

3

Ports sector

This chapter provides an economic, institutional, and legal overview of the ports sector in Brazil. The water transport sector has a fundamental role in Brazil's foreign trade and in its economic development: it is responsible for the flow of more than 98% of Brazilian exports and more than 92% of imports in terms of volume. Three main bodies are responsible for the creation of policies and guidelines for the port sector, while specific state-owned enterprises are responsible for exercising the functions of port authorities in public ports, and the Agência Nacional de Transportes Aquaviários as an independent regulatory agency is in charge of implementing the Ministry's policies for ports and waterways.

3.1. Overview and definition of the ports sector

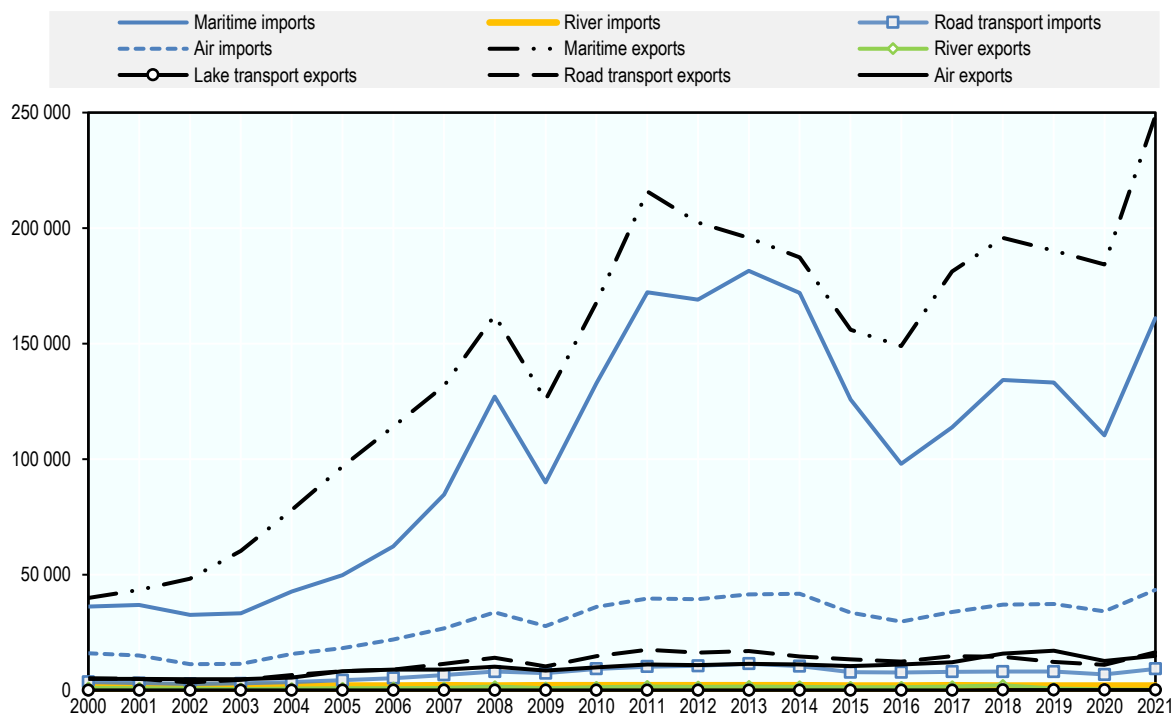
3.1.1. Economic overview

Ports can be defined as places "having facilities for merchant ships to moor and to load or discharge goods or passengers to or from seagoing vessels" (OECD, 2002^[1]). Whether maritime, inland or river, ports play an important function in the economic development of countries and regions by facilitating large-scale domestic and international trade in goods. Port infrastructure supports customers such as freight shippers, ferry operators and private boats (OECD, 2011^[2]).

Although it may not represent a large portion of GDP (0.16%),¹ the water transport sector has a fundamental role in Brazil's foreign trade and in its economic development.² It is responsible for the flow of more than 98% of Brazilian exports and more than 92% of imports in terms of volume. In 2021, exports and imports by maritime transport amounted to more than 851 billion net kilogrammes and USD 409 billion

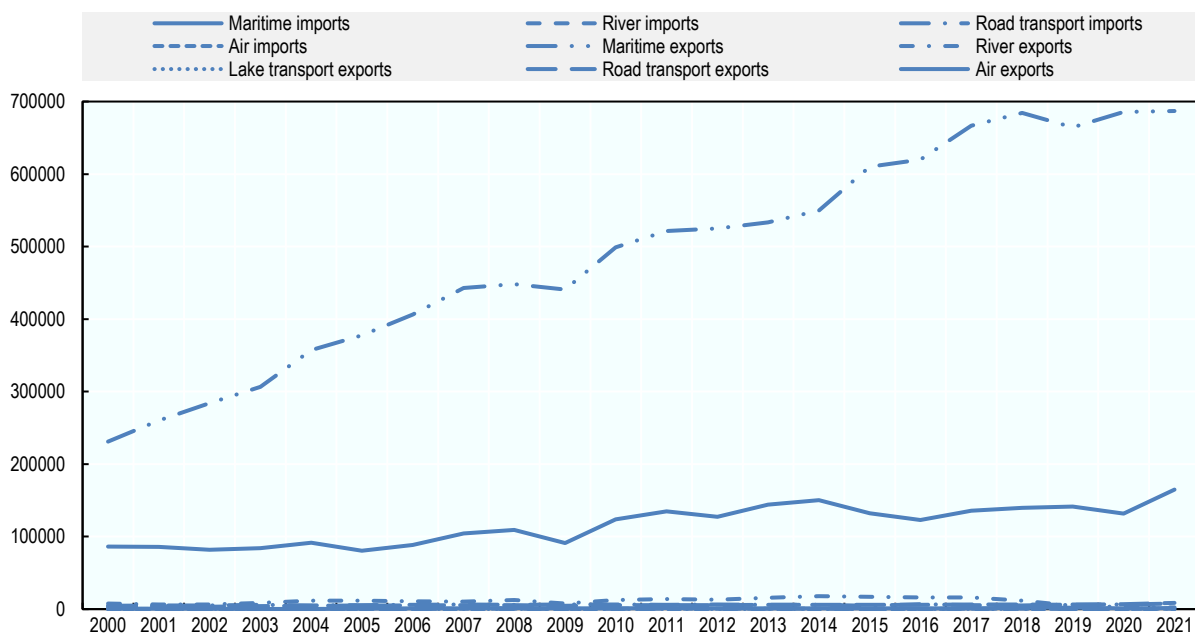
freight on board (FOB), an increase of 169% and 438%, respectively compared to 2000 data (Figure 3.1 and Figure 3.2).

Figure 3.1. Transport methods of imports and exports (USD in millions, FOB), 2000-21



Source: (Ministério do Comércio Exterior, 2022^[3]).

Figure 3.2. Transport methods of imports and exports (net kilogrammes, in millions), 2000-21



Source: (Ministério do Comércio Exterior, 2022^[3]).

In comparison to other regions and countries, Brazil plays an important role in world trade. In 2020, it accounted for 776 million tonnes or 7.3% of the global volume of loaded goods in maritime trade (Table 3.1). This volume saw 6.36% growth between 2014 and 2020, above the average of developing countries in the Americas and in Africa, but below those in Asia.

Table 3.1. Maritime trade

	Loaded volume (as percentage of global total)		Unloaded volume (as percentage of global total)	
	2014	2020	2014	2020
World totals	9 816	10 648	9 719	10 631
Latin America and the Caribbean	13.3%	12.9%	5.9%	5.6%
South America	11.2%	11.0%	3.7%	3.3%
Brazil	6.5%	7.3%	3.4%	3.6%
Developing regions (M49)	60.2%	59.5%	59.8%	59.4%
Developed regions (M49)	39.8%	40.5%	40.2%	40.6%

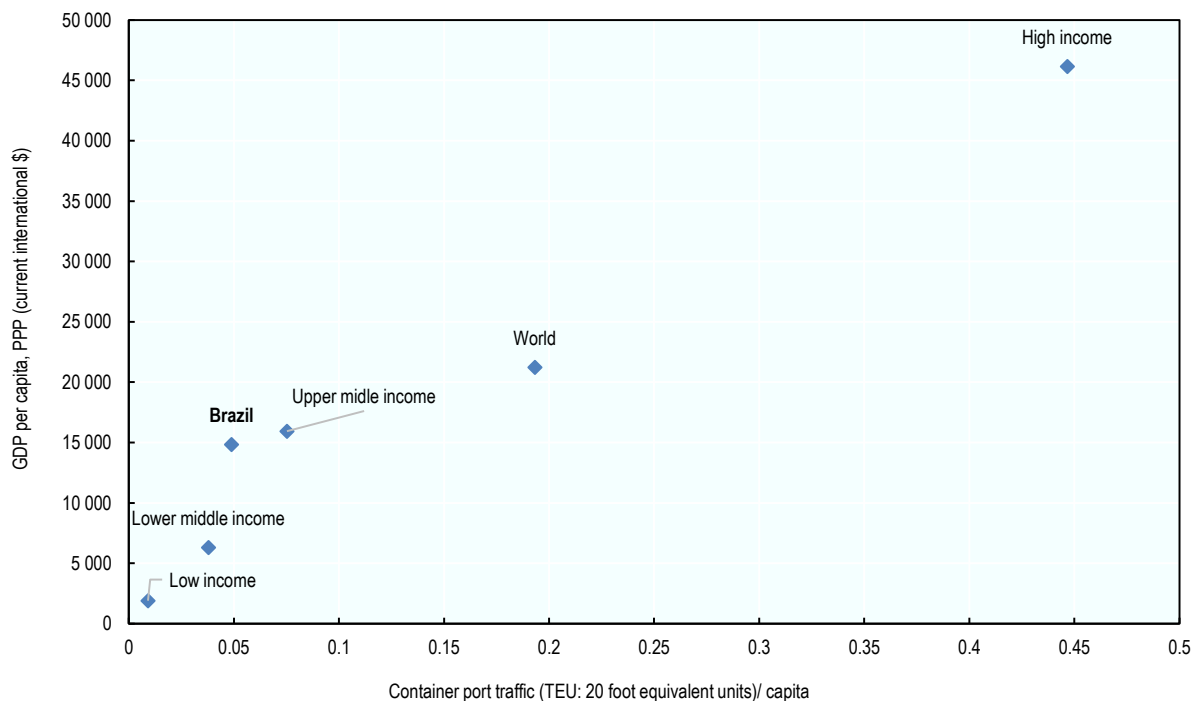
Note: UN M49 is a Standard Country or Area Codes for Statistical Use by the United Nations. For UNCTAD definition of developing economies, see https://unctadstat.unctad.org/EN/Classifications/DimCountries_DevStatus_Hierarchy.pdf.

Source: (UNCTAD, 2022^[4]) and (ANTAQ, 2022^[5]).

Prior to the COVID-19 pandemic in 2020, container shipments in seaports had continually grown between 2001 and 2020 around the world (except in 2009, after the 2008 crisis) both in terms of gross tonnage and the number of 20-foot equivalent units (TEUs). In 2020, nearly 750 million TEUs were loaded and unloaded in countries for which data were available, with Brazilian ports accounting for around 1.3% of total TEUs handled around the world in 2020.

Containerised trade is positively related to GDP growth. The number of TEUs transported has a positive effect on trade flow between countries, which in turn has a positive impact on real GDP growth (CEPAL, 2020^[6]) (Michail and Batzilis, 2021^[7]). Figure 3.3 shows this positive correlation between countries with higher container port throughput and those with the highest GDP per capita.

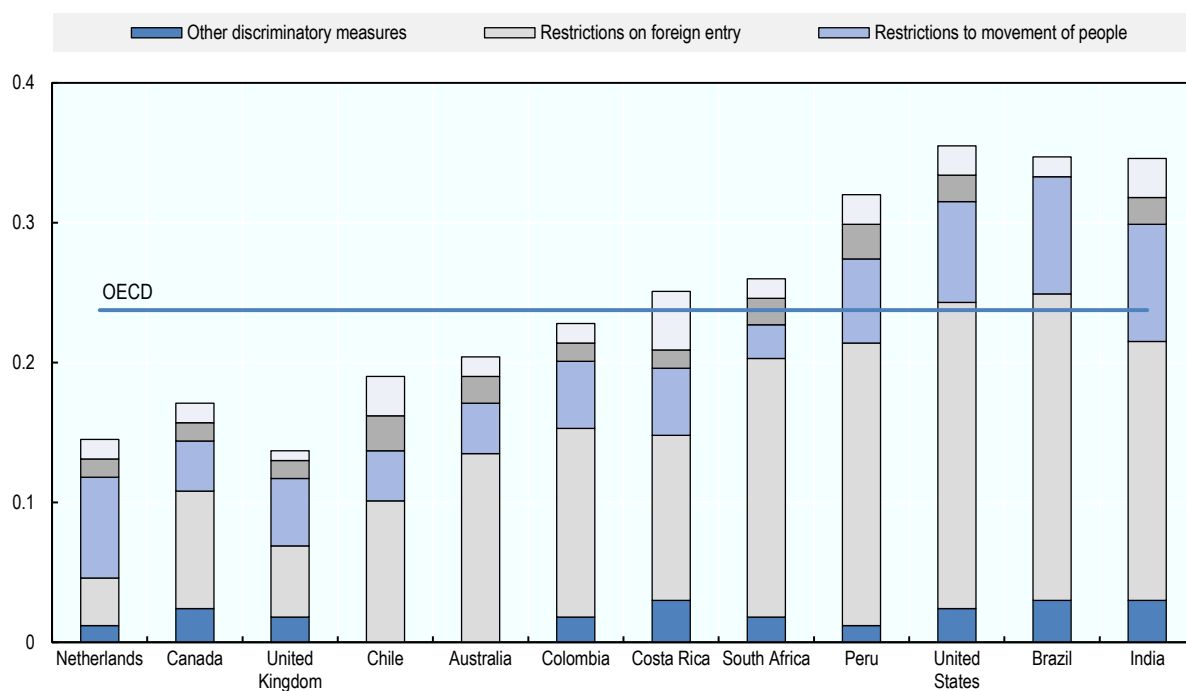
Figure 3.3. Port throughput of containers (TEU, in millions) and GDP per capita, by region and income, 2020



Source: (UNCTAD, 2022^[4]) and OECD calculation.

Regarding the regulatory environment, the maritime transport service sector in Brazil appears to be less open to trade and investment than the OECD average or other comparable economies, such as Chile, Colombia, and Costa Rica. This is shown by the OECD Services Trade Restrictiveness Index (STRI), which provides information on regulations affecting trade in services in different sectors.³ The STRI scores Brazil above other countries (Figure 3.4). In this respect, restrictions on foreign entry play an important weight on the composed result.⁴

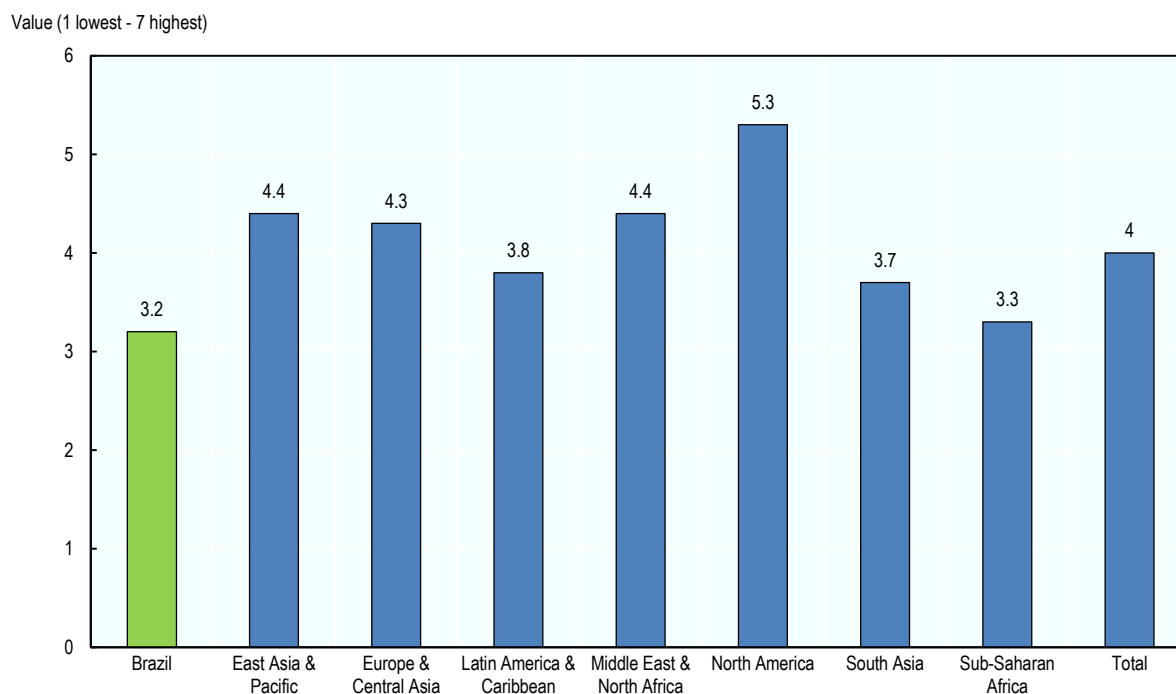
Figure 3.4. STRI in maritime transport services, by policy area, 2021



Source: (OECD, 2022^[8]).

Brazil's performance indicators for maritime transport are low. The World Economic Forum's Global Competitiveness Index (GCI)⁵ ranks the efficiency of Brazilian seaport services at 104 out of 138 analysed countries, with a score of 3.2 on a scale of 1 (worst) to 7 (best). This is below both the average of all other regions in the world and below the world average of 4.0 (Figure 3.5). This inefficiency can also be seen in the GCI's ranking of countries by income level (Figure 3.6). Brazil scores below average of other countries in its income group (upper-middle income), which was 4 in 2019.

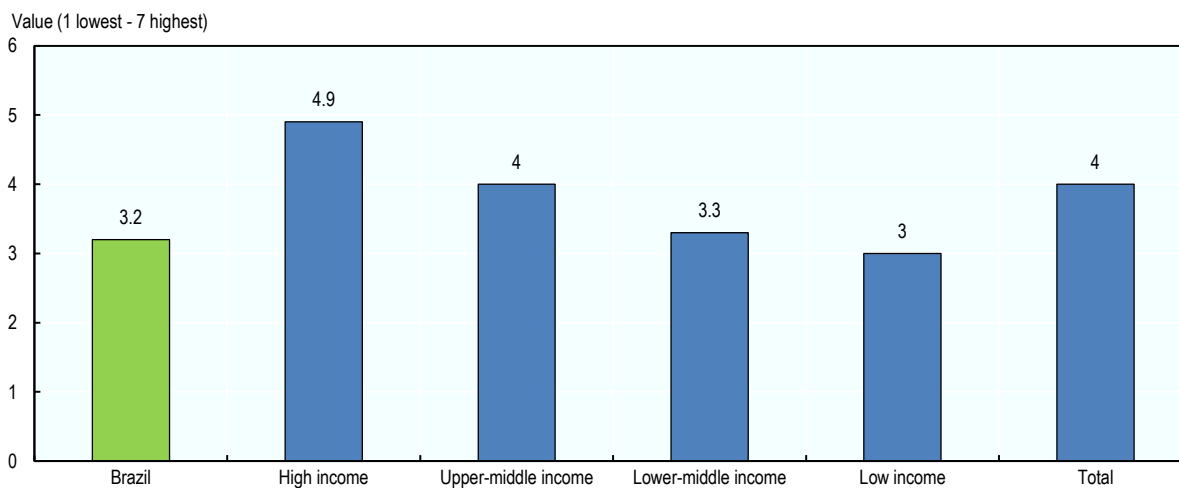
Figure 3.5. GCI 4.0: Efficiency of seaport services, 2019, by region



Note: Data from 2019 are the most recent available.

Source: (World Economic Forum, 2020^[9]); OECD calculation.

Figure 3.6. GCI 4.0: Efficiency of seaport services, 2019, by income group

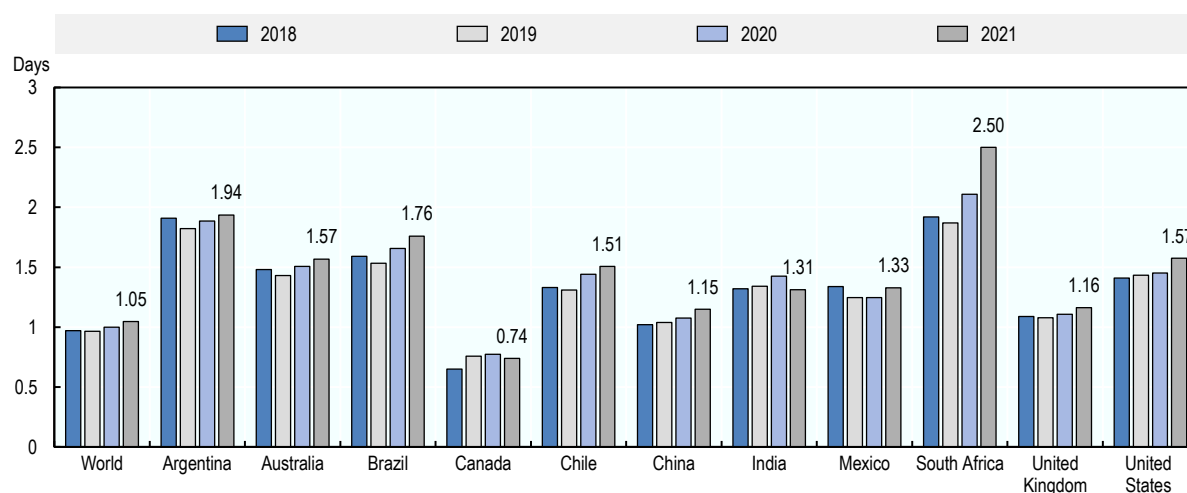


Note: Data from 2019 is the most recent available.

Source: (World Economic Forum, 2020^[9]); OECD calculation.

An alternative proxy measure of efficiency is time spent in ports; shorter times signal possible stronger port efficiency and trade competitiveness (UNCTAD, 2022^[4]). Ships spent on average 1.76 days in Brazilian ports in 2021; this compared with a global average of 1.05 days; 0.74 days in Canada; 1.15 in China; and 1.16 in UK ports (Figure 3.7). Among the main reference countries, only South Africa (1.94 days) and Argentina (2.5 days) performed worse.

