierce competition; 3) economy of scale in shipping imposes costs to inland transport and not investing in it would jeopardize the already small profitability of the ocean leg; and 4) carriers get closer to the cargo origin, which makes them "capture cargo" at source (Frémont, 2009). Thus, "vertical integration, in particular the development of logistical services, currently provides

shipping lines with a means of acquiring comparative advantage over their competitors” (Frémont, 2009). In short, liners have increased their scope in the supply chain. A good example of this trend is Maersk. They have been invested in terminals, trucking companies, rail operators and distribution centres.

#### *Global terminal operators*

As we saw, port business becomes even more capital intensive and there is no more space for inefficiency. The pressure for profitability is spread along the entire supply chain – once one of its members put the overall supply chain profitability in jeopardy, it is rapidly replaced by a more efficient player. Scholars advocate that the competition is played in a higher level, supply chain versus supply chain.

Beyond the shipping companies, other two groups form the global terminal operator class, stevedore companies and financial holdings. Experienced and capitalized local stevedore companies took the threatening moment that the industry has gone through as an opportunity for expansion and revenue diversification. They acquired several container terminals around the world. It happened mainly along the 1990’s, when developing countries made the first port reforms toward a model with more private sector participation (Bird, Olivierô, et al., 2006). For instance, that was the case of HPH and PSA. The latter is a public owned company, but outside of Singapore, PSA act as a private investor.

In the group of financial holdings, we have DPW, AIG and Macquaire as examples. These companies were attracted to the high potential of revenue generation of terminals (Rodrigue, 2010). That was a perfect match of interests. The port system needed high volumes of capital to invest in port infrastructure. On the other hand, infrastructure assets normally operate in an environment of limited competition as a result of natural monopolies, government regulation or concessions, hence, they can “generate predictable and stable cash flows over the long term” (Della Croce, Schieb, et al., 2011 p. 16). As we described, port environment can be highly competitive, but there are still regions where ports are a controlled environment with few competition.

#### *Port Reform*

The technological advance in shipping design allowed ships to increase in size. Larger ships not only make possible to keep the freight rates low, but they also put pressure on the terminal operators and port authorities to increase productivity by investing in new port infrastructure to have a competitive advantage over competitors. Together, competition and technology from the shipping industry are one of the three forces that have driven the ports reform (World Bank, 2003a). The second force is related to the acknowledgement of financial and operational benefits of private participation in developing infrastructure and delivery of services. The increasing demand of investments in social matters requires a higher share in public budget, which in times of crises is already compressed. The third force is associated to the emergence of global terminal operators, as abovementioned.

High productivity requirements, the efficiency of private operators and public budget constraints together with the diversification and globalization of investors have led port reforms towards a lower-state presence system. The next section is entirely dedicated to this topic.

## 2.4 PORT REFORM

Port reform is called either the process whereby countries open the port industry for the private sector or the process whereby public port authorities introduce managerial system and process to monitor port performance more aligned with market practices. Although we describe both to give a better comprehension of the topic, the focus of this research is on the first, which involves private sector participation in port infrastructure development.

Particularly, private investment has appeared in port sector since 1980's. Public budget constraints allied with increasing demand for social expenditures had delayed the maintenance of existing infrastructure or prevent the construction of new by governments (World Bank, 2003). Apart from that, all driving forces we described in the former section also played a role. They made crucial that decisions related to port be taken considering the principles of logistics to be efficient. When the decisions are biased by political interests instead, we very often see wrong choices of location, capacity, construction delays and budget overruns. Rodrigue's (2010) statement emphasize the point by describing the maritime shipping and terminal operation industry as:

*“strongly globalised, having multinational assets, and for maritime shipping those assets can quickly be reassigned. It thus represents one of the transportation realms where public policy is the least effective, unless concerted efforts are made and in line with the objectives of the industry”. (p. 23)*

### 2.4.1 Public or private matter?

In many countries, port services and infrastructure were considered as an exclusive government responsibility. Infrastructure in general was seen as a public good and together with port services they were a supportive tool of wider policies.

A public good is neither excludable nor rival, which means that a person cannot be prevented from using it, and one person's use cannot reduce another person's use of it, respectively. The classical example of public good is national defence, that translated to port business can be represented by the breakwaters necessary to reduce the intensity of wave action in ports, then create safe basins for vessels mooring/unmooring. It also reduces coastal erosion, which benefits all people who live in coastal areas not only those relate to ports.

Concerning government policies, transport infrastructure consists in a mean of economic growth. The Organization for Economic Co-operation and Development's (OECD) work 'Pension funds investment in infrastructure' summarizes the reasoning. It says that "economic infrastructure drives competitiveness and supports economic growth by increasing private and public sector productivity, reducing business costs, diversifying means of production and creating jobs" (Della Croce, Schieb, et al., 2011). Consequently, we can deduce that on the other way around lack of investments in infrastructure results in prohibitive transport costs, downgrade in international competitiveness, slow growth and unemployment. Since the emergence of public budget constraints and the well-known public sector's inability to develop projects within budgets and timetable, the potential downsides of lack of investments seem to surpass the discussion from where the resources to fund infrastructure should come from. One of the interviewees translated

it in short *“The most expensive investment is the one that does not happen”* (Rozenal, 2015).

Port infrastructure, especially maritime basic infrastructure that comprises breakwaters, is very expensive and not directly marketable, reasons that might require the public sector presence still to ensure the private sector appetite for such investment. Apart from that, it is also argued that public intervention is required since ports generate negative externalities, such as noise, visual intrusion, congestion, use of public space (coast) (Yescombe, 2011). Nonetheless, the government presence’s dosage makes all difference between private sector’s incitement and repulsion.

Asked about which source, public or private, should be responsible for financing basic and operational infrastructure, the interviewees made clear how complex is the topic. There was no straight answer.

*“For somebody like us, operators, it doesn’t matter. We do projects where we invest both in the superstructure and the port infrastructure. I give an example. We are building a port in Costa Rica in the middle of the ocean. We are landfilling, building the whole thing. It’s a close to a billion-dollar project. In other ports like here in Rotterdam, the port authority built all the infrastructure and then we provide the superstructure. The key is not who does what. The key is if there is an understanding of the risks associated with the various parts of the project. Who can manage those risks the best. Who has the appetite to do it, I mean the money, and how do we make sure that there is a fair compensation. So, in some countries, public money is not available. The governments are all struggling more or less all over the world these days for money. As a private investor, we can help with that by building the infrastructure as well. But then we have to have a much bigger certainty on being able to get a return on that money we are putting in because that’s infrastructure. It’s going to last 50 or 100 years, it’s why infrastructure, in that nature, is typically public. But if the government doesn’t have money, we can step in as long as there is a level of protection”* (Nielsen, 2015).

Private sector may be the main fund source but it depends on several issues, such as the investments recoverability, governments’ predisposition to share risks, the port development stage. Nonetheless, there is a consensus around the necessity of the investments and that they should be guided by business mindset.

#### *2.4.2 Port reform objectives concerning private sector participation*

Private funds for infrastructure development then becomes essential to achieve public interest. According to a survey carried out by (Baird, 2002), lower port costs, efficiency improvements, trade expansion and reduction of the dependence of public investments are main objectives of port privatization. In addition, there are other goals, such as “improve management capability; redeem debt obligations; rationalise port structures and minimise political intervention in decision-making; diminish the role of government in the operations of ports to landlord functions only; become business-orientated to raise the competitiveness of ports; deregulate the labour market and introduce performance-based contracts” (Van Niekerk, 2005 p. 142).

### 2.4.3 Port reform strategies

Governments count on a range of strategies to achieve the port reform objectives. However, in order to count on private sector to accomplish them it is usually necessary resort to a *liberalization* strategy first. It involves a de-regulation toward enabling private organizations to carry out certain port services that were previously public monopoly. According to the World Bank, “the essential feature of the liberalization option is that its implementing legislation permits the private sector to provide facilities and services and to compete with the existing public port organization” (World Bank, 2003 p. 41). Governments via liberalization can reach, but not limited to, port efficiency improvement and costs and prices reduction due to the competition, government monopolies avoidance, foreign investment attraction and private sector participation in the regional or national economy.

The next four port reform strategies are related to the port administration body, being the port management model service, tool or landlord.

*Modernization* of port authorities does not involve private sector entry in port administration therefore does not require legal or policy changes. It is related to port authorities’ adoption of modern managerial system and tools, which objective is to improve administrative efficiency and accountability. They can resort of corporate planning practices (strategic planning); career planning and management development; management information systems; and development of electronic data interchange (EID) and information and communication technology (ICT);

*Commercialization* is given by the negotiation of a performance contract between government and the port authority, aiming at empowering the port management to perform as well as the private sector. A port authority board, relieving this responsibility from the central government ministry, oversees the port authority managerial. It might require changes in the institutional and legal structures of the port organization to remove bureaucratic obstructions, such as employees and services hiring and firing rules. The agreement should comprise the port’s objectives in terms of performance goals, service quality, and social obligations, all ruled by commercial principles.

*Corporatization* of port authorities, or terminals, is the process in which it is transformed into a company under private corporate law, either being the government the only shareholder or keeping a majority stake. In the case of port authority, the new company conducts the port’s business and holds the assets (inclusive the land). “The main objective is to decrease direct government control over the company and to make it more responsive to market forces” (World Bank, 2003b, p. 44).

The last one, *privatization*, can be comprehensive or partial. The latter usually result in a Landlord Port model allied with public-private partnerships, whereby port infrastructure and port services can be carried out by the private sector. The port authority ownership remains with the government. The comprehensive privatization consists in also transfer the port authority ownership, together with assets and land, to the private sector, which implies in a fully privatized management model.

### 2.4.4 Public-Private Partnerships

Bearing in mind the reasons why public sector is still required in port infrastructure development – public good, economic development policy tool, negative externalities

originator, long-life and expensive infrastructure, non-directly commercialized –, the participation of private sector in building and exploiting port infrastructure is usually via public-private partnership (PPP). There are different definitions to PPP. Although, concerning the purpose of this research, we adopted Yescombe's work.

In order to be considered a PPP, (Yescombe, 2011) remarks the presence of four elements:

- A long term contract between a public-sector party and private-sector party;
- The contract scope consists of design, construction, financing and operation of public infrastructure by the private-sector party. It can be both, a greenfield project or upgrading of an existing infrastructure;
- The private-sector party is remunerated either by the public-sector party or by the general users;
- The asset remains in public-sector ownership or it is transferred to public sector at the end of the contract. Since in the Fully Privatized Port model the assets ownership remains with private sector, it cannot be considered a PPP.

In a PPP contract, the contract's public-sector party only specifies the output of the project, such as productivity. It does not interfere in the design, construction, operation or financing activities. Then, risks that may arise from these project's phases are assigned to the private-sector party, who can usually better control them.

A classic example of PPPs are concessions agreements, whereby the government transfers the right of charging public services to the private sector (concessionaire) after a lump-sum payment, which may be decided in a public auction process. It is important to make a distinction between concession and public leasing agreements. They share several characteristics, however the latter just involves the right of exploitation of an already build asset, it does not include the construction phase. Hence, a leasing agreement between public and private sector is not considered a PPP.

There are different modalities of PPPs, below we list the most adopted ones:

- Build-Operate-Transfer (BOT): the private-sector party is in charge of construction, financing, operation and maintenance of the asset during a contracted time. At the end of the contract, the asset is transferred back to the public-sector party at no cost or pre-determined price. The private-sector party should recover the capital costs charging the final users along the contract period;
- Build-Transfer-Operate (BTO): where the new facilities are directly transferred to the competent public authority right after construction. It is a model applied in countries where legal framework does not allow private ownership of considered public services;
- Build-Own-Operate-Transfer (BOOT): where ownership of land and facilities bears to the concessionaire, but it is transferred to public sector at an agreed price at the end of the concession period.

## **2.5 CHAPTER CONCLUSION**

The answer to the sub-research question “why should public sector attract private investor to port infrastructure?” is complex and requires the understanding of the driving forces of maritime transport chain.

A decent transport infrastructure is vital for the development of a country, main reason why governments had fully sponsored the sector for many years. However, growing investments demanded in social fields allied with public budget constraints led governments to open the sector for private investors.

In addition, market trends imposed an increasing need of investments in port infrastructure as well. In order to be effective, these investments should be guided by logistics principles, aiming at efficiency, which very often do not fit with political interests.

In a strongly globalized world, big multinationals have taken the leadership of markets and economies, for whom efficient logistics is a fundamental matter in reaching profitable supply chains. Countries that offer a decent transport infrastructure have a prestigious place in international trade. Thus, by opening the sector to private investors, governments have allowed future development.

Efficient logistics is a key element in international trade growth, which is a steady trend in a market with low generalized transport costs. It is a virtuous cycle. Efficient logistics brings transport costs down, which boosts international trade. Thus, for companies to keep growing they have to keep pursuing efficiency. It makes sense to private investors to entry into port infrastructure business.

After years with lack of investments, transport infrastructure presents opportunities for private investors. In many places, infrastructure concessions mean monopolies or, when not, they are a market with restrained demand to be unlocked. It also fits several companies’ vertical integration strategy, meaning cost saving opportunities as well as increasing quality services. The opportunities are all around the world, which open room for portfolio management concerning geographical diversification as well.

As we saw, there are several reasons why port infrastructure is an interesting field for private investors, which answered our second sub-research question.

### **3. DETERMINANTS OF INVESTMENT IN PORT INFRASTRUCTURE**

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Investment determinants are quantitative or qualitative variables that affect the investor's willing to invest. Investors are attentive to the determinants movements, since a change can increase or decrease the project's capacity to generate cash flows. Thus, investment determinants variation affects the investor's risk perception of a project. Investors react by translating the risk into the returns on investment they required.

We rely on the financial economics approach and the project finance theory to identify the main determinants that drive the private sector investments in general. Then, counting on literature review, expert interviews and a case study, we narrow the investigation down to the port sector.

#### **3.1 FINANCIAL ECONOMICS BACKGROUND**

Financial economics is a result of academic expansion in the American post-graduation business schools after the 1960's. A combination of high degree of theoretical abstraction from economists, empirical uncertainty (risk) and strong connections to financial institutions from finance specialists shed light to changes in the organization of financial markets, especially of investment analysis and management (Whitley, 1986). Under this science, for instance, we have risk portfolio management theory and business valuation techniques.

The financial economics literature about investment decision states that firms acting rationally will invest to the point that the marginal<sup>2</sup> yield on an asset is equal to the market interest rate. In other words, firms invest as long as the expected return on investment is greater than the opportunity cost of capital.

Market interest rate or opportunity cost of capital refers to the price of credit (loan), which results from the interaction of supply and demand for loanable funds. In economics, "loanable funds refer to all income that people have chosen to save and lend out, rather than use for their own consumption" (Mankiw and Taylor, 2011, p. 561). Thus, savers are the suppliers of loanable funds and investors are those who demand them. People will invest in buildings or/and equipment as long as the return on the investment is higher than that earned by lending out to others.

Investments count on uncertainty. Financial economists, seeking to keep applying maximization models, have introduced the "risk discount" to be subtracted of the expected yield of the project to represent the inherent uncertainty of investment decision (Modigliani and Miller, 1958). By doing so, they keep rationality as paramount.

The "risk discount" method is widely applied on business valuation. Actually, it works as an extra amount on the interest rate that the investor requires as return. The return should be able to cover the opportunity cost of capital and the risk. The higher the uncertainty, the higher the risk to be taken – then also the higher is the return requested by the investor.

In 1958, Modigliani and Miller stated that "no satisfactory explanation has yet been provided, however, as to what determines the size of the risk discount and how it varies

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<sup>2</sup> The yield of an extra unit of capital invested.



in response to changes in other variables” (p. 262). Since that, financial economists have carried out empirical research in order to assess the investment determinants that affect the risk discount.

Regarding specifically to Foreign Direct Investment (FDI), a study carried out by the World Bank for developing countries investigated qualitative factors, such as political risk and business conditions, and macroeconomic variables to explain FDI flows. It suggests that political risks and qualitative index of business operation conditions are significant matters for FDI in such countries. However, export orientation is the strongest variable for explaining why a country attracts FDI (Singh and Jun, 1995).

This research counts on project finance to identify the main determinants of investment in general, since it becomes a well-known technique of risk mitigation. We also resort to expert interviews and case studies to assess the determinants of investment for port infrastructure.

### **3.2 PROJECT FINANCE BACKGROUND**

Investors usually take advantages in resorting to a mix between debt and equity to finance projects:

- Investor’s lack of funds to finance the whole project: Infrastructure investment involves great amount of capital, which might be prohibitive for only one pocket. The investors may invite other partners to the endeavour. However, it can still be an expensive venture to take only with shareholders’ funds (equity).
- Debt is usually cheaper than equity: Lenders protect their position by contractual guarantees. In case the project fails, they can (entirely or partially) recover the capital by executing the guarantees and taking the remaining project’s assets. The guarantees result in lower risk of losses to the lender, which reflects in lower interest rates. On the other hand, the equity can be all lost. Hence, the probability to lose everything is converted in a request of higher return on investment.
- Taxation benefits: debt generates interest expenses, which are tax deductible, turning into benefits to the shareholders (Modigliani and Muller’s trade-off theory of leverage);

There are different modalities of debt. They are more or less divided in two main categories, according to the method applied to secure the lenders. They are Corporate Finance and Project Finance. The former, more traditional, relies on the value of the assets that the sponsors (investors) will make available to the lenders as collateral. In the latter, it is the financed project’s ability of generating cash flows to repay debt and equity – at a rate according to its risk – that is considered.

In 2013, banks financed \$204 billion of capital expenditures using project finance, being \$41 billion in transportation (Esty, 2014). Project Finance becomes a tool to invest in risky projects without contaminating the existing firm assets in case of project fail. In order to do so, it is created a special purpose vehicle (SPV), which holds the debt. The SPV is the debt contract’s counterparty. In this way, the sponsors keep the project’s debt aside of their balance sheets. Project finance can be more expensive than corporate finance because no sponsor’s assets are given as guarantee, then lenders increase the credit

risk parcel of the debt interest rate. In order to offset the potential increase in interests, risk management techniques were developed and project finance loans became a risk management technique *per se*.

In project finance, the risks are assigned to the parties that better can control them. According to Gatti (2013) they are:

- Industrial sponsors, who see the initiative as an upstream or downstream integration opportunity;
- Contractor sponsors, who are mainly interested in develop, build and operate the project. Since it makes part of their core business, they see the project as one more business opportunity. They should also provide equity and/or subordinated debt;
- Purely financial investors, which are more willing to invest in risky projects in return of high yields;
- Public sponsors. Governments are interested in reducing the infrastructure's dependence of public investments as well as achieve social welfare. Thus, they transfer the role of providing infrastructure to a private investor. In return of their funds, private investors are allowed to charge the user directly. Governments can also provide some tax benefits or even grants. It is agreed on a concession agreement, which requires previous law, regulation allowance and long-term commitment.

According to Yescombe (2011), project finance together with PPPs is an effective instrument to attract the private sector to infrastructure investments due to:

- the allowable high leverage for the projects;
- combining different skills of sponsors;
- long-term finance;
- keep the borrowing capacity of sponsors;
- the debt's project is off sponsor's balance sheet; and
- risk spreading and limitation.

As we learnt from the financial economics theory, firms invest as long as the expected return on investment is greater than the opportunity cost of capital. The riskier is the perception of a project, the lower is the expected return of it, what dampens the investor's willing to invest. Project finance is considered a tool to mitigate risks. Thus, by its employment, investors can unlock investments opportunities.

Nonetheless, Gatti (2013) remarks that, in developing countries, where investors have more exposure to country, market and technological risks, project finance might not be the best option from the investor perspective. "High uncertainty, an extremely rigid contract structure, and high financial leverage make it difficult for management to respond quickly or to adapt to change" (Gatti, 2013, p. 20-21). The author also points out that infrastructure projects with public good characteristics and negative externalities generation can be challenging in setting a market price that generates enough cash flow

to repay debt and equity. In these cases, public grants or other contributions can mitigate the investments costs for private sponsors; hence reduce pressure to high charges on end users.

According to Beckers, Chiara, et al. (2013), “the key is to know what risks are inherent to a project and what degree of freedom you have to shape the risk profile before you commit the bulk of your funds; you must also have skills in place to prevent the remaining risks from getting out of control” (p. 4). Thus, in the next section, after we list the potential risks of an infrastructure project based on the “life-cycle” approach, we identify the risks that can be mitigated under project finance instrument and the remaining risks, those which can still hamper the project to get out of the drawing board.

### **3.3 INVESTMENT DETERMINANTS OF INFRASTRUCTURE PROJECTS**

Infrastructure projects include at least two phases: precompletion, which involves not only the risks during the design and construction phase but also during the licensing phase; and postcompletion or operational phase. They can share some common risks or present complete different risk exposure. Below, we describe the risks presented in each phase and which sponsor that is accountable to them:

#### *3.3.1 Exclusive precompletion risks*

The exclusive risks of this phase are those linked to activity planning, procurement and contractual design choices, technology and construction (Gatti, 2013; Beckers, Chiara, et al., 2013). In a fully private project all precompletion risks can be easily assigned to the contractor under a turnkey agreement. Nonetheless, in PPPs governments may decide to keep the activity planning and procurement under public control, where contractors are only hired to the building and operation phase (BOT schemes) based on a pre-established design. In these cases, governments should manage the potential risks of the project design – offering fair and open bidding process with feasible and clear project scope are crucial to attract private investors to public tender process (World Bank, 2003b).

- Activity planning risks arise during the early-stage decisions regarding project structure and design. Projects can be split among different contractors, which is not uncommon in big-budget projects, leading to interface issues. For instance, the HSL-Zuid high-speed rail-line in the Netherlands, which was broken into three separate subprojects, overran the original budget in 43%. According to Beckers, Chiara, et al. (2013), it happened mainly due to issues with the procurement of the rolling stocks, then the integration between the superstructure and substructure. It leads us to another aspect, especially for transport infrastructure individual projects, that should be planned concerning a wider strategy. An efficient transport chain is multimodal interconnected and requires scale. In Brazil, for instance, trains are not allowed to cross the whole country because the tracks have different sizes, meter gauges and broad gauges. It imposes the use of different rolling stocks, thus crossing regions by rail require transshipment resulting in higher operational costs.
- Procurement and contractual risk. Procurement and contractual phase is crucial for creating trust among tender process participants, a right choice concerning

strategy that can attract potential suppliers. According to Beckers, Chiara, et al. (2013), “procurers frequently select the wrong strategy, disregarding or misjudging the ability of private-sector players to control certain risks” (p. 08). Errors in this phase can lead to postpone a tender process already launched due to low interest among private sector. Thus, the big risk to the bid sponsor is lack of private sector interest.

- Technological risks arise from projects that involve innovative or not fully understood technologies.
- Construction risks are those that lead to a delay in the project’s delivery, postponing the project’s cash inflow.

### 3.3.2 *Exclusive postcompletion risks*

This phase is subject to supply risk, operational risk and market risk. These risks can be mitigated in project finance by long-term contracts or sponsors’ stake on the project. They generally are allocated to industrial sponsors through a Supply agreement, an Operation and Maintenance agreement, and a Purchase and Sales (take-or-pay) agreement, respectively.

- Supply risk arises when the project, already operational, does not get the required inputs to operate.
- Operational Risk. Low efficiency is an example of operational risk. It can be caused by bottlenecks in other parts of the chain or, for instance, low-skilled labour force.
- Market risk is related to any cause of revenue forecast underperforming, being volume or price source. Demand analysis should be carefully carried out, regarding competition of not only the same products but also potential substitutes.

### 3.3.3 *Sharing risks between Pre and Postcompletion phases*

In project finance, precompletion and postcompletion risks can be mitigated by long-term contracts. However, there are risks along the whole project cycle that are not easily allocated to the project’s sponsors, which we call remaining risks. Private investors, in order to mitigate them, can resort to the insurance market – which increases the project costs – or avoid investing. The remaining risks are then described below:

- Economic risk consists of, but not limited to, interest, exchange rate and inflation. These variables can negatively affect the project costs if suddenly increased. According to Pindyck and Solimano (1993), inflation seems to have the bigger impact on private sector’s willingness to invest, since bad outcomes are more likely because “a government producing high inflation is a government that has lost control” (Fisher quoted by Pindyck and Solimano, 1993, p. 311). In order to control inflation – that might be a result of government budget overruns or exaggerated economy stimulus by tax relief, for example –, governments would resort to tax rate escalation and tax benefits withdraw. In addition, governments can opt for increasing the interest rate to reduce credit availability or even heat the demand for country’s bonds to finance the government budget deficit (Mankiw and Taylor, 2011). All these actions can increase the costs of the projects.

- Environmental risk emerges since infrastructure projects, mainly transport infrastructure, involve dramatic changes in environment, thus a great public appeal. “Public opposition to projects with major environmental impact could lead the host government to reconsider government support agreements” (Gatti, 2013, p. 42), what can result in lengthy discussions along the environmental feasibility of the project or, after construction, license withdrawal;
- Regulatory framework consists of constitutional provisions, laws, rules, regulations and activities of government agencies concerning development and economic exploitation of regulated activities, such as ports and airports. The regulatory framework establishes the responsibilities among national, regional and local governments; the relationship among government entities; the private sector involvement; land use and titling. Risks emerge when the law is unclearly written. Law misinterpretation by regulators can lead to project delays in licensing or even worse, like unexpected negotiation of contract clauses (Gatti, 2013). The latter is a key factor in concessions agreements;
- Business environment is related to all needs for general business to work properly and efficiently, since its conception until its end, when it is the case. It is related to how costly and time consuming it is to an entrepreneur to set up a business (land clarity; environmental licensing; property transfer; engineering inspections), or to operate (tax regulation compliance; import and export procedures; international cash transfer) or to close (commercial insolvency process). Another important point is what terms prevail in a conflict occurrence during the project construction or operation. Private investors would rather opt for freedom of contract than domestic law. We consider it a matter on business environment;
- Political risk is related to what extent the host country’s institutions have independency to stand on political cycles and to be committed to long-term plans. To be more specific, the Financial Times defines that political risk “concerns not only politically unstable countries, but also places where normal democratic procedures may bring about a change of government and thus a possible negative change in policy, for example, on tax, regulatory constraints and tariffs, etc” (Financial Times, n.d.). Extreme cases like risks of businesses nationalization, expropriation without any payment or even risk of civil war or revolt are considered political risks as well;
- Counterparty risk is connected to the financial soundness and commitment of the counterparties in the various signed contracts required in the project finance. We call it partnership risks as well.

Figure 6 summarizes all the 14 determinants that we have identified. In the lighter-grey boxes we listed how they can be manifested, for instance an unclear regulatory framework determinant may manifest by public administration bureaucracy. If high, bureaucracy generally increases the length of licensing processes, delaying projects delivery, thus postponing cash flows. As we saw, determinants exclusively presented in the precompletion and postcompletion phase can be allocated to the project’s sponsors, the ones who have the best interest in avoiding them. Nevertheless, the risks inherent to

“the whole project life cycle”, the called remaining risks, should be carefully monitored since they are external to the action of the sponsors.

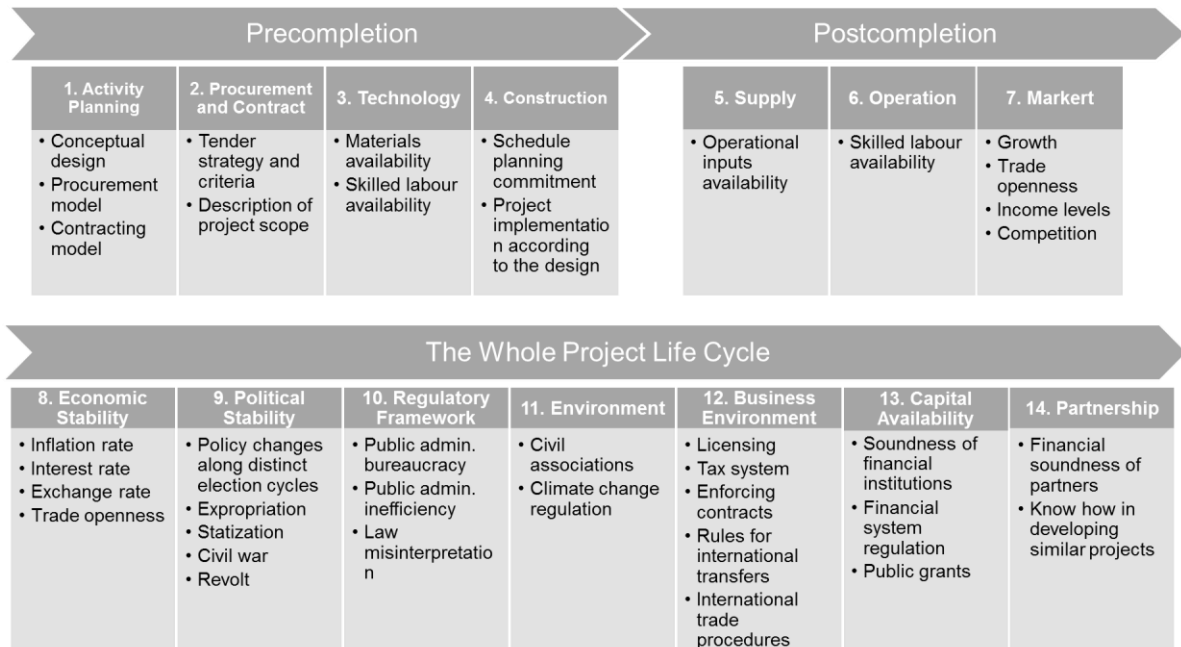


Figure 6: Activities to be monitored aiming at risk control. Life-Cycle approach.

Source: elaborated by the author

Determinants of investments affect the risk perception of the investors. Risks related to a project determine the investor’s willingness to invest, hence determinants of investments and project risks can be considered the same thing. Project finance allows investors to allocate risks to who can better control them. Risks that cannot be assigned are called remaining risks. They are not addressable by long-term contracts. However, investors can still opt for hedging or insuring them, what means lower returns.