Figure 3.7. Median time spent in ports (days)



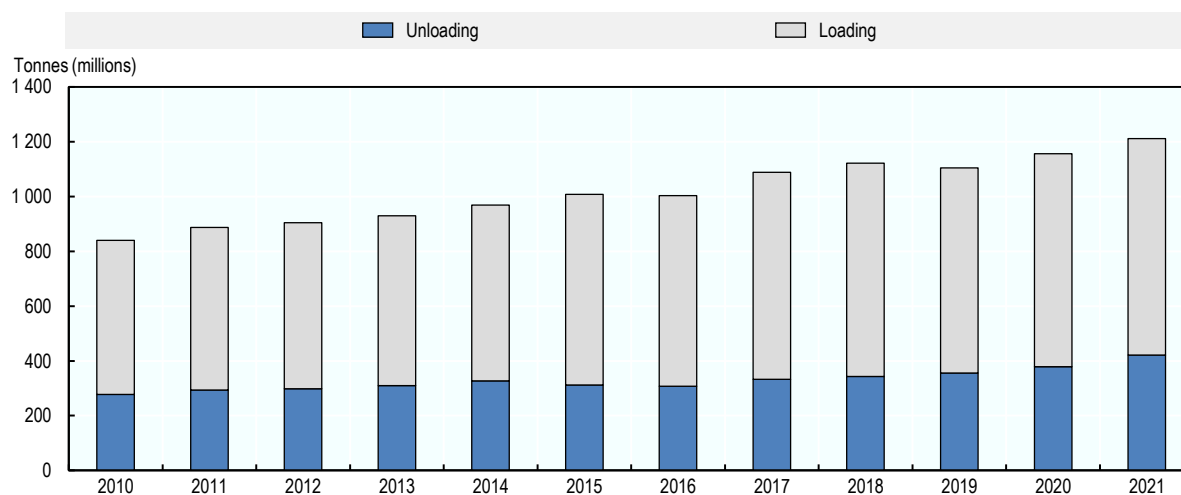
Source: (UNCTAD, 2022^[4]).

Growth of the sector

In the early 1990s, Brazil undertook a reform process for the ports sector, aiming to promote competition by fostering entry and investment. The extinction of Portobrás, a state-owned company that had centralised ports' administrative activities since 1975, and the enactment of Law No. 8.630/1993 enabled the private sector to invest in, lease and operate national maritime ports (AZEREDO, 2004^[10]) (SILVA and FILHO, 2013^[11]) (CADE, 2017^[12]). In 2001, the creation of the National Agency of Waterway Transport (ANTAQ) enhanced legal certainty and fostered investor confidence. Continuing this process, in 2013, Brazil established a new regulatory framework (Law No. 12 815/2013) for the ports sector aiming to further enhance competitiveness and increase private-sector involvement in the supply of port infrastructure.

This new regulatory framework was a response to a lack of sectoral investment and growth. Since these reforms, the volume of cargo handled in Brazilian ports has increased and reached more than 1 200 million tonnes, an increase of 45% compared to 2010 levels (Figure 3.8).

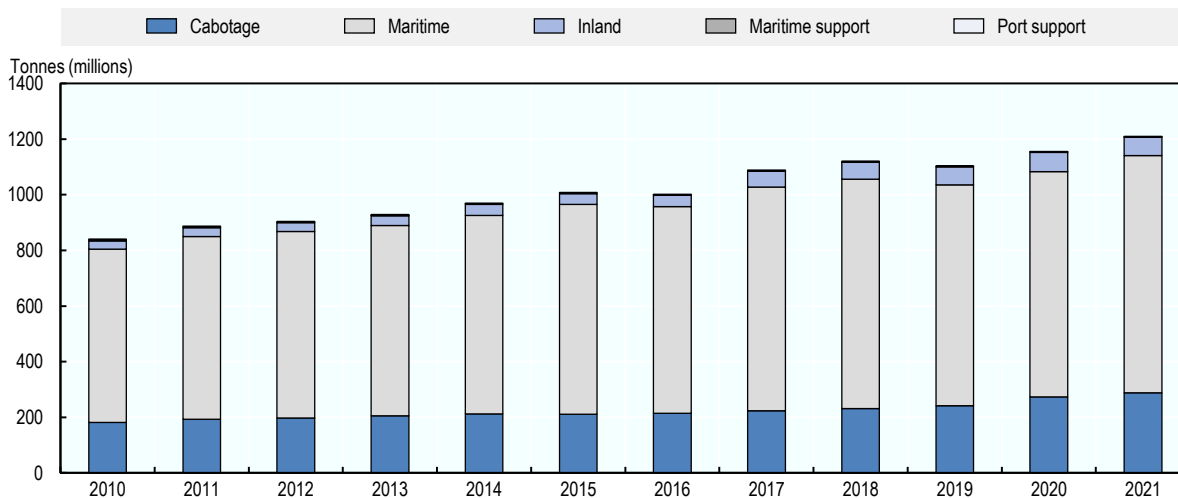
Figure 3.8. Cargo handled in Brazilian ports (tonnes), by direction, 2010-21



Source: (ANTAQ, 2022^[5]).

Maritime cargo is the main contributor to the overall amounts handled in Brazilian ports. In 2021, 71% of cargo handled in Brazilian ports was transported by maritime vessels, followed by domestically transported cargo (cabotage), which accounted for 24% of the total (Figure 3.9).

Figure 3.9. Cargo handled in Brazilian ports (tonnes), by type of navigation, 2010-21

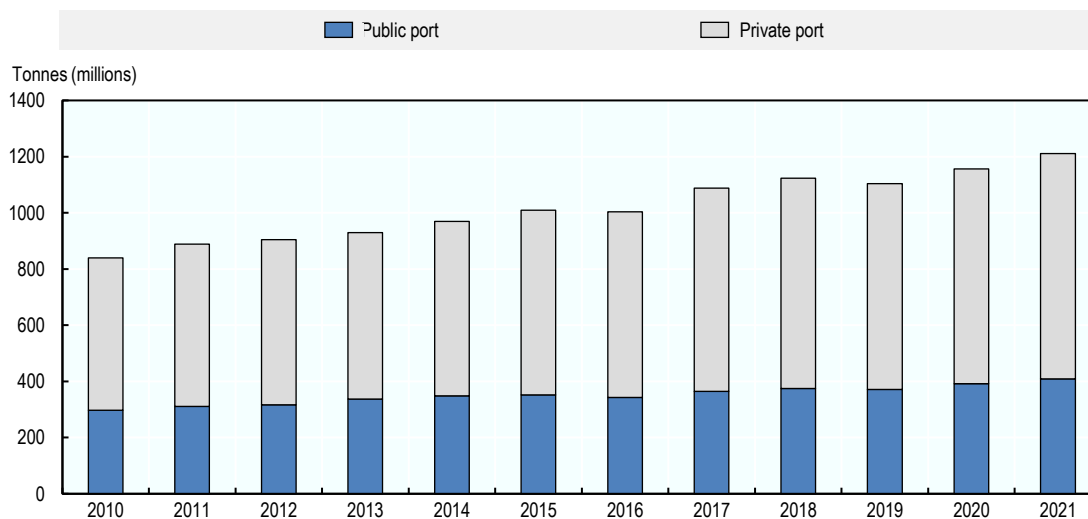


Source: (ANTAQ, 2022^[5])

Market structure

The regulatory framework enacted in the 1990s resulted in an increase in the number of authorisations for the construction of private-use terminals. In 2021, Brazil had 170 private-use terminals (TUPs) in operation subject to a fully privatised model and 125 terminals in public ports under a landlord model (ANTAQ, 2022^[5]).⁶ Private ports were responsible for 66% of the cargo handled in Brazilian ports in 2021, against 34% for public ports (Figure 3.10).

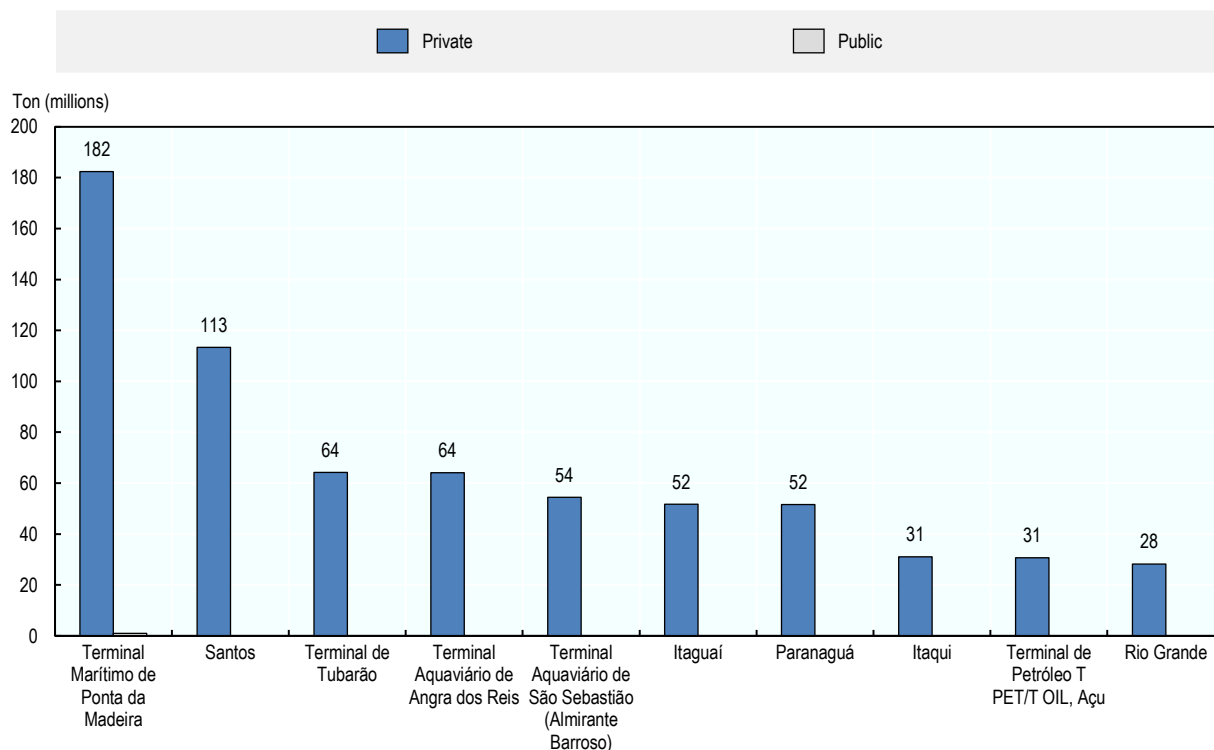
Figure 3.10. Cargo handled in Brazilian ports, by type of port, 2010-21



Source: (ANTAQ, 2022^[5]).

Among the ten main ports in Brazil (measured in gross tonnage handled), five are public ports and five private terminals (Figure 3.11). The leading private port is the Ponta da Madeira maritime terminal, located in the northeast of the country, which specialises in handling ore and has experienced rapid growth since 2014. The Port of Santos, southwest of São Paulo, has the largest container throughput in the country, accounting for around 30% of all containers handled in Brazil in 2021.

Figure 3.11. Main public and private ports in Brazil, in gross weight, 2020



Source: (ANTAQ, 2022^[5]).

The port sector is becoming increasingly vertically integrated. From 1996 to 2016, 24 of the 81 merger cases related to port services analysed by CADE involved vertical integration. The most common cases of vertical integration in port industry are the ones related to production and export of bulk of plant origin (agricultural commodities) and the storage and movement services of these products in port terminals. It is common, in these markets, that large exporters of commodities hold equity interests, or even full control, in port terminals for production flow, which may be for captive use by shareholders or may be offered to some extent to store goods of other independent exporters (CADE, 2017^[12]).

Vertical integration in Brazil has different roots that vary depending on the type of cargo. Before 2013, the regulation of private terminals established that the latter needed to prioritise their own cargo and were not allowed to handle only third-party cargo. Such regulatory evolution is one of the reasons why a considerable number of private terminals are still today part of vertically integrated companies in Brazil. For example, Vale integrates and manages most of the logistics chain for exporting minerals in Brazilian territory, including extraction, rail transport, movement in port terminals in maritime transport in own ships. In the vegetable bulk segment, which accounts for 264 million tonnes or 20% of the cargo handled in Brazilian ports in 2021 ((ANTAQ, 2022^[5]) the logic of vertical integration also plays an important role. Companies like Bunge, ADM and Cargill have their own terminals in different regions of the country. In addition, they invest in other structures in the supply chain such as warehousing and intermodal

transshipment (Bunge) and river transport (ADM) (CADE, 2017^[12]). As to liquid bulk terminals, vertical integration is also widespread, with companies producing commodities acting in the port operation and in other segments of the production chain (Coutinho, 2014^[13]).

In line with this worldwide trend, in the Brazilian containerised cargo market, vertical integrations occurred between large domestic and foreign cargo shipping companies. For instance, TIL (in which MSC has a 60% stake) operates the Portonave private terminal, in Navegantes – SC, located in Itajaí Port Complex, region where the public terminal is also leased to APM Terminals. Maersk and MSC are partners in the port of Santos but compete directly in the containerised cargo market in Santa Catarina. Also, in the State of Santa Catarina, the private terminal of Itapoá has Aliança Navegação e Logística (belonging to the shipping group Hamburg Sud, now part of Maersk) among its shareholders (Jucá, 2021^[14]). Other container terminals (partly) operated by shipping lines are in Rio de Janeiro (TIL), Pecém (Maersk) and Natal (CMA CGM).

The tendency of vertical integration is a world phenomenon which is also related to the increase of the use of mega-vessels. Given the amount of cargo transported, port operations may have the potential to create bottlenecks, eroding service reliability and limiting the efficiency in the use of this type of vessels. Aware of such relevance and aiming to boost operational performance and reduce physical bottlenecks (e.g. undersized infra- and superstructures, nautical accessibility), shipping companies have started to acquire container terminal facilities around the world. By acquiring terminals, carriers have also the opportunity to have more control of the manpower costs and invest in correlated business (OECD, 2017^[15]) From 2002 to 2016, the share of carrier-controlled terminal operators has increased from 18% to around 38% globally (ITF, 2018^[16]). This share is around 14% in Latin America.

While, as mentioned, vertical integration gives carriers the possibility to better co-ordinate their shipping activities as part of a whole logistics chain, it can lead to discriminatory treatment – as the carrier can, as terminal, towage or logistics operator, provide worse services to competing carriers, especially in concentrated markets. For example, carriers often use their terminals as leverage to cut rates in independent terminals and play out ports against each other (ITF, 2018^[16]).

When looking at CADE's decisional practice, from 1998 to 2018, 8 of 13 mergers cases related to container terminals involved some form of vertical integration. The main concern is the possibility of foreclosing upstream or downstream markets and induce rivals' cost increases. If the port terminal of a group started to offer less efficient services for ships belonging to rival groups, this could lead to subsequent delays and cost increases for transporters. However, the possibility of such conduct was ruled out due to the reasons raised in the cases such as the existence of container terminals in nearby ports. The existence of idle capacity at container terminals would allow absorption of demand deviations in the event of a terminal closure to rival companies; it would not be economically viable for port terminals to operate only with cargo from the company of its economic group, as these would not have enough volume; in ports where corporate control is shared, market foreclosure of some shipowners would not be of in the interest of the other partners which do not operate maritime transport; in cases of Vessel Sharing Agreement, the choice of ports of passage is made jointly by the parties, so there would be no certainty that all participants in the agreement would agree to use integrated terminals owned by one of the participating companies. (CADE, 2018^[17]) There is an investigation on going (08700.003945/2020-50) about an allegation of practices of direct and indirect discrimination arising from the vertical relationship between ship owners and terminals, evidenced by dominant position at the port of Santos.

Generally, vertical integration is subject to merger control rules. In general, the acquisition of controlling stakes in other parts of the transport chain should thus be notified to the competent national competition authority, which will evaluate whether there are any possible antitrust concerns with the transaction (OECD, 2021^[18]) In Brazil, the Law 12.529/2011 establishes an ex ante control of concentrations and imposes a duty to notify to CADE acts of economic concentration.

Concerning to the legislation, OECD countries have different strategies to deal with the vertical integration's risks. Some countries define explicit port hierarchies that help focus public infrastructure investments and prevent shipping companies or large shippers from playing off ports against each other. (OECD, 2021^[18]) In Brazil, there is no legislation specifically restricting vertical integration between port terminals and carriers. Brazilian regulation seems to analyse vertical integration concerns on a case-by – case basis, rather than imposing general restrictions.

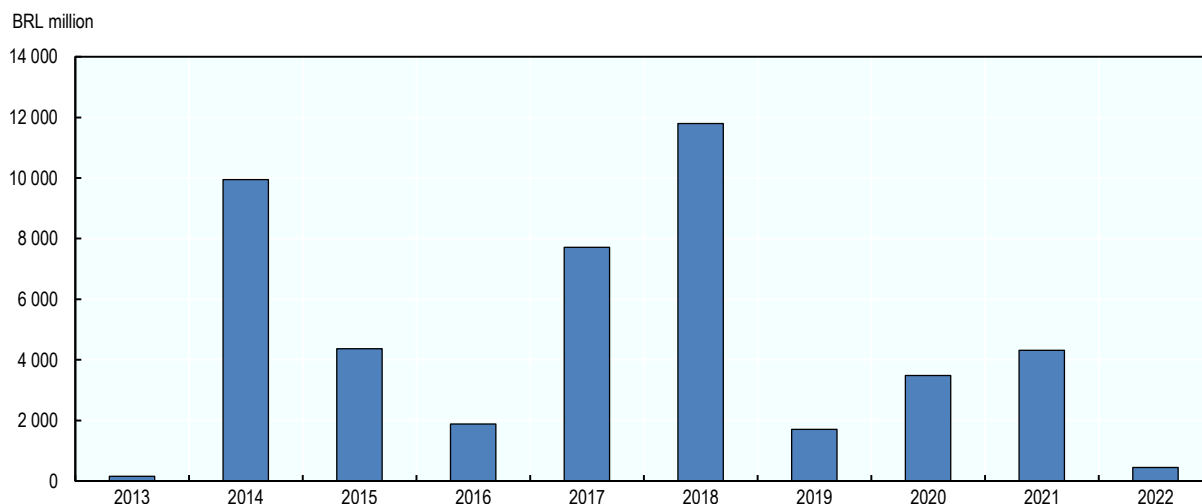
The Law 10233/2001 (which created ANTAQ) allows the transfer of ownership of concession or permission granted, preserving its object and contractual conditions if it is authorised by ANTAQ. The Brazilian legal system includes regulators of sectorial activities (regulatory agencies) and a horizontal competition defence system that is responsible for “prevention and repression of infringements against the economic order” (Article 1 of Law No. 12 529/11).

ANTAQ tried to introduce some form of regulation of vertical integration in 2014, when it sent to public consultation the Resolution 3 708 (which has never come into force). Article 18 established that the public notice may restrict or prevent the participation of companies' members of economic groups that already operate in the organised port area; in the area of influence of the organised port; or in other economic activities that represent forms of vertical integration. In addition, to prevent the risks of vertical integration, the lease of terminals in public ports was subject to safeguards to avoid creating intra- and inter-port links, giving a regulatory role to ANTAQ, the Federal Court of Accounts and SEAE.

Recent trends

Private port terminals have been the main investment driver in the Brazilian port sector in recent years, particularly after 2013 and the enactment of the Ports Law (see Box 3.1). According to data from the Association of Private Port Terminals (ATP), founded in 2013 to represent the interests of the private port sector, the investment portfolio of private ports since the law has totalled BRL 45.83 billion, of which BRL 43.6 billion (95.9%) were investments in private-use terminals (TUPs); BRL 1.5 billion (3.35%) were in cargo transshipment stations (ETC); and BRL 333.8 million (0.73%) were in port tourism facilities (IPTur).⁷

Figure 3.12. Annual investment portfolios in private terminals (in millions), 2013-22



Note: In nominal values.
Source: (ATP, 2022^[19]).

3.1.2. Institutional overview

The institutions responsible for issuing or enforcing rules, instructions and guidelines in the ports sector play a significant role in the functioning of the market and can ultimately affect competition.

This section provides an overview of institutions responsible for issuing and implementing regulations and overseeing the ports sector in Brazil.

Three main bodies are responsible for the creation of policies and guidelines for the port sector.

- Ministry of Infrastructure (Ministério da Infraestrutura), responsible for issuing guidelines and policies for the development and promotion of the port sector and maritime, fluvial and lacustrine port installations. The ministry is also responsible for the execution and evaluation of programmes, measures and projects that support the superstructure⁸ and infrastructure development of ports and maritime, fluvial and lacustrine port installations.
- National Commission of Port Authorities (CONAPORTOS), responsible for co-ordinating and evaluating the efficiency of measures related to activities performed by public bodies and entities in ports and port facilities. Restructured by Decree No. 10.703/2021, it is composed of several public bodies⁹ and chaired by the Ministry of Infrastructure.
- National Secretariat of Ports and Waterway Transports (SNPTA), responsible for establishing guidelines for awarding grants and for tax proposals in the waterway transport sector; proposing priorities in the investment programme to aid the creation and implementation of the Ministry of Infrastructure's strategic planning regarding waterway and port transport; and elaborating grant plans and proposals for the infrastructure and service exploitation in the port sector and maritime, fluvial and lacustrine port installations.

Six state-owned port enterprises (*Companhia Docas*), linked with the Ministry of Infrastructure, are responsible for exercising the functions of port authorities in public ports, and the management and supervision of port facilities and public infrastructure within ports. The six *Companhia Docas* are: Companhia Docas do Pará; Companhia Docas do Ceará; Companhia Docas do Rio Grande do Norte; Companhia das Docas do Estado da Bahia; Companhia Docas do Rio de Janeiro; and Companhia Docas do Estado de São Paulo. Companhia Docas do Espírito Santo was recently privatised (see Section 3.1.3).

Box 3.1. Integration between bodies

Based on a review of the regulation and the procedures of a significant number of institutions in the federal government, there has been an effort since 2011 to integrate the procedures of the governmental bodies into a project called Porto Sem Papel (port without paper). It consists of a digital database that centralises the information and documentation necessary to speed up the passage of goods through Brazilian ports. This single window allows companies to submit information (such as declarations, electronic consents for vessel stay, and certificates of origin and invoices) simultaneously to all relevant entities: the port authorities; National Health Surveillance Agency (ANVISA); the Federal Police (Polícia Federal); Ministry of Agriculture; the system for agriculture and international livestock surveillance (Vigiagro); the Brazilian Navy's Maritime Authority; and the Brazilian Federal Revenue Service's Customs Authority (Receita Federal). By 2021, the system had been implemented in 34 Brazilian ports (Ministério da Infraestrutura, 2021_[20]). In the Port of Santos, the system resulted in a reduction of waiting times and congestion, which before its introduction was costing BRL 115 million a year (OECD, 2016_[21]). The expansion of the project could lead to the integration of further governmental bodies, which will continue to reduce the administrative burden.

The National Agency of Waterway Transportation (ANTAQ), an independent regulatory agency of the federal government, is in charge of implementing Ministry of Infrastructure policy on ports and waterways in accordance with the principles and guidelines established by legislation (see Box 3.2). It is also responsible for inspecting, regulating and controlling the provision of services of waterway transport, and the operation of port and waterway infrastructure. In addition, ANTAQ examines the activities performed by the administration of public ports (referred to as “organised ports” in Brazilian legislation), port operators, leaseholders, and authorised port installations. The majority of sectoral regulations are issued by ANTAQ.