### 3.4 INVESTMENT DETERMINANTS OF PORT INFRASTRUCTURE PROJECTS

According to the World Bank (2003b), the private sector evaluates its participation in port infrastructure/superstructure projects based on the following elements:

- a. “Expected yield;
- b. Adequate debt/equity financing structure;
- c. Strong sponsorship;
- d. Solid legal contracts;
- e. Transparent legal framework;
- f. Fair and open bidding procedures;
- g. Credible feasibility analyses (technical, institutional, financial, economic and environmental)” (p. 36);
- h. “Sufficient and well-trained labour force” (p.24).

Investors aim at maximize the project's yield or the firm's value – In the last case, the project alone might not have the highest return but when combined with the investor's portfolio it maximizes the whole business value, which is aligned with the financial economic theory. We understand that the expected yield (Element "a") is a result of the investment determinants action. Once the risks are low, the expected yield should be higher. Thus, we are especially interested in these determinants.

Capital structure (debt/equity proportion – Element "b"), in a certain extent, depends of the same determinants, since they also affect the lenders risk perception of the project, which reflects the credit risk parcel of the interest rate and the amount that the lenders are willing to lend out. However, port infrastructure, as any other infrastructure project, requires large investments. Thus, fund scarcity, due to external factors, can constrain port development and restrict the investors to a small group of companies.

"The lack of long-term capital markets and real interest rates of more than 10 percent will limit the financially justifiable investments to ports that have a large baseload traffic. This implies either expansion of existing facilities, or endorsing the bulk terminals having long-term agreements with cargo owners or multi-purpose ports that offer significant savings to shipping lines and are protected from direct competition". (*Allport, Arnold, et al., 2000*)

In order to keep the coherence of this research we classified the elements "c" to "h" plus labour force among the 14 determinants we have found and showed in Figure 6. The same criteria will be later applied on the interviewees' answers.

- Element "c", strong sponsorship refers to the project's sponsors including the government. Thus, this element is linked to partnership and political stability determinant. The former is related to the financial soundness and capacity to develop the project. While the latter, is related to the long-term commitment to the government with the private sponsors. As port is a regulated sector, it can be highly affected by policy changes;
- Element "d", solid legal contracts are found in countries with friendly business environment, which are also characterized by contracts enforceability;
- Element "e", transparent legal framework is highly connected to the regulatory framework determinant. Inefficient and bureaucratic public administrations can lead to a law misinterpretation, creating puzzling and not transparent regulations/
- Element "f", promoting fair and open bidding process is a government responsibility in port concessions, which falls in the regulatory framework determinant. Public administration efficiency with no political interests interference is are not desirable.
- Element "g", credible feasibilities analysis when kept in the government scope also depends on the public administration efficiency to carry them out, thus it is another point related to the regulatory framework risks. Nonetheless, if governments bound concession agreements concerning only the project's output, the risk of bad projects design is transferred to the concessionaire, who can better control it;

- Port labour force is an issue linked to the operational risks. According to Baird's survey, when asked about the importance of dockworker labour reform in attracting private sector investment, "overall, a slight majority of ports considered labour reform to be a significant issue (Baird, 2002, p. 279).

Alike the World Bank's list, the interviewees also remarked that remaining risks play a central role in port infrastructure attractiveness. When asked about the state-of-the-art conditions to private investors in port infrastructure projects, all of them have cited at least one issue related to the determinants that compound this group – Regulatory framework, political stability and business environment. The list with the main factors that came out from the interviewees is found below:

*Table 3: State-of-the-art conditions for private investors in port infrastructure projects*

<b>Conditions</b>	<b>No of citations</b>
Political stability related to government long-term support, stable rules and policy making coordination resulting in national master plan	9
Regulatory framework that allows private investments and makes clear the roles of private and public sector	6
Growing market in the long-term that also enables opportunities to add value to the services	6
Friendly business environment concerning rules for international transfers, regulation for foreigner properties in the host country and complexity of licensing processes	4
Economic stability related to inflation control	3
Operation efficiency concerning inland connectivity	2
Know-how and financial soundness of sponsors	1
Capital availability concerning public grants and funding schemes	1

*Source:* elaborated by the author based on the interviews.

A port project involves several governmental entities the investor needs from the land clarity to the customs support. Ports are located in cities, they should benefit regional development, but they are matter of national policies. That implies that port project's sponsors should simultaneously handle up to three government levels. Ports are complex to be developed. All this network should be aligned when a port project takes place in order not to incur in budget overruns, delays or cash flow shortfalls. That is why a regulatory framework must be clear; otherwise the project will collapse in bureaucracy.

Long-term stability, both political and economic, is a requirement for port infrastructure investors. We remark some of the answers below that explain the reasons. (Please, go to Appendix in order to see them all).

*"Infrastructure problems are always long-term. You shouldn't be distracted with economic setback or growth. You need stability. If you are a private investor as we are in Brazil, you need stability, a reliable government who is not changing every time the policy of these kinds of investments. (...) And you need a reliable government which is working with you, also facilitating and seeing the potential of those investments."* (Aartsen, 2015)



*“The first thing is the balance on the government's budget because investors need to see that there is a serious effort being made in the reduction of the inflation, in the reduction of the government's need to fund itself on the high interest rates to the market. If the government's austerity plan is effective, this will be a critical point to attract investors.” (Carlini, 2015)*

Maritime transport chain is a highly globalized industry. Easing cash transfer abroad is vital for such industry. Global terminal operators use the cash flow generated in one location to invest in another. That is a central reason in the portfolio diversification strategy. Thus, a friendly business environment plays an important role in attracting investments. A positive market outlook in the long term is a strong factor of attraction for port investors. As we said, not only because it is a revenue key factor, but also because transport infrastructure needs scale to be efficient. Mr. Nielsen makes both points clear with further examples:

*“The most important thing for a port investment is obviously the market. There has to be a demand for the capacity, not just tomorrow but for the next thirty years because that's the horizon for the things we are building. The market will always be the most important thing. Subsequent to that is how easy is it to operate. In some countries, for instance, you're prevented as a foreigner private investor from having majority. You need to look for a local partner and they need to actually own the company. That's not very inductive to investment. So having, I wouldn't call it a liberal law regime, but a law regime that's built on international standards, that is highly conducive to investments.” (Nielsen, 2015)*

According to the port definition in Chapter 2, “a port is an interface between sea and land; a node in a transport chain; a point where goods change mode of transport” (Haralambides, 2002). Ports, in order to serve their purpose, should be connected to the inland, preferably by more than one mode to be operationally efficient – as we noticed from the regionalization trend. For instance, drybulk cargo is usually produced in the countryside, thus it needs to get to the port to be exported. Imported manufactured goods should get to the consumer markets that are spread within the country. Thus, when governments authorize port projects aiming at improving the country capacity to serve international trade, they should consider ports, roads, railways and waterways in an integrated form in order to the country's logistics to be efficient. The interviewees made clear how important is logistics to be planned as a whole thing citing inland connectivity, a long-term master plan and government support as successful factors in attracting private investors to port infrastructure. Apart from that, a decent transport infrastructure plays a fundamental role in international trade competitiveness, then regional development and employment. That is another reason why government should plan and support the infrastructure initiatives in a long-term and wider context. That gets a bit clear in one of the interviewee's words (who asked to be kept anonymous):

*“We are talking about investments in ports, the most important thing is how that infrastructure is linked to the economic structure around that port. That should be taken into account, very well examined also by the public sector*

*in Brazil, that you have a long-term strategy to certain areas in order to develop it as an economic area” (Interviewee, 2015)*

In Table 4, we compiled all factors that we found along this research, being on literature review or through the expert interviews. We organize them according to the project-life-cycle approach. The first column identifies the phase of the project; the second column presents the 14 determinants/risks that we consider as macro-level; the third column shows the specific issues that arise for each determinant; finally, the fourth column shows the relevance of the issue according to our research. The criteria used to classified the relevance considers (+) for issues found on the literature review (LR) or cited by less than 3 interviewees; (++) found on the LR and cited by less than 3 interviewees; (+++) found on the LR and cited by up to 4 interviewees; (+++++) found on the LR and cited by 5 interviewees.

Table 4: Relevance of investment determinants

Project Phase	Determinant	Specific issue	Relevance*
<b>Precompletion</b>	Activity planning		+
	Procurement design		+
	Technology		+
	Construction budget and timetable		+
<b>Postcompletion</b>	Supply availability	Energy supply	+
	Operation efficiency	Skilled labour force	++
		Inland connectivity	
	Market potential	Long term growth	++++
		Capacity to add value	
<b>The whole project life</b>	Economic stability	Inflation control	++
	Political stability	Stable rules	++++
		Government support / Strong sponsorship	
		Long-term master plan	
	Regulatory framework	Transparency level	++++
		Fair and open procedures	
		Credible feasible analysis	
		Clearly written rules	
		Clear definition of roles	
	Environment		+
	Business environment	Solid legal contracts	+++
		Efficient licensing process	
		Rules for international transfer	
		Foreigners property regulation	
	Capital availability	Debt/equity structure	++
Public grants			
Funding schemes			
Partnership	Sponsors financial soundness	++	
	Sponsors know-how		

\* Relevance criteria: Determinant found on the literature review (LR) or cited by less than 3 interviewees (+); found on the LR and cited by less than 3 interviewees (++); found on the LR and cited by up to 5 interviewees (+++); found on the LR and cited by more than 5 interviewees (++++).

Source: elaborated by the author.

### **3.5 CHAPTER CONCLUSION**

The best scenario for private investors is one where the market is 100% foreseeable and risks are controllable, where they can maximize the return on investment based on rational estimations. Nevertheless, such environment does not exist. The only certainty that investors have is that the future is uncertain and that there is no way to control all the risks but to avoid them, which means do not invest.

Project finance is being widely adopted in infrastructure projects to permit a higher capital structure leverage, to lengthen debt's tenure as well as to spread the risks among sponsors. Nevertheless, there are risks that cannot be controlled by private sponsors, which we called in this research by "remaining risks". On the one hand, these risks can be insured. On the other hand, the extra costs with insurance might reduce the return of the project, then affecting the private sector's willingness to invest.

According to our research, besides market, the remaining risks seem to affect most the port investors' willingness to enter into a new venture. A combination between literature and interviewees led us to point out political stability, clear regulatory framework and a friendly business environment as the key elements in order to attract private investors for port infrastructure.

## 4. THE BRAZILIAN PORT DEVELOPMENT

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In the previous chapter we listed the main conditions for a port infrastructure project to succeed under the private sector perspective. Considering the literature and the interviews, this research found that the most critical determinants are political stability; clear regulatory framework; growing market; and friendly business environment.

The objective of this chapter is to identify then which of these determinants are found in Brazil and which are not. In order to do so, this study counts on the interviewees' experience once again, literature and market reports.

### 4.1 BRAZIL AT A GLANCE

Brazil occupies the 5<sup>th</sup> position in the global ranking considering area (8,5 million Km<sup>2</sup>) and population (204 million). The country is divided in 27 states, grouped in five regions and 5.570 municipalities.

Concerning economy size, Brazil was the 7<sup>th</sup> biggest GDP (US\$ 2.346.118 million) in 2014, of which 70% from services sector (IBGE - Instituto Brasileiro de Geografia e Estatística, 2015). From the International Monetary Fund (IMF) to the Brazilian banks, the expectation is that the Brazilian economy should shrink 1% or 2% in 2015. Next year, the Brazilian GDP growth should be weak, from zero to 1%. According to IMF (2015), for the short term, "the outlook for Brazil is affected by a drought, the tightening of macroeconomic policies, and weak private sector sentiment, related in part to the fallout from the Petrobras investigation" (p. xv). However, from 2017 on, it is expected around 3,5% growth in 2015 (IMF - International Monetary Fund, 2015, Bradesco, 24/07/2015).

Brazil is considered one of the closest economies in the world, measured by the share of merchandise trade as a percentage of GDP<sup>3</sup>. Canuto, Fleischhaker, et al (2015) explain that the situation cannot be attributed to the size of Brazil's economy since other bigger economies are opener (see Table 5). Actually, this condition seems to be explained by lack of integration into global value chains caused by the lack of dynamism of the Brazilian exporters – which are too concentrated in large firms. The Brazilian closed economy is a weakness but also an opportunity. The right reforms, mostly those linked to enhance the business environment and the pace of physical and human capital accumulation, would be able to unlock an enormous potential for growth (Canuto and Schellekens, 2014).

The table below shows the Merchandise Trade as a percentage of GDP for the 10 biggest world economies and BRICS<sup>4</sup> countries and the position of each country in the global GDP ranking for 2014.

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<sup>3</sup> Merchandise trade as a share of GDP is the sum of merchandise exports and imports divided by the value of GDP, all in current U.S. dollars (World Bank, 2015).

<sup>4</sup> An acronym for the combined economies of Brazil, Russia, India and China, later added South Africa, originally coined in 2003 by Goldman Sachs. It speculates that by 2050 these four economies will be the most dominant.

Table 5: Merchandise trade (% GDP) in 2014

Ranking	Country	%GDP	Ranking	Country	%GDP
7 <sup>th</sup>	Brazil	20%	8 <sup>th</sup>	Italy	47%
11 <sup>th</sup>	Canada	53%	3 <sup>rd</sup>	Japan	33%
2 <sup>nd</sup>	China	42%	10 <sup>th</sup>	Russian	43%
6 <sup>th</sup>	France	45%	33 <sup>rd</sup>	South Africa	61%
4 <sup>th</sup>	Germany	71%	5 <sup>th</sup>	United Kingdom	40%
9 <sup>th</sup>	India	38%	1 <sup>st</sup>	United States	23%

Source: (World Bank, 2015)

Considering transport infrastructure, similar countries to Brazil in area, such as Russia, Canada and USA, heavily rely on railway transportation. In those countries, railway represents more than 40% of the transportation matrix, while in Brazil it is 25% - mostly dedicated to iron ore. The biggest share in the matrix is occupied by roadways (58%), however only 20% of them are paved (Benevides, 2014). Despite Brazil's abundance of rivers, waterways represent only 17% of the transportation matrix (Savaris, Vinagre, et al., 2013). After the 1980's, the investments in overall infrastructure as share of GDP dropped from 5,4% to roughly 2,5% in 2013, being less than 1% of the GDP dedicated to transport infrastructure (Garcia-Escribano, Goes, et al., 2015, Savaris, Vinagre, et al., 2013). Those are reasons that contribute to explain the Brazilian low grade in the Global Competitiveness Report 2014-2015 for the second pillar, infrastructure (77<sup>th</sup> out of 144).

Concerning specifically ports, we asked our interviewees how they evaluate the Brazilian port infrastructure – being 1 very bad and 5 excellent –, considering an infrastructure that enables ports to work efficiently. They classified the Brazilian port infrastructure somewhere between very bad (grade 1) and regular (grade 3). They pointed out several reasons for that, nevertheless lack of inland connectivity, lengthy and unclear licensing process, bureaucracy of the Brazilian public entities, unclear and unfinished regulatory framework as well as lack of a long-term master plan are the main ones.

Table 6: The Brazilian port infrastructure evaluation by the interviewees

Grade	1	2	3	4	5
Frequency	2	5	2	0	0

Source: compiled from the expert interviewees by the author.

It is no coincidence that Brazil has a low rank on the Doing Business list of 2015. It occupies the 120<sup>th</sup> position out of 189 countries assessed. The report evaluates how easy it is to do business in each country considering 11 areas such as construction permits, taxes, cross-borders trade, contracts enforcement and labour market regulation. The two worst areas in Brazil are taxes (177<sup>th</sup>) and dealing with construction permits (174<sup>th</sup>) (World Bank, 2015). For instance, considering the latter, BMW recently has set up a new automotive assembly plant in the state of Santa Carina, project that had all the regional government support. In the day of the plant's inauguration, in October of 2014, the Company's CEO harshly criticised Brazilian bureaucracy since the company had to gather more than 60 different documents among construction licenses and signed contracts to be able to build the facility (Junior, 2015). He even made a joke by saying

that “at the beginning, there were required 50 licenses but that number turned out to be 150 in the end” (quoted in Silva, 2014, p.12)

#### 4.2 PORT TRAFFIC OUTLOOK

In the last 25 years, the port throughput has almost tripled (2,7x) in Brazil – CAGR of 4,2%. In 2014, the Brazilian ports handled 969 million tons (see Figure 7), which is 88% of the total throughput of Germany, Belgium and the Netherlands together (1.101 million tons) for the same period. According to the government expectations, the Brazilian throughput in the next 15 years will more than double, reaching 2.200 million tons in 2030 (CAGR~5,6%) (Povia, 2015).

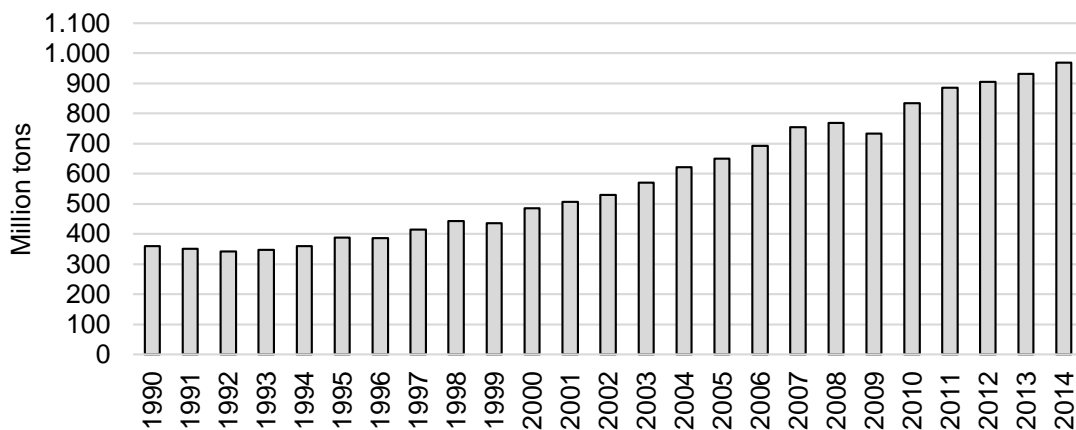


Figure 7: The Brazilian total throughput

Source: (Povia, 2015).

In the last five years, Brazil exported on average 78% of the throughput. Especially in dry bulk, Brazil is the biggest exporter of sugar, alternates the first place in soybean exports with USA, and it is the second largest exporter of iron ore, only behind Australia - what shows why it is known as an export-oriented country.

The top 12 cargoes (see Table 7) represent 90% of the total Brazilian throughput. After corn - which has doubled its exports due to a drought in USA – and fertilizers imports, the fastest growth in tonnage between 2010 and 2014 was containers (CAGR 8,1%). In 2014, the Brazilian ports together handled 9,3 million TEUs.

The main market for the Brazilian iron ore is China. Despite Chinese economy deceleration, Vale expects growth for the incoming years due to China reduction in its high-quality iron ore production and the announcement of interest rates decrease among other stimulus to their economy. The iron ore produced in Carajás, the main Vale mine in Brazil, is considered the highest quality iron ore in the world.

Table 7: Top 12 cargo handled in the Brazilian ports (Million tons)

Top	Cargo	2010	2011	2012	2013	2014	Share 2014	CAGR*
1	Iron ore	311	328	332	330	346	36%	2,7%
2	Fuel/ mineral oil	186	188	195	194	208	21%	2,9%
3	Container	74	84	87	97	101	10%	8,1%
4	Soybean	39	41	40	50	51	5%	7,0%
5	Bauxite	32	37	35	36	36	4%	3,1%
6	Fertilizers	18	23	23	25	27	3%	10,6%
7	Sugar	24	23	22	24	22	2%	-1,9%
8	Corn	11	11	23	29	24	2%	22,1%
9	Coal	16	18	19	17	21	2%	7,2%
10	Steel	14	16	14	14	16	2%	3,1%
11	Soymeal	11	12	13	13	14	1%	7,6%
12	Cellulose	8	9	9	9	11	1%	6,1%
	Others	95	96	92	92	91	9%	-1,0%
	Total	839	887	904	929	969	100%	3,7%

Note: \* CAGR period 2010-2014.

Source: ANTAQ database.

Part of the growth in volume expected to 2030 should come also from agriculture. According to one of our interviewees, Mr. Luis Neves, who is the COO at CHS,

*“Brazil has what we call a competitive advantage in the agribusiness. What I understand as a competitive advantage is the core of Porter’s proposition, it’s something difficult to imitate or replicate. Brazil has the sun, the land – good land – and the water. Brazil’s soil offers a huge potential. It’s not possible that we are so bad that the country can’t turn itself in an agribusiness power. We have to explore many stages of the chain, add value to the agricultural commodities, be it sugar cane, sugar, research... it’s an industry that the only place on Earth that offers something similar or greater is the United States, where most of the agribusiness potential was already explored. So, there’s still much to be explored here in Brazil” (Neves, 2015)*

Considering wet bulk, 90% of the volume is crude oil and fuel. More than 70% of the operation refers to the crude oil drilled offshore and brought back to the Brazilian refineries, when then the fuel is distributed along the Brazilian coast by shortsea shipping or inland navigation. The rest is deep-sea navigation.

Petrobras, the Brazilian state-owned monopoly, expects to increase the production from 2,9 million barrels per day, 2014 average, to 3.7 millions per day in 2021. The discovery of the ultra-deep oil reserves, the so-called pre-salt reservoir, in 2006 has already increased the Brazilian oil extraction in more than 880 thousand barrels per day (Rosa, 2015, Watts, 2015, Petrobras, 2015).



Unlike dry bulk, container has a more balanced share between loading and unloading; the average for the last 5 years was 49% and 51%, respectively. The main cargos are plastics, frozen meat, timber, paper, precious stones and marble, etc. The increasing share of shortsea shipping in the ports throughput is an interesting trend in the Brazilian container market: it rose from 16% in 2010 to 25% in 2014. One of our interviewees, Mr. Rodolfo Ribeiro, remarked that it was made possible because new port capacity was added along the Brazilian coast, mainly in Santos (Ribeiro, 2015). It is a new mode option on the road congestion.

### 4.3 PORTS GEOGRAPHICAL DISTRIBUTION

The Brazilian coast is 8.511 Km long, where 37 public ports and several private terminals are located (see Figure 8). In 2014, 149 port facilities were operational, from which 22 represented 80% of the Brazilian total throughput (see Figure 9). Industrial terminals handled approximately 52% of the total cargo, mainly iron ore and fossil fuels.



Figure 8: The Brazilian public ports location

Source: (Povia, 2015)

As we have already discussed in chapter 2, maritime transport is a sector driven by economy of scale, therefore larger operations are more cost efficient. It underlies one of the critics about the Brazilian port system: the existence of several small ports along the coast. Some of them have either poor access conditions or severe restrictions to expansion. The interviewees argue that a prioritization according to logistics principles would be necessary to avoid high investments in projects with low capacity of recoverability. In addition, prioritization would be better for the environment. Below, we

quote some examples from our interviewees remarks (all ports cited below are identified in Figure 8):

*“Getting back to the public ports access, the maritime access can be solved with the concession to the private sector. The road and rail accesses... the road access can be simple, but the locations need to be reviewed. For example, Itajaí. You can’t think about a highway with six lanes coming and going because the port is in the middle of the city. So, Itajaí tends to become a minor terminal, like the right margin at (Port of) Santos. But (Port of) Suape, Pecém and Rio Grande were well planned in terms of access. (Port of) Navegantes can get better with better accesses, the same way at the left margin at Santos. (Port of) Salvador, with a port inside the city should have already been moved to (Port of) Aratu. Some actions in the public ports should be taken seriously, rationally, not politically” (Carlini, 2015)*

*“(...) The country has a bigger strategy. For example, the country has the strategy to develop the ports in the Northeast to attend companies that are not there today but will grow there in the future. That’s a strategy and inside it the government can do the investment to make it happen. On the other hand, if the government manages to sell the good places to the private sector, it saves an investment it would need to do there and can focus on the strategic part. In Recife, there is Suape because (ex-President) Lula wanted to. Natal and Cabedelo don’t have decent ports. When you go to the United States, you have lots of small ports and only a few huge ones. Here we are not like that, everybody wants to be big. An example is Itajaí. They insist in building a deeper depth, but in the first rain it won’t support. And the people’s money is thrown away” (Junior, 2015).*

*“On quite small locations. All along the coast in Brazil you see those initiatives popping up. I think it is more advantage for the Brazilian government to create a few bigger port areas along the coast. And then it’s far more efficient, because you can play the infrastructure better. In the end, it will be much cheaper and much more efficient, because the government can concentrate in those locations. And it’s also a lot better for the environment” (Aartsen, 2015).*

In Figure 9 we identify the mains private terminals and the main public ports (in light grey) according to throughput.

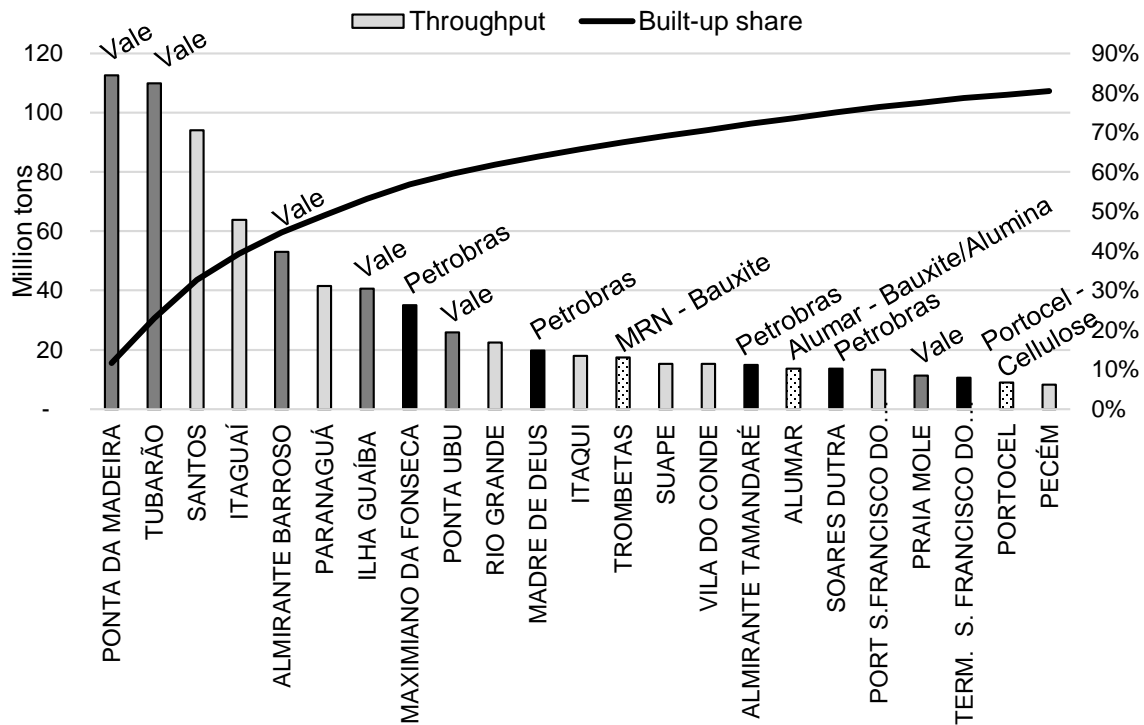


Figure 9: The Brazilian Top 20 ports and terminals in 2014

Source: graph elaborated by the author based on ANTAQ database

#### 4.4 PORT MARKET MAIN PLAYERS AND COMPETITION LEVEL

In the Section 4.1, we made reference to Canuto, Fleischhaker et al (2015) explaining that a possible reason why Brazil is one of the closest economies in the world is linked to the lack of dynamism of its exports, rather focused on big exporters. It is not a coincidence that those exporters have a better transport infrastructure as well, as we demonstrate along this sub-section. We also describe who are the main players in the Brazilian port market, where they invest and the level of competition they face. In addition, we give insights about the inland connectivity of the terminals. The section's breakdown is by type of terminals, regarding the representation in the Brazilian throughput – iron ore (~36%), fuel and crude oil (~21%), agribulk (~15%) and containers (~10%).

##### 4.4.1 Players: Iron ore

Vale has in total 6 private terminals in the Brazilian coast. The two biggest, Ponta da Madeira Terminal (Itaqui - Maranhão) and Tubarão Terminal (Vitória - Espírito Santo), handled more than 100 million tons annually each. In the Brazilian territory, the company has a concession to operate 10 thousand kilometres of railways, by which the iron ore is carried from the mines to the ports (Vale, 2015).

There are other three iron ore terminals in operation in Brazil: TECAR, Port of Sudeste and T1 (Port of Açú). CSN (steel company) exports the iron ore surplus produced in its own mine also through an owned terminal (TECAR) located in the Port of Itaguaí. The

terminal is connected to the mine by a railway whose concessionaire (MRS) is owned by a consortium formed by the Brazilian steel companies CSN, Gerdau, and Usiminas; and mining companies Vale and MRB. Coal for the steel companies' oven is also transported from the terminal by this railway.

The second facility, Port of Sudeste, is controlled by a joint venture between Trafigura and Mubadala. The project is waiting the Brazilian Navy authorization for navigation in the access channel to start operating still in 2015 (Carro, 2015). Its inland connection will also be through the MRS railway. The third, T1, is a terminal in Port of Açú dedicated to handle the Anglo American company production. The project, not yet operational, comprised a 529 km length pipeline to bring the cargo from the countryside to the port.

All iron ore players have invested in and operate the port infrastructure; they have also developed their own inland connection. Few operations are as efficient as the iron-ore logistics chain in Brazil.

#### *4.4.2 Players: Crude oil and other wet bulk terminals*

Besides 21 deep-sea terminals, Petrobras has more than 7.500 km of pipelines connecting the coast to the inland terminals

There are other national and international players in liquid bulk terminal business with smaller operations. The Dutch company Vopak has three bulk liquids storage terminals in Brazil located in the Ports of Aratu, Santos and Paranaguá. Stolt-Nielsen has a terminal in Port of Santos, and recently the German Oiltanking has acquired a stake in a oil terminal (TOIL) in Port of Açú (Prumo Logística Global, 2015). This facility will be used for crude oil transshipment, which is made offshore on unprotected waters. The national companies have small and spread operations along the Brazilian public ports, most of them focused on fuel distribution.