Box 3.2. ANTAQ’s independence as a regulator

Regulatory agencies often find themselves under pressure from sectoral stakeholders and interest groups, which can subject them to different forms of control. Independence is crucial to ensure that the regulator can efficiently exercise its mandate to promote widespread access to services at competitive prices in its specific market (OECD, 2016^[21]).

As defined by Law No. 10.233/2001 and Law No. 13.848/2019, ANTAQ has formal administrative independence in the decision-making process from the Ministry of Infrastructure. This independence is achieved thanks to different factors in line with international best practices. First, directors in charge of the agency have a fixed mandate, which prevents them from being influenced by political pressures and allows them to fulfil the objectives set by the legislation that created the regulatory agency. The designation of directors follows a centralised process, in which they are proposed and appointed by the president after Senate approval.

Second, ANTAQ has a multi-member decision making body. In general, boards are considered more reliable for decision making with collegiate decisions ensuring a greater level of independence and integrity than decisions taken by individuals, which are potentially subject to greater pressure from government and regulated industries (OECD, 2016^[21]). One of ANTAQ’s major differences from other regulatory agencies in Brazil is that its collegiate board consists of a director general and two directors; all other regulatory agencies are composed of a director general and four directors. Stakeholders say that the reduction, occurred before the creation of the agency, during the legislative discussions, from five to three directors, which took place due to budgetary restrictions, could facilitate “regulatory capture” of ANTAQ by regulated industries. The organisational structure also includes an attorney, an ombudsman and an inspector general, whose duty is to supervise the agency’s functioning and its administrative and disciplinary proceedings. To solve this issue, in June 2022 the Provisional Measure 1120/2022 was proposed to introduce the possibility to have more directors in the collegiate board. The proposal is currently being discussed before the Brazilian Congress.

Third, in line with international best practices, ANTAQ leaders must go through a “cooling off” period before accepting jobs in either the government or regulated sector after their term of office. Having no restrictions on pre- or post-employment of agency staff increases the risk of “revolving doors” and conflicts of interest with industry (OECD, 2016^[21]).

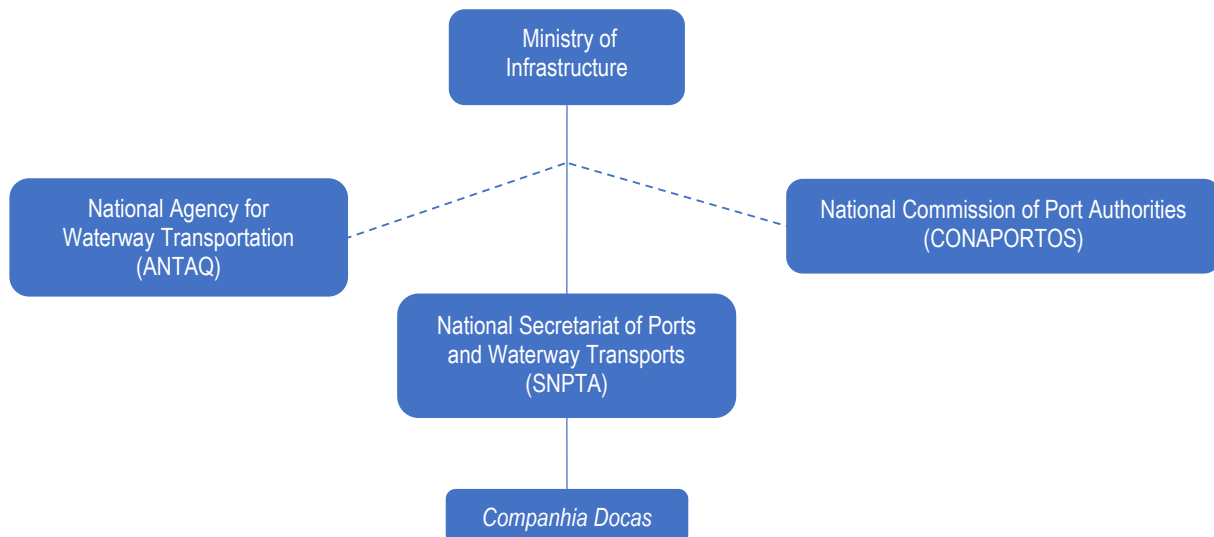
In selecting a regulator’s leadership, international best practice suggests transparency in the nomination and appointment process. According to the *OECD Regulatory Policy Outlook 2021*, 47% of regulators in OECD countries are now appointed by an independent panel (OECD, 2021^[22]).

Promoting a culture of independence in regulatory agencies throughout the different phases of the regulatory cycle generates competition between regulatory agencies and thus economic efficiency. One important landmark, contained in Law No. 13.848/2019 (Law of the Regulatory Agencies), was the legal establishment of the model interaction between regulatory agencies and the bodies of competition defence. The law established ANTAQ as incumbent monitor of market practices of agents in the regulated sectors, in order to assist competition bodies in complying with relevant legislation. CADE is

responsible for applying competition legislation in regulated sectors, for analysing mergers, and instituting and instructing administrative proceedings to investigate infringements. The regulatory agency may also help with technical opinions.

Figure 3.13 summarises the hierarchy and relation between regulatory bodies in the ports sector.

Figure 3.13. Regulatory bodies in the ports sector



Note: A dotted line is used between ANTAQ and Conaportos as there is no hierarchical relation between these institutions and the Ministry of Infrastructure.

Source: (Ministério da Infraestrutura, 2021^[23])

3.1.3. Overview of the legislation

The OECD has identified 77 pieces of legislation related to the ports sector. It should be noted that the sector is heavily regulated and that the services provided in publicly operated ports are more regulated than the services in private ports (TUPs). Since the provisions regulating public ports are more restrictive than those for private ports and in light of the purpose of this project, which aims to identify unnecessary regulatory restraints on market activities and develop alternative measures that still achieve government policy objectives, the OECD has found more restrictions concerning public ports (53 provisions) than private ports (16 provisions).

Law No. 12.815/2013 (Ports Law) provides the legal framework for the port sector in Brazil. It regulates the direct or indirect operation by the federal executive branch of ports and port facilities, and the activities of port operators. It covers the majority of the relevant issues for ports, such as the definition of terms, leasing and authorisation instruments, and issues related to 1) the administration of the public ports; 2) port operation; and 3) port workers.

The Ports Law establishes two different regimes: one for public ports, another for private ports (TUPs). Law No. 12.815/2013 provided for private terminals to operate outside public ports for the first time.¹⁰ More specifically, terminals within public ports operate under a public-lease regime, while terminals in private ports are subject to a different regulatory regime and authorisation process. This regulatory asymmetry gives rise to competition concerns when TUPs operating in a private and less regulated regime compete against more regulated terminals located within public ports (see Box 3.7).

Public ports operate under a landlord model that was first established by Law No. 8.630/1993. This model, which is still in use today, sees the federal executive branch provide port infrastructure, highway and waterway access and grant usage rights. Federal port companies – or *Companhias Docas* – are the port authorities within public ports. As noted in Section 3.1.2, these 100% state-owned companies are responsible for managing public ports, including those in Rio de Janeiro, Santos, Salvador, and Belém. In some cases, public ports are managed by federal states or municipal governments, which establish their own management entities – such as companies or government divisions – as is the case for the ports of Rio Grande, Itaqui, Suape, Paranaguá, among others.

The 2013 law's main objective was to attract private investments by enabling the private-sector operation of port activities. It provided that private ports be subject to a fully privatised model that includes all investment in superstructure, infrastructure and equipment. Port operation and administration are also provided by the private stakeholder.

Table 3.2. Models of port-activity operations in Brazil

	Public port concession	Terminal leasing	TUP, fully private port
Legal instrument	Concession contract	Lease contract	Authorisation
Type	Public-service contract granted to the private sector	Public-service contract granted by the public administration to the private sector	Private economic activity requiring authorisation
Period	Up to 70 years	Up to 35 years (extendable up to 70 years)	25 years (extendable, as long as port activity is maintained, and the authorisation holder makes the necessary investments for the expansion and modernisation of port facilities).
Management	Functions granted to the private sector	Public port terminal operator	TUP owner
Infrastructure	Managed by private investor during concession and returned to government when concession expires		Private and constituted with authorisation from ANTAQ
Berths and hinterland area	Negotiated between the concessionaire and the private-port operator	Direct operation by the lessee	Held by the TUP owner
Labour	The pool of port workers (OGMO) is responsible for the registration, allocation, management and payment of port workers. All port operators, when operating within a public port, are obliged to hire port workers through OGMO.		Hiring labour is independent, according to general work legislation

Source: Adapted from (BNDES, 2021^[24]).

While the Ports Law allowed for public-port concessions in 2013, the first concession in Brazil was not granted until 2022, with others concessions scheduled (Box 3.3).

Box 3.3. Privatisation of port-related SOEs

Following the publication of the Federal Development Strategy in October 2020, Brazil is planning to privatise the *Companhias Docas*, the state-owned enterprises (SOEs) active in the ports sector. These mixed-capital companies were created to operate in port management and until 1990 were linked to Portobrás. From 1990 to 2007, they were controlled by the Ministry of Transport, before moving under the aegis of the Secretary of Ports of the Presidency of the Republic from 2007 to 2016. They are currently tied to the Ministry of Infrastructure (CADE, 2017^[12]).

In 2020, the *Companhias Docas* only invested BRL 35.8 million, the lowest amount in the last decade. This was, for example, less than 10% of total investment in 2014 of more than BRL 492.8 million (Table 3.3). This decrease in investments can be explained by the lack of resources, since these companies have accumulated significant losses in recent years, a trend that was reversed in 2019 and 2020, with the professionalisation of their management, a preparatory step towards their privatisation.¹¹

Table 3.3. Annual investments by *Companhias Docas*, nominal values (in thousands, BRL)

Companhia docas	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Companhia Docas do Ceará (CDC)	18 787	79 812	102 857	69 706	30 766	8 165	4 632	3 589	1 755	23
Companhia Docas do Espírito Santo (Codesa) ¹	17 073	94 401	73 653	47 470	67 076	49 483	40 226	41 626	14 193	4 667
Companhia Docas do Estado da Bahia (Codeba)	6 134	17 276	38 035	24 569	14 677	7 521	4 938	3 158	2 218	6 365
Companhia Docas do Estado de São Paulo (Codesp)	34 345	113 076	184 321	287 104	209 799	112 476	84 322	15 717	4 565	2 010
Companhia Docas do Pará (CDP)	80 127	40 735	6 128	19 627	12 918	3 621	3 044	2 013	5 861	9 354
Companhia Docas do Rio de Janeiro (CDRJ)	5 137	2 750	19 243	9 621	26 045	31 499	26 948	25 709	17 591	4 843
Companhia Docas do Rio Grande do Norte (Codern)	120 954	34 888	36 533	34 773	5 291	18 870	793	2 362	6 366	8 557
Total	277 038	382 938	460 771	492 871	366 572	231 635	164 902	94 174	52 549	35 821

Source: (Senado Federal, 2022^[25]); OECD calculations.

The first privatisation of a *Companhia Docas* took place in March 2022 with a 35-year concession of the Companhia Docas do Espírito Santo (Codesa), the owner of the port complex of Vitória, south-east Brazil.¹² The second concession will be the Port of Santos, the largest port in Latin America, with a total throughput of more than 107 million tonnes (BNDES, 2021^[26]), which is scheduled for the second semester of 2022. The draft of the public notice, among other documents, was discussed at a public hearing and consultation in March 2022. A public hearing for a third concession, for the Port of Itajaí, took place in April 2022. São Sebastião Port will also be conceded, and the public consultation and public hearing took place in February 2022. The next scheduled concessions are for the Ports of Salvador, Aratu-Candeias and Ilhéus, including the privatisation of Codeba, an SOE and port authority in north-east Brazil. The Brazilian Development Bank (BNDES) is conducting studies to this end and public hearings were scheduled for the second semester of 2022 (BNDES, 2022^[27]).

The Ports Law has been gradually updated over the years, and relevant changes that aim to reinforce freedom of pricing in port operations have been implemented since 2020 (Box 3.4).

Box 3.4. New mini-reform in Brazilian Ports Law

Aiming to attract more competition and dynamism to the sector, the Federal Government has made several changes to the Brazilian Ports Law (Law No. 12.815/2013) and decree (Decree No. 8.033/2013). The amendments were provided for in Law No. 14.047/2020 and Decree No. 10.672/2021.

The new law introduced important changes that aimed to bring greater efficiency and dynamism to the management of public ports. The changes brought by the 2020 law reinforced the logic of freedom of pricing in port operations and sought to limit practices harmful to competition (PPI, 2020^[28]).

In order to simplify the leasing contracts of the port facilities, some contract clauses (e.g. on reversal of public assets) are no longer considered as essential (PPI, 2020^[28]).

The new amendments also provided the regulator ANTAQ with more tools to encourage the use of idle areas in ports and allow interested parties to test the feasibility of operating there for a maximum period of 48 months. If more than one company is interested and it is not possible to grant them all the temporary use of such areas, the port administration can promote a simplified selection process to choose the project that best meets the public and port interests. After the expiration of the contract, if the cargo activity is considered viable in the formerly idle area, the government will hold a standard tender for the lease. The change lifted one barrier to competition, which had been a limited number of suppliers (PPI, 2020^[28]).

Other amendments include the possibility of not running a competitive tender when it is proven that only one stakeholder is interested in exploring an area after a public call issued by the Port Authority. Finally, there was a point of legal uncertainty that the new law sought to solve by making explicit that the contracts signed between the concessionaire of the public port (exercising the role of port administration) and third parties are subject to the regulations for private ports (PPI, 2020^[28]).

To reinforce the changes, in April 2021, Decree No. 10.672/2021 incorporated the regulatory simplification measures provided by Law No. 14.047/2020 and amended Decree No. 8.033/2013 that regulates the Ports Law. The simplification measures seek to facilitate investments and business activities in Brazilian ports (APEX, 2021^[29]).

Source: (PPI, 2020^[28]) and (APEX, 2021^[29]).

Decree No. 8.033/2013 is important as it specifies the provisions of the Ports Law, detailing the operation of port facilities within the public-port area – such as how to design the public notice, leasing and concessions contracts and contracts of temporary use – and lays down provisions on authorisations and port workers.

The main instruments for planning in the sector are the Zoning and Development Plan (PDZ) for each port complex, the National Plan of Port Logistics (PNLP), the General National Leasing Plan (PGO), and the master plans for each port complex,

Other relevant legislation includes Law No. 10.233/2001, which created the National Agency of Waterway Transportation (ANTAQ), the independent regulatory agency responsible for inspecting, regulating and controlling the provision of services of waterway transports, and the operation of port and waterway infrastructures. In addition, ANTAQ examines activities performed by the administration of public ports, port operators, leaseholders, and authorised port installations. It also issues the majority of resolutions regulating the sector.

New legislation, Law No. 14.301/2022, introduced in January 2022, aims to lift regulatory restrictions on cabotage. Among its objectives are encouraging competition and competitiveness in the provision of cabotage transport services (SNPTA, 2021^[30]) (see Box 3.5).

Box 3.5. New Brazilian framework on cabotage

Maritime cabotage is sea shipping operating exclusively between ports in the same country. Historically, foreign vessels had restricted access to cabotage routes, which was often justified for security reasons; more recently, restrictions have been more related to maintaining national fleets and for employment reasons. Concerns about relaxing these regimes are often related to how opening cabotage to foreign operators may reduce operating costs, change employment practices, and weaken labour and safety standards for seafarers (UNCTAD, 2017^[31]).

In 2022, the introduction of Law No. 14.301/2022 reformed the cabotage sector's regulatory framework. It introduced new provisions alongside those of Law No. 9.432/1997, which reserved certain markets for the Brazilian maritime industry. The new regime aims to modernise the sector, mainly by lifting barriers to foreign entrants (PPI, 2019^[32]). Research and international case experience suggest that the relaxation of cabotage regimes will improve competition and reduce prices in Brazil (Ipea, 2020^[33]).

The main change provided for by the new regime concerns permits to simplify the expansion of cabotage and the entrance of new companies. Pursuant to the new provisions, Brazilian navigation companies (EBN), legal entities created according to Brazilian laws, with headquarters in the country, and no restriction on the nationality of the capital, will be allowed to charter vessels rather than owning them (SNPTA, 2021^[30]).

Another amendment concerns the nationality of the crew. The old legislation established that on Brazilian-flagged vessels, the commander, the chief engineer and two-thirds of the crew had to be Brazilian nationals; the new regime relaxed this restriction and established that the commander, cabotage master, chief engineer, and chief engineer must Brazilian.

The expected results from the reform are an increase of 40% of the supply of cabotage vessels and 30% in annual cabotage growth (SNPTA, 2021^[30]). However, to the best of the OECD's knowledge, in the absence of implementing measures, the new regime is not yet applicable.

Sources: (UNCTAD, 2017^[31]), (PPI, 2019^[32]), (Ipea, 2020^[33]), (SNPTA, 2021^[30])

3.2. Provision of port services

3.2.1. Background

While port management models vary across countries, there are four main models depending on the role that the public and private sectors play (Table 3.4).

Table 3.4. Main differences between basic port management models

	Ownership of infrastructure	Ownership of superstructure	Cargo-handling operations	Other operations
Public-service port	Public	Public	Public	Public
Tool port	Public	Public	Private	Public or private
Landlord port	Public	Private	Private	Public or private
Fully privatised port	Private	Private	Private	Private

Note: A tool port is a public port in which cargo-handling is privately run, but the terminal equipment is still owned by the public port authority. Tool ports are sometimes transitional models between public-service and landlord ports.

Source: (OECD, 2018^[34]).

The landlord model, in which the port's land remains public but its infrastructure is leased long term to a private operating company, is the most common model in OECD countries, particularly for large and medium-sized ports (OECD, 2018^[35]).

In Brazil, ports have recourse to two models: the landlord model for public ports – with a specific legal framework – and a model applying to fully privatised ports (TUPs), with its own legal framework. In 2021, there were 127 terminals in 25 public ports (out of a total of 35 public ports) subject to the landlord model and 170 TUPs in operation under the fully privatised model (ANTAQ, 2022^[5]).

Box 3.6. International experiences on private participation in ports

In general, despite reforms in recent decades that have opened port services to private participation, international experience shows that it remains more common for the ownership of port authorities to be in public hands. (Notteboom, Pallis and Rodrigue, 2022^[36])

Australia has a two-model system similar to Brazil ports. It has a majority of public ports, and only a few private ports that can only deal with one type of cargo (ore). (Chen, Pateman and Sakalayan, 2016^[37]).

New Zealand has a different model with full private ownership in which one or more private parties own both the port infrastructure and the land. (Notteboom, Pallis and Rodrigue, 2022^[36])

The Mexican model combines elements of the landlord and the private port. Mexican ports are managed by private companies through an entity (Administración Portuaria Integral), which is a concessionaire of the Ministry of Communications and Transport (SCT). Alongside the existence of public regulation and supervision, concession agreements also encompass the operation of ports, which is therefore carried out by private players. The institutional port framework is not rigid and different port management models coexist. (Netherlands Enterprise Agency, 2019^[38]) In fact, in the two main Mexican ports, the Port of Veracruz, on the Gulf of Mexico, and the Port of Manzanillo, on the Pacific coast, private companies offer all services.

The landlord model is the most common in Europe. For example, the Port of Piraeus in Greece was a tool port until 2002, when it moved to a public landlord model, with the construction of a private terminal with its own physical and operational area within the port. (Britto et al., 2015^[39]) The main exception is the United Kingdom, where the model is unique, characterised by significant private participation. There are three main models of port ownership in the UK: (i) private ownership (the government has no ownership interest in this kind of model, it ranges from ports owned by international groups to ports owned by private companies); (ii) trust ports (these are independent bodies which cannot be owned by other companies or shareholders, they are financially and strategically independent statutory corporations); and (iii) local authority owned ports (also operating on a competitive and commercial basis) (Maritime UK, 2022^[40]).

Box 3.7 below provides an overview of the regulatory asymmetry that has resulted from Law No. 12.815/2013 and the main differences between leased terminals in public ports and private terminals (TUPs).

Box 3.7. Regulatory asymmetry between public and private ports

Regulatory asymmetry is one of the reasons why investors prefer to have a private terminal instead of competing in a tender to become lessees in public ports (Tribunal de Contas da União, 2020^[7]).

Since the enactment of Law No. 12.815/2013, in light of their location within public ports, leased terminals in public ports have been subject to more regulations than privately run terminals (TUPs),

which have greater freedom and more flexibility. This asymmetry was motivated by the objective of attracting more private investment, which was the main goal of the law.

Table 3.5. Regulatory differences between leased terminals in public ports and private terminals

	Leased terminals in public ports	Private terminals (TUPs) outside public ports
Award process	Bidding process	Authorisation
Location	Inside the public ports	Outside the public port area
Maximum duration of the contract	35 years, extendable once for a maximum term of 70 years, depending on the performance of the lessee	25 years, renewable without limits
Cargo	Established in the public notice of bidding; can be changed after an official request to ANTAQ	Defined by the port investor; may be changed after a simple notification to ANTAQ
New investment by private investor	Requires ANTAQ approval	Simple notification to ANTAQ
Port workers	Hired through OGMO	Freely contracted
Port tariffs	Defined by ANTAQ after request of port authority	Freely negotiated
Contractual flexibility to change cargo profile	Authorisation by ANTAQ	Without authorisation
Submission of the private investor to the port authority	Submission	No submission

Source: Adapted from (Tribunal de Contas da União, 2020^[41])

Nevertheless, the legislator needs to balance the fulfilment of public-policy objectives – stimulating competition in ports – with the need to avoid harming the provision of public-port services, an objective established by the constitution. This balance is extremely important since competition is not a goal in and of itself and should not jeopardise the achievement of constitutional objectives. These asymmetrical regulations may distort competition between private and public ports and possibly even lead to anticompetitive outcomes in a market with high barriers to entry and a strong tendency towards vertical integration (Fernandes, 2016^[14]).

As summarised in Box 3.7, private terminals have a number of advantages over public ports. For instance, the cargo profile is defined by the port investors and may be changed after a communication to ANTAQ, whereas in public ports it is defined in the public notice and changing it requires an authorisation from ANTAQ. In addition, in private ports, workers are freely hired, and tariffs are freely negotiated while in public ports, port workers need to be hired through OGMO (see 3.3.2) and tariffs are set by ANTAQ. In order to guarantee a level playing field between public and private ports and increase competition in the ports sector the restrictions imposed by the legislation on public ports should be removed. This report used the OECD Competition Assessment Toolkit to identify the main legislative restrictions on public ports.¹³ They are the:

- duration of the process for reviewing tariffs in public ports (Section 3.2.2)
- rules governing the leasing of public ports (Section 3.2.3)
- obligation, for public ports, to hire workers through OGMO (Section 3.3.2).