Petrobras and Oiltanking invest and operate their own port infrastructure, differently from the other players, which lease areas in public ports.

#### *4.4.3 Players: Agribulk*

In Brazil, the agribulk terminals are generally owned by the global trading houses, farmer-owned cooperatives and individual farmers. Recently, after dropping the own-cargo requirement, financial investors entered the market funding new projects mainly in the north due to the expecting high volumes and lack of capacity.

The trading houses investing in terminals are ADM, Bunge, Cargill, Luis Dreyfus, Marubeni and CHS. Despite being also vertical toward the logistics chain, they preferably invest in superstructure only, opting for leasing contracts in public ports. The trading houses strategy gets clear in Mr. Luis Neves words:

*“Being a port operator? No. Investing in port infrastructure? No. Our focus is to set up terminal infrastructure to compete in the same conditions as our competitors. We believe that controlling or being a shareholder of a terminal is an important position inside our chain mainly due to efficiency. Today we are shareholders at TCN, we have 25% of TEGRAM (Port of Itaqui). In all the other ports we operate, we are users with a long-term contract with the local operators” (Neves, 2015).*

The other agribulk players are more willing to invest in operational infrastructure and basic infrastructure. For instance, Amaggi Group (owned by the largest individual soybean producer in Brazil) developed its own export corridor. Trucks bring the cargo from Mato Grosso to Porto Velho - Rondônia, where it is transhipped to barges. Through Madeira River the cargo is carried to Itacoatiara terminal located in the Amazonia state. Finally, the cargo is transhipped again to Panamax ships.



Figure 10: Soybean barge convoy through Madeira River and Port of Itacoatiara

Source: (Amaggi, 2015)

Other similar projects were launched to flow the cargo from the Brazilian Midwest through the north, which is closer than the existing corridors to Santos and Paranaguá. The new initiatives seem to address bottlenecks faced by Midwest farmers. Nonetheless, farmers from the South still face challenges with low rail capacity and road congestion in the existing ports, as Carlini (2015) states:

“Railways are almost inexistent for our (Brazilian) cargo. The ones that exist are basically used by iron ore, they only serve half the demand of agribulk and practically zero containers. Most of the ports are in urban areas, so there is an inherent difficulty of crossing the city.”

#### 4.4.4 Players: Container

There are examples of the three main groups of global terminal operators in Brazil.

- Representing the stevedores, the Philippine ICTSI is the owner of the unique container terminal in the public Port of Suape. While the Spanish Group TCB is one of the owners of TCP, also the unique container terminal in the public Port of Paranaguá;
- From the maritime shipping companies, other two groups have invested in Brazil. APM Terminals (Group A.P. Moller-Maersk) owns three terminals, BTP in Santos-São Paulo, Itajaí in Santa Catarina and Pecém in Ceará, all under concession or leasing agreements. While TIL (MSC Group) has a private terminal in Navegantes, and owns BTP together with APM.
- Representing the third group, the financial holdings, DPW have invested together with other two national partners in a private terminal in Santos called Embraport.

Besides the global terminal operators, there are national players as well. Familiar stevedore companies and financial investors took advantage of the first concession wave

in the late 1990's. They also have invested in the private terminals modality before the decree that imposed the requirement of the own cargo predominance in 2008.

Unlike the abovementioned markets, dry and wet bulk, the competition in container handling is played in the terminals level. Based on the liners port calls and terminals executives' interviews, seven port clusters for container terminals were identified (see Figure 11) (ILOS Institute, 2012). The most competitive markets are in the cluster of Santos and in the South: together they represented 66% of the Brazilian throughput in 2014.

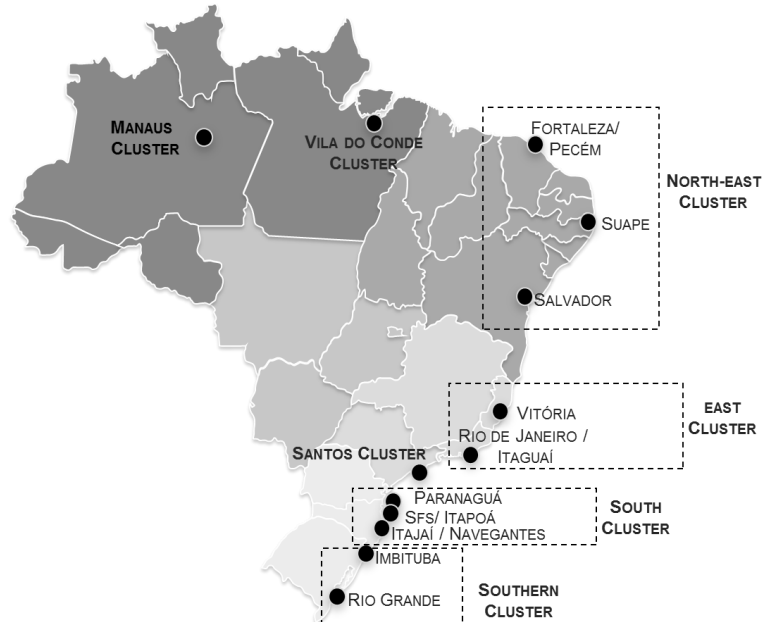


Figure 11: The Brazilian clusters for container terminals competition

Source: (ILOS Institute, 2012)

Port of Santos is located in the Brazilian Southeast region, precisely in São Paulo state, which alone generates one third of the whole Brazilian GDP. In 2014, the six container terminal operators located in Port of Santos handled in a total of 3,6 million TEUs, with CAGR of 7,9% in the last five years. The newest terminals BTP and Empraport (the unique fully privatized terminal in Port of Santos) became operational in 2013, and together they added more 2,4 million TEUs of capacity to the port. As we can see in Table 8, they increased the intra-port competition measured by market share in the total throughput.

Table 8: Market Share in Port of Santos

Years	Terminal Operators						
	Public Quay	Rodrimar	Libra	Santos Brasil	Ecoporto	BTP	Embraport
2010	5%	7%	28%	47%	12%	0%	0%
2012	11%	6%	23%	52%	8%	0%	0%
2014	1%	2%	15%	37%	10%	20%	15%

Source: elaborated by the author based on ANTAQ database and Port Authority of Santos

In the so-called South cluster, formed by states of Santa Catarina and Paraná, five ports compete for the same hinterland. The terminals located in public ports (TCP-Paranaguá, APM Itajaí-Itajaí and TESC-São Francisco do Sul) saw their market share (measured by throughput in TEUs) decrease when the new fully privatized terminals became operational, Portonave-Navegantes in 2007 and Itapoá in 2011 (See Table 9). In 2014, the five ports together handled 2,4 million TEUs, after an impressive CAGR of 13,5% in the last five years.

Table 9: Market Share in Ports of Santa Catarina and Paraná

Years	Terminal Operators				
	Itajaí	Portonave	TESC	Porto Itapoá	TCP
2010	27%	30%	8%	0%	35%
2012	18%	29%	5%	13%	35%
2014	16%	29%	4%	20%	32%

Source: elaborated by the author based on ANTAQ database

In 2012 and 2013, during the discussions of the new port law, representatives of container terminals located in public ports rose the question of the lack of a level playing field for competition with private terminals. The new law did not address the question. Further understanding about the Brazilian regulatory framework is given in the next section as well as the arguments for the unfair competition debate.

#### 4.5 THE BRAZILIAN PORT REFORM

Along the Brazilian history, all port management models had been adopted. Unlike other countries, though, what Brazil had was not a transition from one model to another. New models were introduced to the system without the complete elimination of the previous ones. Nowadays, we can see service, tool, landlord and private models spread around the country, even though the landlord model is still dominant.

According to the Brazilian Constitution, the port sector legislation as well as its economic exploitation are activities reserved to the highest level of public administration (Constituição da República Federativa do Brasil, 1988) Art 21, XII-f and Art 22, X). Nevertheless, the economic exploitation rights can be transferred either to regional or local governments by delegation or to the private sector by concession. Regional and local governments were also allowed to retransfer it to private sector by concessions. This prerogative was kept along the Brazilian history. Nevertheless, to what extent the

private sector was allowed to participate in the port infrastructure seems to depend always on the incumbent government.

In 1808, four days after the Portuguese Royal family had moved to Brazil – the country was a Portuguese colony by that time – the country's ports were opened to "friend nations". Thus, the Brazilian international trade no longer needed to pass through Portugal first. In that time, the vessels that approached the Brazilian coast were small. Wood piers and shallow waters were sufficient. Nevertheless, the Brazilian international trade grew (mainly coffee beans), the vessels found in the Brazilian coast got bigger and therefore better infrastructure was required.

The first private sector venture in the Brazilian port infrastructure happened in 1888. After a public tender process, the Port of Santos construction and exploitation were conceded to the private company Gaffrée, Guinle & Cia for 39 years. After an extension in the concession contract, the port administration was made public only in 1980 (Companhia Docas do Estado de São Paulo, 2015). Unlike Santos, the construction of the Port of Rio de Janeiro was public financed. After built, the port administration was leased to private companies until 1933, when the port administration was made public (Saraiva, 1988, Santos, 2012). Apart from these two examples, the presence of private sector in the Brazilian port infrastructure development appears again only in the 1990's.

Between 1964 and 1985, Brazil was under a military dictatorship, period that is remembered by political repression, great investments in the national industry, high import tariffs and exacerbated nationalism. In 1975, a national company was created to centralize the eight federal port administrations spread through the country. Portobras (Empresa de Portos do Brasil S.A.), a 100% state-owned company, was in charge of overseeing, coordinating, and controlling the activities related to the construction, management and operation of ports and inland waterways. Thus, Portobras (holding) controlled not only all Docas, which in that time were also made companies under private law, but also regional and local administrated ports – Portobras also owned a dredging company and a hydrological research institute (Secretaria de Portos da Presidência da República, 2015). After 1975, with exception of Port of Santos and industrial terminals, all port administration was public (federal, regional, or local). The industrial terminals in that period were those owned by the state-owned monopolies such as Vale and Petrobras. Service and Tool model were the structures that prevailed over the Brazilian ports.

In 1988, the government started to take the first actions towards an economic opening. They aimed at increasing the Brazilian industry productivity by reducing the import taxes in order to incorporate new technologies and access foreigner inputs and capital goods with lower prices (Azevedo and Portugal, 1998). Therefore, improving port infrastructure was a fundamental issue to the success of the Brazilian economic liberalization policy.

Among other administrative reforms made in 1990, the government replaced the Ministry of Transport with the Ministry of Infrastructure and abolished Portobras. The ports administration before subjected to Portobras were transferred to the newly created ministry and the other went back to the respective regional or local government. In 1992, only two years after the previous administrative reform, the ministry in charge of the Brazilian ports was changed again. Now, the new ministry was called Ministry of Transport and Communication.



The real change of the Brazilian port system only took place in 1993, when the government enacted the Law 8.630. The so-called Port Modernization Law marked not only the debut of the Landlord and Fully Privatized port model but also the decentralization of the port policy to the port administration companies. They were given the responsibility to organize the public auctions for private investor within their port area. Thus, under the new law, private terminals were divided in:

- Public-use terminal, concessions or leasing agreements for areas inside of public ports;
- Private-exclusive-use terminal for own cargo handling (industrial terminals);
- Private-mixed-use terminal for own cargo and third-party cargo handling;

Last two were only allowed outside of public port areas. Nevertheless, it could be inside if the land was private. It did not mean that all public port authorities were made landlords. In fact, ports located in remote areas with low attractiveness for private investor remained working under service or tool model.

In addition, the law created Port Authority Councils (CAP), which were composed by representatives of public power, port operators, port labour union and ports stakeholders. For each port administration company there was a CAP. They were in charge of approving the port development plans, port schedule and tariffs as well as discussing and recommending port operational and CAPEX budgets. The law also created a separate entity to organize, train, manage and oversee the dock labours for each public port. It was called in Portuguese “Órgão Gestor de Mão de Obra – OGMO”, something like Labour Manager Body in English. Hence, all private terminal operators located in public ports have to require to the OGMO the dock labours necessary for the daily function of the terminal. The number of gangs and shifts are defined by the OGMO according to the volume to be handled informed by the terminal operator.

The Brazilian port sector modernization that happened with the concessions and leasing agreements contributed to the process of economic stabilization, which took place in 1994 with “Plano Real”<sup>5</sup>. Cheaper imported products helped the government to control the inflation, which compounded the tripod of the new macroeconomic policy: inflation control, floating exchange rate and primary fiscal surplus control (Azevedo and Portugal, 1998).

Under Fernando Henrique Cardoso (FHC) government (1995/98 and 1999/2002), the second president directly elected after the military dictatorship, Brazil went through a privatization wave. Not only ports but also roads and companies in the field of telecommunications, electricity and mining were sold, conceded or leased to national and multinational private companies. In this sense, for a market surrogate framework, regulatory agencies were created. Since 2002, ANTAQ (national agency for waterway transport) is in charge of regulating, supervising and monitoring maritime and inland waterways transportation services and port services.

In the mid 2000’s, the first private terminals started to be authorized and disputes about the compliance with the law were taken to court. ABRATEC, the association of container terminals located in public ports, initiated legal procedures against Portonave, a private-

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<sup>5</sup> A set of economic measures, including currency changing.

mixed-use terminal. ABRATEC claimed that Portonave (operational since 2007) did not comply with the port law, since they did not present own cargo to be classified as a private-mixed-use terminal. On its defence, Portonave claimed that the Iceport, a parent company built together with Portonave, was a trading company specialized in frozen meat, cargo that was handled in the terminal (Valor Econômico, 2010). Later Porto Itapoá and Embraport were made defendants in the same process. The legal process took its course and after comings and goings of denunciations and defences, the own cargo requirement was abolished in 2013, ending the discussion. However, a new debate about unfair competition between private and public ports was raised. The main arguments are summarized in the Table 10.

Table 10: Key differences between concession and authorizations

<b>Main points</b>	<b>Concessions (public)</b>	<b>Authorizations (private)</b>
Payment of government fees	Concession fee and port dues	None
Investments responsibilities	Superstructure and often operational infrastructure	Superstructure, operational and basic infrastructure
Labour	OGMO	Free choice
Business horizon	Limited by contract	Limitless
Assets	Transference at the end of the contract	No transference is required
Universality principle*	Yes	No

\* Public terminals must meet all service requests, while private ports are not bound by universality requirements.

Source: compiled by the author from (Savaris, Vinagre, et al., 2013)

In 2007, now under the first mandate of Luiz Inacio Lula da Silva, the Special Secretary of Ports (SEP) was created to replace the Ministry of Transport for port matters. In the same year, the government launched a long-term plan (PAC) to invest with public funds in several areas, such as transports, renewable and non-renewable energy, water resources, housing and urban sanitation. The latter has benefited a lot of people, but the rest of the sector saw overruns budgets and delays, without remarkable improvements in the Brazilian transport infrastructure.

In 2008, presidential Decree 6.620 established that fully privatized ports should have preponderance of own cargo. Therefore, Brazil went through a freezing in private investments, since the terminals that were built or were in precompletion phase counting on third-party cargo to remunerate the investment were in jeopardy. The decree was an attempt to clarify the law, although it did not precisely established the criteria for “preponderance” of own cargo, if volume or value. The discussions around the legality of the existing private container terminals continued.

Public investments did not replace the private funds in infrastructure in the incoming years (Savaris, Vinagre, et al., 2013). As expected, private investors and Brazilian industry raised concerns that the poor infrastructure was threatening the country’s global competitiveness and economy growth. Therefore, a new legal framework was discussed. After at least two years of heated debate, a new law (Law 12.815) was enacted in 2013.

The law banned the “own cargo requirement”, enabling private investors to invest in port infrastructure outside of public port zones by authorization. This modality was named private-use terminals (TUP). Together with the new law, an ambitious concession and leasing program was launched to transfer to private sector more than 100 areas in public ports. Both private terminal authorization and concession or leasing of public ports areas are now controlled by SEP and ANTAQ. Again, the port command is centralized on the national government (Table 11 summarizes the main port laws and the years they were enacted).

Many inconsistencies were found on the technical projects and other materials that compounded the bid books, which lead the Union Account Auditor (TCU) to interrupt the auction procedures in December 2013 (Craide, 2014). Almost two years later, in May 2015, it authorized the auction of 29 areas in Santos and Belém region – until the moment of conclusion of this research, the public auction did not happen. In addition, private terminal investors still face bottlenecks to take the project out of the drawing board.

We asked our interviewees whether the Law 12.815 helped to unlock the investments in port infrastructure in Brazil. The majority answered yes (5 out of 9). The new law has helped due to the abolishment of the own-cargo requirement. But among our interviewees there are people who believe that the new law was not even necessary. Actually, repelling the Decree 6.620 (established the own cargo requirement) would be enough. Ms. Emma Russo and Mr. Patrício Junio made it clear:

*“It (Law 12.815) helped, but I understand it wasn’t necessary. This confusion started because of the fight around the own cargo requirement. The previous law (Law 8.630) was already good. There was no need for this whole discussion. Anyway, the new law is here and it helped because it solved that confusion. But it didn’t help much in the other issues. It didn’t solve the OGMO issue. In fact, it made things unclear when it said ‘from now on, if there is a private area inside of the organized port lines, there is no possibility of setting a private port there.’ That damaged Santos, for example. Because there is an island there cut by the line. It’s a big area that got useless, the biggest mooring area inside the port. That’s a problem. Another issue are the polygonal lines. Nobody knows if they still exist or they changed. So, they invented new problems. The law helped in some things, but didn’t solve everything” (Russo, 2015).*

*“(…) Even the new law didn’t need to be a new law, they could have improved the old one, but everyone wants to make something new to put their name in. Then we have a Frankenstein” (Junior, 2015).*

For the other three interviewees who answered the question (one of the interviewees could not answer), the fact that the new law helps does not mean that it is effective. In the case of public ports, the new law was not tested yet, since no public auction has happened. However, old problems concerning the public port administration such as lack of investments, inefficiency, bureaucracy and political interference are still present. Concerning private ports, they think there are remaining issues that should be solved in order to the new law to be considered effective in attracting private investors.

As we saw at the beginning of this Chapter, the interviewees pointed out that the Brazilian actual regulatory framework is not clear. Thus, in the next section we describe the main

points of it and address the issues that were considered the main problems according our interviews.

Table 11: Summary of the main port rules in Brazil along the history

Political cycle	Year	Law	Relevance
1964-1985 Military dictatorship	1967	Law 200, 25/02/1967	<ul style="list-style-type: none"> <li>• Creation of Ministry of Transport</li> </ul>
	1975	Law 6.222, 10/07/1975	<ul style="list-style-type: none"> <li>• Creation of Portobras</li> </ul>
1990-1992 President Luis Fernando Collor de Melo. First president democratically elected	1990	Law 8.029, 12/04/1990	<ul style="list-style-type: none"> <li>• Abolishment of Ministry of Transport and Portobras</li> <li>• Creation of Ministry of Infrastructure</li> </ul>
	1992	Law 8.422, 13/05/1992	<ul style="list-style-type: none"> <li>• Abolishment of Ministry of Infrastructure</li> <li>• Creation of Ministry of Transport and Communication</li> </ul>
1993-1994 President Itamar Franco. He replaced the previous president after impeachment	1993	Law 8.630, 25/02/1993	<ul style="list-style-type: none"> <li>• Port Modernization Law enactment – Port Reform</li> <li>• Creation of Landlord and Fully Privatized port structures</li> </ul>
1995-2002 President Fernando Henrique Cardoso (re-elected in 1999)	1995	Law 8.987, 13/02/1995	<ul style="list-style-type: none"> <li>• The first public auctions of port concessions and leasing contracts</li> </ul>
	2001	Law 10.233, 05/06/2001	<ul style="list-style-type: none"> <li>• Creation ANTAQ (regulator)</li> </ul>
2003-2010 President Luis Inacio Lula da Silva (re-elected in 2007)	2007	Law 11.518, 05/09/2007	<ul style="list-style-type: none"> <li>• Creation of SEP, new ministry exclusive for port matters</li> </ul>
	2008	Decree 6.620 29/10/2008	<ul style="list-style-type: none"> <li>• Decree that imposed the “own-cargo” requirement</li> </ul>
2011-actual President Dilma Russeff (re-elected in 2015)	2013	Law 12.815 05/06/2013	<ul style="list-style-type: none"> <li>• New port law – repeal of “own-cargo” requirement</li> <li>• Public auction announcement</li> </ul>
	2013	December/2013	<ul style="list-style-type: none"> <li>• TCU interrupt process of public actions. Adjustments on the bid criteria and technical projects were required</li> </ul>
	2015	May/2015	<ul style="list-style-type: none"> <li>• TCU authorized the auction of 29 areas in Santos and Belém region.</li> </ul>

Source: elaborated by the author.

## 4.6 CURRENT PORT LAW

The Brazilian port reform happened in 1993, when the private sector was allowed to invest in port infrastructure. In 2013, the new law (Law 12.815) can be considered an upgrade, since it completely eliminated the requirement of own cargo for private terminals, the main hurdle for private sector participation in port infrastructure. Now, it does not matter either if the terminal is an industrial terminal, partially or entirely dedicated to third-party cargo handling. Being outside of public port area, it receives the same treatment as TUP. On the other hand, our interviewees claim that the new law not only left old issues unsolved (e.g. OGMO), but also created new issues, such as the uncertainty concerning the public port area definition (Russo, 2015, Carlini, 2015). Another issue arose from the uncertainty about the existence of a master plan, which should be able to coordinate and prioritize all the needed investments in transport infrastructure (Russo, 2015).

The opinions are also divided concerning the fact that the Law 12.815 established the port decision pole is now in the federal government. For instance, the public auctions for areas within the public port limits were port authority competence before. Now, ANTAQ is in charge of leading this process for all public ports. On the one hand, “the centralization in Brasília locks all decisions, makes all of them to be delayed” (Carlini, 2015). On the other hand, according to Mr. Nielsen (2015), it created a better environment for competition.

*“(…), if you get a common set of rules, it ensures that you get fair processes as long they are simple to understand, people can’t twist them, as long as they are equally weighed for private investors. Then I think it’s good to centralize things. This can also ensure that processes stay transparent and that no local entity can introduce parameters that restrict competition. For instance we have had projects in Brazil that required the operator to team up in a joint venture with a construction company. This is not natural and not conducive to a fair competition” (Nielsen, 2015).*

This section seeks to explain how the abovementioned issues affect the private investor’s willingness to invest as well as giving further insights about the port regulation.

### 4.6.1 Port Law objectives

According to the Art.3 of the Law 12.815, the objective of the new port regulatory framework is to enhance the competitiveness and development of the country, following the guidelines cited below:

1. Expansion, modernization and optimization of the Brazilian port infrastructure and superstructure, both in public ports and private terminals;
2. Ensuring affordability and publicity for tariffs and prices, high quality of services and effectiveness of users' rights;
3. Encouraging the modernization and improvement of the management of organized ports and port facilities, recovery and hand-qualification of port work and efficiency of the provided activities;
4. Promoting navigation safety concerning vessels’ entrance and exit in ports;

5. Stimulating competition, encouraging private sector participation and ensuring full access to the organized ports, port facilities and activities.

In order to accomplish the objectives, the current port law allows private investment in port infrastructure in two legal forms:

- *Concession for public terminals, after public auction, for private investments inside of public port areas, including terminals and port administration.*

The contract duration is determined in the public auction book procedures and depends on the area and needed amount of investment, being allowable to renew once. Since the new law was enacted none public auction took place. Bid criteria, technical projects, economic feasibility analysis and other auction rules had not being released until the end of this research.

It is a Landlord model, being the private terminal operator (tenant) in charge of investing in superstructure and operational infrastructure. The public port authority, the landlord, is then in charge of providing the basic infrastructure, at least. Despite being allowable by the Law, the government nothing declared about the possibility of port administration concession.

- *Authorization for private-use terminals (TUP), for private investments outside of public port area.*

The authorization is valid for 25 year, limitless renewable since the investor keep the port activity and follow the agreed investments schedule. The main phases of authorization process consists of sponsors presenting to the regulator a detailed project specification book; regulator gives publicity to the project; regulator assesses the project concerning its strategic fit to the macro policy guidelines and transport infrastructure master plan; sponsors presenting supplementary documentation; then, contract signature. Until Feb/2015, 19 new TUPs were authorized under the new law.

It is a fully privatized management model, where the private investor owns the land and is in charge of investing in basic and operational infrastructure and superstructure. The investor is free to elect its business model, but if the model is Landlord the terminal operators should be separately authorized. That is not said in the law, but it is the current process follow considering Port of Açu – the unique fully privatized port with private Landlord business model.

#### *4.6.2 Government functions*

The regulator is in charge of carrying out the public auction procedures and evaluating the TUP authorization requests. However, the public counterparty for both forms of agreements is SEP. The Ministry, beyond other attributions, should revise the public port areas. Table 12 describes the main roles of the Ministry and the regulator.

Table 12: The Brazilian Ministry and Regulator roles in the port system

Entity	Name	Role/ Function
Ministry	Secretaria de Portos da Presidência da República (SEP) Law 11.518	<ul style="list-style-type: none"> <li>• Policy maker;</li> <li>• Strategic planner;</li> </ul> In charge of: <ul style="list-style-type: none"> <li>• Approving concessions and authorizations;</li> <li>• Prioritizing investments;</li> <li>• Developing infrastructure and superstructure of ports and terminals that it directly control;</li> <li>• Define the public port areas.</li> </ul>
Regulator	Agência Nacional de Transportes Aquaviários (ANTAQ) Law 12.815	<ul style="list-style-type: none"> <li>• Regulator and supervisor concerning the exploitation of port infrastructure and port services in order to ensure perfect competition and economic order;</li> <li>• Conciliator of public and private interests aiming at free flow of passengers and goods with efficiency, security and affordability;</li> </ul> In charge of: <ul style="list-style-type: none"> <li>• Propose the national master plan of port locations;</li> <li>• Execute the public auctions procedures for concessions and leasing agreements;</li> <li>• Evaluate the private terminal authorization request;</li> </ul>

Source: Elaborated by the author.

#### 4.6.3 Transport infrastructure master plan issue

As we already discussed in this work, ports should be planned together with inland transport infrastructure. Without decent inland connection, ports cannot work efficiently, putting in risk the country's competitiveness and development. In 2007, the Brazilian government has opted to keep port infrastructure policymaking separated from the Ministry of Transport, at SEP. Thus, in order to coordinate the policies for all modes (in the national, regional or local level) and ensure the integration of transports policy in the national economic ambitious, the government created a multi-ministry body. CONIT – Conselho Nacional de Integração de Políticas de Transporte (National Council for Integration of Transportation Policies) is a body directly linked to the Presidential Office and is compound of:

- Minister of Transports – President of the Council;
- Minister of Justice;
- Minister of Defence;
- Minister of Finance;
- Minister of Planning, Budget and Management;
- Minister of Industry and Foreign Trade Development;
- Minister of Cities; and
- Secretary of Ports.

The current planning process of transport infrastructure in Brazil have started with two studies:

- *PNLP – Plano Nacional de Logística Portuária (National Plan for Port Logistics), elaborated under SEP supervision.*

Inputs: Public port authorities plans, called PDZ – Plano de Desenvolvimento e zoneamento (port zoning and development plan). Each Public Port authority elaborated its own PDZ with CAP and local community assistance. In addition, specialized consultancies were subcontracted to contribute. For instance, Port of Rotterdam was one of the hired consultancies.

Output: investments needed in ports to fulfil the expected demand. Last update was in 2012. (Secretaria de Portos da Presidência da República, 2012).

- *PNLT – Plano Nacional de Logística e Transportes (National Plan for Logistics and Transportes), elaborated under the Ministry of Transportes (MT) supervision.*

Inputs: transport infrastructure projects from several sources such as municipalities, regional governments, congress, civil associations. The projects were revised and consolidated by a third-party consultancy, a consortium made up by LOGIT and GisTran consultancies.

Output: investments needed in roads, railway and waterways to fulfil the expected demand. Last update was in 2011. (Ministério dos Transportes, 2011).

Figure 12 presents the Brazilian transport infrastructure planning flow and the hierarchy of the government entities evolved in the process abovementioned.

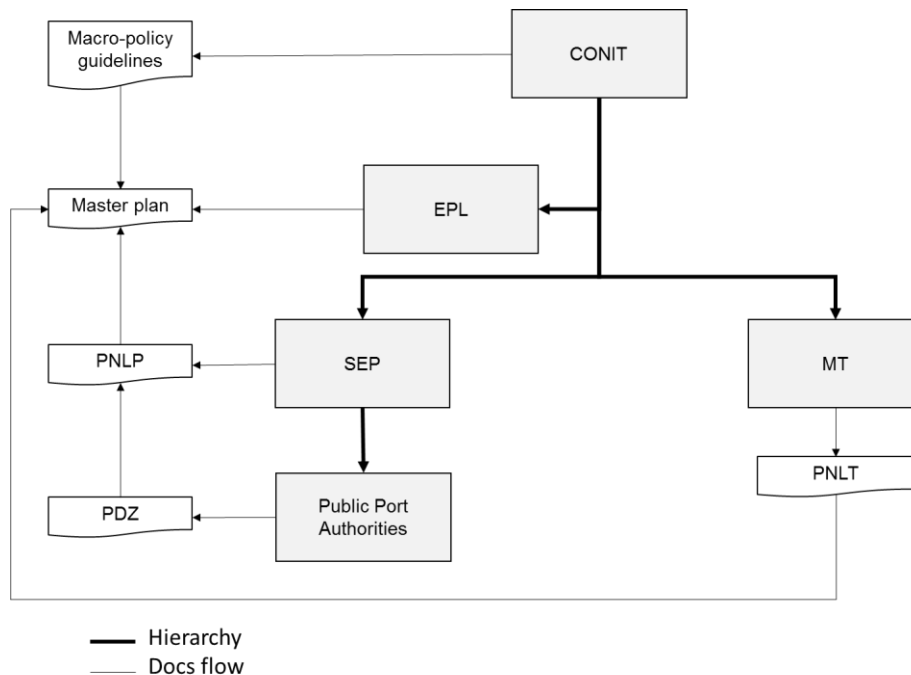


Figure 12: The Brazilian transport infrastructure planning process  
Source: elaborated by the author based on (Povia, 2015).



The studies' scope consisted in forecasting the demand for transport and identifying the transport infrastructure bottlenecks around the whole country. Considering the CONIT's guidelines, EPL – Empresa de Planejamento e Logística S.A. (Planning and Logistics Company) combines both studies and prioritize the investments required to fulfil the gap between the expected demand and the existing supply, resulting in a national master plan. From the national master plan, SEP and ANTAQ generate the PGO - Plano Geral de Outorgas (general grant plan). PGO indicates where and how much capacity should be added by Public Ports expansion or TUPs authorization (see Figure 16).

EPL, stated-owned company, was created first to carry out the project of the high-speed railway shuttle connecting Rio de Janeiro, São Paulo and Campinas, later its scope was broader. EPL was also made the responsible for elaborating the technical projects and feasibility studies for the concession program announced in 2013, including airports, ports, roads and railways. Ports concessions, as we earlier described, were interrupted by TCU. Railways concessions did not get in motion due to disagreements amongst government, actual concessionaires and private investors concerning the business model (single or multi-operator). The concession of airports and roads happened in 2013 and 2014. After three different CEOs in three years, the Brazilian press has predicted that EPL could be abolished (Rittner and Camarotto, 2015).

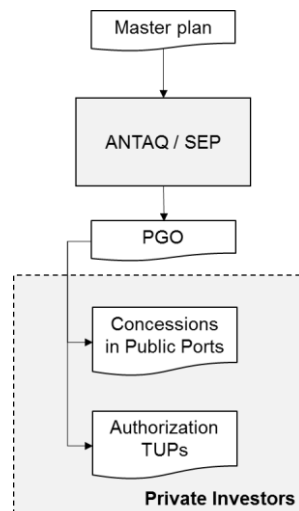


Figure 13: Definition process of concessions and TUP authorization

Source: elaborated by the author based on (Povia, 2015).

The national transport infrastructure master plan, which served as basis for the concessions and authorizations, is not transparent for the private investors as we could observe from our interviewees answers and own research on the government's websites. Some interviewees doubt about its real existence as well as its output, PGO. Indeed, we found the PNLP and PNLT. Although, the master plan with the clear indication of the areas that are reserved for port infrastructure investment beyond the actual public ports was not found. The uncertainty related to the master plan comes from the unclear criteria to authorize new projects. Investors fear that the government excess of optimism can result in overcapacity – putting in jeopardy the recoverability of investments. In addition, private investors are not sure about the availability of inland connectivity during the

postcompletion of their projects. Below we quote our interviews with examples about why a master plan is so important:

*“Commitment of the government and also planning that you have a clear master plan in Brazil, so these are the places where port infrastructure can be built, that you have a clear plan. If you’re going to invest somewhere, on another location there are all kinds of initiatives, the government is approving everything, then you create competitors there. Also the competition is important to take into account” (Aartsen, 2015).*

*“We need the PDZs, but also someone connecting them to a master plan. Once it’s defined where we want to get taking into account the market opportunities, the government should provide the inland infrastructure to serve this plan by auctions. And then the port authority should be able to generate the access channels with sufficient depth and all the maritime infrastructure needed” (Neves, 2015).*

It would be appropriate that CONIT and EPL included the Ministry of Environment on the national master plan elaboration since the beginning. This research recognises that a common understanding among all main national policy makers would accelerate the process of important projects’ licensing.

#### *4.6.4 Public port areas definition issue*

According to the new law, excepted from those projects that had been filed at ANTAQ the authorization requirements before December 31<sup>st</sup> 2012, TUPs cannot be set within public port limits. The port area should cover all the public port facilities and the protection and access required in order to public ports work properly. Before the new law, each port authority had defined the limits (called polygonal line) of the port according to its expansion ambition and necessities. The issue has emerged since some of the areas within those limits are private and, in some cases, were bought by private investors thinking in port infrastructure development. The solution passes through redefining the area excluding the private land – when it is not possible, the land should be then acquired by the port authority.

The public port authority is in charge to present to SEP a proposal, which is given publicity in the ministry’s website. Nevertheless, it is uncertain how long the process to redefine the areas for all public ports will take. While it is not presented, private investors located in those areas are not allowed. Until the end of this research, 4 out of 37 polygonal lines have been revised and two more are under discussion.

Figure 14 shows the example of Port of Paranaguá area, which polygonal lines are under discussion.



Figure 14: Port of Paranaguá polygonal lines under discussion  
 Source: (Secretaria de Portos da Presidência da República, 2015)

#### **4.7 INVESTMENT OPPORTUNITIES, DISINCENTIVES AND INCENTIVES FOR PRIVATE INVESTORS**

As abovementioned, private investors can invest in the Brazilian port infrastructure in different forms:

- Fully privatized ports (TUPs), by government authorization for exploiting port infrastructure in private land;
- Partial or comprehensive concessions, by public auctions, for exploiting port infrastructure in public land.

Although the formal relationship of private investors with SEP and ANTAQ is different according to each model, projects face similar challenges regarding business environment, inland connection and political and economic scenarios. We understand that the bottlenecks found for developing TUPs can also affect the Brazilian port attractiveness for concessions.

##### **4.7.1 Partial or comprehensive concessions**

According to the current regulatory framework, port authorities should supervise or perform the construction, renovation, expansion, improvement and maintenance of port facilities (Law 12.815 Art. 17, § 1-V). For the terminals located in public ports, the government transferred to the private sector the role to develop or refurbish operational infrastructure and superstructure by concession. Therefore, port authorities should supervise the construction of the private terminals and develop and maintain basic infrastructure.

Although allowed by the law, Brazil has not a recent experience with comprehensive concessions, in other words, concessions that include also port authorities. The last was

in Santos, which ended in 1980. In the last 15 years, few public auctions of partial concessions have happened. They were carried out by the own port authorities. According to the new law, it is no longer possible: only ANTAQ and SEP can carry out public auctions in ports.

In 2013, the government announced a broad port public auction, including more than 150 areas. Nevertheless, it was cancelled. The government promised a new one for 2015, but the rules and bid books were not released yet. Since there are only rumours about the rules and the projects, we did not include them in our analysis. Therefore, we focused on asking our interviewees about the public port authority performance and whether it generates an environment that stimulates investments and efficiency for private terminals located within their limits.

We asked our interviewees “are the Port Authorities playing their role in providing the required basic infrastructure to an efficient port operation?”. Seven out of nine interviewees answered our question. The remaining two did not feel comfortable to give us their opinion since they do not have investments located in public ports. The unanimity of those who answered the question said “no”, public port authorities are not fulfilling their role. They gave us examples or directly the reasons why they think the public port authorities do not fulfil their role, which we compiled in Table 13.

*Table 13: Reasons why public port authorities are not fulfilling their role*

<b>Reasons</b>	<b>No of citations</b>
Administration inefficiency or incompetence	6
Lack of funds for investments	3
Bureaucracy	3
Political interference	1
Corruption	1

*Source:* elaborated by the author based on the interviewees.

Most agreed that the public port authorities are inefficient. Although some reasons were less cited than others, for us they are all connected. We explain.

From the 37 public ports, 19 are administrated by the Docas, federal state-owned companies under private law subordinated to SEP. The other 18 were delegated to regional or local governments, being state-owned companies or public bodies under public law. The higher layers of public port authorities’ hierarchy are compound by professionals nominated by the respective current government. It means that not always the nominations are according to experience or technical knowledge as the function require.

Beyond assessing the Brazilian ports infrastructure, the scope of the PNL (National Plan for Port Logistics) also comprised to analyse the status of port management and operation. The main conclusions were:

- Nautical infrastructure and quay walls have improved because the National Plan of dredging or PPPs;
- Most public ports presented an outdated superstructure and berthing aids;

- Enormous bottlenecks were identified in the ports inland access, which might jeopardize the Brazilian port sector growth. Great investments are required;
- Inefficient Port authorities' management is a concern. Unqualified employees, outdated leasing contracts, outdated tariffs and threatened financial status were the main remarks of the study (Secretaria de Portos da Presidência da República, 2012).

Unqualified employees might be the result of political interference in the nomination process. The incompetence of the port administration results in inefficiencies and bad financial administration, which put in risk the investment capacity of port authorities. Lack of investments in inland and maritime access results in congestions and loss of competitiveness. The inefficient administration of public port authorities put public ports in a disadvantageous position in the competition against TUPs. The last one is guided by commercial objectives and the former not.

The solution for those issues is not easy but not impossible. We already mentioned in this work some strategies to overcome political interference. Corporatization of port authorities is clearly cited by World Bank as a tool to decrease political interference and make the port authorities more responsiveness to market forces. A successful example of corporatization, taking into consideration improvements in relevant performance indicators, is Port of Rotterdam (de Langen and Heij, 2013). A Landlord port, whose port authority's shares belong to the Dutch government and Rotterdam municipality. Some of our interviewees also see the Dutch port as a good benchmark for Brazil.

Another option comes from the Brazilian history. A comprehensive concession of public ports, similar what was made in Port of Santos and Port of Rio de Janeiro more than hundred years ago. The actual regulatory framework contemplates this model among the given alternatives. It is not the first time that this model is suggested, (Lacerda, 2005) has called the attention for this extra opportunity for private sector to invest in the Brazilian port infrastructure. He also suggests a segregation of functions between port authority and port administration. The former would be in charge of planning, regulation, inspection and asset management while the latter would keep commercial responsibility for investments, maintenance and operation of port infrastructure (Lacerda, 2005). In addition, a comprehensive concession would match with the landlord model in ports with great demand but also could be applied with service model in remote areas where volumes are not sufficient to remunerate separately the port administration and terminal operator. One of our Interviewees, Carlini (2015) suggested a comprehensive privatization as a form to improve public ports performance.

Some interviewees also mentioned Australia as a good example for Brazil. Besides the continental dimensions similarity, the Australian ports were regional government monopolies, when they had been corporatized (Everett, 2007). A new phase of port privatization has taken place. The Australian regional governments, supported by the federal government, have transferred the rights of operating and receiving the economic benefit of the ports' assets to the private sector, under a 99-year comprehensive concession agreement. The public auctions assured to the governments' coffers 15-27 times the ports' annual earnings. Under this modality, Port Botany (2013), Port Kembla (2013) and Port of Newcastle (2014) were transferred to the private sector (Taylor and Deed, 2013, The Australian Financial Review, 2014).

As we saw, there are options to reduce the political interference and improve public port performance. However, in order to pick the right model the decision should be preceded of further research on the topic.

#### 4.7.2 Fully privatized ports (TUPs)

Investing in TUPs, on the one hand, gives freedom to the investors to manage their business according to the market forces. On the other hand, investors should face the Brazilian government bureaucracy and sluggishness in the authorization process as well as lack of coordination between the different level of policy makers (national, regional and local).

We asked the interviewees what were the bottlenecks to get private port infrastructure projects off from the ground. Some said that they are all the problems and issues already mentioned when asked why the Brazilian port infrastructure did not deserve more than a grade 3-regular (See Table 6). The answers of both questions are presented in Table 14.

Table 14: Bottlenecks for developing TUPs

<b>Bottlenecks</b>	<b>No of citations</b>
Lack of inland connectivity	8
Lengthy and unclear environmental license	8
Unfinished and unclear regulatory framework	6
Lack of a long-term master plan and prioritization	5
Political instability	5
General licensing process bureaucracy	4
Lack of multimodality	4
Lack of coordination among different government levels	3
Lack of capital availability/public grant	2
Government's lack of long-term commitment	1
Competition lack of levelled playing field	1

Source: elaborated by the author based on the interviews.

Next Chapter presents a TUP development case study, where the way the bottlenecks affect the project development in each phase, precompletion and postcompletion, are shown, contributing to the understanding of the main challenges faced by private investors in Brazil.

#### 4.7.3 Incentives

The Brazilian government announced it would make funds via BNDES – the Brazilian development bank – available for private concessions in ports with subsidized interest rates. Nevertheless, only part of the loan would have lower interest rate, the other part should be financed through capital market, namely securities. Since 2011, the government has been given tax benefits for buyers of securities issued with infrastructure projects' purpose that are considered high-priority by the government.

Specialists doubt if BNDES would have sufficient funds to fulfil all the demand, since the Brazilian Federal Treasury is no longer available as fund raising source. Mr. Ribeiro, one of our interviewees from the bank sector, thinks that BNDES should not face scarcity of

capital to lend out – the source of the problem seems to be prioritization and risks that the own government generates. The latter is related to the bottlenecks presented in Table 14. Banks assess and include those issues into the risk parcel of the interest rate. BNDES is not completely free to arbitrate the interest rate from project to project, but it decides the level of guarantees a project should give according to its risk. Excessive guarantee requirements have a similar effect of high interest rates on investors, which is dampen investments.

*“Our problems are that, firstly, the state is not entrepreneurial enough in order to generate a long term plan that will improve conditions to make business inside a better structure and knowing when it has to provide some guarantees. The government always provide some risks itself. In many of them, the private sector can’t act and the public sector should act. The cost of expropriation, for example. The size and capacity of BNDES today is already exorbitant. And a good part of it is about loans that are not transformational to the country. There are subsidies for machinery, in which the added value in financing at 2,5% interest rate in 10 years is low for the country (development). The value for the country is added by loans and projects that are valuable for the whole structure. It’s a matter of credit portfolio allocation. Lots of companies are benefiting from BNDES to grow” (Ribeiro, 2015).*

The government simple announcement of availability of funds with subsidized interest rates seems not to be sufficient to stimulate private investments. This research found that other issues are higher ranked in the private investors’ list of concerns that affect their investment appetite.

#### **4.8 CHAPTER CONCLUSION**

The Brazilian regulatory framework theoretically allows private investors to build and operate port infrastructure in Brazil. It can be via authorizations for fully privatized ports or concession agreements in public ports. However, the simply law endorsement seems not to be sufficient to attract private investors in the volume and speed required to fulfil the demand.

The Brazilian political instability, unclear regulatory framework and unfriendly business environment are the main determinants that jeopardize private investments in Brazil, according to our interviewees.

In addition, the actual conditions of the Brazilian existing inland connections allied with the absence of a clear and long-term master plan also appeared as significant issues for private investors attractiveness. These issues appear to be the same that dampen the Brazilian port development toward a new stage in spatial port development. Regionalization phase is highly dependant of inland connectivity, balanced mode split and coordination among the transport chain actors as well as requiring better planning concerning port location.

Inland connection, as part of the broader concept of transport infrastructure, is subject to the same determinants of investments in port infrastructure. Hence, the government acting toward generating stable rules, a friendly business environment and clear and

effective regulatory frameworks will also attract private investment to railway, waterways and roads.

The relevant determinants found in this chapter are presented in an additional column on Table 4, named “The Brazilian status”. The table presents the 14 determinants and their respective relevance to port infrastructure projects found in Chapter 3. The specific issues showed in the third column of the new table (Table 15) can differ from the previous (Table 4), because it presented generic issues, while Table 15 presents those exclusively related to the Brazilian case, which were mentioned by the interviewees (Table 14).

The criteria to define the investment determinant status in Brazil take into consideration the number of interviewees mentioning the issue. The determinant receives (-) if cited by less than 3 interviewees; (- -) from 3 to 4 interviewees; (- - -) from 5 to 6 interviewees; (- - - -) up to 6 interviewees. For those positive determinants, that stimulate investments in Brazil, it was applied the same criteria but the character was replaced with “+”. For the determinants that were not mentioned we added (+) because it seem not to repel private investors.



Table 15: The status of investments determinants in Brazil

Project Phase	Determinant	Specific issue	Relevance	The Brazilian status
<b>Precompletion</b>	Activity planning		+	+
	Procurement design		+	+
	Technology		+	+
	Construction budget and timetable		+	+
<b>Postcompletion</b>	Supply availability		+	+
	Operation efficiency	Inland connectivity	++	- - - -
		Balanced modal split		
Market potential	Long term growth	++++	++++	
<b>The whole project life</b>	Economic stability		++	+
	Political stability	Stable rules	++++	- - - -
		Government commitment		
		Long-term master plan		
	Regulatory framework	Fair and open competition	++++	- - - -
		Clearly written rules		
		Coordination / clear definition of roles		
	Environment		+	+
	Business environment	Efficient licensing process	+++	- - - -
		Bureaucracy in general		
Capital availability	Public grants	++	-	
	Funding schemes			
Partnership		++	+	

Source: elaborated by the author based on the interviewees.

## **5. CASE STUDY: PRIVATE TERMINAL PORTO ITAPOÁ**

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Porto Itapoá is a single container terminal located in the North of Santa Catarina state. We have chosen it as the case to be studied in this research for two main reasons. The project's concept was first planned right after the Brazilian Port Reform in 1993. Nevertheless, it got operational only in 2011. Porto Itapoá went through several phases of the Brazilian port system until it got operational, and during the actual expansion phase it had to tackle with a new port law. Thus, it is an interesting example to identify the challenges in developing a project in the Brazilian unstable political environment and its consequences. That is the first reason for it to be chosen for this research. The second reason is Porto Itapoá's funding structure. The project was financed under project finance modality, which enables us to understand how it works as a risk mitigation tool and what are the effects of the remaining risks in the project.

First of all, we describe the project and shareholders. Next, we analyse the project according to the life cycle approach, precompletion and postcompletion.

### **5.1 PROJECT DESCRIPTION**

The project sponsors are Battistella, a familiar company that own other business in the region; Hamburg Süd, the German shipping liner that is the leader in the Latin America East coast maritime transport; and LOGZ, a holding owned by private equity funds.

The Battistella family, among other businesses, had a timber trade company. At the beginning of the 1990's, although the economic liberalization had reduced the barriers to international trade, the Brazilian existing port infrastructure – very old and with low-capacity – was almost completely taken by dry bulk exports, leaving few space for any other cargo. Then, in 1993, after the new port law permitted the construction of private terminals, Battistella decided to build its own port to enable its pine timber exports (Pereira, 2012).

In 1997, the port location was finally chosen and the land acquired. The area was located in the North of Santa Catarina state, in protected waters and with excellent natural draft (16 metres). Another advantage was the existence of the maritime access used for the public Port of São Francisco do Sul. On the other hand, the inland access had to be built, since the unique access to the highway (BR-101) crossed a small village nearby. Beyond the single-lane road (PR-412), the streets of the village were narrow and were not paved.

The area acquired had 456.000 m<sup>2</sup> and its development was planned in three phases for three reasons. First, the large amount of investments required in the initial years; second, the uncertainty related to the market and competition level; and third, the time required to get the land clarity. The latter is a procedure that usually demands a significant amount of time due to the several steps to be followed. We touch upon this point in the Sub-section 5.2.3.

This case study is focused on the first phase, which resulted in a terminal capacity of 500 thousand TEUs per year. At the end of the third phase, the sponsors sought to reach 2 millions TEUs per year.

The budget for the first phase was estimated in approximately R\$ 450 million (US\$ 270 million), compound of:

- Stack yard of 150.000 m<sup>2</sup>;
- Quay length 630 metres;
- Bridge to reach the maritime channel 230 metres long;
- Inland access of 8 kilometres
- 4 quay ship-to-shore cranes to serve post panamax ships;
- 11 stacking cranes;
- 26 terminal tractors.



Figure 15: Porto Itapoá location and final layout.

Source: Google earth and Company's website

## 5.2 PRECOMPLETION PHASE

### 5.2.1 Activity planning, procurement and contract, technological and construction risks

From Chapter 3, we know that the exclusive risks of precompletion phase involve activity planning, procurement and contract, technological and construction. The project's sponsor mitigated those risks by hiring an experienced contractor in infrastructure projects under a turnkey contract. Andrade Gutierrez, the contractor, had the financial soundness required by the lenders to carry out the project. In addition, the sponsors hired a well-known law firm to elaborate the contracts with support of a project management company. Enger Engenharia, the manager, not only helped to draw a better engineering contract as well as it oversaw the terminal construction. All main equipment was acquired from ZPMC, a Chinese company in charge of the fabrication of cranes. The company has over 70% of the global market share in port cranes, what reduces the technological risks of the project (ZPMC, 2013). The sponsors are proud to have finished the Porto Itapoá construction within the budget for the terminal. Other investments were required that were not previously demanded – they will be further explained in this section.

### 5.2.2 Capital availability risks

The project was conceived by Battistella. Years later, Hambug Süd, through its subsidiary Aliança Navegação, became a partner of the venture. In 2007, when the project was in

the last phase of the environmental construction license, LOGZ joined the partnership adding part of the equity required to develop it. Battistella and LOGZ together have 70% of the project through a holding called Portinvest.

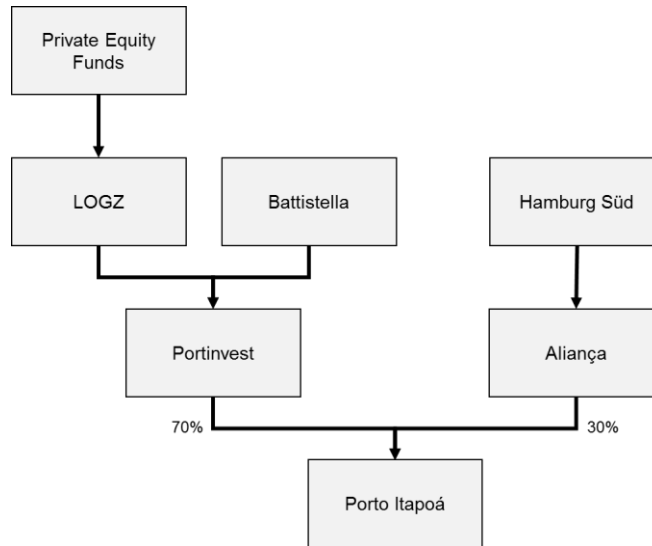


Figure 16: Porto Itapoá corporate structure

Source: Company's website.

In 2008, the shareholders were structuring a project finance operation with a multilateral financial organization when two events led the lenders to give up the deal, although it is not possible to affirm which event had weighted more in the decision. First, in September 2008, Lehman Brothers went bust, which was the beginning of the global financial crises whose effects are still sensed. Second, in October 2008, the Brazilian government enacted the Decree 6.620 requiring own cargo dominance for projects classified as private-mixed-use terminals, rising doubts regarding the adherence of Porto Itapoá to the regulation.

The project's sponsors found another alternative. They structured a project finance debt with BVA, Petros and Funcef. The last two are Brazilian foundations managing the second and the third Brazilian largest pension funds. Both pension funds also have stakes in the private equity funds that invest in LOGZ, Porto Itapoá's shareholder.

In June of 2009, BVA bank emitted R\$ 330 million in credit notes that were entirely purchased by Funcef and Petros. The operation details are presented below:

Table 16: Debt Conditions

Bank	Banco BVA
Creditors	Funcef and Petros
Loan	R\$ 330 millions (US\$ 197 millions)*
Deb/Equity structure	75/25
Interest rate	Inflation** + 11%
Tenor	10 years
Grace period for principal and interests	3 years
Covenants	Cash waterfall; contingency fund; limits for debt/EBITDA, debt/capital.
Rating	AA-

Notes: \* Nominal price of 2011. Exchange rate average in 2011 US\$ 1 = R\$ 1,675.

\*\* Inflation according to IPCA – The Brazilian prices to consumer index

Source: Company's documents and (Diário de Itapoá, 2009)

The debt operation was expensive and operationally restrictive, thus later on it had to be refinanced. However, it was the mean that the shareholders found to keep the project up in a bleak global financial situation.

### 5.2.3 Business environment risks

According to the Port Law 8.630 of 1993, prevailing at the time of the project conception, Port Itapoá would be classified as a private-mixed-use terminal for own cargo and third-party cargo handling. However, before the authorization to port economic exploitation (terminal authorization) had been issued, the sponsors needed to work on other two fronts: land clarity and environmental license.

The stripe of land at the margins of sea, rivers and lakes as well territorial sea are federal state property. The use of whatever federal surface by private sector should be authorized and paid. The fees are not negligible, but do not compromise the return of the project. The costly part is the lengthy and bureaucratic process to get the authorization from the public entity in charge of national properties, SPU – Secretaria do Patrimônio da União. The clarity of the land was a prerequisite for the TUP authorization as well as the preliminary environmental license.

IBAMA is a national government institution subjected to Ministry of Environment in charge of assessing environmental impacts of projects as well as issuing the environment licenses if the project is approved. Additionally to IBAMA, there are also regional and local environmental entities, but since ports are federal jurisdiction, they are only consulted. The environmental process consisted of three licenses:

- Preliminary Licence: it is the most important license since it demonstrates the environmental feasibility of the project, approves its location and design, and establishes the basic requirements and conditions to be met in the next stages of the project implementation. The sponsors should elaborate a detailed environment study of the area and the project's impacts to be presented to IBAMA. The studies should be open for public hearings with the community, which are also assessed by IBAMA. Porto Itapoá's preliminary license was issued in 2003.

- **Construction License:** It means that the project's construction was authorized. The construction should follow the specifications according to the approved plans, programs and projects, including environmental control measures and conditions proposed at the previous phase. The sponsor should elaborate a detailed environment plan, including IBAMA requests, to be followed along the construction and operation to reduce or compensate environmental impacts. IBAMA issued Porto Itapoá's Construction Licence in 2008.
- **Operation License:** It authorizes the operation start after checking whether the project complied with the former licenses' requirements and the environmental control measures. The referred license was issued in June of 2011, although Porto Itapoá was ready since the end of the previous year. According to the IBAMA website, this process should take 45 days, but for Porto Itapoá it took more than 6 months, meaning revenue losses that would never be recovered.

According to ANTAQ, Porto Itapoá was authorized in April 5<sup>th</sup> of 2005, however it had to wait until the Construction license in 2008 to initiate the construction. Table 17 summarizes the main licenses required to develop the project giving insight about the time the project took to get operational.

*Table 17: Time elapsed for licensing*

<b>Licenses</b>	<b>Year</b>
Kick-off	1993
Land acquisition	1997
Environmental preliminary license	2003
Regulator authorization	2005
Environmental construction license	2008
Construction end	2010
Environmental operation license	2011
Total time elapsed	18 years

*Source:* elaborated by the author based on company's documents.

Beyond IBAMA, SPU and ANTAQ, the project's sponsors had to overcome other licensing challenges including the obtaining of licenses and guarantees from international, federal, state and municipal agencies as well as intervening stakeholders such as the Custom, Cesportos (State Commission of Public Safety in Ports), Fire Department and ISPS Code (International Ship and Port Facility Security Code).

#### *5.2.4 Political risks*

In 2008, after 15 years developing the project, the sponsors were caught by the Decree 6.620, which established that private-mixed-use terminals should have prevailing own cargo over third-party cargo. Nevertheless, the Decree did not make clear the criteria to judge own cargo prevalence, if value or tonnage or TEU. The sponsors together with other investors in the same situation opted to keep the project counting on the gaps of the law, the Brazilian justice sluggishness and the public administration bureaucracy and inefficiency to translate the new law in administrative procedures. However, the uncertainty regarding the legality of the project increased the risk perceived by the potential lenders.

Along this work, we have remarked how important is for an infrastructure project the long-term commitment of governments and how fundamental is inland connectivity to port efficiency. Porto Itapoá had to overcome both challenges with extra investments. In 2003, the same year that the environmental preliminary license was issued, the state government of Santa Catarina agreed in building a 23-kilometre highway (SC-415) connecting Itapoá city to the BR-101 in Garuva city. The highway BR-101 is the main corridor linking the North to the South regions of Brazil. Porto Itapoá' sponsors should build other 8 kilometres of roads (Jaca road) to connect the port to the SC-415.

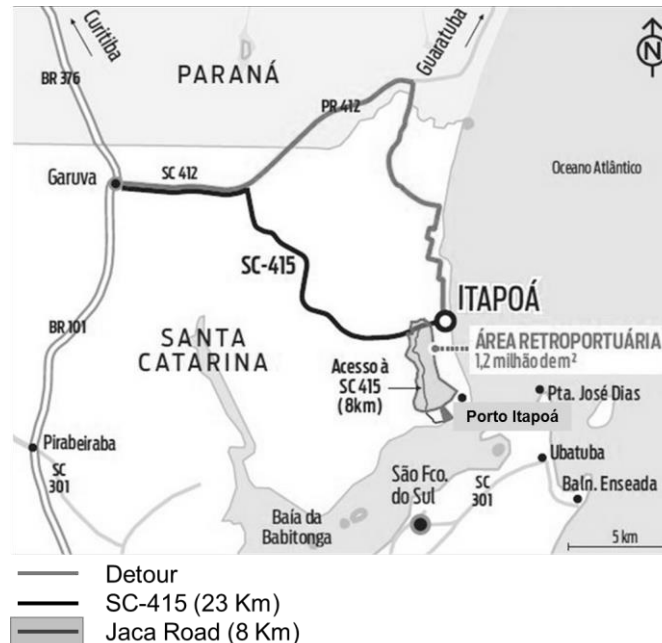


Figure 17: Porto Itapoá inland access

Source: (Menezes, 2011)

At the end of 2010, the port and the 8-Km inland access were ready. However, the SC-415 was only finished in 2012. In order to start the operation in June of 2011, already 6 months after the inauguration due to delays in the environmental license, Porto Itapoá's executives made an agreement with Itapoá municipality to allow trucks crossing the city's streets. From the 10 kilometres that the trucks should cross the city to get to the port, only two kilometres were paved. The paving of the remaining path was an investment made by the port in return of the "crossing rights". In addition, IBAMA restricted the number of trucks that could cross the city in only 39 per day, while the sponsors' estimative was to receive 250 trucks per day in the first year (Menezes, 2011).