3.2.2. Duration of the process for reviewing tariffs in public ports

Description of the obstacle and policy makers' objective

In Brazil, private ports can freely set their own tariffs. By contrast, ANTAQ sets the tariffs in public ports for each type of services provided by the port authority, such as those to vessels, port operators or owners of goods. Tariffs are fixed based on the specific characteristics of each public port and cover total costs and

a profit margin for investors (Mello and Monteiro, 2020^[42]). Tariffs are subject to annual readjustments, based on the Broad Consumer Price Index (IPCA), taking account the percentage variation of price indices incurred in the previous calculation period and any expected productivity gains. Private lessees within public ports are subject to tariff regulation under their respective concession and lease agreements.

Once ANTAQ has set the tariffs, it may also subsequently review them.¹⁴

Tariff reviews are common in ports worldwide. A 2015 survey of 67 ports from five continents showed that 60% revised their tariffs annually; 18% had no specific timeline for revisions; and 10% rarely revised their port tariffs (Bandara and Nguyen, 2016^[43]).

Box 3.8. Port tariffs around the world

Fixing tariffs by type of service is common practice in ports around the world. (ESCAP, 2003^[44])

In Vietnam, the government provides a price framework, and a port operator can choose to raise or reduce tariffs within this maximum-minimum range (OECD, 2021^[45]).

In Mexico, according to the Ports Law, the Secretariat of Infrastructure Communications and Transportation is the competent body to establish the basis for tariff regulation if in a port there is only one terminal dedicated to a specific cargo or one service supplier. For this purpose, the Secretariat may request an opinion from the Competition Commission on this issue (Congreso de los Estados Unidos Mexicanos, 1993^[46]).

In Thailand, Singapore, Brunei Darussalam, and South Africa, tariffs are set by a national body, such as the national port authority (Port Regulator of South Africa, 2022^[47]). In Malaysia and Cambodia, local port authorities in each port set their own tariff (OECD, 2021^[45]).

In Germany, shipowners can enter into civil-law agreements with a port operator and define different tariffs for its use of the port; for instance, it can negotiate discounts if its vessels regularly visit a port. In the Port of Gothenburg, Sweden, individual port authorities establish tariffs and the national government can intervene through regulations of general application (OECD, 2021^[48]).

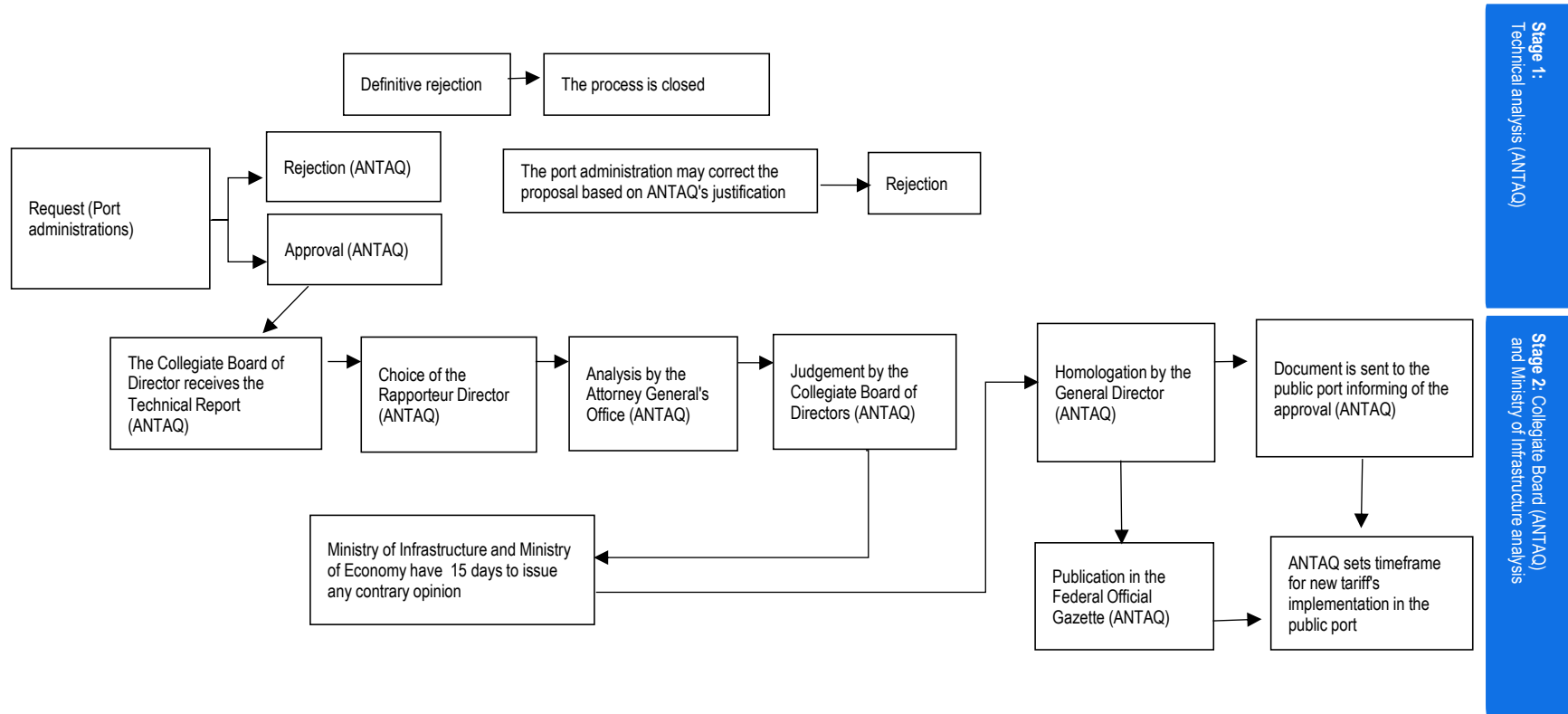
In Portugal, tariffs for port services provided directly by port authorities are regulated by Decree-Law No. 273/2000, which establishes tariff-setting formulas, exemptions and discounts. Each port authority then publishes annually its own tariffs within the rules of that law. If the services are provided by private operators, tariffs are determined in the respective concession and licensing contracts (OECD, 2018^[34]).

Although tariff regulation may restrict a port authority's ability to set tariffs, it may be justified in traditional monopoly sectors where a counterweight is needed to the lack of competing alternatives. The regulation introduced by ANTAQ may prevent port authorities from abusing any market power they hold through their monopoly on the provision of the services in the specific port.

Private ports handle 66% of the total cargo handled in Brazilian ports, although the majority of containerised cargo is handled in public ports as shown in Section 3.1 Market Structure. However, the relevant market is defined by CADE by type of cargo in each port complex and CADE notes that certain ports face significant competition, while others are not subject to any competitive pressure. Due to this fact regulations applying to public ports may be burdensome (e.g. prior price notification as opposed to price regulation) in the event specific public ports are subject to sufficient competitive pressure from TUPs located outside the public port.

In addition, the process of reviewing tariffs in public ports is complex,¹⁵ as it is long and involves ANTAQ, SNPTA, and the Ministry of Economy (Figure 3.14). ANTAQ launches the tariff-review process by giving prior notice to the granting authority at least 15 working days in advance. It analyses proposals received from port administrations for approval and may request additional information and clarifications; it then informs the granting authority and the port administrations about the tariff adjustments.

Figure 3.14. The tariff review process



Source: (ANTAQ, 2021_[49])

Port administrations must provide ANTAQ with a justification of their review proposals, showing that the cost increases cannot be absorbed by increases in productivity or operational efficiency and need to be passed on to users of the facilities or service recipients.

Harm to competition

Since the tariff must be approved by ANTAQ and it takes a long time (Table 3.6) for the approval, the proposed tariff may become outdated and based on past costs. A tariff based on past costs may generate a decrease in the quality of the service since the cost cannot be covered. In addition, such lower quality service may lead the user to choose another port (Tribunal de Contas da União, 2020^[41]).

Service quality, efficiency and tariffs are key drivers of competition between private and public ports (Tribunal de Contas da União, 2020^[41]). Since TUPs outside public ports compete with lessees within public ports, but only the latter are subject to the long and complex tariff-review process described above, public ports may suffer from a competitive disadvantage compared to private ports. This creates another asymmetry which harms competition.

Table 3.6. Duration of tariff review process (10/2019 – 01/2022)

Public port	Time of technical analysis (days)	Time with unchanged tariff (days)	Total time (days)	Tariff Adjustment Index (IRT) *
São Sebastião	113	1 480	162	38.03%
São Francisco do Sul	126	2 136	163	12.76%
Paranaguá	106	1 125	177	26.42%
Antonina	106	1 125	177	79.24%
Itaquí	169	2 238	190	31.36%
Vitória	84	438	117	13.99%
Santos	168	1 286	207	13.19%
Suape	329	665	380	19.87%
Fortaleza	284	993	324	35%
Itajaí	55	993	81	40.42%
Average	154	1247.9	197.8	29.62%

Note: *The Tariff Adjustment Index is the monetary restatement of the tariff, having as reference the application of the percentage variation of price indices incurred in the previous calculation period and the expected productivity gain.

Source: (ANTAQ, 2021^[49])

The risk of competitive disadvantage is even more serious since the enactment of Law No. 12815/2013. Following the repeal of the prohibition for private terminals to deal with third-party cargo (see 3.1, Market structure), public port authorities must face indeed competition from private ports (more specifically, from TUPs located outside public ports area) (Mello and Monteiro, 2020^[42]). The asymmetrical regulation described in Box 3.7 may translate into an advantage for private ports. For example, given the length of the review process, a tariff based on outdated costs may lead to a decrease in service quality as costs can no longer be covered (Tribunal de Contas da União, 2020^[41]). Reduced service quality in turn may then divert users to a competing port.

By contrast, private ports have the flexibility and agility to revise their tariffs quickly whenever needed. As a result, tariffs based on actual costs allow ports to keep their users and attract new ones since port tariff is an important factor in the choice of a port (Bandara and Nguyen, 2016^[43]) (De Souza and Pitombo, 2021^[50]).

Recommendations

With a need for a more agile process in public ports, the OECD recommends that Brazilian authorities consider reviewing the regime so as to simplify and speed up the revision process for port tariffs. A faster review process may in turn avoid the risk of reduced quality, while removing a competitive disadvantage for public ports when compared to private terminals.

Brazilian authorities may also consider imposing even less stringent regulation (such as prior price notification currently applicable also to TUPs) whenever specific public ports face sufficient competitive pressure.

3.2.3. Instruments to grant private port zones and facilities

Regulatory framework

Three solutions were put in place by Law No. 12 815/2013 for private participation in ports:

- concession of public ports
- lease of zones within public ports
- authorisation to create and exploit private ports in zones outside the public port

In the concession model for public ports the concessionaire acts as both port administrator and port authority, while under the leasing model, the lessee acts only as port operator of zones within public ports.¹⁶

The first concession in the country was awarded in March 2022 (Box 3.9).

Box 3.9. Port concessions in Brazil

The first concession awarded in Brazil was part of the privatisation of the Companhia Docas do Espírito Santo (Codesa), the authority of the port complex in Vitória, southeast Brazil (BNDES, 2021^[24])

The chosen model is a combination of concession and privatisation. All Codesa's shares held by the federal government were sold and it will become a private-sector company. The privatisation process was conducted by the sale of all shares held by the federal government following the signature of a concession contract between the executive branch and the company for the operation of the Ports of Vitória and Barra do Riacho for 35 years (Governo do Brasil, 2022^[51]).

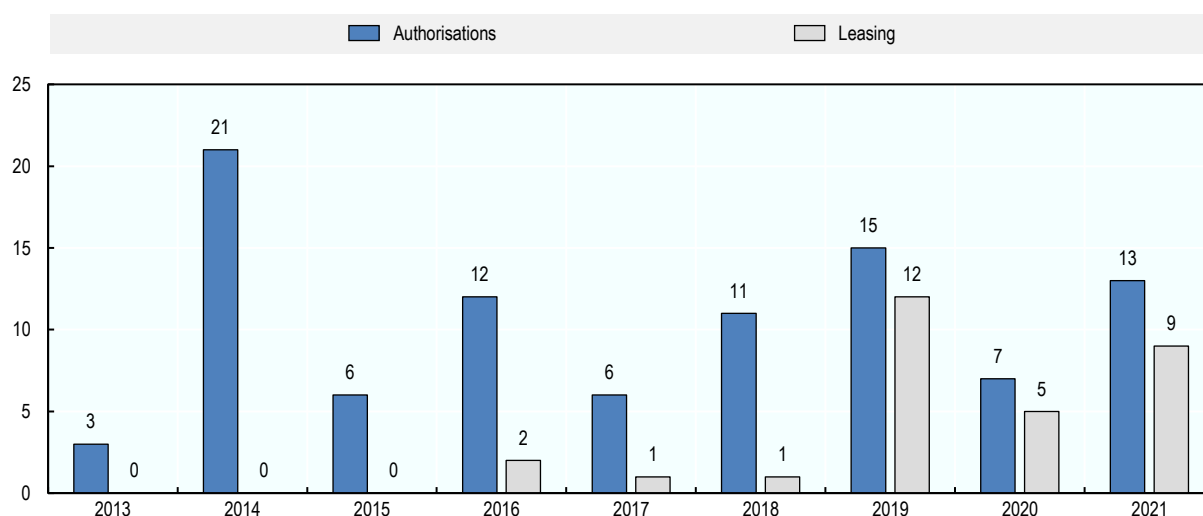
BNDES conducted preliminary studies and recommended an adaptation of the classic landlord system with a hybrid public-private management system for port terminals awarded through concessions to the private sector. The port authority would be private, but the public administration would still be responsible for strategic planning and assuring national interests (BNDES, 2021^[24])

The concession of the Port of Santos, the largest in Latin America, is expected for the second semester of 2022. The draft of the Public Notice for Port of Santos Concession establishes limitations to participation in the bidding, namely that at least 60% of the concessionaire's capital must be held by economic groups with no conflict of interest related to operations in the Port of Santos; this restriction to ownership extends to the entirety of any economic group (ANTAQ, 2022^[52]). The study conducted by BNDES highlights that this limitation aims to maintain a concessionaire's independence in relation to public ports' main infrastructure contractors. This keeps the premise of the private landlord model, in which the public-port concessionaire does not intervene directly in port operations since the winning bidder – the future port authority – will not be a company with interest related to operations in the port (ANTAQ, 2022^[52]) (BNDES, 2021^[26]).

If competition in the market seems impossible or inefficient, the possible solution to deliver advantages to the consumers and address the market failure of a natural monopoly may be competition for the market (OECD, 2019^[53]). In such situations, the selection process of operators is vital to preserving the benefits of competition. Leasing is useful in cases where competition in the market may not be viable, for instance, where there are space constraints or safety, security or public-interest concerns as in public ports (OECD, 2021^[45]).

In Brazil, as in the majority of Latin American countries – Chile, Mexico, Costa Rica, Ecuador, Guatemala, Honduras, and Jamaica – leasing is granted after public tenders (Suárez-Alemán, A., 2020^[54]). In Brazil, from 2013 to 2021, 30 leasing contracts of cargo terminals in public ports were signed – with the highest number being 12 in 2019.

Figure 3.15. Annual authorisations (TUPs) and leasing



Source: (ANTAQ, 2022^[5]) and (ANTAQ, 2022^[6]).

In the leasing, only the management of contracts and assets are delegated to the private concern for a period of up to 35 years, extendable once for a maximum total of 70 years. It is also awarded through a public tender. At the end of the contract, all contracts and assets return to the Federal Executive Branch.

The authorisation requirement is justified by the importance of port services for the economy and because of the use of the national waters. The state can exercise regulation and inspection in activities closely linked to the public interest. Due to their importance to the public interest and their spill over effects for the economy, these types of activities – such as port activities – need regulations that grant the public administration the control of the way these services are offered to guarantee that their provision in the best possible way (Moreira Neto and de Freitas, 2015^[55]).

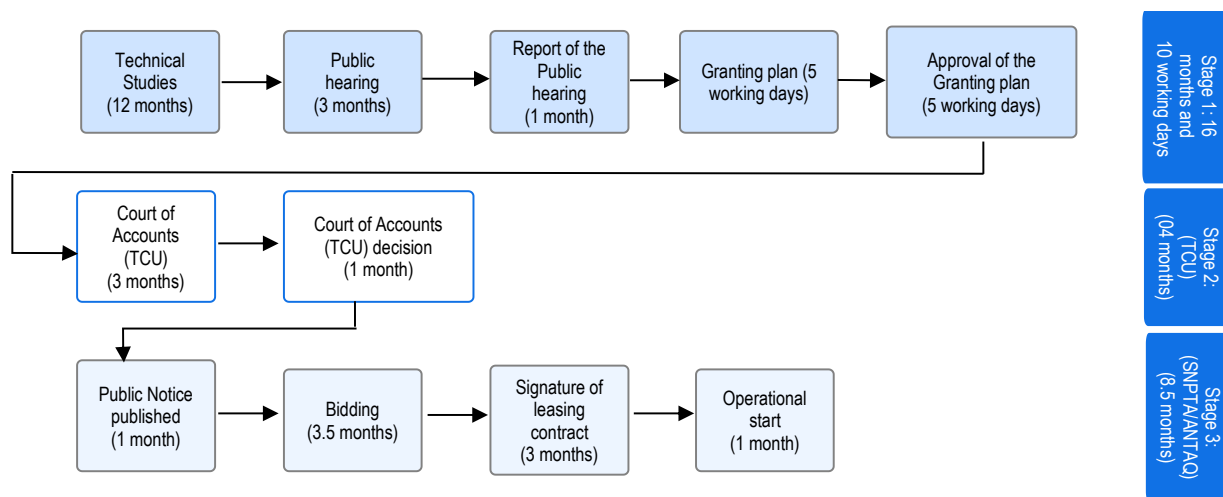
Leasing

Leasing is the instrument established by Law No. 12.815/2013 for the operation and indirect management of public port areas and facilities. The use of leasing aims to allow for the expansion and development of ports while in theory removing the financial and risk burden from governments, encouraging efficiency and reducing monopoly shortcomings (World Bank, 2007^[56]). Promoting a competitive bidding process to select the most efficient company is important because leasing grants exclusive rights to operate a specific asset within the public port. In this situation the lessee acts as a monopolist for that the specific area or terminal (OECD, 2014^[57]).

Unclear access and participation criteria for bidding can prevent the identification of the most efficient company to hold the leasing contract, while more efficient companies may be excluded from the market, with consequences on service quality (OECD, 2021^[18]).

The process for leasing organised port areas and terminals follows the planning guidelines contained in the National Plan for Port Logistics (PNLP), the Master Plan, and each port's Development and Zoning Plan (PDZ). These documents contain detailed information on the handling and storage capacity at public ports and an analysis of whether such capacity meets current and projected future demand for all load profiles. Figure 3.16 provides an overview of the main steps in a leasing procedure, a process that takes 28 months on average.

Figure 3.16. The port-leasing process



Source: OECD, based on (Tribunal de Contas da União, 2020^[41])

The leasing process may itself be creating barriers and limiting investment, with some requirements raising barriers to competition and not promoting efficiency and quality in port services.

Any requirements of potential port operators must provide legal certainty and ensure competitiveness, in line with broader port policies. To this purpose, there must be no disproportionate entry barriers or exorbitant clauses in the business relationship between the parties (public body and private lessee). The OECD found four areas that posed barriers to competition:

1. centralisation of the bidding process
2. duration of the leasing contracts
3. requirement to have headquarters in Brazil
4. absence of flexibility of the contracts.

Centralisation of the bidding process

Description of the obstacle and policy makers' objective

Before Law No. 12.815/2013, port authorities controlled the leasing of terminals. In order to ensure stronger control over leasing in public ports, Law No. 12.815/2013 established the Federal Executive Branch, specifically the Port Secretariat of the Ministry of Infrastructure, as the granting body for leasing of terminals in public ports. The objective of this provision was to centralise decision-making in the Port Secretariat, partly to ensure an integrated view of sectoral public policy and to develop sectoral expertise.

Since the reform, however, the process for assigning leasing contracts in public ports – from technical studies to start of operations – now takes an average of 28 months (Tribunal de Contas da União, 2020^[41]).

The main instrument applied to Brazilian public ports is the traditional leasing process described above. However, in order to mitigate the lengthiness of this process, which could result in idleness in public ports, new instruments have been recently introduced. These include the simplified leasing process (established in the art 6 Decree No. 8033/2013) and temporary use contracts (art. 5-D Law 12.815/2013).

The simplified leasing instrument facilitates and speeds up investments in small areas or areas with little economic relevance or that are not on the federal government’s list of priority terminals to be included in the Investment Partnerships Program – PPI. This modality can be applied to contracts of up to 10 years, and the studies are based on unit values for exploration of areas in organised ports (ANTAQ, 2021^[58]). The “simplified” process is expected to take six months. Until July 2022, this procedure was applied to two bidding procedures.¹⁷ In July 2022, there were 10 applications for a simplified bidding process being analysed by ANTAQ.

The temporary use contracts, introduced by the “mini-reform in Brazilian Ports Law” (Box 3.4), allow interested parties to test the feasibility of moving cargoes without a consolidated market through a contract with a maximum term of 48 months (PPI, 2020^[28]). If no formal tender procedure is launched and if more than one company is interested and it is not possible to grant the areas to only one of them, the port administration can promote a simplified selection process to choose the project that best meets the public and port interests. In this way, the area to handle a cargo (which would have no investors) becomes more attractive and this mitigates risks of possible idleness. Until July 2022, 22 temporary use contracts were signed, two of them after the enactment of the Law No. 14047/2020, which added the temporary use contract to the Law No. 12 815/2013.

In 2018, in order to mitigate the effects of this centralisation, the Ministry of Infrastructure published Ordinance No. 574/2018. As an exception to the leasing procedure described in Figure 3.16, this delegated to specific port authorities not only the bidding procedure for port leases, but also the execution, management and inspection of such contracts. According to the ordinance, a delegation of decision-making power is not automatic and must be formalised by a specific agreement signed between the Ministry of Infrastructure and the entity responsible for the administration of the respective port, with the involvement of ANTAQ. To take advantage of the opportunities created by the ordinance, regain their autonomy and begin awarding leases for their areas and terminals, the administration of each Brazilian public port must meet the requirements of the Ministry of Infrastructure and the ministry must agree to the request and sign a formal agreement. The main requirements include a schedule foreseeing the main actions planned for the next three years, the establishment of the port authority in accordance with the Law of SOE’s (Law 13.303/2016), updated master and zoning plans with ISPS-Code certification and a minimum score in the port authorities management index (Índice de Gestão das Autoridades Portuárias – IGAP). The requirement of this score shows that, to have the delegation, the port authority must have an adequate level of management.

So far, only two port authorities had these functions delegated and the first leases signed by port authorities in accordance with the new ordinance only took place in March 2022 (Ministério da Infraestrutura, 2022^[59]).

Harm to competition

The centralisation of decision-making power and the number of participating bodies prolong and slow the bidding process. During the lengthy leasing procedure, a terminal can often lie idle, and any potential lessee may lose opportunities. This situation may also prevent companies from even entering the bidding process.