In addition, Port Itapoá also had to invest in the electric network from Garuva to Itapoá city in order to have sufficient energy to operate.

### 5.3 POSTCOMPLETION PHASE

#### 5.3.1 Supply, operational and market risks

Hamburg Süd, as one of the project's shareholders, contributed to market risk mitigation. Porto Itapoá fit the sponsor's strategic planning of setting a transshipment point in the South of Brazil (Revista Portuária, 2009). It was used to serve the trade with Uruguay and Argentina, where ports did not have depth to receive larger vessels (Río de la Plata Basin conditions). Apart from that, Hamburg Süd owned Aliança Navegação, a short-sea company for the Brazilian coast and South of Latin America region. Porto Itapoá reached its capacity (93% of utilization rate) in less than three years. See Figure 18.

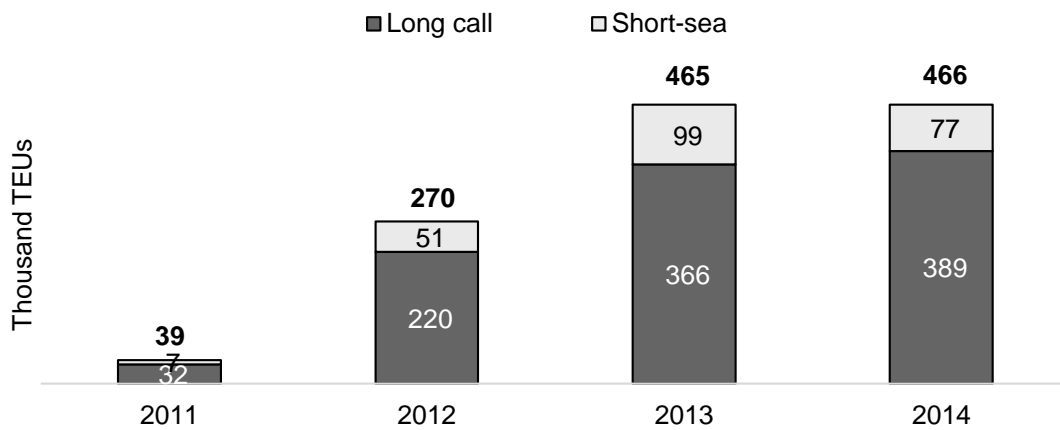


Figure 18: Porto Itapoá throughput

Source: elaborated by the author based on ANTAQ database.

#### 5.3.2 Capital availability risks

Considering the Operation License and SC-415 construction delays that postponed in one year the cash flow generation allied with the extra-budget expenditures with the city's street paving and electricity network construction, the project's shareholders had to add extra equity to comply with the debt's covenant. The grace period was planned to end when the project would be already able to sustain the debt costs. Nevertheless, it only happened in 2013. The shareholders were aware the debt arranged to the project was expensive and the covenants rather restrictive to the business. However, considering the market conditions in 2009, the debt contract was considered a success.

In 2013, Porto Itapoá was increasing its market share among the other South-cluster players. The new port law had finally given comfort to the shareholders. In addition, Brazil has gone through the global financial crisis well, the Brazilian bank system was sufficiently sound to support the bad times and in that time it was looking for opportunities again. All these factors contributed to Porto Itapoá refinancing its debt. The new operation involved Banco do Brasil and Banco Votorantim, two Brazilian banks, in a debt of R\$ 450 million for 10 years with a 2-year grace period for the principal. The interest expenses decreased by roughly 20% per year, comparing 2012 and 2014 (in 2013 each semester had a different debt structure, which made the year not a good base for comparisons) (Porto Itapoá, 2014, Porto Itapoá, 2015).



### 5.3.3 Business environment risks

The project succeeded although operational problems had happened. The natural depth of the 2-berth quay wall was 16 metres, however the maritime access channel was limited to 12,8 metres. In 2013, Porto Itapoá worked together with the Port Authority of São Francisco do Sul in order to get the environmental license for dredging, but two years later, the license is still not issued yet. Hence, Porto Itapoá still could not take advantage of its natural conditions against its competitors, namely Portonave and TCP.

The Brazilian bureaucratic system for international trade allied with lack of dry ports support – the Brazilian regulation restricted the number of dry ports around the country - caused operational problems to the port as well. The imports dwell time in Porto Itapoá can vary from 8 to 16 days, what makes stackyard planning a challenge. The terminal worked with high peaks of capacity utilization, increasing the cost with fuel since some of the stackyard corridors were closed, then trucks should drive for longer distances to accommodate the additional containers. The operational system in charge of the terminal planning, Navis, does not guarantee optimization working with capacity utilization greater than 80%.

In 2013, Porto Itapoá has initiated the environmental licensing process for port expansion purposes, the project's second phase. The new port law had finally blown the own-cargo-prevalence ghost away. Porto Itapoá was classified as a TUP as all the other ports built in private land with private funds. Asked if the new law had finally unlocked private investments in port infrastructure, the port's CEO disagreed. It seems that some problems faced in the first phase are still present.

*“It didn't unlock private investments because the regulatory process wasn't done. Ibama still stuck it. Itapoá is trying to expand for two years and doesn't get the licence. Do you know what an Ibama analyst asked when we went to Brasília to discuss the case? ‘Since the fisherman can't pass in front of the port for security reasons, isn't it possible to demolish the actual bridge and build a new one with a bigger arc so the fisherman can pass under it?’ Then we asked if she knew how much it would cost. That's the kind of people who takes the decisions. Nobody signs anything, nobody takes any responsibility for anything. Here in the port I am the responsible if anything that happens, but in the country there is no one. Every time something happens during the current government it's the past government's fault.” (Junior, 2015)*

### 5.3.4 Regulatory risks

Other problem is related to the intervening agencies required to the cargo inspections at ports, such as customs agents and Ministry of Agriculture inspectors. Concerning the latter, Porto Itapoá's CEO told us that only four years after the port inauguration they managed to bring a Ministry of Agriculture unit to the port. According to Mr. Patricio Junior, “that's an absurd. You give the terminal a licence and you don't provide anything else. There's lack of people” (Junior, 2015). Before that, the port had to wait an agent to come from the Port of São Francisco to inspect the cargos in Itapoá, generating delays on the handling process. It affects the port operation, but the origin of the problem is related to the inefficiency of the public administration, bureaucracy of the public processes and the

lack of public authorities commitment. To put it in short, regulatory issues implied in operational inefficiency.

#### **5.4 CHAPTER CONCLUSION**

The sponsors' of Porto Itapoá seem to have controlled the:

- Planning, design, technological and construction risks by hiring a experienced contractor, project manager, law firm and equipment supplier;
- Market risks by bringing a shipping liner as a shareholder;

On the other hand, the sponsor could not overcome the challenges linked to the remaining risks without affecting the project's ability to generate cash flows.

- Capital availability risk was partially mitigated with a private equity investor with access to capital market sources as shareholder. It was important to the project during the precompletion. The pension funds made the capital available when the market was weak. However, the strict debt conditions allied with Brazilian environment required new equity calls from the shareholders.
- The unfriendly business environment, embodied by lengthy licensing process and international trade bureaucracy had delayed the project delivery and affected the project operation, respectively.
- The political instability, reflected in changing rules, first had increased the uncertainty concerning the project legality. Finally, it legitimated the project. Lack of government long-term commitment is also an issue that we attribute to the Brazilian political instability. The government took nine years to deliver a 23-kilometer road. It not only made the project's launch to be postponed but also led to extra investments, such as paving and electrical network.
- Regulatory issues are reflected in the inability of the federal government – body that authorized Porto Itapoá – in coordinating the different levels of the government to supply the port with the minimum it needed to work properly. In Porto Itapoá case, this situation is exemplified by the delays in providing accredited people to undertake the sanitary duties.

The new port law clearly appeared to have contributed to the project. The sponsors could refinance the port's debt without the uncertainty related to so-called "own cargo requirement" previously in effect. On the other hand, the government could not provide the port the minimum support concerning the inherent activities of international trade. Regulatory issues related to definition of roles and coordination along the different layers of government seemed not to be solved by the new law. In addition, the bureaucratic licensing process incurred in delays and operational challenges. Porto Itapoá did not have authorization to either expand or dredge the maritime access.

Aligned with the findings of chapter 4, the business environment, political instability and regulatory framework played a significant role in the Porto Itapoá development.

## **6. CONCLUSIONS**

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### **6.1 GENERAL FINDINGS**

In many countries, governments have fully sponsored port infrastructure due to its inherent characteristics, such as being a public good, serving as an economic development policy tool, generating negative externalities, and at the same time its long-life, expensive and non-directly marketable infrastructure. However, growing investments demanded in social fields allied with public budget constraints led governments to open the sector for private investors. In addition, market trends such as globalisation and containerisation imposed an increasing need of investments in port infrastructure as well. The reasons abovementioned answer our first sub-research question “why public sector should attract private investors to port infrastructure”.

On the other end, port infrastructure is an interesting business for private sector. In many places, infrastructure concessions mean monopolies or, when not, they are a market with restrained demand. Infrastructure is an attractive asset class for long-term investors, being relatively stable and having a inflation covered return. Infrastructure also fits several logistics companies’ vertical integration strategy, meaning cost-saving opportunities as well as increasing quality services. The opportunities are all around the world, situation that opens room for portfolio management concerning geographical diversification as well.

Investors carefully look to their investments. As port infrastructure is a very specific asset class, specific knowledge is required and investors take many aspects into account. According to this research, project finance is one of the tools that investors use to analyse and structure projects. In project finance, risks are allocated to partners that can bear the risk the best. Besides a promising market, political and economic stability, clear regulatory framework and a friendly business environment are the state-of-the-art conditions to attract private investors, as it was found by the analysis of specialized literature, expert interviews and a case study performed in this research.

### **6.2 FINDINGS ON BRAZIL**

This research found that investors in general see Brazil as a promising market for ports. The port infrastructure is poor, the government was not able to place the investments required to follow the sector trends. On the other hand, concerning size, Brazil presents a great economy and population. A decent transport infrastructure can include Brazil in the international trade more effectively. However, as stated in the previous chapters, the country has a history in changing rules in the course of the game according to the interests of the incumbent government. Interviewees affirmed that these rules are not always written in a clear way, they usually leave room for misinterpretation. They also understand that both political instability and unclear regulatory framework disincentive private investments in Brazil.

By the analysis, it can be concluded that investors do not find a friendly business environment in Brazil. The lengthy licensing process is seen as a big issue for developing infrastructure. For instance, in terms of the environmental licensing process, the problem does not seem to be related to the private sector resistance in complying with laws, but to the great amount of time the authorities take to allow or not a project to move on.

In general, private investors tend to avoid uncertain scenarios. In this sense, this research found that the lack of a long-term master plan creates uncertainty among investors. Therefore, it is not made clear for investors the criteria to authorize new projects or the availability of inland connectivity when it is needed.

The process should be clear and transparent since the beginning so investor can include it on their cash flow planning. The same is applicable for market competition. Private investors should be able to judge the level of competition they will face to include it in the return they should expect – they are used to deal with these market forces. Therefore, this research confirmed that they usually need a level playing field to compete, where the most efficient company will take the greater share.

### **6.3 RECOMMENDATIONS FOR BRAZIL**

Concerning our main research question, in order to enhance private investment in the Brazilian seaport infrastructure, it seems to be important Brazil acts toward creating a political stability, a clear regulatory framework and a friendly business environment. However, these are culturally guided determinants and culture takes time to change. On the other hand, there are simple actions that can radiate positive messages to investors and enhance the port-infrastructure attractiveness in the short- and mid-term.

In order to create barriers for political interference in public port authorities, the government could resort to corporatization or comprehensive concessions, what would be considered a continuity of the port reform made in 1993. In the mid-term, the effects might be a professional and accountable port administration able to generate funds to reinvest in port infrastructure, thus relieving the pressure on public budget as well as generating a levelled playing field for private and public ports competition.

Another valuable measure would be presenting a clear and public transport infrastructure masterplan indicating the government priorities in the short-, mid- and long-term. It could not only help the government to plan and to prioritize their actions but also to communicate to the private investor where are the opportunities and what they can expect regarding inland connection and level of competition. The publicity of this plan is indispensable to press government commitment. A masterplan might present improvements in the short-term, since preliminary studies are already done.

The determinants of investments affecting the project sponsors are the same that affect the lenders. Work on reducing risks that are out of investors' control would make project finance an important tool to unlock capital for long-term projects in Brazil, being either by increasing the capital volume offered or decreasing the risk parcel of interest rate.

### **6.4 THEORETICAL IMPLICATIONS**

Our research enforces the point that project finance might not be the most suitable option for countries where investors have more exposure to political risks. It makes the project expensive and requires stronger guarantees, stricter contracts and covenants, which restrict the companies manoeuvre options to overcome the challenges. By reducing those risks, project finance can unlock fund available for infrastructure with commercial banks support relieving public budget.

In addition, there are more investment theories and many scholars have written on public-private partnership, however international port investments have not delivered extensive theoretical findings up to now.

### **6.5 LIMITATIONS**

There are plenty of literature about port reforms and private sector experiences in port infrastructure around the world; however, the time was short to analyse them all. Thus, we focus on the main works about the topic, decision that might left the research rather generic. Also related to time pressure, we build the interviews' questionnaire without finishing the theoretical framework. It implied in extra effort to coding the interviews according to the theory adopted.

Recently, the biggest corruption case in the Brazilian history was discovered. The scandal involves top politicians accused of taking bribes from the biggest contractors in return of lucrative contracts with Petrobras. Top contractors executives, most of them with branches in port infrastructure, were arrested through the investigations that are still running. If, on the one hand, it represents an advance in the Brazilian democratic history, where corruption is finally being legally judged and punished, on the other hand the country is under a crisis of confidence. After years of growth, the scandal hits Brazil in a bleak economic scenario since the commodity spree seems to be over. All in, the interviewees might be biased toward a negative perspective.

### **6.6 RECOMMENDATIONS FOR FURTHER RESEARCH**

In this research we proposed a new step in the port reform initiated in 1993 toward transforming the public port authorities in companies under private law guided by business principles. There are different strategies to accomplish it – we have suggested corporatization or a comprehensive concession or privatization.

Both models should be further researched in order to understand which has more chances of succeeding in the Brazilian environment and which of those would require a shorter time of implementation.

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## APPENDIX

### INTERVIEW TRANSCRIPTS

Date	13/07/2015 at 15:00
Interviewee	Nelson Carlini
Profile	Chairman at LOGZ Logística Brasil S.A.. Previous Commercial Director at Verolme, Chairman at Flumar Navigation Company, CEO at Wilson Sons Brazil, CEO at CMA-CGM Navigation Company in Brazil.

*MW: How do you evaluate the Brazilian port-related infrastructure from 1 to 5, being 1-very bad and 5-excelent?*

NC: From 2 to 3.

*MW: 2 or 3?*

NC: Between 2 and 3, I would say 3.

*MW: What are the determinants behind your grade? You can make a division between the use of existing infra and the development of new infra.*

NC: From the existent reasons, the main problem are the maritime and inland accesses.

*MW: Do you think the capacity is low or badly maintained?*

NC: The problem is the accesses are non-existent. In the long distances, there is a problem of poor maintenance, but in the short distances the problem is poor access structure. We would need new things to be done. Railways are almost inexistent for our cargo. The ones that exist are basically used by iron ore, they only serve half the demand of agribulk and practically zero containers. Most of the ports are in urban areas, so there is an inherent difficulty of crossing the city.

In the maritime access we can see the government incapacity of keeping the depth (of the maritime canals). The government make multiannual plans that always demand a lot of resources, the approval is difficult, the execution is totally centralized by the federal government. So, there is a delay in the public tender process since the hiring is lengthy, you have updating plans every ten years. That way it's not solved. It would be necessary to make permanent maintenance plans.

The same thing happens with the dredging plans for maritime access channels and the new terminals (new leases). Even though the new terminals are paying the same taxes to the port authorities, many times they have to bear the costs of connecting the channel to the terminal. Nowadays those are the main issues of the port management in Brazil.

The leased terminals were modernized. There's still a need to consolidate some areas in order a terminal can get a larger scale – so small terminals don't keep splitting it. I say this looking at Santos. In the case of containers of the right margin and the bulk terminals inside the urban area, the operation is very complicated. Some investments in terminals are still needed, but they are located in more remote areas.

In the bulk you need the cargo to reach the sea from a smaller distance from the production areas. So, there is a need to migrate this maritime exit to the North. This is already happening. The private sector is consolidating this situation. There are some normal difficulties of approving environmental licences, but it's running.

The best solution for the containers would be in the Northeast, at Pecém and Suape. In the South, the solution would be abandoning some inefficient areas. In these cases, the ports are too inside the urban areas, so there is a need of a huge intervention in order to improve the rail access that is made difficult through the urban area. So, some areas will need to be converted in other things but not cargo handling. Companhias Docas could maybe use these lands to restructure themselves, since they are not eligible for new port investments they could be used for real estate. But this is a difficult problem to solve in Brazil because there are many interests involved, the decision is slow, the labours resist in permitting the port to lose areas. They want Companhia Docas to keep these areas so they can keep their jobs longer, they don't accept the evolution for the fixed job that would mean they would need to abandon the gang schemes.

*MW: There are two sources to finance port-related infrastructure: public and private. Which one do you think is the most suitable for this purpose? Why?*

NC: Inland access could be private if there was economic viability in the new rail connections, for instance. But I think it would be more wise to think about PPPs. Hardly the required links are viable at first. So, the roads could be privatized because it's a model that already worked well. Where (financial) balance is not possible because there is insufficient demand, a PPP would fit. This is the case of BR-163 that crosses a remote area where there are not anyone living, not much traffic, only cargo traffic in evolution. In these remote areas, even with a large volume of cargo, I don't know if it's possible to balance the investment because the distances are too big. In these cases the government should have a complementary role.

The private sector is interested in these projects. There is a way to do it, there are many people becoming specialists at it. There are companies with sufficient scale to raise funds directly, like CCR, Ecorodovias, among others. Nowadays, we have to mention the fact that some of the biggest companies in the construction sector are involved in lawsuits that can lead to delays in the ongoing investments or even transference of assets to other companies. They are facing difficulties in raising resources in public banks because of the involvement in corruption suits. There are no condemnations yet, but the lawsuit is running, what may affect some of these strong groups.

*MW: Are the public funds enough to provide the port-related infrastructure that Brazil demands or other sources are required? Why?*

NC: The government, at this moment, does not have the capacity to take resources, it is running a fiscal deficit right now. It should reduce its expenditures and it's gonna affect investments. The government lived a budget spree for some years after the exit of Antonio Palocci (former minister of finance) and Henrique Meireles (former president of the Central Bank). The government Dilma believed it could fight the global recession with more investments in the country, more applications and stimulating consumption, what resulted in growing inflation and the need for adjustments. The left wing says these are neoliberal adjustments but they are mandatory and obviously will cause recession in the short term.

*MW: So, to conclude, you understand that the Brazilian government is not able to fund infrastructure?*

NC: I would say no, at least in the next three to four years, because of this process of rebalancing bills. It is quite unlikely that there will be resources left to invest in infrastructure. Since the infrastructure sector has more appeal in the international market, the money will come when investors realize there is a stabilization of the inflation, an improvement in the conditions of leasing and auctions - allowing better return -, besides the government's commitment to make an effort to reduce the bureaucracy in environmental licencing and to solve the problem of the access infrastructure. In brief, when the environment gets better for the investor.

Obviously, China wants to invest in Brazil, but for it they want to bring workforce from there to build railways. These are things that won't happen in Brazil because there's a need to employ workforce from here. These kinds of packages won't be successful in Brazil. But international companies that employ construction companies from here will be successful.

*MW: Regarding port-related infrastructure investments, what are the successful factors for a private investor? What would make a private investor go for it?*

NC: The first thing, is the balance on the government's bills because investors need to perceive a serious effort in the reduction of inflation, in the reduction of the government's need to be funded by high interest rates in the market. If the austerity plan of the government is successful in finding a balance in the bills, this will be a critical point to attract investors.

Moreover, specifically about concessions, there was an evolution since the government understood the investor's need to have an adequate return. The government's structure turned away from policy makers more inclined to statization. The major advance is the possibility of directly investing in private terminals. That was made much easier. We already have five or six projects being developed in the North without public money because regulations were softened.

The government also seems more receptive to talk openly with the national entities that represent the change of the model of the sector, for example the ones of the maritime infrastructure concession.

*MW: Which of these factors are found in Brazil and which are not?*

NC: I believe that now the government has a team with a correct vision about things. It's assembled, it has the power to do, even though sometimes it may face the resistance from some players that were harmed with the openness to new investments. What could put at risk the effectiveness of the new regulatory framework is the political instability. If they are able to prove the resources for the election campaign come from deviations, the court may contest the election and call a new one in six months. During this period, the country would be paralysed. That is a possible scenario.

The economic team and the entities that regulate the sector, SEP and ANTAQ, are more sensitive to the complaints of the private sector. It's much better. There are no resources from the government. But I think there is enough money in the world. The good news is



that the FED delayed to the next year the increase of the interest rates in the USA. If this was made this year, resources would migrate from the developing countries to the USA.

*MW: In your opinion, the new regulatory framework was an effective tool to attract private investors to the port infrastructure sector? Why?*

NC: I believe the end of the own cargo requirement is a progress in the new regulatory framework. If the concessions show problems, the private sector will abandon them e focus on the private ports. There are enough projects for private ports, like the bulk ones in the North, there is a quest for containers in the Northeast. The Brazilian private sector is moving the country since they are already used to the hurdles and intern difficulties.

It's hard to explain this scenario to the international investor and convince them to invest in Brazil in this environment of political uncertainty.

*MW: In your opinion, for terminals located in public port area, is the Port Authority playing its role in providing the basic infrastructure? Can you give some examples that justify your answer?*

NC: I don't think so. First, the centralization in Brasília locks all decisions, makes all of them to be delayed. Second, port authorities don't have their own resources. They are not like in Rotterdam that they have their own funds and go to the market. Here they are public entities that make use of the resources of the dredging taxes to pay their administrative expenses. The solution would be implementing private management, maybe a consortium of leasers and entities connected to the port could control it. But it's hard to build in Brazil. The path to it would be to diminish the political interference in the decisions of port authorities.

*MW: For fully privatized ports, what are the main bottlenecks to develop the required infrastructure?*

They main bottlenecks are the accesses. When you decide the location of a terminal, most of the time you have restrictions in the access. For example, everybody is going to Vila do Conde. It will be necessary a dredge there. It won't be a simple thing considering the need of environmental licences in the Amazon area. The regulatory question is not complicated.

*MW: Considering the example of Vila do Conde, if the private sector wants to invest in the deepening or widening of the channels, it could, right?*

NC: Yes, but how to have a return on that? That's why they talked about the concession of the exploration of the maritime infrastructure as it is done in roads. However, a lot of people complain about this solution, specially shipping liners. They believe there will be double charging, since Companhia Docas will still charge their tariffs because without it they couldn't survive. That is related to the bills of Companhia Docas, they are technically bankrupt. In Brazil, only some port authorities are able to survive with their own resources: Rio Grande, Itajaí, Paranaguá, Santos, Suape e Pecém.

*MW: In your opinion, do they accumulate resources to reinvest or only to cover expenses?*

NC: They can barely sustain themselves, they are not able to invest. To invest they depend 100% on the government, which is exhausted in this moment. It means nothing

will happen. If we give a private solution to some of the problems – for example, to take out their right to economically explore the maritime access -, Docas won't be able to pay their own expenses. They have too many people, too many labour debts.

The concession of the maritime access for the private sector would be an intermediate solution. A definitive solution would be to pass the administration of the public ports to the private sector. But what to do with the white elephants and labour debts? The areas that wouldn't be used for ports could be used for real estate. That's my point of view.

*MW: The port system consists of nautical infrastructure, inland access infrastructure, operational infrastructure and superstructure. Regarding LOGZ business scope, What is its economic interest to invest?*

NC: Operational infrastructure and superstructure. The access part is more complex. If that's conceived, it would be a project for the big construction companies, the ones that are already in the roads concessions, for example. We could get involved wherever there is a need to total management, where we could split investments with other interested parties. But it's not our actual focus, our actual focus is terminal and maybe the barging operation in waterways and inland storage. The building of the access to the Port of Itapoá made sense because it was absolutely necessary to the operation of the terminal.

*MW: In your opinion, what should be done to enhance the infrastructure port sector attractiveness to private investors? Before you talked about modernisation of the port authorities.*

NC: It can't stay the way it is. There should be made a privatization of the management of the port assets. Which is the best model I don't know. We would need to create a model for that. But something needs to be done, or the public ports will languish. Our history is too recent, we should only tell it from 1930 because before of that Brazil was a large farm. I don't have any hope that this problem will be solved inside the state – like from one moment to another the state could become a good manager, a thing it never was. So, I believe in the concession of the port management to the private sector.

Getting back to the public ports access, the maritime access can be solved with the concession to the private sector. The road and rail accesses... the road access can be simple, but the locations need to be reviewed. For example, Itajaí. You can't think about a highway with six lanes coming and going because the port is in the middle of the city. So, Itajaí tends to become a minor terminal, like the right margin at Santos. But Suape, Pecém and Rio Grande were well planned in terms of access. Navegantes can get better with better accesses, the same way of the left margin at Santos. Salvador, with a port inside the city, should have gone to Aratu. Some actions in the public ports should be taken seriously, rationally, not politically. Companhia Docas should be deeply changed.

*MW: Getting back to the new regulatory framework, do you believe there is a clear division of responsibilities between the different governmental entities and the private sector?*

NC: It's clear how it should be done, but there is still a problem of definition of the demarcated areas for public ports, but it should be solved soon. So, I think it's clear.

*MW: What are examples of other countries where conditions for private investors in ports are attractive and what can Brazil learn?*

NC: It would be England, where there is a private administration of ports. Or the Netherlands, with Rotterdam, and Germany with Hamburg. There, when you talk to the port authority, you talk with great executives interested in promoting the port as a whole. It's different from Brazil, where the decisions are centralized and based in other strategic interests – many times related to politics and not the promotion of the port, what lead to misguided logistic decisions.

Date	15/07/2015 at 10:30
Interviewee	Mr. Marc Aartsen
Profile	Senior project manager at Port of Rotterdam International

*MW: How do you evaluate the Brazilian port infrastructure – being 5 very good and 1 very bad?*

MA: I must be very honest, I cannot compare all the ports in Brazil, I can only mention what I heard or what I know myself. It's known that the Brazilian port infrastructure is not the best in the world. That there are some challenges in the capacity and quality. We, as Port of Rotterdam, we're included also in the PNLP, the master plan of the Brazilian ports, where there are some problems mentioned by my colleagues and I think they're still valid. There are some still huge efforts for Brazil to improve the port infrastructure. So, I find it difficult to rate it from one to five because I haven't seen a lot of ports in Brazil, only in Rio and SP. There are a long period of waiting for ships to enter the ports, you see that the capacity is not enough. What I hear is that it is very expensive in Brazil due to all kind of taxes but also inefficiencies. Then, I would say 2.

*MW: You already mentioned some reasons. Regarding new infrastructure, what do you think is the problem?*

MA: There are a lot of challenges that we have ourselves in the projects. For instance, getting a clarity of the land. That is the key for a project like this. The whole licencing process also takes a long time and it's very complex. Brazil is not the only country where it's like that, but we experience that in Brazil now. We see that it is a challenge in Brazil to deliver construction works within time and within budget. Financing is also an issue, because BNDES is a good source of financing but there are some challenges in there as well – they are diminishing or decreasing the amount that we can borrow for these kind of projects. So, you have to go to the commercial banks and they in Brazil are not very well suited for financing infrastructure projects – expensive and short duration periods -, so they are not very attractive. There are some challenges. What we also hear from some international business is that there is a lot of concern about insecurity around the Brazilian market. You had some issues with the government, some protests, well, that's not a problem as such, but you see that there are some corruption cases, for instance at Petrobras, construction companies like Odebrecht. There is some fear of doing business because of that as well.

*MW: So, you think that the political instability is a big issue.*

MA: I think so, yes. And everybody that we talk too and we ourselves believe that Brazil has a huge potential. There is a base for growth and doing good business. But still there are some issues that need to be solved.

*MW: Regarding the base for growth, do you think that economic stability in Brazil provides a good environment for private investments or it's still not that comfortable?*

MA: The financials are an issue, inflation and financing like you mentioned, but also things like bureaucracy and the tax system. It's so complicated sometimes. I'm not a tax expert, but what I understand from the Brazilian tax system is that there are laws that are

conflicting with each other. It's very hard to be compliant with the Brazilian tax system. That's also an issue and an expensive one. If you do business across the states, every state has its own tax systems, it's difficult.

*MW: Who do you think that should invest in this kind of infrastructure, the government or the private sector?*

MA: That's a very fundamental question. You know the port system in the Netherlands, where the Port of Rotterdam is a corporatized organization, with only professionals, no political influence whatsoever. But we have two public shareholders. What we think is that investments and some of the planning need to be checked by the government, you can't leave everything to the private sector. That's my opinion. What you need is a sort of cooperation between government and private sector. Because private sector is best in doing business. My opinion is that the government should not be involved in a day to day basis in doing business with Brazilian or foreign companies. You can leave that to the private sector. But some of the infrastructure need to be planned and governed by the Brazilian government. Like road systems, railway systems. Some basic infrastructure and even, perhaps, some important infrastructure.

*MW: Do you think Brazil nowadays have funds to invest in this infrastructure?*

MA: Well, I'm not sure. IMF mentioned that BNDES is a little overstretched, they finance maybe too much, and too much subsidies as well, which can cause a problem for the Brazilian economy. I'm not sure if there are enough funds. But it is also a question of priorities. What I think is that the Brazilian economy can profit a lot if there are good investments in infrastructure in place, because that will improve business, improve jobs, improve the welfare in Brazil.

*MW: Would you mention other factors for a port infrastructure projects to succeed?*

MA: Infrastructure problems are always long-term. You shouldn't be distracted with economic setback or growth. You need stability. If you are a private investor as we are in Brazil, you need stability, a reliable government who is not changing every time the policy of these kinds of investments. That's a challenge in Brazil but not only there. We have a problem in Romania, which is also an EU country, and there it's far worse than in Brazil. They have a new minister of transport every three or four years. For a project like we do, every time you need to explain again to the government what you are doing, what's the ambition. And you need a reliable government which is working with you, also facilitating and sees the potential of those investments. What we are planning to do in Espirito Santo can be of a huge advantage to the economy there. I think politicians in Espirito Santo noticed that, which is very important.

*MW: Do you think that economic stability in Brazil nowadays is better?*

MA: Brazil is in a kind of economic recession at this moment, which has its causes obviously. Less growth in China, less demand for raw materials... But we think it's temporary, it will pick up again. What is also a problem is perhaps the way of doing business, which is not always transparent in Brazil, I notice. The mentality.

*MW: You mean the regulatory framework or the licensing process.*

MA: Not only that but also the mentality of doing business. In northwestern European countries and the US, for instance, it's rather transparent, you look for partners that have

the same ambition. Whether if it's your friend or not is not an issue. But in Brazil, you see that there are a lot of connections, people who know other people could do things for them. In return, you do something back. It's a little bit intransparent. That is something cultural, you have to get used to it, but in projects like this, that is what I heard from people from Port of Rotterdam working there, that is a daily challenge for them to keep everybody on track. Sometimes, for instance, what you see happening is that the research has to be done, the land or the sea bottom has to be explored, and then somebody of high level ranking in the office knows somebody who can do that. And you see that it's not the best company to do it. There are other companies far better suitable for doing this. And that's constantly a challenge.

*MW: In 2013, the new regulatory framework allowed private investments there. Was it a good tool to boost private investments in Brazil?*

MA: For us it's perfect, because it gave us the opportunity to invest there and create a port in an industrial area, which was not possible under the old law. Because under the former you needed your own cargo. I think that is a positive change.

*MW: For public ports, the government is still in charge of providing the basic infrastructure. But for the private ports everything is private. Regarding your knowledge, do you think the government is providing the right infrastructure for the terminals inside public ports?*

MA: That is what I cannot say. I can only say from what I hear. What I hear is that it's expensive, that they have to make use of people from the unions, that it's not very efficient. That's the complain I hear.

*MW: About bottlenecks, you already told me some reasons...*

MA: What you saw happening in the past is that companies like Vale didn't want to make use of the public ports and created their own port infrastructure. What we are trying to do know is trying to set up a complete port with all kinds of terminals, with completely private investments, and that is still a challenge. Because you have to finance an entrance channel, break waters, everything. And that's expensive. Therefore maybe the government should facilitate something. You can think about a loan that you pay back with certain conditions, whatever.

*MW: A strong sponsorship maybe...*

MA: What the government of the Netherlands did here, for instance, is that the Port of Rotterdam is financially independent. We have to make profit in order to be able to invest. When we created the Maasvlakte 2, it was so expensive – it was a 3 billion euro project -, that part of the project was not feasible. For instance, the Outerdijk was a very costly investment you couldn't commercialize that. You couldn't do business with an Outerdijk, you just needed it to protect the land. So, the government in the Netherlands decided to invest in the Outerdijk because it was also a responsibility for the government of Holland protect the country from the sea. So, they invested in the Outerdijk and in return they got a share in the Port of Rotterdam. That shareholdership for us was very positive because Port of Rotterdam is of national importance. But they are not interfering in the day to day business, they are just looking at the strategic issues of Port of Rotterdam and not influencing it directly on the day to day business. That might be an idea for the Brazilian port sector. For the government to become a shareholder in a port which is privately run,

but the government can't interfere in the day to day business, but only looking at their interest in a strategic level. Which might be a huge advantage for private investors. But now private investors can be a bit frightened to involve the government because then, all of a sudden, you are under the government regime and you have to deal with the unions, whatever, which makes it very complicated and expensive.

*MW: Maybe what could be done is the public ports pass by a corporatisation like here in Rotterdam or something like that. Nowadays they completely waste the money they collect from private terminals.*

MA: And, in fact, you should use the money that you earned in the port. You can distribute it as dividends, but you have to leave a part of the revenues in the company to be able to invest, to improve your port, because it's also a long-term planning. And we see that in more countries. In India you have also public and private ports, there you also see a lack of investments in the public ports because the dividends are distributed to the government. They do good things with it, I presume, but don't invest in ports.

*MW: What is the scope of Port of Rotterdam in Brazil at least as a private investor? Is it basic infrastructure, superstructure, operational infrastructure?*

MA: In fact, we want to do the same as we do in Rotterdam: to provide the basic infrastructure, to facilitate businesses and the businesses will set up and finance their own terminals. We provide the entrance channel, the breakwaters, the port basins, the quay walls, internal road system, it's all our investment together with our Brazilian partners. The companies at the terminals will invest in the cranes, the office buildings, the terminals itself.

*MW: Regarding the World Bank definition, it's basic and operational infrastructure.*

MA: Indeed.

*MW: What would make you decrease or increase this scope?*

MA: Superstructure we will not be involved in because that's not our core business, we are not experts in investing in superstructure. What we might consider is to limit our role and to leave it more to other partners. For instance, if the business case is not feasible, then we have to think about how to finance such investment. What we are aiming to do there is to create a project, which can be financed with a project finance

. But for creating a port, phase 1 is very expensive, because in this phase you have all the investments needed to create a port like the entrance channel, like the breakwaters. And the breakwaters will be there forever. So, it will be serving the next phases but you have to finance it already in phase 1. And that's the challenge that we're now facing, that maybe another government entity, for instance, should be able to pre-finance those big investments that you need in the beginning of the port but you can only pay back in later phases because then you have the ports running.

*MW: What do you think that should be done to enhance private investment attractiveness? You already mentioned a couple of things, like capital availability, maybe some commitment from the government. Do you think that's the most important?*

MA: Commitment of the government and also planning, that you have a clear master plan in Brazil, so these are the places where port infrastructure can be built, that you have a

clear plan. If you're going to invest somewhere, on another location there are all kinds of initiatives, the government is approving everything, then you create competitors there. Also the competition is important to take into account.

*MW: I read last week that they have already 60 private terminals authorised and more 150 areas to be leased. That may be a problem...*

MA: On quite small locations. All along the coast in Brazil you see those initiatives popping up. I think is more advantage for the Brazilian government that you create a few bigger port areas along the cost. And then it's far more efficient, cause you can play the infrastructure better. In the end, it will be much cheaper and much more efficient, because the government can concentrate in those locations. And it's also a lot better for the environment.

*MW: As you said, we have a lot of small terminals along the coast, and the basic infrastructure for access, for example, may be still poor.*

MA: Inland access is essential for ports. If you talk about responsibility of the government, of course we are in close contact with the government of Espirito Santo and the Brazilian to make sure the connecting infrastructure is there when we start, because that's essential. If it's not there, you cannot develop the port. So, you are dependent on the government there. It's a little bit scary sometimes. Also for the railway, there are already for a long time discussions to connect or create a new railway line in Espirito Santo and connect our port project with that. But still it needs to be done. And it's not clear how or when it's going to be done. This is also essential for attracting companies to it.

*MW: So, maybe the basic infrastructure and the inland connections, as they are not there, they are something that can damage the project.*

MA: Yeah, that can harm the projects.

*MW: What are some examples of countries where the conditions are attractive to investors and they could serve as examples for Brazil?*

MA: There are challenges in all the locations that we are active. You see that even in developed and industrialised countries like Australia, for instance, that the situation is clear, the government used to manage ports and it is not a privatized port. So it's a very straightforward financial deal, in fact. Also the conditions are clear: this is what you get and this is what you have to do. In a lot of countries where we are active it's a challenge. I cannot say there is a perfect country for private investors. Also in the Netherlands it's not possible to create a port by private investors, that's a government thing. The government has to approve such development and there is simply no space anymore in the Netherlands to create port areas. That would be also a challenge in the Netherlands.

*MW: So, Australia would be a good example.*

MA: Yeah. It would also help if all the ports in the same country are falling under more or less the same regime. That you have a levelled playing field. Because now, in fact, what we are doing or people can think about our project is that we are going to compete with public owned ports, which can be also a threat for politicians because they are responsible for public ports. And now, all of a sudden, there is a private initiative which is competing, or can compete, with them. So, this is also a little bit blurred sometimes.



*MW: I think last year, I was still in Brazil, when they brought this debate. The association of the public ports (ABRATEC) with all the private investors there had really a heat debate about that. I agree with you. Brazilian politicians are not blocked against this lobby. They are open to these interferences, to this pressure.*

MA: If Brazil was completely blank and there was not port at all, you should never come with a system that we have now there, where you have different business models. Well, if you can start from scratch, the government's responsibility is this, the private sector's responsibility is this and we create all a regulation in which the ports can be developed. Everybody has the same regulation. Also the tariff structure would be free or not but the same for everybody – which is not the case at the moment. Or making use of the people from the union, for instance, which private ports don't have to do, but public ports do have to do. There is not a levelled playing field at the moment.

*MW: The labour union is a battle the public ports lose. The unions are really powerful. The government can't control them and show that the way they're working is damaging the business. They will be without jobs at the end.*

MA: You have a system in Brazil also for container terminals, for instance... To handle containers in Brazil is really expensive. What you see happening there, what we understand from it... What you see in Rotterdam is that the container is moved as quickly as possible from the terminal to the hinterland. In Brazil is not the case. They store the container terminals in the port and they earn money by storing the container there. They earn more money from storing the container than from handling the container. That's a business model which is not improving efficiency. And how can you break through such a system?

*MW: In 2013, they tried to approve a new law for dry ports that maybe would improve the situation for the (sea) terminals themselves but they couldn't. I agree with you, the terminals now must be really big to keep all containers, but still they are earning a lot of money. For instance, a terminal that my former company (LOGZ) invests, 60% of the revenue come from the stackyard, but now the terminal is full and they do not have more space to put more container. And the land that they have, it took 2 years and they do not get the environmental license yet... they maybe will lose cargo because they do not have space.*

MA: There is no incentive to move the container as quickly as possible.

In the end, I think Brazil needs to focus on a levelled playing field, create also more competition, so that there is also an incentive for companies to grow up as efficient and cheapest possible. This will increase business, I'm sure. What you see in the shopping malls in Sao Paulo, in Rio, is that the prices in Brazil are higher than they are here. If you buy jeans in the Netherlands it's twice as cheaper than it is in Brazil. This is crazy that Brazilians are travelling to Miami to buy clothes and earning the ticket back with the money they saved shopping there.

Date	15/07/2015 at 15:00
Interviewee	Anonymous
Profile	Senior Commercial Executive at a container terminal in Europe

*MW: How do you evaluate the Brazilian port-related infrastructure from 1 to 5, being 1-very bad and 5-excellent?*

INTERVIEWEE: This is an observation from another continent looking to Brazil. It's more than ten years back I was personally visiting Brazil, Brazil has, in many cases, a very decent infrastructure but what you can reach from one port area is very scattered. That makes planning for logistics in large-scale operations probably a bit more difficult than in other continents. A comparison, but that's totally different in terms of development, can be made to Australia. My first reaction would say maybe giving it a 2 instead of a 3 but it is somewhere in between. Although if you come closer to the ports, some are very well developed. But that is only in the vicinity of the port, thereafter where is the real network...

*MW: You already cited some reasons behind this grade like geographical coverage that is not sufficient...*

It's also a fact of your country and the continent, it's a relation between landscape, population and existing economic centres, so I would never advise to copy something from what you see in Europe. The port should stay very close to your own country, to your own merits. Those particular merits also existing in Brazil.

*MW: You told me about the difficulty to plan the logistics of the country maybe because of its size, maybe you have another reason for the grade.*

INTERVIEWEE: The size structure... The size may not be a problem when you have good roads. Where is the economic related to your coast to Santos? That's the main difficulty for Brazil. The very long distance and scattered operations. There is no true focus. There is some focus, but if you see here in Europe you have a couple of ports... you see the focus. Rotterdam is one of these focus ports. If you take a little bit bigger, you see that Antwerp and Rotterdam are actually one port, actually the same economic zone. And the same you can say for north Germany, there you have a group of ports, three locations Wihlemshaven, Bremen and Hamburg, but there is one port area where you can see Hamburg as a very good infrastructure into the hinterland. It's not purely only the rail and truck connection, but it's also the logistic services provided that are impressive in Hamburg. If you look to the two other ports, it's a total new development. Then you have a problem of connection to the infrastructure in Germany is not existent. Then you can construct a railway but after the construction of a railway where are the logistic services provided? You need all those companies and chains working together to be successful and mainly to be cost leader.

*MW: Regarding the basic and operational infrastructure... Which source do you think is the most suitable for this purpose, public or private?*

INTERVIEWEE: A private investment in this case is a very difficult one because where is the horizon for the private investor? The private investor is maybe in a position to create a good terminal or port but what the port needs is the total reach into the economic area.

And that is beyond the reach of a private investor. So, you need a combination of both. The combination must be balanced to the location, public investments combined with private initiatives.

*MW: You think that the reason may be because the fact that it has a long life...*

INTERVIEWEE: It's not the long life. Of course, the return of investment in 25, 35 years is quite normal, even longer, maybe 50. That is very different for a private investor to do. The private investor will definitely look for a shorter-term investment. But for public investments, it's contributing to the society and the development of the country as such. So, that's one of the major issues here. And also the reach, how far you can go.

*MW: Do you think the Brazilian government have the funds to pay this bill alone or it needs the help of private investors?*

INTERVIEWEE: I cannot answer that one. I assume that Brazil has the capabilities to raise funds. It's a political decision in the end how to use these funds.

*MW: For a private investor in this kind of infrastructure, what do you think is the successful factors behind these projects?*

INTERVIEWEE: For private investors it comes always to business. What is the yield, or the risk taking versus the profitability, the return. Estimating returns is difficult. It has also to do with the structure of Brazil, not very easy to get money out of the country for an investor. And superstructure to ports, you have to keep with that. Those are fixed locations, you can never move that again. So, the only thing you can do is to move the profits, the dividends. If it's uncertain how to do that, or very well regulated, there is a certain impact to the willingness to invest or the risk taking. It is one of the items. The other item is, if you invest in the location, how is the location embedded in an economic area? We are talking about investments in ports, the most important think is how that infrastructure is linked to the economic structure around that port. That should be taken into account, very well examined also by the public sector in Brazil, that you have a long-term strategy to certain areas in order to develop it as an economic area.

What are you doing is there, manufacturing, logistic services... If you have logistic services, what do they serve? It has a lot of layers. And if all that comes together you build a strong economic pillar to build on a specific port and you attract private investments. You can see how difficult it is see London gateway, new port development, in a very strong economic area, but still then difficult to develop. And what's one of the missing things is the third party logistic service provider, what is a market. At least there is balance in the market and if you examine those hotspots, you can find what are the missing aspects or the strengths to the success of the port Hamburg, Antwerp, Rotterdam, South Hampton, Felixstowe. When you see this logistic strength you know what it takes to bring it to success.

You must be able to develop a business. Maybe you can build a beautiful restaurant but if there are no customers... it will not be successful either if the restaurant has no food supply, if the supply chain for food is very distant. Or you have a beautiful restaurant, you have customers, you have the best meat, but you don't have the right people on service at the restaurant or to work in the kitchen. It needs to be all fit together. Here in Rotterdam we invest in university, in schools, so you have people educated and trained for jobs here

in Rotterdam, it's what the Netherlands need. We attract businesses because all the services are here, the market is here, infrastructure is here.

It's related to the business environment we have there too. And the security of the environment, long-term.

*MW: You are talking about economic and political stability. Do you think that political stability is an issue in Brazil?*

INTERVIEWEE: History shows some cases. Let's say it that way. Although in the last decade there's clear...

But one of the issues for Brazil is that the density of population in some areas is very very high and other is so low. That's really something that makes a difference in how to play and organize. And Rio is totally different from Sao Paulo. You cannot compare the areas.

These issues that you're talking here, political stability...

Leaders, they don't have to be in the top of the politics, they may be lower, but if they have a vision that's incorporating economic development, what are the pillars, the cornerstones for economic development.... Then it's not only the roads, airports, it's everything. I see infrastructure as even more important than road infrastructure. Electricity stability, power supply 24/7, it's all important things for investors.

Nowadays, making investments in Brazil is not different from do business in any other country. The margin of the investments are still, so if you miss the operation of 2 days because of failure of electricity that is near 7% of the slots, maybe it is the margin that companies work on. So, that's why the supply of electricity, water or whatever should be reliable. It is a political instrument.

*MW: regarding those factors that you told me, are there some that Brazil can offer for private investors?*

INTERVIEWEE: I have a positive believe in Brazil, the attitude is good. The country has a lot of natural resources, so there is an expectative of a very good position for Brazil. But it takes to other things, ambition is one of those of these things. Leadership in areas you want to develop. That is important.

*MW: In 2013, the Brazilian government has enacted a new regulatory framework. Are you aware of this?*

INTERVIEWEE: No, I'm not.

*MW: So, the new regulatory framework allows private investor invest in everything, all port infrastructure outside of public port zone, by an authorization. So, the question is whether the authorization is enough to unlock the private investments.*

INTERVIEWEE: No, the authorization is only one risk in this. Private investor just invest for the sake of making investments... it is a personal opinion... some private investors only invest for the sake of the investment and they don't care about the day after. They are interested in building infrastructure from where they can earn money, later on the result of it is not something on they concern because they already have the project money. So, it is ok, fine. In that case, you can see those example here in Europe as well, where the city of Rotterdam invited a terminal operator to invest when it is no logic to develop

an extra container terminal in the Hamburg-Le Havre range. They invested all that money with no reason. There was a lot of public money lost as well. So, you need a regulation and an understanding what market can bear, what the opportunities are. It should be also in the regulation, because opening the market to invest is not the most logical.

What is the issue of inviting people? For example, there are three economic zones, so they offer an area. My zone is good because I have the hinterland around, but then they invite other investors for the other areas. It ends up that you don't have the area that you have before, because a certain area will be shared with the others. So, the sum of the areas is not the opportunity that they quite often presented. And this is what you see in port development. And then, when you buy a new infrastructure in certain area, at the end you find out that you have too much capacity because the market is not the one that you once have predicted. This issue should be managed by regulation.

*MW: I totally agree with you.*

INTERVIEWEE: If you open to investors it is nice, you have a lot of activities because there are investors willing to invest, but it might result in no success.

*MW. It is nice you brought this topic because this is a potential issue for Brazil. The government has announced 150 areas to be leased and we still have the private investor that are allowed to invest, so we might end up with this sort of contestable hinterlands and over capacity.*

INTERVIEWEE: What you should do, but it is not easy, even here where we are a little further in that political development, you should make up your mind. If you take Rotterdam and Amsterdam. Amsterdam is very good in bulk and Rotterdam has bulk, fluid bulk and containers. Make some focus on those areas. Say you are better in containers or maybe the best in containers, as a port here the bulk development may have more successful in the global market for bulk. So on the top, it must have some regulation to give guidelines to those clusters.

*MW: Let's say that de-regulation without planning, at the end, can jeopardize private investments.*

INTERVIEWEE: It can be. And that is maybe the most sensitive think because here there are factors playing a role. But the coin has two sides. Who is paying for the bill and who is earning the coins? An that is, sometimes, also more a cultural thing. In that you can make a difference. And it requires a strong government with good vision and a good eye for private investments.

*MW: If your business scope is superstructure and operational infrastructure, for example, what would you make increase or decrease your scope?*

INTERVIEWEE: The capacity for return. The capacity for return is very important. If the capacity is realistic and also feasible in the long term, then you can discuss it.

*MW: For example, contract duration and if you can see in the future a good perspective...*

INTERVIEWEE: Particular for infrastructure, you should have control over the income. The recoverability should be quicker. If you invest in port, are the port dues public or for the private investors? Or, do you have some benefit on taxation?

*MW: To what extent do you think capital availability, debt/loan, is important for this industry? And then, government sponsorship?*

INTERVIEWEE: If a government supports you by subsidies or providing infrastructure without charging the costs of it, and enable us to do the business, then the way to achieve the breakeven is shorter. For global investor it is important that you have the yield and be able to reuse it somewhere else. As you know, investors are always looking for new opportunities to invest. Minimizing the debt, is minimizing the risk that can also be achieved by risk sharing.

In general terms, global operator do not have problems to rise capital. Interest rate can be an issue. Infrastructure in the right location is always possible to find capital.

*MW: Last question, what do you think should be done to enhance the Brazilian port infrastructure attractiveness? Can you give a sense of priority?*

INTERVIEWEE: One is vision. Vision from the leaders concerning the type of development they want and how they see it embedded in the total economic strategy. Sharing that vision with the world makes the difference. Automatically, you are going to discuss among yourselves how you are going to support investors. If you have the vision that you want to be strong economic zones with good port infrastructure and economic rings around this area, it means you come to discussions how to organize this, what kind of incentives are required.

*MW: It is nice to hear that, because two years ago, the Brazilian government launched a long-term national plan for logistics, but if they are not able to advertise that abroad in a trustful way it does not accomplish its role.*

INTERVIEWEE: Yes, we wait until the strategy gets more clear, until we have some bodies in the federal level where we are able to discuss strategy. In this time line, 10 years is nothing.

*MW: So. political stability plays a big role in this.*

INTERVIEWEE: Yes. That is something...

For instance, the Betuwe rail line that links Rotterdam, Maasvlakte, into Germany. That originated in 1990, with a lot of discussions until 1996, planning and discussion for many political cycles and it was completed some where between 2003/2004. Actually, maybe the years are not exact, but you can see how long it is. For a rail line, it takes around 50 year to complete a project, so that is what we are talking about.

*MW. In Brazil, scholars say that we have an institutional crisis since they are not strong enough to stand along political cycles.*

INTERVIEWEE: It leads us to a government level and risks. You cannot flip flop all the time. That is the thing I would like to emphasize, Brazil has good chances, and considering population wide, you are not so big.

*MW: What would be good examples for Brazil that have succeed in attracting private investors?*

INTERVIEWEE: I mentioned Australia, because they are somehow comparable. They have a big coastal area, several big cities, and very empty intervals. The cities are

connect to each other but not integrated. You have some differences like the type of natural resources, population, level of education and social standards, but the layout can give very good parallels.

*MW: And Australia, now, is trying again to attract private investors...*

INTERVIEWEE: They do that many times already, of course. Melbourne, Brisbane... The integration of that market is very difficult.

Date	16/07/2015 at 22h30
Interviewee	Rodolfo Ribeiro
Profile	Corporate and investment banking at HSBC, previously he worked for Banco Votorantim and Santander, in logistics and transport infrastructure

*MW: How do you evaluate the Brazilian port-related infrastructure from 1 to 5, being 1-very bad and 5-excellent?*

RR: In the maritime side, there is a serious issue related to cabotage, a regulatory issue, that is not only restricting but increasing costs. A lot of discussions about loans are focused in local articles for cabotage, some things that bring a restriction to the operation of cabotage ships, since they are imported. Besides that, there is a regulatory framework that imposes too many costs to cabotage. At last but not at least, there is something that is being reduced nowadays but in the past happened very often – especially in Santos -, the ports had excessive demand or shortage of supply, let's put it this way. That made port terminals to focus on operations that offered greater revenue margins, the long call instead of the cabotage. There were less slots, less possibility to operate cabotage in Santos in an efficient way. And that obviously disturbed the process because the main stopping point for cabotage is in Santos.

*MW: I'm only trying to understand your point of view, thinking about cabotage structure, you mean that there is a lack of capacity to serve it in Brazil?*

RR: No, there was a lack of capacity to moor in the ports. The ports didn't have capacity, specifically talking about Santos, to serve all modals and types of cargo. Since there was not this capacity available, cabotage didn't have the conditions to get to Santos instead of the big ships that came, docked, and left those assets stored in Santos. The major difference of cabotage is that not many times you find a cheaper service – that may take a bit more time though.

The second problem about Brazilian ports is the access. Even more important than the offer of port terminals, the access to the port terminal is not usually made by railways, which should be our main option for all kinds of cargo in Brazil. In terms of outflow and transport, in some cases, the railways are very poor. There is a company that has great part of its result connected to the cargo from its own shareholders, the MRS. There is a huge opportunity for ALL and some interesting corridors, but it should invest more than it used to do. A good example for this is how Cosan is entering the business and making every possible adjustment specially in relation to cargo capacity, efficiency. Because even though ALL has a beautiful history, it was needed many more investments in cargo capacity in order to grow the agribusiness in the midwest. They managed to evolve inside the reality of the company, they got to Rondonopolis, but not enough to have a competitive modal.

The waterway modal is a great promise in which I bet a lot and I believe Brazil can benefit from it, but it's almost unexplored. What is transported in Mississippi is more than what is transported by waterways in the Brazil. This is an interesting modal, competitive, but if you look at it there is a great difficulty to access it in the North. BR-163 is incomplete,



there is a stretch of dirt, is a very delayed business. The roads in general are poor, the concessions were given too late in order to correct that. So, there's huge transportation problem and access to the port terminals in all possible ways.

*MW: You touched in many subjects, so the Brazilian modal matrix is too focused in the truck and this end up overburdening the roads and we don't have multimodality...*

RR: Yes, briefly that's it. The issue is to examine what is our perspective for the future. We live in a country full of bureaucracy, with huge issues to put projects in motion. Brazilian government's path to evolve in the concessions is interesting. It was something underexplored in the past. This is the possible path to this kind of work. The bureaucratic process makes it impossible or very difficult to plan the future access to the port. Brazil's characteristics make it really hard to change this game fast. There is an issue of functioning, the country's culture, capacity and inefficiency in several points needed to put a project in motion. It is a lot of work to wait for rail, roads licencing, something that takes a lot of time. It has expropriation, the legal uncertainty of this process. We need a more entrepreneurial state focused in PPPs to unlock this process. It may not be happening right now, but it's possible to make progress in this sense.

*MW: There are two sources to finance port-related infrastructure: public and private. Which one do you think is the most suitable for this purpose? Why?*

RR: In general, private sector. If it's necessary public subsidies in order to equate the private interest and the development of the country, then I think it's important the equity input in a PPP too. If the investment in some of the modes is needed for new investments, I don't see a problem in the public sector investing together with the private sector. I don't see purely public investment as something interesting in any case. There are some simple examples of that, like the dredging of Santos. It's a slow and inefficient process. In some cases, the private entity end up looking for a solution for that. It's better to make the dredging and have bigger ships operating inside the concession than waiting for the government to make it and lose revenues. I think BTP is a good example in that sense, even though in this case the dredging is only for them. If it's a case where there are several players involved, then it's possible for the state to be more entrepreneurial and bring these guys to the game too with companies interested in providing a service with the governmental support. It's a process of thinking more on the modes than in the individual public process.

*MW: If the government had to invest in these collective solutions, do you think they would have enough funds?*

RR: In general, I don't think so. The investment should be mainly private. I just don't discard the public support when it's necessary to balance the bill for an specific operation.

There was an understanding, at least in the literature and here in Europe, that the public sector should invest in the heavy infrastructure. Port reforms started to happen because the governments didn't have enough money for that or because they were not competent to do that. In this sense, ignoring competence issues, shouldn't the investment be public?

In my humble point of view, the government is not competent and is not capable to support most part of the investments. But all the time you create some kind of structure to facilitate investments that wouldn't be done and get a social return at the same time, I think the government could support the investments. It's a matter of thinking in a state

that is not heavy in terms of presence but an entrepreneurial government that is thinking about becoming competitive. To be more detailed, all the time BNDES is financing something in more time and lower interest rates, the country is giving money for that structure in a way or another. It's natural that it can't subsidize everyone, but I'm not a radical and I can say that eventually the government is able to support this kind of investment allowing deadlines the banking market couldn't assume. I don't see sceptically the government assuming part of the risk to support infrastructure investments that will be beneficial for the country in the long term.

*MW: Do you think Brazil would have money to increase its grade from 1 to 4 with the subsidized loans of BNDES?*

RR: I think so. Our problems are that, firstly, the state is not entrepreneurial enough in order to generate a long term plan that will improve conditions to make business inside a better structure and knowing when it has to provide some guarantees. The government always provide some risks itself. In many of them, the private sector can't act and the public sector should act. The cost of expropriation, for example. The size and capacity of BNDES today is already exorbitant. And a good part of it is about loans that are not transformational to the country. There are subsidies for machinery, in which the added value in financing at 2,5% interest rate in 10 years is low. There's no value for the country. The value for the country is provided by loans and projects that are valuable for the whole structure. It's a matter of credit portfolio allocation. Lots of companies are benefiting from BNDES to grow.

*MW: Regarding port-related infrastructure investments, what are the successful factors for a private investor? What would make a private investor go for it?*

RR: There are many factors. First, obviously, is the mapping of the existent potential demands. You need to make an analysis of demand against distance from the port terminal to the cargo against distance from the cargo to other port terminals in other cities. This is part of the job, the expectation of growth of that kind of cargo over time and the capacity to insert additional agribulk to your port. I think capacity and competitiveness structure of the terminal is very relevant. Five years ago, besides the theme of a container project in Santos, there was a relevant discussion not about demand but the offer for that port terminal.

Always an important theme to emphasize is who is the partner of a port terminal and how that partner acts. If the partner is a carrier, you have the cargo guarantee, so to say. If the partner is a trading company, there is also a cargo guarantee because the company already operates in an equal or larger volume in relation to the terminal. You bring the process of decision taking and the ability to influence to your hand. In the case of dry bulk, there is one more step, here they build all the logistic infrastructure to the port. In the North they do it a lot. The company operates the barge, there is a terminal in Miritituba, a second terminal in Santarém or Vila do Conde... There should be a study to make the project, put that logistic solution in motion and make it turn your port operational. Those are the main points to me.