In addition, the centralisation of planning, decision-making and running of bidding processes for all public ports creates administrative bottlenecks. Despite their expertise, responsible teams within centralised

entities may simply not have enough time to conduct all the processes simultaneously. They also have less knowledge of the day-to-day operations or specificities of each port than local administrators.

This situation results in a bidding process for port leasing that is incompatible with the agility needed to optimise the use of public space. This may result in lost opportunities for the port and potential lessees, and a loss of revenue for port authorities due to low occupancy rates; this may in turn lead to financial unsustainability and an inability to invest. In addition, this might result in financial damage to the state due to the underutilisation of infrastructure and a port's public assets, as well as the need for monetary support to the port authorities. Overall, a loss of efficiency in the system will ultimately result in higher costs of cargo handling and so in the wider Brazilian economy (Tribunal de Contas da União, 2020^[41])

Despite the decentralisation attempt, as said, only two port authorities had the delegation, which has left in place barriers arising from the length and inefficiency of the centralised leasing procedure.

Recommendation

Brazilian authorities should consider introducing more flexibility in the rules of Ordinance No. 574/2018 to give more autonomy to port authorities when choosing lessees, whether through tenders or simplified processes for non-complex contracts, while remaining subject to federal legislation on public procurement and port-leasing contracts.

Box 3.10. International experience in leasing space in ports

Internationally, many port authorities have the autonomy to issue calls for port operators and then to conduct the selection process.

In the United Kingdom, the Port of London Authority conducts the selection of port operators itself following the *PLA Investment Plan.*, a document in which the Port Authority presents its strategy, vision, investment categories and their characteristics, the criteria by which they are evaluated and claims to be open to receiving proposals from potential partners.

In Australia, the Port Authority of New South Wales, which is owned by the state Government of New South Wales, publishes online instructions on the presentation of a project and the necessary documents. After the submissions, the port authority decides if it approves or not the project.

In the Port of Rotterdam (which belongs 70% to the city of Rotterdam and 30% to the central government), commercial partners are selected through a process defined by the managers, who decide the most convenient procedure to use from a variety of possible methods, including individual invitation and a public call.

The authority of the Port of Antwerp-Bruges, an SOE, has three different processes to select its partners: public bidding; non-public selection; and upon a company's initiative. The projects are selected considering criteria such as a company's financial health, the amount of the proposed investment, project quality, and number of potential jobs generated. There is no public transparency on the reasons for awarding a contract.

At Port Houston, which belongs to the state of Texas, the selection process is dependent on the duration of a contract. For those of less than 50 years, no tender is required, and the authority can choose freely. For contracts of more than 50 years, a tender process is needed, although the process is fast and 90% of tenders are concluded in four to eight months. The port also has contracts called "month-to-month

leases” that are the equivalent of monthly rental agreements. This type of contract was created for urgent or transit cargo or for areas where no previous leasing contract existed. The objective of this instrument is to respond quickly to the changes in the market and not to lose business opportunities.

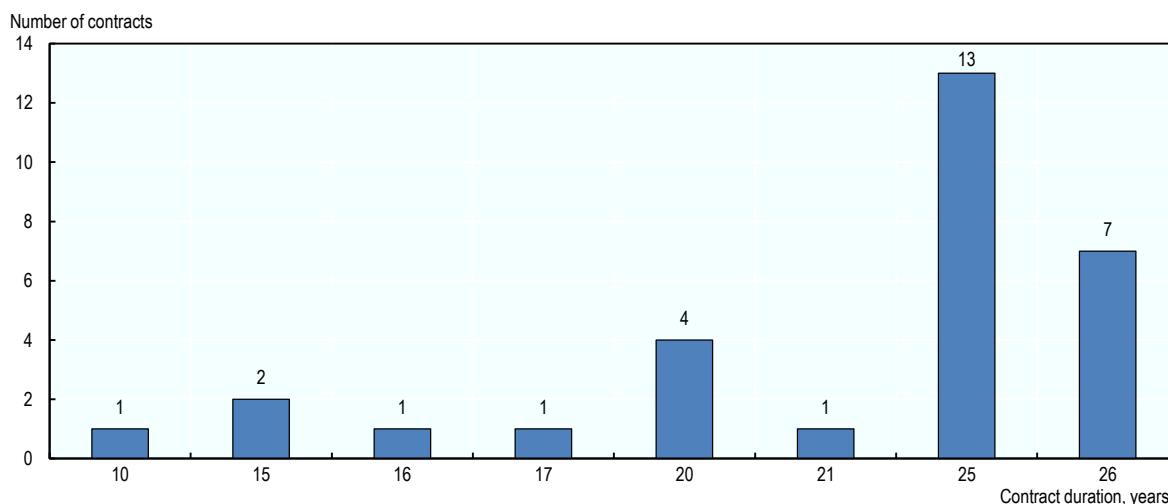
Source: (Tribunal de Contas da União, 2020^[41])

Duration of leasing contracts

Description of the obstacle and policy makers’ objective

In Brazil, Law No. 12815/2013 establishes that the initial maximum length of a leasing contract for public ports is 35 years, extendable once for a maximum term of 70 years, depending on the performance of the lessee. The OECD has analysed 30 leasing contracts, signed after 2013, and more than half were granted for 25 years, as this was the maximum initial term set in the legislation before 2017 (Figure 3.17).

Figure 3.17. Duration of port-leasing awards, 2013-22



Note: The data used was obtained from (ANTAQ, 2022^[60]) and the duration considered refers to the period from the signing of the contract until the end of its validity (the public data available at the website) and not the duration between the date of transfer of the area and the end of its validity.

Source: (ANTAQ, 2022^[60])

Harm to competition

A long-lease contract allows a lessee to engage in long-term investment. Indeed, “longer concessions are sometimes preferred as this ensures that the capital investment made by the concessionaire has a stable long-term period of revenue returns to ensure its financing” (World Bank, 2018^[61]). On the other hand, long-term contracts prevent new tenders, while shorter contracts generate more frequent competitive tenders that “can facilitate entry and ensure that any benefits of increased competition are reflected more promptly” (World Bank, 2018^[61]).

Box 3.11. International benchmarks for port-lease contract duration

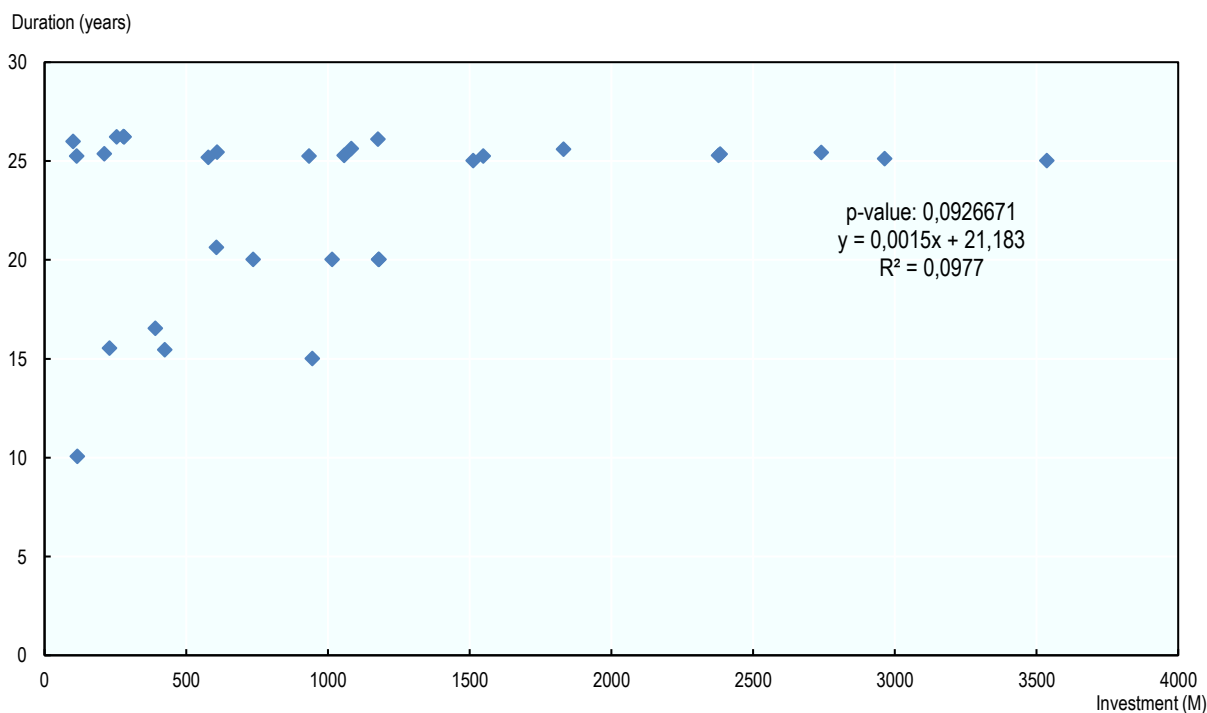
Contract lengths and possible extensions vary from country to country. In Latin America, 57% of contracts are between 15 and 25 years, while the minimum length is 10 years (Manzanillo in the Dominican Republic). Medium-length contracts are between 24 and 26 years in more than half of the countries, but in Colombia, Ecuador, Jamaica, and Peru they are between 29 and 30 years. In 11 of 20 of the contracts analysed the contracts do not allow an extension; 8 of 20 do; and in 2 (Balboa and Cristóbal in Panama), the extension is automatic if the lessee fulfils its obligations (Suárez-Alemán, A., 2020^[54]).

Analysis by the ITF/OECD of a dataset of more than 730 contracts shows that leases on container terminals have an average duration of 32.5 years. In Portugal, port authorities set the duration of the contracts for towing services at no more than 10 years and concessions of cargo-handling services at no more than 30 years. Lengths may vary inside the same port and across ports. (OECD, 2018^[34]) Around 90% of contracts for European terminals over 100 hectares are awarded for durations of 30 to 65 years. (Notteboom, 2008^[62])

Sources: (Suárez-Alemán, A., 2020^[54]) (OECD, 2018^[34]) (Notteboom, 2008^[62]).

Empirical evidence suggests that, even though the duration of the leasing in Brazil is 25 years and in line with the average contract length in Latin America (Box 3.11), certain leasing contracts have been awarded for a longer time than the period needed to recover the capital invested (Figure 3.18). Data available for 30 terminal-leasing contracts reveals a weak correlation between the duration of a terminal award and the volume of accumulated investment by the private sector, given factors other than duration that can affect investment choices.

Figure 3.18. Correlation between investment and lease duration in Brazilian ports



Source: (ANTAQ, 2022^[60]).

The European Directive No. 2014/23/EU on the Award of Concession Contracts establishes that, in contracts lasting more than five years, the level of the investment should be linked to the maximum duration of the contract. EU legislation establishes that the duration of a concession should be limited to avoid market foreclosure and restriction of competition. However, long durations may be justified if it is indispensable for the recoupment of investment (European Parliament, 2014^[63]).

The European regulation provides that when estimating contract length any initial and later investments necessary to operate the concession, including expenditure on infrastructure, copyrights, patents, equipment, logistics, hiring, training of personnel and initial expenses should be taken into account (European Parliament, 2014^[63]).

Recommendations

Brazilian authorities should review the regulations to establish clear criteria that ensure that the duration of a contract takes into account the level of investment. The duration of a lease should be determined on a case-by-case basis and expressly tied to the minimum number of years required to repay the capital invested in each case.

More specifically, the period of validity of leasing contracts should be established to allow amortisation of and a return on the investment for the lessee. At the same time, it is recommended that the leasing contract include the appropriate mechanisms to allow for early termination in the event of any changes of market circumstances and conditions not provided for in the initial contract (OECD, 2018^[34]).

Absence of flexibility in leasing contracts

Description of the obstacle and policy makers' objective

The OECD has found two main obstacles related to the limited flexibility of public authorities when considering changes to the use and improvement of spaces in public ports. These concern the change in the type of cargo and the authorisation for new investments.

Change in cargo type

In Brazil, Ministry of Infrastructure Ordinance No. 530/2019 regulates changes in cargo profile for public ports. The regulation establishes that any change in the type of cargo that an operator can handle and store in the terminal is based upon on information it must produce. The provisions require the involvement of the port authority and ANTAQ, as well as an examination of possible rebalancing of the contract in case of force majeure or of fortuitous circumstances.¹⁸

The lessee must apply to the granting authority with a justification of the claim, accompanied by an investment plan that contains the following information:

1. information and data regarding the current capacity and performance of the leasing
2. revised capacity and performance estimates for the port leasing if the proposed contractual amendment were to be approved
3. information about services that the lessee intends to add or exclude from the contract
4. information on possible competition impacts in the port's region of influence that would result from the intended contractual change (Ministério da Infraestrutura, 2020^[64]) The lessee may also include any other information that it considers relevant to its claim.

In public ports, a change in cargo type handled will be approved if it is compatible and coherent with the public policies defined for the port sector and the public port's overall planning (Ministério da Infraestrutura, 2020^[64]).

Unlike public ports, private ports do not face such a burdensome process. The cargo profile of a private port can be changed by an operator simply informing ANTAQ.

Authorisation for new investments

Receiving authorisation for new investments in public ports, using the ordinary process,¹⁹ can be a lengthy process. During a 2019 consultation by the Federal Court of Accounts, SNPTA stated that it had had 16 requests from port operators for approval of new investments waiting for analysis, the oldest dating back to 2016 (Tribunal de Contas da União, 2020^[41]). Authorisation for new investments is in the Decree No. 8.033/2013 and in Article 8 of Ministry of Infrastructure Ordinance No. 530/2019. The article of the Ordinance establishes that whenever there is justified public interest, the relevant authority may approve the realisation of investments not originally foreseen in port-leasing contracts, after analysis by ANTAQ.

The lessee must present ANTAQ an executive project document accompanied by a note of technical responsibility at least six months before the start of the work. In the case of works implemented in stages, the lessee may present partial executive projects for each stage, at least six months prior to the start of any work.

Implementation of an investment plan can only begin after a favourable opinion from ANTAQ that confirms the plan's compatibility with and approved study of technical, economic and environmental feasibility (EVTEA), any addendum (including contractual conditions signed by the lessee and the granting authority), and the market values of new investments. If the executive project document presented to ANTAQ is incompatible with the approved EVTEA, the lessee may make the necessary adjustments. If ANTAQ believes that the estimated value of the investment is lower than foreseen in the project document, then it can follow Ministry of Infrastructure guidelines to present alternative scenarios that ensure the contract's continued economic-financial balance. The lessee must execute the work according to the approved executive project document. Any changes in the executive project previously approved by ANTAQ require a new analysis and a statement confirming its compatibility with the approved EVTEA, the amendment, and market values. If considered compatible with these conditions, the pre-existing amendment remains in place (Ministério da Infraestrutura, 2020^[64]).

According to stakeholders, the Ordinance No. 530/2019 has improved the situation thanks to its provision of an agreement of investment risk. This instrument is used in specific circumstances that authorise immediate and urgent investments not provided for in the initial contract of lease and prior to ANTAQ analysis.²⁰ When signing an agreement of investment risk before an authorisation is granted, the port operator assumes the risk that: 1) the investment plan will be later rejected, if the granting authority finds it incompatible with public policy; 2) the investment plan will need to be revised later to gain approval; 3) ANTAQ will reject the submitted EVTEA study of technical, economic and environmental feasibility; 4) in any other risks may be discriminated in that agreement.

Private ports are not required to go through a burdensome process to undertake new investments. Instead of requiring an authorisation, they simply need to inform ANTAQ of any new investment (Ministério da Infraestrutura, 2020^[64]).

Harm to competition

Port terminals require constant investment and, given the dynamism of international trade and the frequent technological innovations, prospective port operators cannot foresee in the bidding phase all potential needs that may arise throughout the contract duration to keep the business efficient and competitive. This is the reason why legal instruments concerning port leases require flexibility in order to allow timely

contractual adaptations to competitive commercial and technological changes, and so allow fast way to investments to those ends.

In Brazil, as has been noted, port lease contracts for public ports do not grant the necessary flexibility to allow lessees to adapt to the dynamism of market. It is complicated to amend leasing contracts even if it would benefit the public interest and the lessee. This is also because the principle of abidance obliges the administration and the bidders to comply with the criteria and rules established in the notice for tender. Delays in amendment approval generate costs to companies that can lose contracts and opportunities and cannot adapt their business to the reality and modernity of the port sector. This absence of flexibility generates difficulties for the management of contracts and reduces their efficiency.

These difficulties in implementing new investments put public ports at a competitive disadvantage compared to private ports, which have more autonomy.

Box 3.12. Flexibility in contracts in ports worldwide

In Rotterdam, a terminal operator needs authorisation from the port authority to change the type of cargo that it is entitled to handle. Stakeholders report that the process is rapid. Likewise, at Port Houston, the authority authorises cargo profile modifications as long as they are judged in the interest of the port.

For new investments, if a lessee in Rotterdam invests more than initially agreed, the term of the lease may be extended, but not necessarily changed, as efficiency and raised cargo-handling capacity are prioritised to increase revenues. In Houston, any claim for new investment, such as extending the term or reducing the value of the lease, is made by the terminal operator and results in detailed monitoring of the budget and project execution.

Source: (Tribunal de Contas da União, 2020^[41]).

Recommendations

The OECD recommends that Brazilian authorities review the regulations and put in place more efficient and speedy processes for contractual changes.

Brazilian authorities should also consider the creation of more instruments such as the agreement of investment risk, which make it easier for the operator to change the contract at its own risk with the possibility of a later rebalancing of the contract in cases of public and private interest.

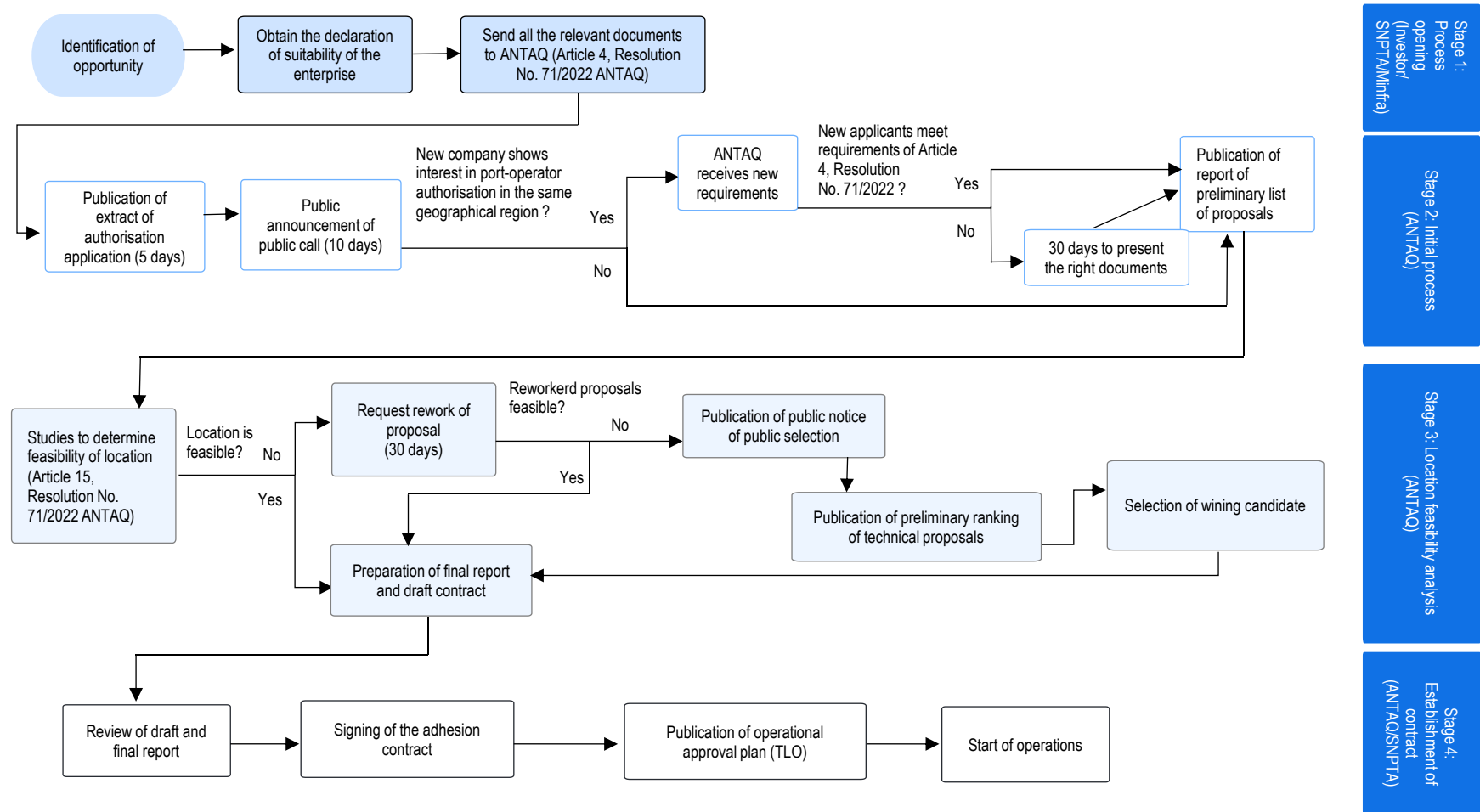
3.2.4. Authorisations to build and operate port facilities

Regulatory framework

In Brazil, it is possible to build private port facilities outside the area of a public port, provided that an authorisation is obtained from federal authorities. The Federal Constitution of 1988, in its art. 21, item XII, item “f”, establishes the competence of the Federal Executive Branch to exploit, directly (through the public administration) or indirectly (via operators which act upon delegation of obligations and rights, through the instruments of authorisation, concession or permission) sea, river and lake ports. Law No. 12.815/2013 establishes that the indirect exploitation of port facilities located outside the public port area will take place upon authorisation. The instrument for the authorisation is called “adhesion contract”.

Figure 3.19 below provides an overview of the authorisation process.

Figure 3.19. Private port (TUP) authorisation process



Source: OECD, based on (Tribunal de Contas da União, 2020^[41])

The OECD found that the main barriers to authorisation were related to performance guarantees, bid bonds, and technical requirements to participate in the public selection (which will be analysed in Chapter 4). In addition, the process of obtaining an authorisation excludes foreign companies and imposes administrative burdens and other costly requirements.

Duration of the process to obtain the declaration of adequacy

Description of the obstacle and policy makers' objective

Companies interested in obtaining an authorisation to build new private port facilities must submit an application to the National Secretariat of Ports for an assessment of whether the plan meets planning guidelines and port-sector policies. Issuance of this declaration of adequacy, the first step before the launch of the authorisation process described in Figure 3.19, can take 100 working days (Presidency of Republic of Brazil, 2022^[65]).

Harm to competition

While the provision that an interested party must comply with planning guidelines and port policies is reasonable, the duration of the declaration process is currently excessively long. Investors must wait more than five months to obtain a declaration of adequacy, which is necessary to submit an authorisation request to ANTAQ. As a result, competition may be reduced due to potential entrants being blocked from entering the market for a significant period of time and consequently losing business opportunities.