*MW: But in your case as a banker, what do you evaluate in order to make the deal? What kinds of risks?*

There are many points. Maybe I will forget some now. First, execution capacity of the companies in charge of building the structure. Execution capacity from the companies that are bringing assets to the project. Is it a national player? Does it have financial capacity? Can it default? What are the guarantees in case there is a completion issue? Is there a demand risk or not? Take or pay is long term? What is the punishment in case the project is not ready at the take or pay? Who are the offtakers of this take or pay? What are the credit risks for this offtakers? Is it an acceptable risk? What is the additional demand? In a stress test of that demand, what could be done to supplement the generation of revenues of that port terminal or structure? What is the timing to put the project in motion and what are the bargaining possibilities from the ones who are going to operate the port terminal? All the licencing process, how is it going to be done? Is there a delaying risk in this process? How the project guarantees that it is essential? What is the legal robustness to access these guarantees? These are just some of the risks. There are others. Obviously, all the financial analysis of the stress tests will say how is the physical and financial completion of a project. Maybe everything is fine in one moment, but in the long term there is a pricing issue that affect its robustness.

*MW: Do you think political instability is an issue to port funding in Brazil?*

RR: I don't think so. If your question is related to some kind of rupture, I don't think so. Of course there are several points related to bureaucracy, trust in the people inside the port sector structure, change on rules in the middle of the process. For example, Libra Group won a concession in Santos and the area given was different than what was written. There was a railway in the middle of the area conceived, a smaller size of land... Then, a legal imbroglio has to be started. Some concessions were given during a government and then need to be renewed during a different government. This discussion is not easy, it's slow, so this is a big issue. But it's not relater do rupture. Even though I don't understand some points of the new regulatory framework and I am critic about them, I think the new law at least made it more clear what kind of cargo can be transported at each terminal. Even though it's still not clear how a financier can access the assets in case there is an issue, there was some progress in that sense.

*MW: Among the points you mentioned as success factor for a project in the private sector, which ones do you find in Brazil and which ones you don't?*

RR: Political instability is not a great point, not the key factor here, even though the price related to all the political problems and Brazilian peculiarity is included in the projects. The new regulatory framework is clearer about what can be done, there is no doubt about that. There were some points that generated huge and long fights on the Supreme Court. It doesn't mean, though, that the new regulatory framework is excellent. But it fixes or mitigates some issues.

*MW: Could the unfriendly business environment repeal private investors from Brazil?*

RR: I think so, it's a matter of return of investment. All that is included in the price and becomes cost in the end.

*MW: In your opinion, for terminals located in public port area, is the Port Authority playing its role in providing the basic infrastructure?*

RR: I don't think so. I think it's vastly incompetent and good regulation could put the private sector to help a lot in bringing some more efficiency to the services. Nowadays,

everything being done in the private ports is efficient but everything that there is the involvement of the public sector is inefficient.

*MW: In relation to the private sector, taking the example of Açu – a private port in Brazil – what would be the bottlenecks to develop these kinds of projects?*

RR: I don't know much about Açu specifically. I think they face similar issues to the ones already mentioned here before. They are related to the government bureaucracy, they don't have a robust access structure built before the project is ready to go. Timing becomes a great issue in a project like that.

*MW: Are you interested in all the scopes of port infrastructure?*

RR: Yes, there is no way to look at it individually. You won't fund a crane in a terminal in Rio de Janeiro, for example, looking only at the asset guarantee. In this case it only enhances the project, but you should be looking much more to the way they are operating in that port terminal, the capacity of generating revenues. Banks can support all the sides of port businesses. The most relevant thing is to understand how the operation is sustainable. If you see that there is a clear take out and other players are funding in the long term, you start to get more appetite to support it too.

*MW: In your opinion, what should be done to enhance the Brazilian port sector attractiveness? And give a priority.*

I think that a key point is access, to be able to get to the port. That is the first thing. The second point is to delimitate port areas and define what should be involved in that area. The regulatory theme is still a subject for discussion. Legal certainty about the projects could also be increased. There is a problem much more related to how the country works than to ports: there are different tax regimes in the states. Hence, there are players generating import and export cargo, port cargo in some areas because of tax breaks. It affects the predictability of the long-term competitiveness of that flow. In the long-term it may happen a change according to a public decision to change the rules to tax benefits.

*MW: Do you think Brazil could learn something from other countries? Which country would it be?*

RR: Sincerely, I don't know much to answer this question clearly. By I tend to believe it's easier to Brazil to look for examples that have similar challenges and also had a positive history of attracting private investors to the leadership of the country's logistical transformation. The obvious example from the top of my head is the United States. They have access to two oceans, they have the need to make internal transportation of cargo to long distances, and they are the best example of player that can stimulate the association of eventual public support to the majority of private capital to lead the development of the country's infrastructure. Then, it's very important to think about the access and the cargo transport before the structure inside the port area. If you can take a look at the way the maritime and rail transport has been made in the USA, the truth is that the development is robust.

*MW: The government always says that its decisions are based on a logistics national plan made in 2012. Do you believe in it?*

RR: I have read this plan some time ago. I don't believe in any of these plans. The implementation capacity of our government is ridiculous. Not only recently but every

decision taken during Dilma's government was sad. Not only this plan but also the growth acceleration programs (PACs), I don't believe in them. There is no long-term strategic plan.

Date	21/07/2015 at 11:00
Interviewee	Mr. Joe Nielsen
Profile	Global Head of Container Ports Business Development, previous Head of the Latin America region at APM Terminals.

*MW: If you would score the Brazilian port infrastructure being 1 very bad and 5 excellent, what grade would you choose?*

JN: I would consider somewhere around 2, maybe a little bit more with a 5 being something like we have in Rotterdam, parts of China, and you know a 3 being a good average port in the world. I think Brazil is below that with exceptions. In Santos we have just invested in BTP and Dubai Port have invested in Embraport. That means that Santos at this point in time has excellent, at least port infrastructure. There are a lot of issues behind it, but just the port site in Santos is pretty good – between a 3 and a 4. But in Brazil in general I would say just north of 2. One of the biggest issues is what happens behind the terminals. Roads, rails, those kinds of things, and especially around Santos of course.

*MW: Would you think that's a lack of capacity, lack of geographic coverage...?*

JN: It's a little bit of everything, so in the hinterland side is a lack of capacity. Again, especially around Santos, which is the biggest port. There we have tremendous issues with capacity. If we look more on the port site, then the biggest issue in certain markets is modernised capacity. So, getting the right type of cranes. Actually, it is superstructure but, the reason why you can't have it is because of infrastructure.

*MW: Talking about new infrastructure in Brazil, what do you think are the problems there to develop new infrastructure?*

JN: The biggest issue is the administrative process for determining, for instance, what the conditions for an investor would be. We have a now new port law inaugurated. It's about two years old - if memory serves, it was about May 2013 – while the new port law at least in principle has helped determining some things, nothing has happened since, because the law hasn't been tested. And the law separates things, for instance, from private ports to public ports. That's all fine, but the details of it are not necessarily clear. To give you a very precise example of that, this goes actually back to the old port law: we had a public port and somebody started a private port next to us. Under the old port law you were not allowed to do that unless you had your own cargo. The definition of own cargo wasn't clear. And that meant that people were allowed to build ports that by law shouldn't have been built. And they were built. How could that be? For an investor, looking at that creates a lot of uncertainty. The uncertainty in the regulatory environment and the application of the regulation, that uncertainty makes it very difficult for an investor to have certainty that this is what's going to happen. You are taking a really big bet if you start to develop a new capacity on your own in the private environment – you know, I need environmental licenses that can take ten years, I need this, I need that that can take forever. That means you won't get a private port. It has happened so few times in Brazil – somebody developing a private port. On the public port side, nothing happens. There you can't see any development either because the government is supposed to initiate

that we as an investor can get the opportunity to invest. But they haven't done that. So they are both, the private and the public port, not working as they should because of either regulation or the application of the regulation.

*MW: Who do you think should invest in basic operational infrastructure: the public or private funds?*

JN: I understand the question and that's the kind of question we're being asked quite a lot from many parties. For somebody like us, operators, it doesn't matter. We do projects where we invest both in the superstructure and the port infrastructure. I give on an example. We are building a port in Costa Rica in the middle of the ocean. We are landfilling, building the whole thing. It's a close to a billion dollar project. In other ports like here in Rotterdam the port authority built all the infrastructure and then we provide the superstructure. The key is not who does what. The key is if there is an understanding of the risks associated with the various parts of the project. Who can manage those risks the best. Who has the appetite to do it, I mean the money, and how do we make sure that there is a fair compensation. So, in some countries, public money is not available. The governments are all struggling more or less all over the world these days for money. As a private investor, we can help with that by building the infrastructure as well. But then we have to have a much bigger certainty on being able to get a return on that money we are putting in because that's infrastructure. It's going to last 50 or 100 years, it's why infrastructure, in that nature, is typically public. But if the government doesn't have money, we can step in as long as there is a level of protection. An example of that is a terminal we're going to be building in Ghana, in Africa, we announced it only a month ago. It's a plus-billion-dollar project where we are going to build everything from ground up. And we are able and willing to take that risk because the contract we have made ensure us that there is a way for us to recoup the money. Not over 50 or 100 years, because we as private investors have to see a return on our investment. It's however not like we should get the money back next year. But there is a reasonable mechanism that allow us in sharing that risk and reward.

*MW: Can I ask you which is this mechanism?*

JN: It can be many different ways. You can almost think about anything that economically impacts a port and then you can find mechanisms that allow you sharing them. What has to be understood is that a port is not just the building and the operational thing. What it actually provides a country is the ability for local companies to export the goods they make to world markets in a cheap and efficient way. This has a huge impact, a social impact so to say. Or import things, which also has a social impact. The best example I can think of from the top of my head is frozen chickens that we are exporting out of Santa Catarina, in Brazil, which we take out from our port in Itajaí and all of a sudden they end up in Dubai or in Moscow. I actually have colleagues that live in Dubai that now know that the chicken they can buy in the supermarket has been through our port in Itajaí. Of course there are a lot of other elements in the logistic chain, but the port is a very important part of the logistics of a frozen chicken. If you ask the farmer in Brazil, the guy who breeds these chickens, whether he just wants to be able to sell chicken to Curitiba, to Florianópolis or he also wants to be able to sell it to Dubai and Moscow, I think he will say yes. So, it's good for the economy, good for the social part of the economy around a port that there is a very efficient, modern port that gives them access to the world. And that's what we can help to provide, but there has to be a good mechanism of course, so

that we can invest our money and, not have a guarantee that we have our money back because we are operators, we are willing to take risk, but there has to be some certainty that we are not just putting money there and we're never going to see it again.

*MW: If I could put it in short, I think the commercial risk is okay, inherent for the private investors, but not the political risk and others that may come from it.*

JN: That's exactly right. We can take commercial risk, we can take country risk... Ghana, for instance, we're the only port in Ghana. When we put a lot of money in Ghana we're betting that Ghana will be a strong economy. And that we are absolutely fine betting on. But there can be other things, political risks, things that are sitting outside our control that we don't feel that we understand them enough. And that's why we need to have some certainty around contractually.

*MW: I think you have touched upon some points of my next question, about your thoughts if Brazil has money to invest in these operations. You told me that countries are struggling to have the money...*

JN: Every country in the world is struggling and Brazil is just one of many. I think the issue in Brazil is that the average infrastructure – ports, roads, rail -, the things that should bring the frozen chicken to world markets, that infrastructure is not good enough compared to other countries. Brazilian economy is at a disadvantage compared to other economies at the world when it wants to trade. And the public sector just doesn't have the money to build new things. It has to create an environment in which private money will want to invest in Brazil. And Brazil is competing for money with every other country in this world. Just take a look at the Pacific Alliance, for instance, neighbours of Brazil, Chile, Peru - maybe even Ecuador, ok not yet Ecuador, it's not exactly in the Pacific - definitely Colombia. Those countries just embrace private investors by creating an environment that gives us the confidence. That's what Brazil needs to address. It's a big big big issue. Nobody is sure on how to estimate that, even if everybody wanted to change it tomorrow, it wouldn't happen for a long time. But we have to start the process of changing. And it goes to every element of society, there is a level of interaction between government and private businesses. I don't know if you're interested, but the Brazilian tax code, for instance, is a nightmare. To say it's a mess is actually an underestimation. I once saw, think it was in the Economist, an analysis on how much time it takes for a company to prepare its taxes. Brazil is number one in the world on that. And it's four times better – or worse – than number two. So it takes four times as much time to prepare taxes for a private company in Brazil in comparison to the second worst country in the world.

*MW: It's a shame. I was looking into some reports from the World Bank and we are one of the last ranked there. We need more than 100 days in a year to prepare taxes.*

JN: These kinds of things ought to be addressed. Everybody recognises Brazil has potential beyond anyone's widest dreams. Why isn't Brazil the United States of Latin America? It should be. It has 180 million plus people, big population, it has minerals, natural resources, food resources that are absolutely fantastic, actually on the food side it's also competitive with the rest of the world. There is only the United States, Brazil and once Argentina which could actually produce food. It has a healthy climate, nice beaches, a lot of wonderful things. So why is it that Brazil still hasn't been able to unlock their potential? I think it rests in regulations and the administration of regulations.



*MW: Do you think that we don't have a transparent framework or at least the lines are blurred?*

JN: It is very difficult to operate in Brazil. Very very difficult. Just look at the amount of lawsuits that you can face as a private company. Doing the right thing you're still to lawsuits from left, right and centre.

*MW: Someone of the other interviewees told me that is hard to find a company in Brazil that doesn't have any issue with taxes and government. And now he understood that is because it's almost impossible to comply with laws and everything due to the complexity of the system.*

JN: Sometimes it's almost impossible to comply with the law. Even if you wanted to you couldn't. If you want to buy a company in Brazil, merger and acquisition type, which is an important part of capitalism, of making an economy work, you can't do it. You can but you're taking a lot of risk because of lawsuits, tax claims, all sort of things. I personally had the experience with tax audits in Brazil, I can promise you that you just don't want to have those tax audits. Not because you're hiding anything, but because the amount of work that goes into not only preparing your taxes but subsequently when they are being audited, that amount of work is astonishing. It's sad for Brazil.

*MW: If you can prioritize, what are the best conditions that lead private investors to invest in port infrastructure?*

JN: The most important thing for a port investment is obviously the market. There has to be a demand for the capacity, not just tomorrow but for the next thirty years because that's the horizon for the things we are building. The market will always be the most important thing. Subsequent to that is how easy it is to operate. In some countries, for instance, you're prevented as a foreigner private investor from having majority. You need to look for a local partner and they need to actually own the company. That's not very inductive to investment. So having, I wouldn't call it a liberal law regime, but a law regime that's built on international standards, that is highly conducive to investments.

*MW: We touched this point before, so what we don't find in Brazil is political stability.*

JN: Yeah, I actually think it's very stable. It's very stable but a little bit of a mess.

*MW: What of these two topics, a positive outlook in port traffic and friendly business environment... Do you think in Brazil we have a positive outlook for port traffic in the long term?*

JN: In the long term, yes, because the economy in Brazil you can't hold it back even if you want to. As an administration, you will not be able to hold back the Brazilian people for long. But there are right now some really big brakes on the economy that prevents Brazil from seeing the same future as countries like Colombia, Chile, Mexico, Panama, those kinds of countries. It has to do with philosophy. Without being too political about it, I think it's fair to say that you look the kind of two blocks that exist in Latin America, you have the Pacific Alliance and the Mercosul trade block, you can try to look at the countries in them and in your own conscience say whether one is better than the other. One has Venezuela, Argentina and Brazil. And the other one has Colombia, Mexico, Chile. So, you know, it actually does say a lot about the future. Now in 50 or 100 years, it's a long horizon, I still don't think you can hold back the Brazilian people. But these changes that

are anchoring Brazil together with Argentina, together with Venezuela, two very promising countries as well. Both have vast oil resources. Venezuela used to have one of the best oil reserves in the world, but no longer. Vast natural resources, grains in Argentina, for instance. It's amazing how much they can produce, but both countries are also being held back by lack of reform and changes. Unfortunately, the people that will pay the price are the people from those countries. Everyday, you meet people on the streets in Buenos Aires or in Brazil's case in Sao Paulo, while the last ten years were relatively good, they were built on the commodity boom, not on actual proactivity, which means that the next decade might be not so good.

*MW: What we don't find in Brazil would be a friendly business environment, political stability and a transparent legal framework – or at least a clear one, with every role clear for everybody.*

JN: It's the sacredness of contracts, actually. If you make a contract between two parts that can be upheld in a reasonable way and that the law is clear enough to provide actual guidance. One of the best legal systems in the world is the British legal system and that's why every private contract more or less, if you can, you try to link it to the British law. That allows you to make an agreement, you don't get lawsuits on private sector afterwards. Brazil has chosen a different path a long time ago, maybe it's time to reconsider if we still want to go down that path or we want to try something else, something that works in other countries, as mentioned the pacific alliance countries, for instance. No country in this world is perfect, we all have our issues, but this is key to unlocking the growth for Brazil, the growth that will benefit everybody in Brazil.

*MW: I think that you're aware of the new Brazilian regulatory framework. So, do you think that it unlocks investments in Brazil? Was it positive to the country in terms of port infrastructure investments?*

JN: I think, to its credit, it at least clarified some outstanding issues that the old port law had not done. That's to its credit. It is a lot clear what will be demanded of port operators. It also looks like there is less opportunity for local port authorities, local governments to create an environment where there's not a fair competition. At least on surface it looks like it's better, fair competition and more clear regulation. The problem with it is we're now two years into it and we still haven't seen it in practice. So, the proof is in the pudding, as they say, we need to see if this one actually works. We have been promised the tendering of a number of projects in Brazil, several hundreds. We've been promised that ever since the law was established, but to my knowledge not a single one has actually been launched. It's pretty amazing.

It's very easy to change. If people wanted to change, they could. But what has happened is that people are paralyzed. People are not able to take decisions, they are afraid. Even good people are afraid to make decisions.

*MW: Some people criticize the new regulatory framework because this new law centralizes all the power in ANTAC and SEP. Now port authorities are useless for the system, if I can say that. Do you think that was a good decision?*

JN: That's always a balance. You can try looking elsewhere. European Union, for instance. About ten years ago, we also made common rules for port investment. I think the good thing about it is that, if you get a common set of rules, it ensures that you get

fair processes as long they are simple to understand, people can't twist them, as long as they are equally weighed for private investors. Then I think it's good to centralize things. This can also ensure that processes stay transparent and that no local entity can introduce parameters that restrict competition. For instance we have had projects in Brazil that required the operator to team up in a joint venture with a construction company. This is not natural and not conducive to a fair competition.

*MW: The basic infrastructure channel, primary access should still be provided by public authority, the government. Do you think that they are playing their roles in providing this basic infrastructure for the tenants?*

JN: That's a good question. They have done it in the past, we could see. But again, no new project had been surfaced in the last many years, unless it has been a private project. So, the newest ports we have in Brazil – Itapoa, Embraport, BTP – are all private ports. You could definitely argue that no, the government has not set aside the money to invest. And maybe therefore, should allow for that also... As long as it's fair competition, I would subscribe to that.

*MW: What is the problems, the bottlenecks that the private investors still face to develop this kind of infrastructure?*

JN: Going to back to an early answer, the market has to be there. And I think that there are certain markets in Brazil that could warrant more capacity, but the real issue that comes out from regulatory risk is that people can have a project for ten years trying to secure environmental licenses, for instance, and that's just not good. Maybe it's not a good project, but that's a different issue. It can't take ten years for someone say it's a allowable project. If it has been built in a sacred place, the rain forest, somewhere you don't want to have a port, say no. It's easy enough, right? If it is built in a place where there can easily be a port, they need a port and all of that, then say yes. But sit around it for ten years because nobody wants to make a decision is not good.

*MW: You, as APM Terminals, your business scope is where? Only superstructure or you are willing to invest in basic and operational...*

JN: We are willing in the whole thing and actually in the whole port. We actually are port authorities in some of the places we operate. Salalah, in Oman, is a good example. There we are both the superstructure operator and the port authority. We have developed the port together with the Omani government. And the same goes for many other projects around the world.

*MW: What would make you increase or decrease this scope?*

JN: It goes back to, I mentioned it before, "does the local government need private money or competencies to build this?". Then we have to take a role and help up as long as the framework for doing so provides us some certainty that we're not going to get kicked out after three years, they are going to say "thank you very much for your billion dollars, now you can go home and cry".

*MW: And in your opinion, what should be done to enhance private investment in Brazil? What should be solved first?*

JN: It is the ability to have fair competition, to have clear regulation, and the application of regulation – how do they interpret the law. Everything surrounding what we've been

talking about here, those are the critical parameters. And then just get going. We have some clear needs in certain places where new port capacity, competition, would be helpful. I think the chicken farmer in Santa Catarina today will have options through the logistic providers. They can go by Itajaí, Itapoá, maybe even Paranaguá, São Francisco do Sul. But if you go to Suape, if you're an industrial producer in Suape, you want to export to world markets, you only have one terminal. And the prices at that terminal I imagine are pretty good – for the terminal. But not for the guy or girl who wants to get whatever they produce locally to the world market.

*MW: If you could point out a good example to Brazil to follow, a country or a port project...*

JN: There are plenty of good examples. Port of Rotterdam is one of the leading experts in ensuring a good environment for the investor. It's just the framework that they put up. It means it is relatively easy, understandable deal that you get, you are protected by the Dutch system, the legal system, and so on. That just makes that all of those kinds of uncertainties get a lot better. Definitely, the Port of Rotterdam would be an inspiration. But is more about the general direction of Brazil. It is where it all comes down to. Do you want to be more like Venezuela or more like Chile?

Date	21/07/2015 at 21:00 on Skype
Interviewee	Mr. Patricio Junior
Profile	CEO at Port of Itapoá, ex CEO at Port of Jordan (APM Terminals)

*MW: If you would score the Brazilian port infrastructure being 1 very bad and 5 excellent, what grade would you choose?*

PJ: First we need to establish a reference. If we compare Brazil with Europe and the United States, the grade wouldn't be better than 1,5. If the grade is considering the progress made in Brazil in the last years, it would be 2,2, which is still very low.

*MW: The idea is to compare with a sufficient infrastructure for the port system to work efficiently.*

PJ: So, the grade is 1.

*MW: How would you justify this grade? You can divide your answer considering the existent infrastructure and the development processes of new ones.*

PJ: Why the grade is low? For instance, nowadays a ship doesn't even have an assistance system to enter in a port, they depend exclusively on the pilots, there are no navigation aids on the channels, there is not a norm. Our navy, since the times of the dictatorship, was reduced because the ones on its leadership didn't like the military regime. At the same time, the responsibility kept changing hands. Today you have a pilot commanding more than anyone else. That is bad for the system, since the pilot is commercially interested.

When we look to Rotterdam or the United States, the port authorities manage the ports from a second entity – the government or the municipality, whatever – and they are really responsible for them. It doesn't happen here. Some ports, like the public port of São Francisco do Sul, don't assume any responsibility. We divide the channel with them. So, there is a deficiency if we compare to countries like the Netherlands. There you receive the information in advance, there are experienced pilots with equipment. In 1995, when I did my last trips to Europe as a ship officer, the port authority already tracked the ships by radar. So, the channel entrance there is differentiated.

In general infrastructure there are two points. The first is what we can invest as a private port, and the second is when you get an authorization to work in a public port. In this sense, the worst are the licencing and the slowness you face before you can invest. The rest is commodity; port equipment is the same everywhere. But we are stuck waiting for a licence from Ibama. That is a reality that could be improved.

Also in the internal part, I'd like to call the attention to the bodies involved. Only four years after the port inauguration, we managed to bring an unity from the Agriculture Ministry to the port. That's an absurd. You give the terminal a licence and you don't provide anything else. There's a lack of people.

Let's talk about the inland accesses. The access to Itapoá has only two lanes, trucks passing by. Of course we are going to have problems, accidents. We know that. That is irresponsibility from the authorities to plan those kinds of accesses. In the public ports

like Santos, they improve the capacity, but the accesses are not improved, there is no parking lot, it's full of trucks and they don't have any control about that.

In São Francisco do Sul, the SC 280 was planned but never built. In Navegantes and Itajaí, the trucks are always inside the city because the SC 470 was not improved. Everywhere in Brazil is the same, it shouldn't be a secret. The list is access infrastructure, licencing and maritime channel. We have a historic problem in the country, we were always a road country and roads that they never finished building like TransAmazon.

*MW: Who do you think that should be in charge of the port infrastructure in Brazil, the public or the private sector?*

PJ: In the first place, what a government should do for its people? In my opinion, provide education, health, and open the possibility for people to invest and get a good return. Now we are going to discuss who is the responsible. If we paralyse everything now, what was done until here is from the government, from now on the private sector is going to be allowed to enter. The biggest problem is that the private sector is looking for the opportunity that offers the fastest return and fits its strategy. The country has a bigger strategy. For example, the country has the strategy to develop the ports in the Northeast to attend companies that are not there today but will grow there in the future. That's a strategy and inside it the government can do the investment to make it happen. On the other hand, if the government manages to sell the good places to the private sector, it saves an investment it would need to do there and can focus on the strategic part. In Recife, there is Suape because Lula wanted to. Natal and Cabedelo don't have decent ports. When you go to the United States, you have lots of small ports and only a few huge ones. Here we are not like that, everybody wants to be big. An example is Itajaí. They insist building a deeper depth, but in the first rain it won't support. And the people's money is thrown away.

*MW: So, you understand that the government should keep the infrastructure planning but the operation should be private?*

PJ: That's it. But in my opinion there is no infrastructure planning, there is macroeconomic planning that involves everything, including infrastructure. The country's formatting, the long-term vision... The government should manage the people's and the investors' expectations. Theoretically, the government is the one that should put everything over the table and establish priorities.

A good example is Itapoá. Even though it's no a very strategic project, Itapoá didn't exist, but they created it and built a road in the middle of nowhere where nobody wanted to invest money. Santa Catarina realized it would be important for the state, then it invested some money on it. Maybe someday this road will be conceived to the private sector. For me, if it's related to business, it should stay with the private sector. And always with more than one company, to avoid monopoly.

*MW: If the port infrastructure was a governmental responsibility, do you understand the government has enough funds to provide it?*

PJ: Yes, the country has enough money. Our economy is robust, you think I'm kidding but I'm not. There's a huge market and producers. It's not a poor country, it's mismanaged.

*MW: What would be the success factors for the private investments to be successful in the port infrastructure sector?*

PJ: In the first place, government's willingness to do it. Secondly, clear and stable rules because you need legal certainty. In the case of Itapoá, they did that law of own cargo and the port was damaged, we went to the banks and they always asked how the port would deal with it.

In relation the to governmental will to do it, for example, you send a project to Ibama and they have 30 days to examine it. They don't do it and there is nothing to punish them for that. Public entities in Brazil are not public servers, they are public authorities. It's a conceptual issue.

*MW: Briefly, you understand that the factors of success would be a clear regulatory framework with clear roles and solid contracts...*

PJ. Yes.

MW: And also a friendly business environment where a licence does not take 10 years to be granted.

PJ: BMW opened its factor here in Santa Catarina. In the inauguration event, they did a presentation. A slide was about the licencing they would need. There were more than 60. Obviously they criticized that. And the BMW was a project with all the state support to happen. There is no explanation for that, there are some laws nobody understands, overlap of laws about the same subject that say different things. So, you don't put your money or ask a high return, what turns Brazil into an expensive country.

*MW: Among these factors, which ones you find and which ones you don't in Brazil?*

PJ: Example, they created a new law for the port sector. Now, during the regulatory process, they want to change it again. That's a problem. You create a law that is theoretically proactive but when you have to work on it you don't.

*MW: Do you understand the new regulatory framework unlocked private investments?*

PJ: It didn't unlock private investments because the regulatory process wasn't done. Ibama still stuck it. Itapoá is trying to expand for two years and doesn't get the licence. Do you know what an Ibama analyst asked when we went to Brasília to discuss the case? "Since the fisherman can't pass in front of the port for security reasons, isn't it possible to demolish the actual bridge and build a new one with a bigger arc so the fisherman can pass under it?" Then we asked if she knew how much it would cost. That's the kind of people who takes the decisions. Nobody signs anything, nobody takes any responsibility for anything. Here in the port I am the responsible if anything happens, but in the country there is no one. Every time something happens during the current government it's the past government's fault.

*MW: In the new regulatory framework, considering public ports, the concessioner is responsible for the superstructure and, in some cases, for the operational infrastructure. The port authority is responsible for the basic infrastructure. In your opinion, does the port authority fulfil its duty?*

PJ: No, the ports today are not facing too many problems because the demand was reduced. Nowadays Brazil doesn't have a model port. Inside the ports, the terminals work

in international standards. But when we talk about cargo arrival and departure, we don't have a port able to receive the biggest ship of the world. If it arrives, it will be with a very low use of its capacity. We are talking about the seventh economy of the world, not about Africa or any other poor country.

*MW: What are the main bottlenecks to develop port infrastructure in Brazil from the perspective of the investors?*

PJ: All the ones I have already mentioned. Lack of will from the government. Lack of legal certainty. Even the new law didn't need to be a new law, they could have improved the old one, but everyone wants to make something new to put one name in. Then we have a Frankenstein. So, the ones who made it before have the vested right, the ones who didn't should run after it. This opens up legal barriers. The law is done, but some points weren't regulated. Now the public ports unions want to represent workers from private ports and it's generating a huge fight in Brasília. It's proven that the old union is not good for the country, not good for the terminals. But the political part is still getting a vote. Here people call them the "workers", but these workers are only 15% of the ones who work in the ports. But when we talk about workers, we only talk about them.

*MW: You mentioned the labour union, do you understand that it's a factor that repels the private investor?*

PJ: I wouldn't say it repels, because it would be a deal break and I don't know if that's the case. But it's certainly something taken into consideration when you plan the operational costs, what consequently influences the services final value and the return of investment.

*MW: What's the business scope of the port of Itapoá?*

PJ: The port was organized to invest in operational port infrastructure and superstructure for the cargo operation. However, due to lack of investment, for this scope to be made possible the port invested in access infrastructure in the past – the Jaca road, the paving of 8km of roads in the city, made electricity transmission infrastructure. In relation to the maritime infrastructure, the port will invest R\$ 8 million in environmental studies because it takes too long for the government to make this investment.