Recommendation

Brazilian authorities shall consider speeding up processes used to analyse submitted claims.

Alternatively, a provisional, fast-track declaration that allows parties to start the authorisation process with ANTAQ immediately could be introduced. If, upon subsequent analysis, SNPTA finds that the project to build new port facilities is inadequate, then the original adequacy declaration would be withdrawn, and the authorisation process stopped.

Duration of the authorisation process

Description of the obstacle and policy makers' objective

As shown in Figure 3.19, the process to obtain an authorisation may have 18 steps, and according to the Federal Court of Accounts, between 2013 and 2018, took between 6 to 26 months (Tribunal de Contas da União, 2020^[41]). The authorisation must be granted by ANTAQ's technical staff and Collegiate Board, and SNPTA, and involves a series of administrative agents in the decision-making process.

The need of authorisation is justified by private terminals undertaking economic activity with a public interest and so must follow the sectoral guidelines and policies (Justen Filho, 2019^[66]).

To start the authorisation process to build and exploit a port installation a company must first submit a request to ANTAQ presenting specific documents, including its declaration of adequacy for port-sector planning guidelines and policies and documents describing access, polygonal areas (areas of the terminal) and equipment and devices for vessel loading and unloading, and cargo movement in storage installations. In addition, it must submit the physical and financial schedule for building a port installation; an estimate of cargo or passenger movements; and the total value of the investment. Also necessary is a land-

ownership certificate, occupation registration, cession contract or any other legal instrument granting the right to use and profit from the land.

When an area belonging to the Federal Executive Branch is indispensable for the establishment of the port facility, which happens in most of the cases according to stakeholders, a potential operator must obtain a certificate issued by the Secretariat for Federal Heritage (SPU) guaranteeing the right of land use and declaring the land's availability to the entrepreneur authorised by the Ministry of Infrastructure.

Harm to competition

A requesting entity must wait on average 16 months to invest, far longer than in other jurisdictions as the involves many different entities. For instance, in Philippines, a licence to build and explore private ports is granted within 60 to 85 days (Philippine Ports Authority, 2021^[67]). The requirements and processing time reduce a company's incentives to compete in the market. In addition, a company may lose business opportunities while waiting for a decision.

Recommendation

The OECD has two recommendations for the authorities.

1. Consider reducing the number of bodies involved in the authorisation process.
2. Consider implementing provisional instruments that authorise a request after a fewer number of steps of the authorisation process to allow the requesting entity to move forward without having to wait until the completion of the entire process.

Requirement to have headquarters and administration in Brazil

Description of the obstacle and policy makers' objective

Article 3 of ANTAQ Normative Resolution No. 72/2022 establishes that only companies or entities incorporated under Brazilian law, with headquarters and administration in the country may apply for authorisation to build new private port facilities. The provision aims to guarantee that the requesting entity will fulfil the contract as it is easier to take legal action against a company established in Brazil.

Harm to competition

The requirements of being constituted under Brazilian law and have headquarters and administration in Brazil limits the ability of foreign suppliers to provide their services in Brazil and may raise entry costs.

Recommendation

The OECD recommends that Brazilian authorities accept foreign companies to request the authorisation to construct and operate a port by a simple commitment of establishing a subsidiary or local company after an authorisation is possibly granted for this purpose.

3.2.5. Pilotage

Maritime pilotage consists of a service provided to vessels by a person with expert local knowledge of a specific port, which enables him or her to navigate and manoeuvre vessels entering, leaving or moving inside it (OECD, 2011^[2]). This activity is extremely important due to the risks that unsafe navigation inside a port may pose to other to port users, cargo, port infrastructure, and the environment (OECD, 2021^[18]).

While pilotage services vary across the jurisdictions, they are generally offered by:

1. federal or local governments
2. government-controlled entities, such as a port authority or other public entity
3. the private sector (OECD, 2021^[18]).

The depth of involvement of the three players may differ significantly depending on the model for the allocation of responsibilities. These depend on who bears commercial risks, conducts daily operations, and owns assets (such as ships and docks). Ten models can be identified for the provision of pilotage services, as shown in Table 3.7.

Table 3.7. Overview of models for the provision of pilotage services

Model	Description
1	Federal government
2	State-owned enterprise (SOE)
3	Municipal, regional or provincial government
4	Stand-alone entity
5	Port model
6	Licensed pilots' part of a regulated monopoly
7	Licensed pilots tied to regulated competing organisations
8	Corporation part of a regulated monopoly
9	Corporation with regulated competition
10	Shipowners

Source: (Government of Canada, 2018^[68]).

Models six and seven are the most common pilotage service systems around the world. In model six, governments have no operating responsibilities and the service is provided through a regulated monopoly by licensed pilots with incentives to improve their service. In model seven, some form of regulated competition within the market aims to stimulate innovation, efficiency gains and ultimately lower user costs (Government of Canada, 2018^[68]).

3.2.6. Regulatory framework

Law No. 9 537 of 11 December 1997 establishes the legal framework of maritime pilotage in Brazil, regulating the safety aspects of waterway traffic in domestic waters. It defines pilotage services as an essential activity for the country, which means they must be permanently available in all pilotage zones in Brazil.

To this aim, the Pilotage Law establishes that pilots cannot refuse to perform services, under penalty of suspension of their qualification certificate, or, in case of recurrence, its cancellation. In addition, with a view to guaranteeing full availability of pilotage services, the Maritime Authority may fix the price of services in each pilotage zone and set the precise number of pilots in each zone.²¹

The Pilotage Law gives the Navy the role of the Maritime Authority. Within the Navy, it is the Directorate of Ports and Coasts (DPC) that acts as the representative of maritime authority, for instance by issuing

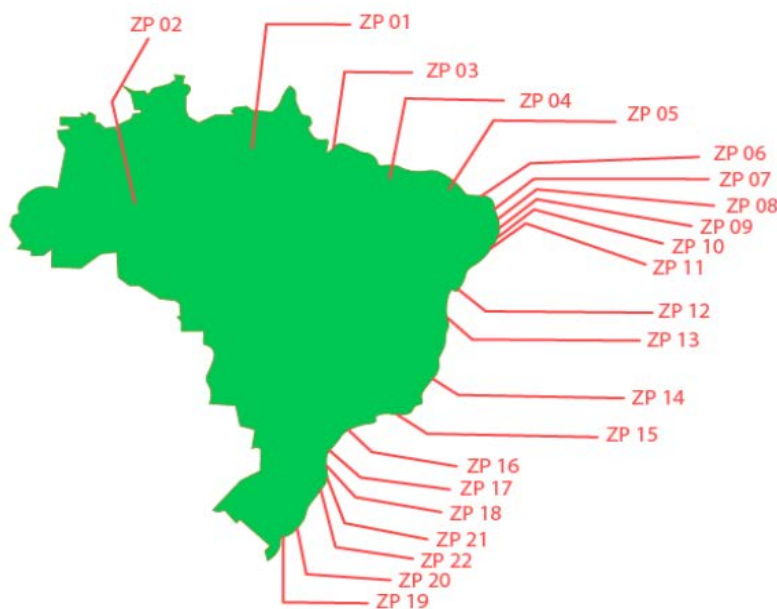
regulations of pilotage services in Brazil, defining pilotage zones where recourse to pilotage services is mandatory, and specifying the vessels exempted from hiring pilotage services.²² DPC also has port captaincies, agencies and delegations as local units of the Maritime Authority in specific areas. These are responsible for monitoring and detailing the regional parameters in the respective areas of activity (Marinha do Brasil, 2021^[69]).

Besides the management of maritime pilotage, DPC is also charged with vessel registration, maritime-personnel registration, maritime aid, naval coastal police, and professional training of maritime and fishing personnel.²³

In 2011, DPC issued the regulation NORMAM 12/DPC to co-ordinate the aspects of pilotage services that were not yet provided for within the Pilotage Law; it has since been updated and modified 23 times. Local specificities are addressed in the rules and procedures issued by local port captaincies.²⁴

NORMAM 12/DPC defines a pilotage zone (ZP) for pilotage as the “geographical area delimited due to local specificities that make it difficult for the free and safe movement of vessels, requiring the establishment and uninterrupted operation of a pilotage service for that area. It falls to the DPC to establish a ZP.”²⁵ Figure 3.20 provides a map of the current 20 pilotage zones in Brazil.

Figure 3.20. DPC-established pilotage zones in Brazil



Note: ZP 11 and 13 were abolished and their pilots re-distributed between the other ZPs in 2022.

Source: (LS Prático, 2017^[70]).

In all pilotage zones, pilots must be hired by transportation companies to assist ship captains during the arrival of a vessel in the port and its docking at a berth. The same obligation applies when the vessel leaves the port or when changing terminals within the same port (Secretaria de Acompanhamento Econômico do Ministério da Fazenda, 2005^[71]).

In NORMAM 12/DPC, DPC set out exceptions to the obligation to hire pilotage services for small vessels²⁶ or for certain optional stretches within pilotage zones.²⁷

3.2.7. Access to the piloting profession

Description of the obstacle and policy makers' objective

Potential pilots in Brazil must sit an exam organised by the DPC, and if successful, must then undergo a minimum of one year's training. Following this, they must pass a technical exam before fully qualifying as a "pilot practitioner".

To sit the initial exam, a candidate must:

1. be a Brazilian national aged 18 or over
2. hold a graduate diploma officially recognised by the Ministry of Education
3. have a certification as a seafarer or as a master-amateur, as defined in the regulation.
4. not be an ex-military officer retired due to permanent disability or a civilian retired due to disability.

A person meeting these criteria then begins the four phases of the pilot-selection process: 1) a written exam; 2) submission of documents to attest the requirements of moral integrity and a record of good conduct, as well a psychological and physical-fitness test; 3) a review and scoring of relevant qualifications provided by applicants; and 4) a practical oral test, including a test in a simulator (Diretoria de Costas e Portos, 2011^[72]).

In general terms, the requirements to become a pilot practitioner do not seem restrictive. However, requiring pilots to be Brazilian nationals may be restrictive. According to the DPC, the reason behind this requirement relates to national security and the need to ensure knowledge of specific ports in Brazil. Such a nationality requirement is common around the world. Argentina and some US states also demand this nationality requirement.²⁸ Other countries, such as the UK, by contrast, do not impose any nationality requirement to become a pilot (South Shields Marine School, 2021^[73]). Similarly, in Portugal, the applicant may be a Portuguese or EU national, or a national of the European Economic Area or of countries that reciprocally allow Portuguese nationals to exercise professional activities in their jurisdictions (República de Portugal, 2002^[74]).²⁹

Yet, there seems to be no clear and direct link between the legal provision and the above-mentioned policy objective, however. Maritime pilots assist the vessel captain to enter the port. Captains who conduct their vessels through the same port several times a year with the support of a maritime pilot will inevitably acquire knowledge on the safest routes to enter a given port. Technological advancements also make circulation in ports easier. Yet, nationality requirements may prevent captains with sufficient expertise to obtain a licence and become pilots.

For the process of accessing the pilot profession, the DPC (as the representative of the Maritime Authority) determines when the selection takes place and the number of vacancies in each pilotage zone.³⁰ The most recent call for pilots took place in 2012. Over the past 10 years, the DPC has called successful candidates in that 2012 selection process to take their functions as pilots.³¹

DPC also sets the number of pilots of each pilotage zone (Diretoria de Costas e Portos, 2011^[72]). According to the latest version of NORMAM 12/DPC, there are currently a total of 624 pilots in Brazil, active across 20 pilotage zones. In 2020, two pilotage zones were abolished (ZPs 11 and 13) and their pilots relocated to other ZP, at the sole discretion of the DPC. If reassigned, pilots must re-join the qualification programme and pass an exam to qualify in the new piloting area.³²

Table 3.8. Location of maritime pilots by pilotage zones

Pilotage zone	Scope of the pilotage zone	Number of pilots
1	Fazendinha-Itacoatiara (States of Amapá and Amazonas)	160
2	Itacoatiara-Tabatinga (State of Amazonas)	45
3	Belém and Complexo Portuário Vila do Conde and surroundings (State of Pará)	36
4	Itaqui, Alumar and Ponta da Madeira (State of Maranhão)	33
5	Fortaleza and Pecém (State of Ceará)	15
6	Areia Branca (State of Rio Grande do Norte)	4
7	Natal (State of Rio Grande do Norte)	6
8	Cabedelo (State of Paraíba)	4
9	Recife and Suape (State of Pernambuco)	18
10	Maceió/Terminal Químico and Redes/Terminal Marítimo Inácio Barbosa (States of Alagoas and Sergipe)	05
12	Salvador, Portos and Terminals of Baía de Todos os Santos, and Ilhéus (State of Bahia)	33
14	Vitória, Tubarão, Praia Mole, Barra do Riacho and Ubu (State of Espírito Santo)	31
15	Rio de Janeiro, Niterói, Sepetiba, Ilha Guaíba, Ilha Grande (TEBIG), Angra dos Reis, and Forno, Açú, Barra do Furado and Macaé (State of Rio de Janeiro)	65
16	Santos, Baixada Santista, São Sebastião and TEBAR (State of São Paulo)	65
17	Paranaguá and Antonina (State of Paraná)	33
18	São Francisco do Sul and Itapoá (State of Santa Catarina)	13
19	Rio Grande (State of Rio Grande do Sul)	26
20	Lagoa dos Patos, Rios, Portos, and Terminais Interiores (State of Rio Grande do Sul)	09
21	Itajaí and Navegantes (State of Santa Catarina)	17
22	Imbituba (State of Santa Catarina)	06

Source: Annex 2-I, NORMAM 12/DPC.

DPC has no obligation to review the number of pilots in each pilotage zone unless it deems it necessary.³³

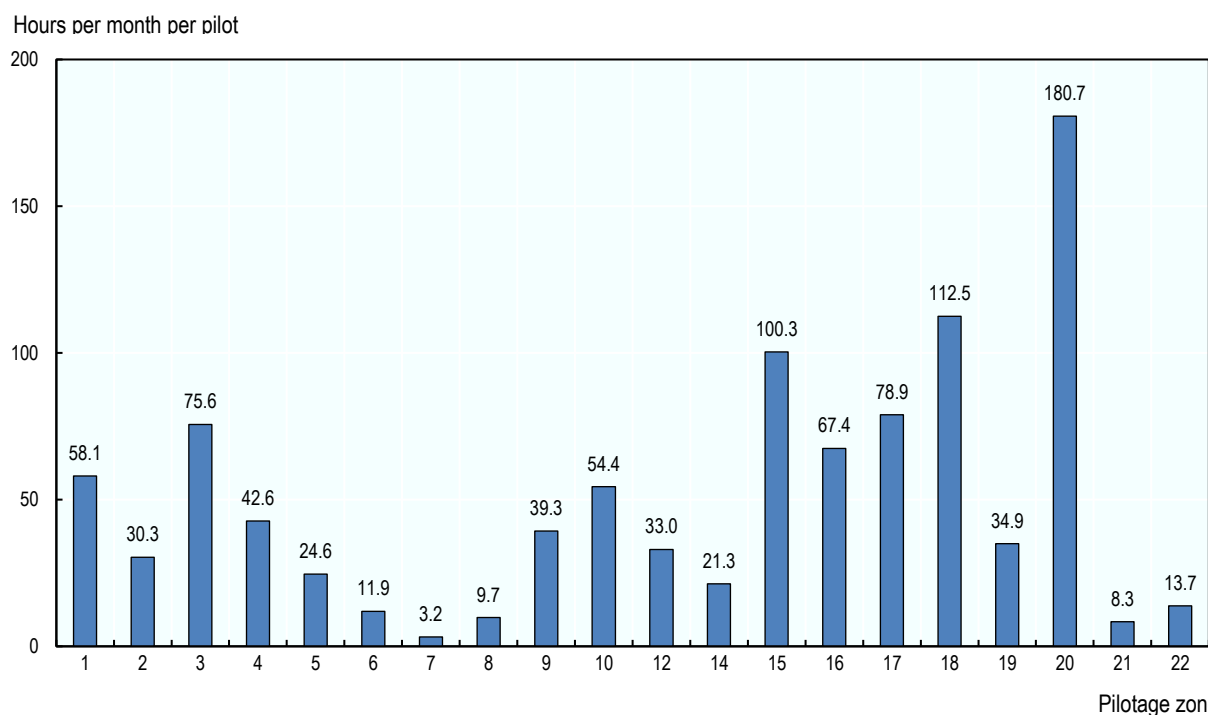
Harm to competition

The requirement to have Brazilian nationality is discriminatory. By excluding nationals of other countries, fewer people are able to offer services in the market. Moreover, the refusal of foreign nationals can reduce the quality of the service; for instance, employing foreign nationals as maritime pilots in Brazil could facilitate the exchange of best practices and so improve services provided within the pilotage zones.

For the process of access to the piloting profession, DPC enjoys broad discretion. It has the power to open new selection processes whenever it deems it necessary without any external control from another body. The same applies to its discretion to reviewing the effective number of pilots in each zone. With no legal provision for when the DPC needs to carry out such a review, coupled with the establishment of a fixed number of pilots, the number of pilots can easily lag.

As an illustration, Figure 3.21 shows that the total duration of manoeuvres for pilots varies significantly in different pilotage zones. This may suggest a need to review the numbers of pilots in each zone more frequently. As an example, pilots from ZP 18 and 20 provide more than 100 hours of effective work – carrying out actual manoeuvres – each month without counting their warning periods (see Section 3.2.8), whereas pilots in ZP 7 and 21 only provide less than 10 hours a month.

Figure 3.21. Total manoeuvre duration for each pilot in each Pilotage zone



Source: OECD, with data provided by Brazilian Navy of total number of pilotage manoeuvres in Brazil between January 2017 and October 2021.

Setting a fixed number of pilots for each zone may give rise to allocative inefficiencies. Considering that vessel traffic will fluctuate in pilotage zones, for example, it is important that they do not have a fixed number of qualified pilots, and that this number can easily adjust to real-time needs. This, combined with the rapid hiring of experienced pilots (subject to their training in the specific pilotage zone, when necessary in light of local conditions), possibly from other countries, would prevent the risk of shortage or overload of pilots in certain pilotage zones.

Recommendations

The OECD has two recommendations.

1. Review the requirement for pilots to be Brazilian nationals. A proficient knowledge of Portuguese could be required for foreign applicants, just as a knowledge of English is currently required for the Brazilian applicants.
2. The Brazilian authorities should not define a precise or maximum number of pilots in each pilotage zone. As an alternative, authorities should stipulate a period to review whether the number of pilots in each pilotage zones are adequate.

3.2.8. Price-setting alternatives for pilotage services

Description of the obstacle and policy makers' objective

Law No. 9537/1997 allows maritime pilots to offer services either individually or organised under associations or as employees of companies. Pilotage services in Brazil can be offered freely by private operators³⁴ and in the majority of pilotage zones, two or more pilot entities offer services.

These entities do not compete with each other in practice, however, due to NORMAM 12/DPC, the DPC's technical pilotage regulations. This effectively eliminates competition by establishing a single rotation scheme for each pilotage zone with all the licensed pilots, irrespective of their operational organisation.³⁵ This scheme divides the pilots into three groups.

1. **Active pilots.** Pilots are active and available for work for a specific number of consecutive hours or days. Each period is subdivided into a "service period", during which the pilot is effectively on duty, and a "warning period", during which the pilot is not providing pilotage services but must remain available.
2. **Resting pilots.** Pilots have an uninterrupted amount of time following an active period during which they cannot be requested to carry out pilotage work, except in an emergency or in a situation where there is a risk to human life
3. **Unavailable pilots.** When pilots are unavailable, they cannot be requested to carry out any pilotage duties under any circumstances; in general, a pilot is unavailable when on leave or serving a temporary suspension.

In practice, the single rotation shift functions following a list elaborated by the representative of pilots from each pilotage zone.³⁶ When a vessel needs the assistance of a pilot to enter or leave the pilotage zone, the first active-period pilot on the list is assigned to that vessel. When this pilot concludes the duty, she or he will return to the bottom of the list and be placed in the warning period until returning to the top of the list. When pilots are resting, they are not included on the list until their rest period is over. A pilot assigned to a vessel during the single rotation shift cannot refuse to perform the duties under penalties of suspension.

Maritime transportation companies' vessels are obliged to hire pilotage services to enter or leave a port; they must accept the assigned pilot by the single rotation shift. This means that the rotation shift creates an artificial monopoly of the first pilot due to the absence of competition among competitors as no other pilots may offer their services to the maritime transportation companies.

Moreover, maritime transportation companies have no bargaining power in such a situation, as they are obliged to hire the services. In theory, pilots assigned to perform piloting services for a particular vessel are not constrained when setting prices, unless they are obliged to charge a price based on an agreement concluded by their union and their respective maritime transportation companies.

In practice, pilots' representatives establish wide agreements with maritime-agent unions to price services for any type and size of ship. These agreements normally serve as reference prices for any ships of foreign or Brazilian companies that do not have specific pilotage price agreements (Tribunal de Contas da União, 2020_[75]).

In addition, professional pilot associations also sign specialised agreements with companies or associations of shipping companies establishing different prices than the reference prices for a determined period. When these contracts approach expiry, the reference prices are used as bargaining chips to increase the prices of specialised contracts during their renegotiation. This is because the courts themselves use these reference prices as guides in the event of a lawsuit concerning the price of pilotage manoeuvres (Tribunal de Contas da União, 2020_[75]).

The pilot is assigned when a shipping company informs the pilots' representative in a pilotage zone that one of its ships will need pilotage services to enter or leave the port at a certain time. Based on the schedule given by the company, the pilots' representative will designate the pilot on duty to that ship, based on the rotation schedule. At this point, the shipping company will be informed whether the price will be based upon specifically negotiated contracts or upon the price lists set by the pilotage representatives.

Until 2012, the DPC set prices when maritime transportation companies and pilots disagreed on prices,³⁷ using reference prices for each pilotage zone set in ordinances and based upon the last negotiated prices between the pilots of a given pilotage zone and the maritime companies, and were periodically readjusted.³⁸ Decree-Law No. 7 860 of 6 December 2012 revoked the legal provision establishing the Maritime Authority's competence to fix prices and created the National Commission for Pilotage Matters (CNAP), which, among other objectives, prepared proposals on price regulation. Composed of representatives from the Ministry of Defence (Maritime Authority and DPC), Ports Secretariat, ANTAQ, Ministry of Transport, and the Ministry of the Economy, CNAP was accorded the competence to set: 1) a methodology for pilotage price regulation; 2) maximum prices for pilotage services in each pilotage zone; 3) measures to improve the regulation of pilotage service in each pilotage zone; and 4) coverage of each pilotage zone. CNAP published Resolution No. 3 of 23 September 2013 to establish a predefined methodology of regulation of pilotage prices. In addition, CNAP established maximum price tables for three pilotage zones: ZP 12, ZP14, and ZP16. This proposed methodology raised several legal disputes, however, and the commission was abolished with Decree No. 9 679 of 2 January 2019.

With CNAP abolished and Decree-Law No. 7860/2012 revoked, the DPC's competence to resolve disputes regarding prices was left in a regulatory vacuum. Law No. 9537/1997 regarding pilotage allows the Maritime Authority to establish prices where there is a dispute but, unlike Decree-Law No. 7860/2012, it does not *oblige* it to do so. Indeed, DPC has not set prices since 2012, when the obligation was revoked. The only times that the Maritime Authority has continued to set prices has been when the courts have obliged it to do so.³⁹ In light of this vacuum, pilots and their associations no longer face any constraints when negotiating their prices.⁴⁰

The use of the single rotation shift meets the DPC's main goal of ensuring the safety of port operations. Indeed, Brazil is one of the countries with one of the lowest number of accidents related to pilotage services (Tribunal de Contas da União, 2020^[75]). In addition, in line with NORMAM 12/DPC, the single rotation shift aims to guarantee uninterrupted availability of pilotage service within the pilotage zones, as well as ensuring that pilots will not be tired when performing their duties. Moreover, the single rotation shift seeks to maintain pilots' abilities to perform their duties, as all are entitled to work within the single rotation shift, except when unavailable or resting (Marinha do Brasil, 2021^[69]).

Harm to competition

The necessity to follow the single rotation shift creates an artificial monopoly in the market. Pilots are obliged to accept the assignment that they receive under the single rotation shift, without being able to choose their own clients, while vessels must accept the pilot assigned by the single rotation shift. This means that maritime pilots chosen to provide services to a given ship acts as monopolists, in the sense that no other pilot can compete against them.

This regulatory framework removes all competition among pilots. In this way, the single rotation shift may increase prices and lower the overall quality of services. The fact that the DPC does not set prices in cases of disagreement between the pilots and maritime transportation companies and leaves resolution to the courts incentivises pilots to exploit their monopoly to keep raising prices without major constraints.

In addition, there is a lack of transparency in the definition of prices and in justifications for increases. (Tribunal de Contas da União, 2020^[75]). Indeed, the OECD struggled to find updated pilotage prices for the years 2021 and 2022 as price lists and contracts are often confidential.

One complaint received by the OECD from stakeholders was that even though pilotage prices in Brazil were already too high when compared to other countries in 2019, these prices have continued to rise.

Pilotage prices in Brazil are indeed among the highest in the world. In 2016, the Brazilian Association of Maritime Cruises (Abremar), in a public audience before the National Congress Road and Transport Commission, presented a comparison of prices for pilotage services between Brazil and the rest of the world. In particular, while the average global price of a single in-out pilotage operation was USD 7 870, the same in-out operation in Brazil cost USD 32 500 (Brazilian Association of Maritime Cruises, 2016^[76]). (See Table 3.9.)

It is also important to mention that several legal disputes concerning pilotage prices between pilots and maritime transportation companies have finished in Brazilian courts. The OECD discovered lawsuits before 2012 and cases questioning the prices charged by pilots in 1999 remain pending.

Box 3.13. Judicial and administrative proceedings concerning pilotage

Judicial proceedings

Over the past few years, several lawsuits related to pilotage and the price of services in several pilotage areas in Brazil have been filed. More than 30 lawsuits were found in several state courts in Brazil concerning the price of pilotage services in various pilotage zones in the country. The most common issues are the discussion of the price charged by pilots and the inclusion of additional charges by pilots without the shipping company's agreement on the final value of a service provision.

In 2017, the Superior Court of Justice of Brazil ruled that the Maritime Authority cannot set maximum values for the prices of pilotage services provided in port areas for an undetermined period, but left public authorities the possibility of intervening to ensure service continuity. The case started upon a lawsuit filed by the Union of Pilots of the Paraná State demanding the court to refrain from all initiatives to allow the Navy to set maximum prices concerning pilotage services. The court observed that the Pilotage Law only allows the Navy to set prices occasionally when there is no agreement between a pilot and a maritime shipping company. This case is still ongoing and has had its referral on appeal to the Federal Supreme Court, Brazil's Supreme court.

Administrative proceedings before CADE

In 1999, an investigation was opened against the Association of Pilots of the State of Paraná (APEP) after a complaint made by the Union of Maritime Shipping Agencies in Paraná (SINDAPAR). In particular, the alleged conducts were related to the arbitrary increase in profits and abuse of a dominant position. In 2006, CADE dismissed the proceeding due to the absence of evidence to corroborate with the complaint.

In 2019, CADE received another complaint by a pilot in the pilotage zone in Santos, in which he alleged that the dominant pilot association in Santos had the control and management of traffic in the port of Santos and uses this power, without any control or supervision by the Maritime Authority, to harm the competing association insofar as it would delay the larger ships to be manoeuvred by pilots of their own association. CADE is still investigating the alleged conducts.

Sources: (Superior Court of Justice, 2017^[77]); (CADE, 2006^[78]);

Table 3.9. Pilotage prices presented by Abremar, 2016

City, country	Price in 2016 (USD)
Salvador, Brazil	44 062
Angra dos Reis, Brazil	37 500
Ilha Grande, Brazil	37 500
Santos, Brazil	36 875
Rio de Janeiro, Brazil	32 500
Fortaleza, Brazil	30 625
Recife, Brazil	26 562
Maceió, Brazil	17 187
Newark, USA	14 300
Miami, USA	11 000
Xiamen, China	11 000
Ostend-Bruges, Belgium	10 000
Sydney, Australia	9 700
Lisbon, Portugal	8 200
Venice, Italy	7 700
Valparaíso, Chile	6 900
Montevideo, Uruguay	6 800
Okinawa, Japan	5 600
Barcelona, Spain	4 080
Athens, Greece	3 600

Note: Costs based upon for pilot services for a cruise ship with a gross weight of 139 000 tonnes.

Source: (Brazilian Association of Maritime Cruises, 2016^[76]).

Similarly, TCU also compared Brazilian pilotage prices with the international benchmarking in 2019 (Table 3.10). The results were similar to those presented by Abremar. When comparing these prices, TCU found a percentage difference of approximately 529% between prices worldwide and in Brazil.

There are currently bills in the Brazilian Congress proposing to change the Pilotage Law in order to address the price issues (see Box 3.14).

Table 3.10. Pilotage prices for two port manoeuvres, worldwide and Brazil, 2019, BRL

Global Prices				
Port, country	65 000 mt	92 000 mt	138 000 mt	153 000 mt
Dubai, AE	-	6 577	8 164	8 164
Barcelona, Spain	-	13 573	14 563	14 563
Lisbon, Portugal	-	7 760	9 481	10 002
Civitavecchia, Italy	-	8 737	11 833	12 865
Genoa, Italy	-	19 054	26 522	30 256
Hamburg, Germany	-	13 823	13 823	13 823
Miami, USA	27 480	33 096	42 647	42 836
Fort Lauderdale, USA	25 329	30 575	39 530	40 422
Vancouver, Canada	-	26 000	38 440	41 392
Average			21 427	
Prices in Brazil				
City, state	62 000 mt	92 000 mt	138 000 mt	153 000 mt
Angra dos Reis, Rio de Janeiro	-	70 380	154 680	154 680
Rio de Janeiro, Rio de Janeiro	-	58 234	127 938	127 938

Santos, São Paulo	63 051	89 107	132 694	147 682
Ilhabela, São Paulo	66 417	93 952	139 908	155 711
Salvador, Bahia	-	121 225	190 882	214 719
Ilhéus, Bahia	-	121 225	190 882	214 719
Maceió, Alagoas	-	66 755	89 669	89 669
Recife, Pernambuco	-	102 243	177 012	201 612
Average			134 729	

Source: (Tribunal de Contas da União, 2020^[75]).

Box 3.14. Pilotage-related bills

In March 2022, Bill No. 757/2022 was presented to the National Congress to amend the Pilotage Law. The project provides for the transfer to ANTAQ of the economic regulation of the pilotage services, including setting service prices and monitoring service-quality compliance. It envisages a collegiate body, set up by act of the Executive Branch, establishing the parameters that ANTAQ will observe in its economic regulation of pilotage services to correct market failures and guarantee service quality. The bill also provides that pilotage service will be performed by duly qualified pilots, individually or through an incorporated company, who will provide any information requested by ANTAQ.

Other bills in the Brazilian Congress concerning pilotage include, notably, Bill No. 4392/2020 that aims to grant ANTAQ competence to act in the economic regulation of pilotage services. In particular, price limits in each pilotage zone would be fixed by ANTAQ. In addition, rather than leaving it with the pilots' representative, Bill No. 1565/2019 seeks to introduce the Navy's obligation to establish a rotation shift with all pilots in certain pilotage zones.

Source: (Agência Câmara de Notícias, 2022^[79]); (Câmara dos Deputados, 2022^[80]); (Câmara dos Deputados, 2020^[81]); (Câmara dos Deputados, 2019^[82]).

The absence of price regulation or control coupled with the single rotation shift may result in higher prices and lower overall service quality.

Recommendations

The OECD has two recommendations for enhancing competition in the pilotage sector.

1. Brazilian authorities could abolish the single rotation shift, in line with the possibilities offered in the Pilotage Law to give pilots a choice of how to provide their own services. If this option is chosen, Brazilian authorities should define another way of identifying which pilot will provide the service to ensure service competition between the pilots and their entities while guaranteeing safety. This new scheme should take into account pilot fatigue, exercises for the renewal of pilot qualification, and ensure uninterrupted availability of pilots
2. Alternatively, if Brazilian authorities maintain the current rotation shift established by the DPC, some form of control over prices of pilotage services would seem appropriate. If this option is chosen, any price-setting body should be independent and use objective criteria in its decisions.

3.2.9. Pilot exemption certificates

Description of the obstacle and policy makers' objective

A pilot exemption certificate (PEC) allows the holder to navigate and manoeuvre within a compulsory pilotage area without using the services of a maritime pilot, and so avoid pilotage costs (OECD, 2018^[35]).

In Brazil, Article 13, paragraph 4 of Law No. 9537/97 establishes that the Navy may authorise captains of Brazilian-flagged ships to manoeuvre vessels under their command within a specific pilotage zone (or a section of it) in which they will be considered as pilots. NORMAM 12/DPC lays down the basic requirements demanded by the DPC to grant a PEC.⁴¹ Passenger or cruise ships, oil, gas and chemical tankers, and ships with packaged cargo that presents a mass explosion hazard cannot manoeuvre in a pilotage zone without a pilot.

In addition, section VII of NORMAM 12/DPC indicates that a PEC is granted only after the DPC has taken into account the captain's experience and knowledge, vessel size, the specific pilotage zone, and the port and terminal requested. If any of these criteria changes, the PEC will be revoked. Also, in a pilotage zone more than 30 miles of length, piloting services are mandatory even if a captain possesses a PEC. The PEC holder may, however, replace one of the pilots who should be on board.

If captains fulfil the necessary conditions and hold the necessary certificates of health and maritime competence, they can request a PEC by addressing a letter to the competent harbourmaster. The proceeding to obtain such a licence has the following phases: 1) providing documents that attest to meeting qualification conditions (see endnote 33); 2) preparation of a risk-management plan; 3) simulation; and 4) onboard exams (Diretoria de Costas e Portos, 2011^[72]).

These provisions aim to ensure that a captain has the necessary knowledge to perform pilotage services, and so guarantee port safety.⁴² NORMAM 12/DPC sets no deadlines for each phase, which can lead to unreasonable processing periods, which reduce incentives to apply for the exemption. The third and fourth phases foresee evaluations carried out in simulator and on board ships to examine the captain's technical skills as a pilot, whereas, in these two phases, NORMAM 12/DPC indicates that it is the examining board that establishes the evaluation criteria for the captain, including which and how many piloting exercises will be evaluated, as well as the basis of the scoring criteria used for approval (Diretoria de Costas e Portos, 2011^[72]). Such subjective evaluation may lead to discriminatory treatment between captains within the same pilotage zone, but also between geographically similar zones.

Moreover, considering that the examination board is generally composed of maritime pilots, the regulation should avoid any conflict of interest between the maritime pilots and captains during evaluations.

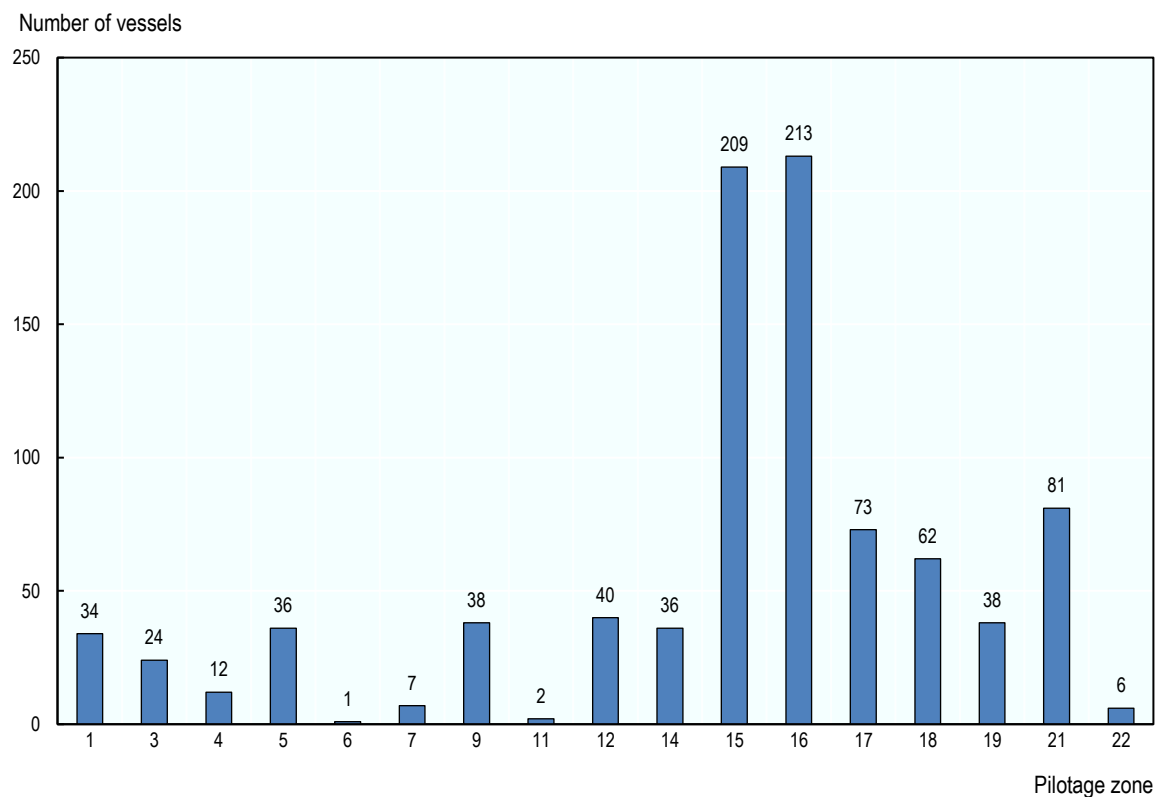
While the law has provided DPC with the possibility of awarding PECs since 1997, it did not implement the option until 2020 after a report by the TCU, which ordered it to develop an action plan to make the PEC process in Brazil more transparent, faster and viable. In consequence, DPC amended NORMAM 12/DPC (Tribunal de Contas da União, 2020^[75]).

Ordinance No. 53/2020 provided that DPC adopt rules that stated for a captain to qualify for a PEC he or she must have undertaken a minimum of 18 pilotage manoeuvres in ports in the previous 24 months accompanied by a qualified pilot. NORMAM 12/DPC had previously required a total of 72 pilotage tasks in two consecutive semesters, which was even higher than the minimum manoeuvres demanded for fully qualified pilots in certain pilotage zones.

The OECD interviewed stakeholders about the issuance of PEC in Brazil after the 2020 reform, and to the best of its knowledge, no PEC has yet been granted. This despite, according to OECD calculations (Figure 3.22), under current requirements more than 200 captains of vessels could have been granted PECs in ZPs 15 and 16 alone after 2017. Extrapolating from this figure would suggest that if PECs were

to be awarded, almost 1 000 captains would be eligible.⁴³ This number would be in line with other countries, such as Sweden, Germany and Finland (see Table 3.11).

Figure 3.22. Number of vessels having performed 18 manoeuvres in each pilotage zone, 2017-21



Note: Excludes cruise ships and oil, gas and chemical tankers; data for PZ 2 not included.

Source: OECD, based on data from the Brazilian Navy about the total number of pilotage manoeuvres in Brazil between January 2017 and October 2021.

Table 3.11. Number of PECs approved in European countries, 1995-2011

Country	2011	2010	2009	2008	1995
Belgium	112	107	103	9	0
Cyprus	0	0	0	0	0
Croatia	0	0	0	0	0
Denmark	158	167	182	-	0
Finland	857	1 185	1 405	1 659	1 900
France	224	228	236	233	500-1 000
Germany	1 267	1 269	1 180	-	20
Ireland	113	118	111	-	80
Netherlands	315	317	309	203	60
Norway	2 800	2 800	2 800	2 866	-
Portugal	5	5	5	-	0
Spain	375	375	375	-	0
Sweden	1 200	1 100	1 200	1 100	-
United Kingdom	815	-	-	-	1 000

Source: (PwC and Panteia, 2012_[83])

Harm to competition

After TCU lobbying, the legal requirements to obtain a PEC in Brazil changed in 2020 and DPC modified the number of pilotage manoeuvres required from captains as a way to facilitate PEC issuance in Brazil. Nonetheless, to the best of the OECD's knowledge, since the modifications, not a single PEC has been granted.

The recently modified criteria still do not reflect the peculiarities and needs of each pilotage zone. In particular, the need to complete exactly the same number of manoeuvres in each piloting zone seems unreasonable due to the peculiarities of each area. For example, crossing certain stretches of pilotage zones on the Amazon and its tributaries can take up to two days, while others take just a few hours. Due to the difficulty in obtaining a PEC in Brazil, some captains with long experience of navigating within a pilotage zone are unnecessarily forced to use piloting services. This can have the effect of increasing costs for vessels, leading to an inefficient allocation of shipping companies' resources.

In addition, a risk of conflict of interest exists as DPC, which is the entity with responsibility for regulating piloting services, is also the body charged with granting PECs in Brazil. This situation has the potential to create incentives to restrict the number of PECs granted, potentially also causing inefficient allocation of shipping companies' resources. Many European countries give the competence of issuing PECs to transportation authorities or agencies.

Recommendations

The OECD has two recommendations for reinforcing the viability of PECs in Brazil.

1. Revisit the criteria for each pilotage zone and the DPC-established procedure to propose modifications to how PECs are issued. This should a) include proposing reasonable analysis periods for each phase of the PEC qualification process; and b) introduce objective, relevant and proportionate evaluation criteria in each pilotage zone to avoid possible conflicts of interest and discriminatory treatment.
2. In light of DPC's competence for establishing PEC-qualification criteria, the responsibility for granting PECs should be attributed to an entity other than DPC. If DPC remains the granting authority for PECs, the Brazilian authorities should establish a new governance model within DPC to ensure that PEC approval is feasible without conflict-of-interest concerns.

3.3. Pool of port workers

3.3.1. Background

A labour pool is an employee organisation run as a network of individual workers in the same industry and region. Workers tied to the pool are sent to wherever employers need them. This system is used as a way of managing activity with peaks and troughs (Eurofund, 2022^[84]). In the Brazilian port sector, this pool is organised by a labour management body, the Pool of Port Workers (Órgão Gestor de Mão de Obra, OGMO).

Generally, the objective of labour pools in the port sector – such as OGMO – is “to share available dock labour among different terminals in the same port so that workers can be deployed from the pool depending on demand. This increases efficiency as it allows terminals to deploy more workers if there is peak demand and fewer workers if there is little demand” (ITF, 2021^[85]).

Pools of workers – or other mechanisms that allow for flexibility in the provision of workers – are particularly useful when demand is unpredictable. Although the containerisation of maritime transport has reduced demand unpredictability, as sailing schedules have become more predictable, port work continues to be irregular, especially in small ports and for break-bulk shipments (OECD, 2014^[57]). In addition, peaks related to megaships and alliances (i.e. co-operation agreements on a global scale between liner shipping companies) require labour flexibility in ports (ITF, 2021^[85]).

Pools of workers were widely used to organise work in ports in the 1960s, with no workers outside a pool allowed to work. In the 1980s, ports entered an era of gradual modernisation and liberalisation, which changed this exclusivity and the mandatory registration. In many ports globally, this meant that workers outside the pool were allowed to work (Cooper, 2007^[86]). Certain countries (e.g. the port of Le Havre in France) replaced the system of casual employment of registered pool workers with regular employment under long-term contracts with an individual employer. In other countries (as it was in Spain before the RDL 9/2019), pool workers signed permanent employment contracts with the pool agency itself. In both cases, the transition to stable employment links during the 1980s was defined as a period of “regularisation” (Van Hooydonk, 2014^[87]). Currently, many governments (such as the Netherlands and the UK) consider that port labour can be adequately, efficiently and safely organised based on general labour law.

Box 3.15. Port-worker registries around the world

Internationally, major differences exist in the use of pools of port workers. The International Labour Organization’s Convention 157 on the Maintenance of Social Security Rights Convention, 1928 (No. 157) establishes that registers for all occupational categories of dockworkers should be determined by national law or practice. The convention also establishes that registered dockworkers should have priority of engagement for work.

In the EU, in 11 Member States the pool systems have preferential rights and so priority for work (OECD, 2021^[18]).

- In Germany, employers can hire permanent employees directly from the external labour market, but any occasional labour must be hired from a regulated labour pool. In some schemes, excess-capacity workers from port operators can be included in the labour pool (Van Hooydonk, 2014^[87]). This is the case in Hamburg where the dock labour pool acts as a transfer point for surplus dock workers. For example, operators can offer their surplus workers to the pool, which is not obliged to take them (Notteboom, 2018^[88]).
- In the Netherlands, there is no national registration requirement for dockworkers. Dockers have never had to register, nor have they needed to hold a membership card to perform their port duties. In Rotterdam, however, dockers without a job can register with Rotterdam Port Services (RPS), a temporary employment agency, but will receive no compensation unless they work. Directly employed workers are hired individually on a permanent or temporary basis (Ministry of Infrastructure and the Environment of the Netherlands, 2014^[89]).
- In the port of Le Havre, France, a pool system was introduced in 1947 with permanent workers *professionnels*, who were guaranteed 300 half-day shifts a year, and casual *occasionnels*, who had no work guarantee. In 1992, the pool system was abolished and dockers became ordinary salaried employees. This reform was pushed as essential to opening French ports to global terminal operators. In 2008, the port authority of Le Havre was renamed Grand Port Maritime du Havre and dock workers were transferred to stand-alone operating companies (Notteboom, 2018^[88]).
- The Portuguese system – which inspired OGMO – was reformed in 1993 in order to facilitate the hiring and qualification of the port workforce. The country created a transitional regime to

hire port workers, after which the labour pool became port-labour companies. The same law permits the creation of port-labour companies as associations and co-operatives to foster competition (Tribunal de Contas da União, 2020^[41]). If the port labour companies are not enough to satisfy the demand for casual work, they can hire workers from temporary work agencies (OECD, 2018^[34]), which do not exist in Brazilian system. Thus, the Portuguese legal regime enables temporary work agencies to supply labour indirectly to cargo handling operators, by using an existing port labour company as an intermediary or by creating their own port labour company an intermediary (OECD, 2018^[34]). Contrary to Brazil, in Portugal, the registry of permanent workers in the port labour companies is not a legal obligation (OECD, 2018^[34]).