*MW: So the port scope is superstructure and operational superstructure. It invested in basic infrastructure to make the main scope of the port possible?*

PJ. Perfect.

*MW: What could be done to enhance the port infrastructure attractiveness to the private investors? Give priorities, please.*

PJ: Establishing priorities, I would say legal certainty. I am saying it from the perspective of the foreign investor. We need to improve the legal stability with clear rules, and not only the new law but all the regulation involved. Secondly, the agility to make processes happen. It's the will to do that I mentioned before. For example, we're going to make a general study at Babitonga Bay considering all the opportunities to future investments. Every time someone is going to make a deal, the investor pays a tax to contribute with the environmental studies already made. Itapoá had to make several studies and now Coamo, one of the biggest grain cooperatives of the country, bought an area around here. Consequently, they will need to redo all these studies again. It's going to be another study on the same area. Tomorrow a new terminal is opened close to Coamo and they



will need to make the same study. So, the best way to stifle any system is to increase the processes and the best way to solve it is to simplify the processes. Simplifying everything taking into consideration the deadlines.

*MW: Which country do you consider a good example of port system that attracts the investor and could be used by Brazil?*

PJ: I have an opinion because I have worked in many places of the world and dealt with many executives. If I were the Brazilian president, I would look to the countries with similar cultures to the Brazilian. For example, Spain, France, Italy, Panama, Colombia. Places where people think similarly and are recognised by the efficiency. That way we could work in a way our culture wouldn't be affected, in a first stage. That done, I would upgrade the services. Then I would look to Germany and countries from North Europe, where the great European ports are.

Date	22/07/2015 at 15:00
Interviewee	Nelson Rozental
Profile	Executive Partner at GP Investments and Chairman at BRZ Investimentos. Former Executive Director at BNDES Participações – BNDESPAR

*MW: How do you evaluate the Brazilian port-related infrastructure from 1 to 5, being 1-very bad and 5-excellent?*

NR: There are problems at the port sector, problems of moving, concentration and access. Santos, which is the most important port, is chaotic. From the perspective of the investor, that is an opportunity because that's a bottleneck. On the other hand, it's too fractioned, so there are big and smaller ports, what is also an opportunity to the investor because they are out of a monopoly. In Brazil, another difficulty is that the port authority offer not many benefits. People who take care of the port sector in Brazil is old fashioned, like São Francisco, Saboó in Santos. Capitalism has been entering this area only recently. Wilson Sons is a more modern movement, TCP, which is private equity, us in Itapoá. In Santos, there are big new companies assuming the business, but in the North it's still old... individuals owning ports. There is still that thing of being friends with the king. An exception made to those ports used by only one company, like the ones from Brasken and Vale, the ports depend on the port authority and the conditions are really poor. The dredging at São Francisco is always difficult, the same happens at Paranaguá and Santos. I would say 2 or 2,5, there is still a lot of room for improvement. The only advantage is that now it's apparently moving in a better path. Another bad thing is when the government tries to limit the return rates.

*MW: There are two sources to finance port-related infrastructure: public and private. Which one do you think is the most suitable for this purpose? Why?*

NR: In Brazil, the ones that are being developed are the ones with private investments. Theoretically, it should be public, but if you have the options of not having or being private, so it's better to be private. The most expensive investment is the one that does not happen. In Itapoá, the public sector made some progress, but the rest had to be made by private investors, roads and electrical network. Everything close to the port should be private, but the public sector should fund it, assist in the process of licencing. The private sector should be involved in building all the port surroundings, but there is no justification for the private sector to build the more distant infrastructure, there is no justification for the private sector to open a road in the middle of a city to get to the port. The last mile is private, but not all the investment. If the (public or private) port authority is charging for the usage, it should invest this money in dredging, maintenance and the occurrence of accidents, they should be prepared to guarantee the port operation.

*MW: Do you think Brazil has public funds or can rise funds to provide the port-related infrastructure that it demands?*

NR: If the money is originated from the selling grants, taxes anticipation or the fund of the merchant navy, BNDES funding, funding with private entities, I think it would be possible for the government to do it. But it would need to separate the money for it. If the money

from ports is mixed with the general infrastructure, the money will be destined to electrical network, oil platforms, the money disappears.

*MW: Regarding port-related infrastructure investments, what are the successful factors for a private investor? What would make a private investor go for it?*

NR: The most successful is to make an investment with a high IRR, usually involving greenfield, but it's too slow because several licences are needed. Getting into an area, providing quality services in the long-term reflects in stable IRR. You can't gain because it takes too long for the customs to untangle the products, so you gain in the storage. You need to gain in efficiency. There should be a balanced gain in storage and moving, because that is sustainable. From the perspective of the investor, if you get to a secondary market you will hardly get a reasonable IRR. Hence, you need to make a mix of greenfield and secondary brownfield, which is an acquisition with expansion. This way you aggregate more logistic services to the process of building customer loyalty. You need to differentiate.

*MW: Do you understand that there should be a long-term demand?*

NR: Yes, for example, in Santos you can't operate because there is a traffic jam on the road, because there is excessive competition, so you are positioned in the wrong place. It's not worth you position yourself in a more busy place where the competition is fierce and you have a disadvantage in the sea and inland access. In Itapoá, there is a scenario with less competition and better access. In Rio, there is an access bottleneck, but the potential is smaller.

You also need to be in a port where there is a possibility to renovate your concession, where there is are good quality services, investment frequency. It would be important to guarantee the continuity of investment with the quality of infrastructure provided. Offering 10-year contracts is crazy because you will use the equipment until the end, what is bad.

*MW: What is your opinion about political stability in Brazil? Do you think it's appropriate for the private investor to be attracted to Brazil?*

NR: Brazil is not stable. There is an unstable long-term political scenario, now it's in the middle of a conjectural crisis. On the other hand, the country has a cyclic economy that depends on commodities, one time the currency is strong and the import flow is better, the other time it changes.

One of Brazil's problems is that it's a one-way country. What I mean is that Europe has flows in both sides, import and export. Singapore is a cargo aggregator, so it can move the full container in and out. In Brazil, it's rare. The bulk comes from the inside and is exported, the return is with fertilizers, but not enough. In containers it's similar, it comes full from China and leaves empty. We have a deal with BMW in Itapoá to put cars on it, but it's also rare. It's a problem in the port modelling because you have to organize your equation for only one direction.

There is a problem of political instability, but it's inherent to democracy. Some of the programs are discontinued and other problem is the hype. One time there is a hype in managing the port profitability, there is an auction or a fight in the courts with the federal government and the renovation of the concession becomes an ideological issue sponsored by Arno Augustin. For him, it was an absurd for the private sector to have a

return. Then there is a moment that the economy is frozen and there is a stimulus for the private sector to make it happen.

There is a dysrhythmia that hinders long-term planning, but also creates some opportunities. If you're a long-term investor, instability is bad, but if you're a short-term investor looking for fast return, you can have an opportunity in the right place and the right time.

But I don't think political instability is a problem. The problem is the unpredictability of the politicians. Brazil is not Egypt, there is not a risk of political coup at any moment. But Brazil is not also an Europe with a stability of rules. Here the problem is that rules are unstable because of the political mobility, which is essential to the investor. Now they want to change the rules of funding.

The risk here is the change of economic rules because a rule was sloppy. PT policies have been disastrous in the last 10 years, now they are reaping the fruits: too much interventionism, unclear clear selection processes, slowness... the problem is the political uncertainty.

One thing called my attention in Shanghai: there they have the museum of the future and it shows how the city will be in 2030. The new government can't change the planning. There is predictability. In Brazil you don't have that in relation to the return rates, the funding, the auctions.

The only more or less organized thing that happened lately was the airports auction because the government recognised it was a sophisticated technology that needed a lot of investment. On the other hand, the private sector recognised there was going to be profitability since there is a fixed demand – they are not going to build another Galeão in Rio de Janeiro...

In ports we don't have that, you don't know how many ports will be built in a specific amount of time. It's not that competitiveness is bad, but if there is competitiveness then the government shouldn't stipulate the investor's IRR. When you interfere too much, you create imperfection. Then one wins and other loses, what is not good.

*MW: Do you think the new regulatory framework unlocked port investments?*

NR: If the law were implemented, it would unlock investments. The problem is that it's not being implemented. The public agents should comply with the law, but that is not happening.

*MW: The law discriminated public and private ports. In the public port, the landlord model is valid, then the government became responsible for the basic infrastructure.*

NR: Yes, I think that is the way, the access is complicated, there is expropriation of areas, sometimes it crosses more than one city. The channel dredging shouldn't be private, but the berth dredging is fine.

*MW: Is the government fulfilling its role in providing this infrastructure?*

NR: It's under expectations. For example, at TESC the berth and channel dredging is not done. In Itajaí they get an agility that we do not have in San Francisco. The Ponta do Felix (Port of Antonina) has an agility in dredging that you cannot get anywhere else in Brazil. To be dependant on the port authority is impossible. It's too slow. Then, if you

want to do anything, you need an incredible amount of licences. Itapoá is ready for the duplication, but the licence is not given. Dredging the external berth of TESC, waiting two years for a licence of an area that is already being used as a port...

*MW: What should be done to enhance port sector attractiveness to the private investor?*

NR: The first thing is to have a single cashier without corruption. You can't deal with 10 different bodies in order to get a licence. Another thing is to make clear how the funding can be done, system of guarantees, insurance. Make the resources available for every investor, not only to large contractors and companies. The other thing is to stop arbitrating the return rates but the service quality. And to make it easier to access the public ports, if the leaser paid it has the right to a good access.

*MW: What is/are your economic interest or scope?*

NR: It's everything, but restricted to the last mile.

*MW: What factors would make you increase or decrease the scope?*

NR: If the government does not reduce the return rates, give me clear rules, guarantee that I will get a renovation of the concession if I invest.

*MW: What are examples of other countries where conditions for private investors in ports are attractive and what can Brazil learn?*

NR: Singapore and China call my attention, but they are public initiatives. Rotterdam also calls my attention because the landlord model is the same as here, but there the port authority is private.

Date	30/07/2015 at 21h
Interviewee	Luis Fernando Neves
Profile	COO at CHS Brazil

*MW:* How do you evaluate the Brazilian port-related infrastructure from 1 to 5, being 1-very bad and 5-excelent?

*LN:* It's a broad question, so I should answer with some reservation. We export a lot. If we are talking about grains, it's approximately 100 tons/year. There's iron ore, in which we are a world power, and also containers, where we have a lot to improve. So, I would give a 2,5. I wouldn't give a 1 saying everything is wrong because some things were well worked and thought and there is a huge opportunity to get to a 4 with relative ease.

*MW:* What would be the reasons for your grade?

*LN:* I think we have some gaps. One of them is lack of planning in order to understand what we want the ports to be. Hence, the port authority and the municipalities made the PDZs (Port Development and Zoning Plans). We have an instrument made by the organized port and its community tracing a plan about what they understand to be their strengths. From it, we could work on what is demanded to reach their potential. It's nothing very scientific, but the port has the clear and consistent vision of what it wants to work in relation the cargo and how it can organize it physically to be efficient. And how this infrastructure from the internal part to the accesses should be worked to serve this planning. I think the port authorities should do it in a more organized and perennial way. That's the first part of the business. Of course, you would need to work consistently to make these plans minimally realistic.

The main task for the government is to organize what are the missions of the different ports across the economic plan in order to generate efficiency. It doesn't make sense for all the ports to do everything. This way you're going to lose scale and efficiency. You have to have your mission. And from this mission you have to work on the path to make it happen.

*MW:* Can you evaluate the existent infrastructure?

*LN:* What happened in Brazil, especially in relation to the agribusiness that I know more, is that the production capacity was increased much faster than the infrastructure needed to give vent o it in the last years. So, there are bottlenecks everywhere. In the past three or five years, the industry realized that it would lead to chaos, especially in 2013 because everything went wrong for everyone and some infrastructure projects failed.

Looking to the interior, the road concession plans are being put in motion in a way or another and there is some logic in them. The rail programs are a mess, the regulatory framework was bad, it didn't address basic questions – the main one is the right to pass in the old and new railways. The adopted model is not the one that generates more efficiency. There is a collective mistake here, people believe railways are expensive in Brazil because the companies explore the user. I don't think that's the reason, it's expensive because it's inefficient. If it was a monopoly, ALL would be the most profitable

company of the world, which is not the case. It's a company that was close to bankruptcy. The problem is inefficiency. We need to solve inefficiency.

The highways are fine, we have some cases of inefficiency too, but they are fine. In the railways, the model is wrong. I believe in a model with longer deadlines that can give the investor time to recover his investments. Railway investments are very heavy and the private sector should be able to do it. Government shouldn't. The government should allow the concessioner to expand its array in the directions he believes there is cargo. The government should only be a regulator. The government role should be developing the master plan of the ports and maybe an additional action should be working in the environmental viability of the projects. Today the private investor has no idea about when his project will be environmentally authorized. So, you tell your shareholder that you don't know when your project will be authorized, it can be in 2, 5, 10 years. This generates an absolute insecurity to the investor. That is wrong. Only a few are right. We need the PDZs, but also someone connecting them to a master plan. Once it's defined where we want to get taking into account the market opportunities, the government should provide the inland infrastructure to serve this plan by auctions. And then the port authority should be able to generate the access channels with sufficient depth and all the maritime infrastructure needed.

*MW: In the railways you understand that the investments should be private and the government should regulate. Do you think the same model should be adopted for ports?*

LN: I think the government should stimulate the infrastructure around the port, efficient roads, a logic master plan. The port areas should be able to expand, for example, houses and buildings shouldn't be built in that area. The rest should be left for the private sector by concessions in the auction model.

A very important point in this new regulatory framework... For me this regulatory framework is terrible because there is nonsense stuff. In the previous model, the port authority had a business opportunity to charge a company for the service provided in its area. There was a rent for the use of the land, the tariff for the infrastructure provided, a tariff for the transport inside the port. The auction would be won by the company that provided the best value for that opportunity. The government had an early cash flow and from the implementation of the project it would get some kind of take or pay to receive as well. With this money, the government should invest in the common infrastructure. For me this is an easy and transparent model. The winner of the auction is the one that offers the best value, the investor makes its business plan and decides how much from its NPV it can pay for the opportunity. The most aggressive one will give the society a contribution, which is the payment for the port authority. I don't know a port authority private model, but even private it would have the flow to increase the access with more efficiency. But what the government did in this new model, especially for the agribulk commodities? Win the auction the one that compromises itself to have the greater throughput. How the investor is going to predict the future? If you don't comply with the plan you can lose the concession without any reimbursement. I don't control the market, I can't guarantee a new terminal won't be built by my side. So, imagine getting to a serious investor and saying "we're going to put US\$ 250 million in a project but if we don't comply with the business plan you are going to lose it all because you're going to lose the concession". There is only a slight probability of a serious investor will win this concession. I would never tell my shareholder to put money in a project like this because I can't guarantee

that I will reach the volumes predicted in the next 25 years. This way the government loses an opportunity to earn cash to invest.

*MW: So, the rules are clear but not fair. Is that it?*

LN: It makes you promise what you can't control. That's all. In the other model I promise to pay a specific value to the port authority. You explore the business during the period of the contract with some regulation – the investor can't do everything, but he is allowed to work. After some time, you will get a demand that is higher than your capacity, so you need to get another concession. The offer and demand is adjusted by the auctions. There is no need of huge regulations. Today the logic is inverted. Since there is a huge bottleneck, who is in holds the monopoly. Fight the monopoly is to give the conditions for the market to decide who is more efficient.

We should have a clear and coordinated plan. Coordination is very inefficient in Brazil. Everybody should face the same scenario. When you talk to the port authorities, if you sum up all the cargo they estimate, you have cargo for five countries. It's just to give you a dimension of the absurd things we hear. The port should be private, there is no problem of efficiency, we should understand the legislation, how the interaction between the private port authority and the public entities, the municipalities, for example.

The auction path is good in my opinion, but it should be the more public a process can be, so everyone could be aware of it. Things would be faster if the port authority had already progressed in the issue of environmental licencing.

*MW: Since ports are long-term projects, in your opinion Brazil offers a safe environment for long-term planning?*

LN: Trust is something you should earn. The political issue is timely... being optimistic, I believe Brazil is going through a path of not accepting some things, but we need to be optimistic because we see some signs this optimism is not justified. In the institutional issue, we need to get more mature, in the sense of being more predictable, with a plan of government, but that's difficult.

*MW: My question was exactly regarding that, because nowadays the experience we have is that the government changes and regulation changes as well...*

LN: And the regulation changes but not in a technical manner. I don't see a problem in changing regulations, the problem is it's being changed with ideological and dumb criteria. It's complicated, as Brazilians we get very disappointed, because our family is here, we work to have some kind of benefits, we contribute with a heavy load of taxes that are not well used. I'm not selfish, I believe if I work well on my company I am helping society.

*MW: What are the successful factors found in Brazil for private investors?*

LN: Brazil has what we call competitive advantage in the agribusiness. What I understand as a competitive advantage is the core of Porter's proposition, it's something difficult to imitate or replicate. Brazil has the sun, the land – good land – and the water. Brazil's soil offers a huge potential. It's not possible that we are so bad that the country can't turn itself in an agribusiness power. We have to explore many stages of the chain, add value to the agricultural commodities, be it sugar cane, sugar, research... it's an industry that the only place on Earth that offers something similar or greater is the United States, where



most of the agribusiness potential was already explored. So, there's still much to be explored here in Brazil.

*MW: In relation to the regulatory framework, what you're saying is that the auction model is not good for the agribulk...*

LN: It's bad. For the railways, the concessioner doesn't know what to do, doesn't know if he can invest. The investments are being poured with a dropper because they don't know how long the contracts are still going to be valid.

*MW: From the people I already interviewed, there is a group that thinks the new regulatory framework unlocked the public investments and another one that doesn't agree because there is no investment made after the new framework, even after two years. What is your opinion?*

LN: In relation to the private port, the fact that there is no own cargo restriction anymore is something positive. Some projects got off the ground or could have got off the ground because of that. But I don't remember any port that doesn't have its own cargo... The Bunge port in the north is own cargo... But container is another business that shouldn't have own cargo restriction because it is a service provision...yeah, I don't remember. There are lots of them on paper, but not one that has been built yet.

*MW: In your opinion, why didn't these projects get off the ground yet?*

LN: In the private sector, the difficulty is... It is a bit of a cultural question, the "you can't". It's hard for any activity to benefit everyone, there is always a group that is damaged and should be compensated. But if the benefit is bigger for the society than for the group so the activity should be allowed. There are too many discussions about solving smaller problems in the agenda, it gets other subjects paralysed. A more technical vision of things should help.

*MW: People say that Brazil takes too long even to say "no".*

LN: Exactly, so if you're going to say "no" at least make it fast and give an alternative.

*MW: In the new regulatory framework, port authorities are still responsible for providing the basic infrastructure for the terminals to operate efficiently in the public ports. In your opinion, are they fulfilling their role?*

LN: No. These entities are bureaucratic, corrupted, they don't understand their role and looks like that they don't want to understand. Only a small amount of port authorities in Brazil is minimally business minded, but when you say in attracting activity to the port... for example, if the port was a shopping centre. The managers of the shopping centre have to convince the entrepreneur to open a store inside it, so the shopping managers promise to invest in parking lot. Then it's not possible. It's a reverted logic. When you listen that the port authority is interested in your cargo, that it's going to develop the infrastructure needed for your cargo to be transported by there, you always ask yourself if it's a joke.

*MW: Nowadays, CHS invests in port terminals, your interest is only in superstructure?*

LN: Yes, only terminals. Being a port operator? No. Investing in port infrastructure? No. Our focus is to set up terminal infrastructure to compete in the same conditions as our competitors. We believe that controlling or being a shareholder of a terminal is an

important position inside our chain mainly due to efficiency. Today we are shareholders at TCN, we have 25% of TEGRAM (Itaqui port). In all the other ports we operate we are users with a long-term contract with the local operators.

*MW: In your opinion, what should be made to enhance the attractiveness of the port infrastructure sector for the private investor?*

LN: A serious master plan for the ports, more concessions by auctions with clear rules. From the models I know, the winner is who offers the best price – for bulk. Or any other model that stimulates the productivity. There should be an investment in the issue of the licencing. If the public authority is able to auction something with an advanced licencing process, things get better.

*MW: Is there a good country that could serve as an example for Brazil?*

LN: I don't know many models, but I like the way of thinking of the American. It's more pragmatic, turned to efficiency. I don't have much information about the details on the American regulation, but the result is an efficient operation.

Date	07/08/2015 at 15h
Interviewee	Emma Russo
Profile	Lawyer specialized in infrastructure greenfield project. Former Transport Infrastructure Director at TPI - Triunfo Participações e Investimentos S/A

*MW: How do you evaluate the Brazilian port infrastructure – being 5 very good and 1 very bad?*

ER: In general, I would give it a 3. There are several bottlenecks to make new projects viable. There are also some problems for projects already installed and in operation – the ones that need extra land, modernisation, etc. All the stages we have to follow with the authorities are very complex, from environmental licences to regulatory issues. Despite the new law, there are still some difficulties. For me a serious issue is the fact that we have to deal with three governmental levels – municipality, state and federal -, and fatefully a port will have a local impact in a city but the terminal is regulated by the federal government.

*MW: Do you think the actual infrastructure is enough to attend the ports in Brazil?*

ER: There is great disorganization in the vision of the ones in charge of the port policies. A structured vision, a planning of how we would be able to attend a country with this continental dimensions with a vision of logistic chain is needed. It's not enough to have – if we had – great and efficient ports. We need to take care of the access to this port and the condition for the ships to enter and leave with cargo. This general vision, this coordination is missed. It doesn't exist. We are used to have some punctual attempts to do something inside the chaotic environment we are in. But we stumble on clutter, besides the other problems we already mentioned. Another issue is labour. There is a problem in the public terminals. The new law didn't address the issue of the OGMO, what is a problem. And nowadays it's difficult for both sides, not only to the private terminals but to the conceived ones, it's the first time they are together. SPU is a crazy issue we have to face. I worked a lot with this. When you start to understand the Pandora's box, understand where it is and what is inside it, you realize that there it's useless to find the paths because you're going to bump into political issues. "We don't want it". You make a request, look for a result and you can't get to it because "SEP has other lateral questions to solve". Then everything is stuck again. You ask why and they say that's the way it is.

So, we have this problem in the country, people don't think with the mindset of a country that needs infrastructure, projects. What did the national coordination designed and we can work on? This way would be way easier. It's a crazy thing. We think "I'm going to try every path, I will do the best technical work possible for the project, all dimensions" but we bump into unclear subjects, crazy approaches according to the political moment, several interests. A bit of all of this makes it difficult to build anything.

*MW: Do you believe private or public sector should fund port infrastructure in Brazil?*

ER: This is a structural question, a bit complicated to answer. Because we get into a conflict... Is it a strategic activity? Does it have an impact in the country's economy? Totally. Is it possible to be practiced by the private sector or even funded by it? I think so too. To me it's essential for this activity to be regulated. I can't open a port anywhere. I

should understand there is a master plan – if there was any, they say there is a PGO, but I never saw it. The state should be looking to the whole. Where does the government, the commander of this policy, say there is a need for a hub of terminals? The private sector has a vision of it and can make its business venture. The question is: is it a super intense capital activity? There are projects the private sector can't build alone. This answer is difficult to give in a single paragraph. For example, Santos, the company I used to work for was in a new area where the dredging is essential. Who should make this dredging? The private initiative has the interest, can it make the terminal? Yes, but there is a limitation. Sometimes private initiative needs support, others it's not necessary. Each case is a different case. If there was a master plan, a clear regulatory framework, a friendly and trustful business environment, we could make a structured operation, inside that line of what can and what can't be done, if the business plan was understood and a part of what is not feasible could be absorbed by the government – federation, state or municipality. Sometimes it's an inland access, sometimes is a railway, sometimes is dredging, so it depends on the level of the problem. Sometimes even in Santos we don't have an electrical network to expand. These are logical things. We should see where is this limit. By logic means, if there's a necessity, we should analyse and understand if the private sector could afford the project alone or would need the support from the public sector. It's also important to understand what kind of business the private sector wants to undertake. Sometimes the business can't handle the level of investment. If we talk about commodities, it's complicated. We are always looking to container, which is the ideal, but you need operation for all kinds of products. Eventually, some won't hold. A balance should be found for the public sector to participate in a way it can leverage what the private sector can do.

*MW: If Brazil had done the planning and took responsibility in the investment on the inland access and channels, do you understand Brazil would have the resources to make these kinds of investments?*

ER: In the country today it's easy to answer, no.

*MW: What do you think are the success factors for a port infrastructure project?*

ER: If we had a calmer environment to deal with the issues of viability, from environmental licences, regulatory framework, these are all important. Funding. It's complicated to get funding for a port project, almost impossible. We should be able to develop, the country should be a bit concerned with it in order to define a better way to fund projects in a sector that demands huge investments. If the private sector needs to be installed, needs the surroundings for the hinterland, all these issues the government should be able to follow and provide, what is beyond the capital expenditure of these projects. It would be very important, even more to the foreign investor, because he could realize there is a determination, a political will to support investments.

These clear rules would bring much more comfort to the private sector to get mobilized. One feeling that I have – recently in a meeting at FIESP a person asked the Planning Ministry “who he should talk to” – is that sometimes we don't know who to talk to. For example, DUP is a hell on Earth. What is a DUP? Until the 2012 Porto Seguro scandal, nobody knew if it was a decree, a declaration, who should ask for it, who should provide it. Now it's turned into a declaration by presidential decree. Until now, only two were conceived. So that's it, you take an incredible *via crucis*, conclude all environmental

issues, but you don't have a DUP. You think that now it's going to get easier since you know who should provide you that, but it's impossible to get it. It's a subject in the same level of difficulty of licencing. The minister of environment should sign it too. Imagine if the president of the country is aware of your project. And we are not even mentioning yet the Public Ministry, lawsuits...

*MW: Is there any factor that Brazil is able to offer to the private investor?*

ER: I may have forgotten, I just can't remember any.

*MW: What I heard here is that at least now Brazil offers an expectation of increasing the cargo, trade GDP in the long term. But even those now are complicated.*

ER: Yes, it's uncertain. We don't know. We were in a positive moment, having some growth, this indication was important because the rest we can run after and solve. If there was a sign that the country would grow, make progress, but in this moment the scenario is negative.

*MW: Talking specifically about the new regulatory framework, do you understand it unlocked private investments?*

ER: It helped, but I understand it wasn't necessary. This confusion started because of the fight around the own cargo requirement. The previous law was already good. There was no need for this whole discussion. Anyway, the new law is here and it helped because it solved that confusion. But it didn't help much in the other issues. It didn't solve the OGMO issue. In fact, it made things unclear when it said "from now on, if there is a private area inside the organized port lines, there is no possibility of private port there". That damaged Santos, for example. Because there is an island there cut by the line. It's a big area that got useless, the biggest mooring area inside the port. That's a problem. Another issue are the polygonal lines. Nobody knows if they still exist or they changed. So, they invented new problems. The law helped in some things, but didn't solve everything.

*MW: In the public port, the responsibility of providing dredging, this things, is still from the port authority. In the private terminal, this responsibility should be private, but there are some funding problems, regulatory, the process is slow. Back to the public port, do you understand the port authority is able to provide this infrastructure for the private sector?*

ER: That's a whole different issue. The Docas companies are facing structural problems, vices that would be important for us to change. Mainly, changing the model. We like to copy foreign models. In Rotterdam, for example, the management is professional. We should be able to terminate these political indications. All Docas companies face this problem. Historically they accumulate debts, impressive liabilities. So, they are inefficient, incompetent. I would do something they did to the railways. Leave the problem behind, inaugurate a new structure without the vices, the problems. Nowadays they can't fulfil their role. They don't even have the financial resources. So, the answer is no.

*MW: The port sector investor nowadays can invest in everything, from the basic infrastructure to the superstructure. Or he can opt to invest only in superstructure in a public port. What would you think could make an investor increase or diminish his scope of investments?*

ER: The only two reasons that could make the investor do it are: if he's obligated to do something to keep his business. If he doesn't invest, nobody will invest in that. The complete lack of commitment from the side that should comply with some needs. The government promised but didn't do, so you have to do it. It's the urgency, the necessity. I really don't know if this investor can be compensated after investing in something like that. Another reason is trying to get a better result. But we're not in this scenario, I think. I think Itapoá would prefer not building an access, but they had to invest. We end up being obligated to invest. But it's not a good deal. You do it because you won't be able to make and endeavour.

*MW: What do you think should be done to enhance Brazilian port sector attractiveness to the private investor? Can you prioritize, please.*

ER: Coordinated planning with all the governmental levels, I always point that out. That is reflected in several other subjects, an inland access, neighbouring communities. Regulatory framework. Environmental issue. In this point communication is key. There's no point in the government or SEP saying something could be done if there's a community there, indigenous people, a heritage site. This communication to solve viability issues is needed. Funding, a model of funding. Access issues. All that is in that whole. If we want this project to happen, what should we do? Let's split the costs? I think that should exist. These things would provide good signs to the investors. We also need a country that is growing. Nowadays, that's the number 1 item everything I said, a stable country able to solve political issues we are facing now. The country can't live in this shame, without solving the tax issue. The country needs to be organized as an entity for all of us. This "Car Wash Operation" never ends. You never know if you are going to wake up and they're going to announce the 18<sup>th</sup> stage of it. We can't ignore the moment we are living. We were so happy after (president) Fernando Henrique Cardoso, everything was getting so organized.

*MW: If you could mention one country or port as an example for Brazil to look at in order to attract the private investor, what country would it be?*

ER: I think Rotterdam is a good example. I've never been there, but people that visited always say that there's everything there. They planned and did what should be done. China did the same. It's a matter of planning and doing, it's that simple. Here we keep dreaming and we don't do anything. But in terms of Brazil I think Suape is a good example.