Law No. 12815/2013 establishes that in public ports only members of an OGMO can provide port worker services.⁴⁴ Non-profit entities created by port operators in public ports, OGMO have supervisory, administrative and professional roles, and are responsible for the management and supply of port workers, both casual and permanent. Port operators maintain and create an OGMO in public ports pursuant to a legal obligation. Each public port has an OGMO – 30 in total – which holds a monopoly in the registration of all port workers. Figure 3.23 presents the location of the OGMOs in Brazil. Private ports are not bound by the OGMO regime and so their workers are not obliged to be part of one.

Figure 3.23. OGMO location



Source: Based on (Ministério do Trabalho e Previdência, 2022^[90])

3.3.2. Monopoly of port-worker registration

Description of the obstacle and policy makers' objective

All workers in public ports, whether they have a permanent contract or are registered only for temporary work, must be part of OGMO. The Law No. 12.815/2013 gives OGMO exclusive rights in public ports to register and select permanent and casual workers, as well as manage their hire by port operators. OGMO is a non-profit entity collectively created and financed by all the port operators as an obligation established by law. There is just one OGMO per public port, collectively managed by all the ports operators. It is possible that an OGMO acts in more than one public port (e.g. OGMO Aratu e Salvador). However, no port operator can invest in a different separate labour-pool company other than the OGMO of the port in which it operates. OGMO cannot provide services to third parties (only to the port operators of the determined public port) or carry out any activity not linked to the management of labour.

Harm to competition

OGMO's monopoly of the registration and supply of labour constitutes a limitation on trade imposed on port operators in public ports. It also excludes other companies with different corporate activities, such as temporary work agencies, from the market. The establishment of exclusive rights restricts the level of competition in the port labour market, increasing costs of labour for port operators and potentially leading to fewer job opportunities for casual workers. Indeed, the National Confederation of Industry (CNI) has pointed out that mandatory hiring through OGMO prevents port operators from accessing the labour market fully, restricts labour supply, and raises costs, which can affect the final user price (CNI - Confederação Nacional da Indústria, 2018^[91]). Port operators interviewed by the OECD expressed similar concerns.

The obligation to hire workers through the OGMO labour pool is one of the issues most often highlighted by operators of Brazilian public ports as a competitive disadvantage when compared with private ports, which are not subject to this requirement. Stakeholders in public ports pointed out that it makes their operating costs higher than those in private terminals. This can distort competition by creating competitive asymmetry with clear benefits for the private terminals that do not hire casual workers through OGMO, as well as failure to provide adequate service (Quadros, 2022^[92]). This happens because the leased terminals within public ports will have more costs and will compete with the private terminals which do not have to bear the same burden.

For example, a 2020 study by TCU, looked at the economics of hiring workers through OGMO in the Port of Santos. In each terminal, the feasibility study estimated 31% of the terminal's revenue was used to cover expenses incurred through labour hired through OGMO.

European Union member states have successfully removed almost all the restrictions in the port labour market. Box 3.16 explains how restrictions to the port labour market have been addressed in Spain as a result of a complaint lodged by the European Commission.

Box 3.16. Procedures against the dockworker pool system in Spain

In 2014, the European Commission began assessing the closed and, sometimes, exclusive character of certain labour pools; this led to procedures against dockworker pool systems in Belgium and Spain.

After a complaint lodged by the European Commission, the Court of Justice of the European Union (CJEU) found in 2014 that in Spain the obligations for terminal operators to register with a port labour pool company and to employ pool workers preferentially was against Article 49 of the Treaty on the Functioning of the European Union (TFEU) (Notteboom, 2018^[88]) which states that restrictions on the freedom of establishment of nationals of a Member State in the territory of another Member State shall be prohibited. This resulted in a reform which established the freedom to hire port workers, while also creating port-employment centres (CPE) which could serve as pools facilitating the sharing of workforce among companies. The resulting Decree-Law No. 9/2019, which regulates the CPE, aims to promote a more balanced approach to the profession's precarity, taking into account its nature as casual labour but also the specific sector to which it belongs (OECD, 2021^[18]).

Recommendation

The OECD recommends that the OGMO monopoly for the registration and supply of port workers be abolished. Brazilian authorities should discuss with unions necessary considerations for the design of new legislation. In particular, Brazilian authorities should take into account both the unpredictability of the demand of casual port workers and the flexible requirements of today's shipping industry.

3.3.3. The monopoly in establishing worker teams

Description of the obstacle and policy makers' objective

In public ports, neither port operators nor OGMO choose the specific workers to perform each task because workers provide their services following a pre-established rotation system. In addition, neither can choose the number of casual workers needed to perform each task as team numbers are set out in a collective agreement signed by unions and port operators, and commonly valid for one or two years.

For instance, in a public port the collective agreement provides that the task called *conexo* – the lashing and unlashing of containers – requires five workers. The port operator cannot hire a different number to perform this task even when it is preferable, for example, due to specific technical equipment employed by the company or because there is no safety issue. During each shift, the worker determined by the rotation system must be hired and will then work for a single operation in a team with the number of workers established in the collective agreement. The amount earned by the workers is also fixed in these collective agreements. The rotation systems were established to prevent unions from manipulating worker teams; before the system, mainly workers with relations with unions were hired by port operators.

Harm to competition

According to the academic literature the rotation schedule creates inefficiency, as it allows casual workers to participate in the work schedule, with mandatory hiring by leased terminals, without any possibility for the contracting party to select professionals (Tribunal de Contas da União, 2020^[41]).

The rotational schedule, without encouraging more productive workers, also generates low interest in professional development among casual workers. Research by the TCU in terminals highlighted that many of the training courses offered by OGMO (which are the legally responsible entities for the qualification of port workers) attract only a few interested workers as workers know they will be hired even if they are not the best choice for that job vacancy, given that employers cannot select workers for their competencies or qualifications (Tribunal de Contas da União, 2020^[41]). The TCU also pointed to a study that concluded that the port work done by casual port workers hired by OGMO could be done with 40% of the workforce, which shows that hiring casual port workers through OGMO is 150% more costly than directly hire a casual worker (Tribunal de Contas da União, 2014^[93]). International benchmarking shows that the freedom to choose the worker to hire is accepted in many jurisdictions, including in Argentina and Peru in South America. In Spain, the composition of the teams is subject to negotiation for each port. Before the RDL 9/2019 which allowed negotiations, the teams were generally bigger than what was needed, and this had effects on productivity at scale. Therefore, the Royal Decree has expressly provided that the company holding the cargo handling port service licence has the power to designate the personnel needed to perform each of the port activities (OECD, 2021^[18]).

In port labour pools internationally, employees and employers generally define the number of workers required for each operation (ITF, 2021^[85]). This aims to determine the overall labour supply needed in a port to meet current and future traffic needs, while generating efficiency and ensuring that sufficient labour is always available.

Private terminals have the freedom to select their workers and to set the number of workers required in each activity. In 2020, dock workers' hourly wages in private ports were on average 30% lower than those earned by a casual worker in a public port. This would appear to show that flexibility in choosing worker numbers in each team and the possibility of port operators freely selecting their workforce leads to them paying significantly lower wages to increase efficiency. In addition, Brazilian labour legislation has mechanisms to protect workers from earning less than the minimum wage.

All these sources of inefficiency harm competition when a public port with its OGMO-registered workers competes with a private port and its freedom to choose the most efficient workers.

Table 3.12. Numbers and salaries of port workers in OGMO and private ports, 2020

Occupation	Private Terminals		Public Ports – OGMO		Difference %
	Number	Avg. Monthly Salary (BRL)	Number	Avg. Monthly Salary (BRL)	
Estivadore	1 441	3 317.7	13 313	5 396.2	-62.6%
Loading and unloading checker	822	4 400.6	447	9 640.0	-119.1%
Loader (warehouse)	517	1 383.9	102	915.4	33.9%
Loader (ground transportation vehicles)	263	2 485.9	-	-	-
Crane operator (fixo)	186	5 543.5	-	-	-
Night guard	262	2 417.5	177	2 895.8	-15.8%
Others	17 493	4 358.8	769	3 846.0	11.0%
Total	20 298	4 178.4	14 808	5 383.1	-28.8%

Source: Ministry of Labour and Social Welfare (2020).

Recommendations

The OECD has two recommendations.

1. The Brazilian authorities should allow port operators to assign workers to allow them to choose workers who best meet their needs.
2. Brazilian authorities should introduce flexibility in the set number of workers required to perform each task.

3.3.4. Exclusivity in the management of port-worker training

Description of the obstacle and policy makers' objective

In public ports, registration as a port worker depends on a prospective worker's prior professional qualifications and training by OGMO or by an OGMO-appointed entity. As explained below, OGMO has exclusivity in the management of port workers. Port workers can register and work in public ports only if they have been trained by OGMO or by an entity appointed by them.

The legislation gives OGMO exclusive management of port-worker training in public ports. In particular, OGMO must support the professional training of permanent and casual port workers, adapting it to the modern processes of cargo handling and operation of port machinery and equipment.

OGMO's exclusive management of training for the casual workforce constitutes a limitation imposed on port operators in public ports since private terminals do not have to pass through OGMA for training.

Box 3.17. Port-worker training: an international perspective

Globally, the bodies that commonly manage port-worker training include: 1) a public agency, the state, or port authority; 2) joint worker-employee organisations, or 3) employee or employer organisations (Van Hooydonk, 2014^[87]). Brazil falls within the third group as OGMOs – managed by the port operators pursuant to the obligation laid down in the Law 12.815/2013 – have exclusive control of worker training.

Ports where the exercise of port activities is controlled (such as through a system of registration of workers) often invest heavily in worker training. At the Port of Antwerp-Bruges, for example, workers must undergo rigorous initial training before starting work. About one-fifth of the training period is theoretical; the rest is practical work, such as load handling (Tribunal de Contas da União, 2020^[41])

The main international reference for training in the port sector is the International Labour Organization's *Guidelines for training in the port sector*, published by the ILO in 2012 (International Labour Organisation, 2012^[94]) These identify the competencies required for all functions along the transport and logistics chain (OECD, 2021^[18]) (Van Hooydonk, 2014^[87]).

In “Communication on a European Ports Policy”, published in 2007, the European Commission proposed setting common standards for the training of port workers. However, as of 2021, no specific regulation at an EU level has been introduced, except the Bulk Terminals Directive (2001/96/EC), which requires safety training for all staff at solid-bulk terminals (OECD, 2021^[18]).

In Italy, a national law establishes training and certification of all workers, and while labour pools are required to provide training, they do not have the monopoly. In other countries, including Finland and Denmark, equipment operators, such as crane drivers or workers handling dangerous goods, must hold a special training certificate. Finally, Croatia, Estonia and Ireland, have no specific training requirements other than the mandatory occupational health and safety training (Van Hooydonk, 2014^[87]). None of the studied countries has a monopoly training body for port workers similar to Brazil.

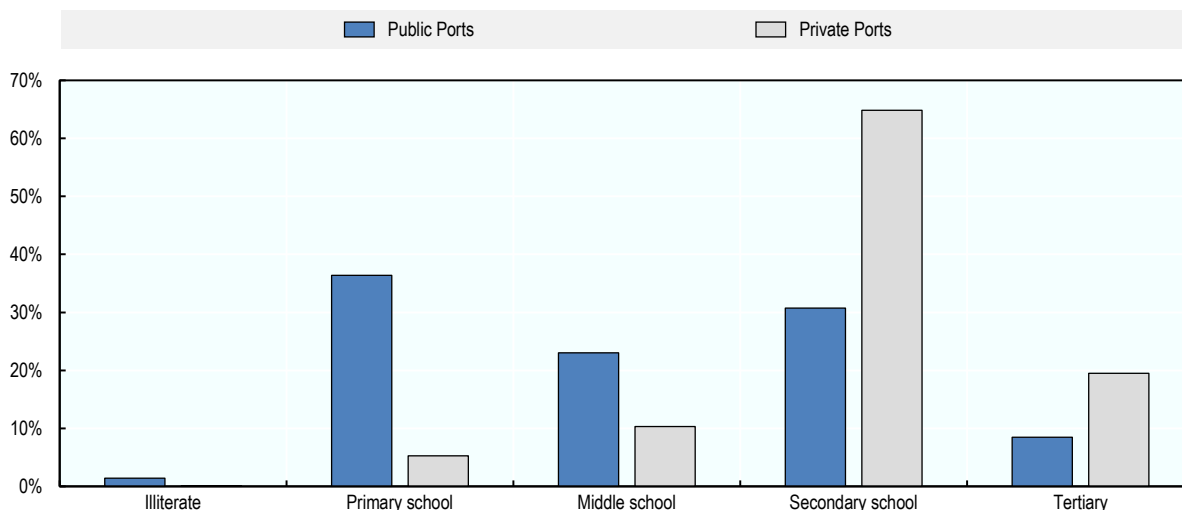
Harm to competition

Through its control on training, OGMO can determine who can become a port worker as training is a prerequisite to becoming a registered port worker. In this sense, OGMO's control of training constitutes a barrier to market access.

In addition, the fact that OGMO manages the training and not the employer might lead to less efficient workers since the individual training needs of each one may not be detected.

Regarding the educational level, as shown in Figure 3.24, workers hired through OGMO have lower educational levels than those at private terminals. This may be due to the rotational shift system, as port operators must hire the registered worker next in the rotational shift and cannot help workers strengthen their skills and knowledge.

Figure 3.24. Educational level of workers at public ports and private terminals, 2020



Source: (Ministério do Trabalho e Previdência, 2022_[90]).

In addition, adequate training is an important variable for the physical well-being of the workers and for port productivity (Notteboom, 2010_[95]). According to the ILO, training helps safeguard occupational safety and health in ports and is a way of intensifying the welfare and skills of port workers who can then better use new technologies for port operations (International Labour Organisation, 2012_[94])

Recommendation

The OECD has the following recommendation. Brazilian authorities should remove OGMO's exclusive management of port-worker training and allow port operators to choose the training most appropriate for their workers.

3.4. Segregation and Delivery Service Fee

The segregation and delivery service fee (SSE) is a fee charged by port operators – both public and private – for the handling of containers inside the port terminal. A legal definition is provided by Resolution No. 72, of 30 March 2022, issued by ANTAQ.⁴⁵ SSE relates, among other activities, to the cargo movement service from storage to the vehicle at the port terminal gate for importation (ANTAQ, 2022_[96]).⁴⁶

Until the 1990s, the ports sector in Brazil had a model marked by strong state intervention, with the administration, co-ordination, and operation of ports carried out by a state company, Empresa de Portos do Brasil (Portobrás). It controlled the dock companies (which were also state-owned entities) responsible for each port. With the abolition of Portobrás by Law No. 9029/1990, the operation and administration of Brazilian ports passed exclusively to the dock companies (CADE, 2016_[97]). After the enactment of Law No. 8 630/93, the operation of public ports⁴⁷ was no longer exclusive to dock companies, as the law implemented the landlord model in Brazil, a form of port management that aims for the progressive transfer of port activities from the port authority to the private sector. This governance model sees the port authority owning the port infrastructure and the port area, but leasing the infrastructure to private players (Ferreira dos Santos, 2019_[98]).⁴⁸ Under the landlord model, private operators are responsible for implementing and

developing port equipment, but also for managing their businesses, including hiring the docks and administrative workforce, for the security of their facilities, and for the development of other business-related activities (CADE, 2005^[99]). With the landlord model, competition for port services takes place in two ways: 1) interport competition between infrastructure providers who compete with other port facilities to attract volumes to their port; and 2) intra-port competition in downstream markets for services such as cargo loading and unloading, provided by terminal operators (OECD, 2011^[2]).

Port operators usually have contracts with different maritime-transport operators related to services for berthing, stowage and horizontal handling services in the port. Port operators are responsible for unloading and loading all cargo of a certain ship destined to a certain port (Soares Coelho, 2013^[100]).

Port operators are remunerated by their clients – shipowners – through a fee called “box rate”, which includes vertical movements⁴⁹ (covered by liner-terms contracts that set out the costs of the service provided by the shipping company to the shipper or end clients) and horizontal movements⁵⁰ (not included in liner terms contracts) of containers. When the box rate is added to the freight handled on behalf of shipowners, this tariff is called the terminal handling charge (THC) or wharfage price.

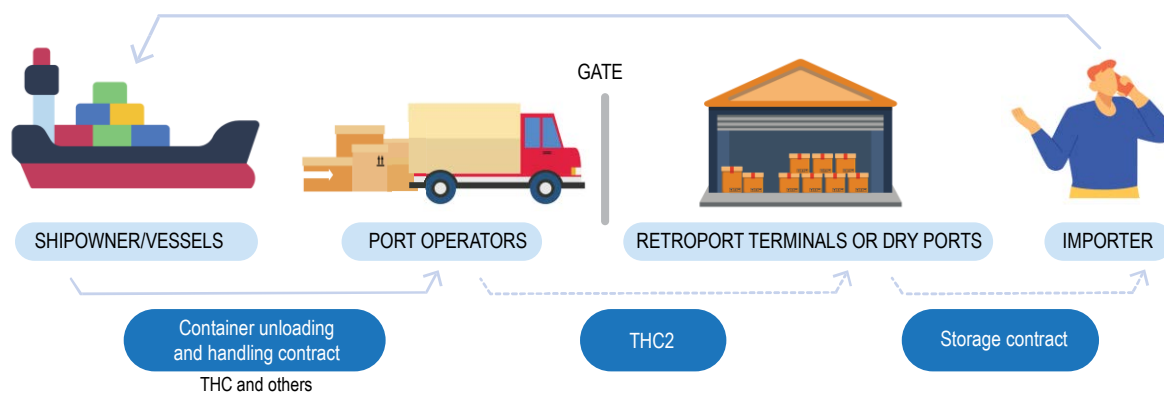
After unloading cargo from vessels, port operators move the cargo to storage terminals, where it waits until delivered to importers. Port operators usually keep these warehouses within the public port. This service is covered by an additional fee (Oliveira Fernandes, 2015^[101])

A new segregation and delivery service fee (SSE) or THC2 was created after the establishment of retroport terminals, also known as dry ports, by Decree No. 1910 of 21 May 1996. These were “installations for the provision of public services for the movement and storage of imported and exported goods, not located in a port or airport area”.⁵¹ They are authorised by the Federal Revenue Service of Brazil as customs facilities (just like port operators),⁵² and so are also able to store imported goods until customs clearance.⁵³ The main difference between the port terminal and the retroport terminal is that the former only handles transfers of cargo to the whips, while the latter is a facility that also performs services up to customs controls to facilitate the transit and logistics of the port terminal. It was a solution by the Federal Revenue Service itself to improve overloaded terminals, so the retroport terminal is often located a long distance from the port terminal.

Retroport terminals began to compete with the port operators in the cargo storage market, which led to operators demanding additional fees not initially foreseen in cargo-handling charges from users of port services (Secretaria de Advocacia da Concorrência e Competitividade, 2021^[102]). The justification for SSE/THC2 was that the segregation of cargo destined for customs facilities located outside the port would involve additional costs not covered by the usual THC fee (Oliveira Fernandes, 2015^[101]).

In contrast, retroport terminals argued that port operators were effectively offering no service other than the horizontal movements already covered by the THC. According to them, port operators have artificially created a fee for a service (that was already covered by existing charges) only to increase retroport terminals’ costs (Prata de Carvalho and Frazão, 2020^[103]). Figure 3.25 shows graphically the cargo importation flow and the imposition of the SSE/THC2.

Figure 3.25. Cargo importation flow with the imposition of the SSE/THC2



Source: OECD based on (R. Amaral Advogados, 2021^[104])

Box 3.18. Diverging views on SSE/THC2: ANTAQ, CADE, SEAE and TCU

ANTAQ resolutions

Since its establishment in 2001, ANTAQ has been charged with developing norms for the provision of transport services and operation of waterway and port infrastructure. In 2003, ANTAQ looked into the legality of SSE/THC2 and concluded that cargo-handling services for retroport terminals were fully covered by the THC. In 2019, however, ANTAQ's directors council considered SSE/THC2 a legitimate fee, clarifying that there were additional costs related to the separation and delivery of containers to retroport terminals.

In 2012, ANTAQ published the Normative Resolution No. 2389/2012, based upon the conclusions of a working group created to resolve differences on the subject. The Resolution found that, on the importation regime, the THC tariff would only remunerate the movement between the side of the vessel and the placement of cargo in a port operator's terminal warehouse.

Finally, in 2019, ANTAQ published Normative Resolution No. 34/2019, revoking Resolution No. 2389/2012. The new norm provides that "the SSE on imports is not part of the services remunerated by the box rate, nor of those whose expenses are reimbursed through the THC, unless otherwise provided for in the contract". In other words, this provision expressly provides for the possibility of charging SSE/THC2 and concludes that such a fee does not overlap with the THC.

CADE

CADE reached a decision on the first case about SSE/THC2 in 1999, finding that the imposition of SSE/THC2 fees artificially increased rival costs and constituted an abuse of dominant position. Until 2021, there were around nine administrative procedures before CADE's Tribunal involving port fees related to the service of segregation of goods from importation in several ports throughout Brazil. In June 2022, CADE's Economic Department released an opinion divergent from CADE's Tribunal case-law, namely by concluding that the SSE/THC2 fees are justified from an economic perspective.

TCU

TCU, which is the competent authority to inspect regulatory agencies' activities, issued an opinion in 2018 that concluded that the resolution creating the THC2 (Resolution No. 2389/2012) had to be revised by ANTAQ, as it directly violated the Brazilian Competition Act at the time by regulating the collection of THC2.

In June 2022, TCU decided that ANTAQ shall annul all provisions of the new resolution that allows a fee to be charged for the SSE/THC2 fee. The reporting Minister concluded that the current version of the regulation contains ‘express deviation’ and ‘defect of purpose’. The Minister considered that, in issuing Resolution 72/2022, which allows port terminals to charge SSE on retroport terminals, the agency enacted regulation that failed to comply with the principle of avoiding abuse of regulatory power,⁵⁴ which would incentivise the creation of ‘market privilege by favouring an economic or professional group through regulation, to the detriment of other competitors’.

SEAE opinion

In January 2022, Brazilian competition-advocacy entity SEAE released an opinion assessing the effects of ANTAQ’s Normative Resolution No. 34/2019 on competition and other incentives for economic efficiency, in particular its permission to charge the SSE/THC2 fee. In its conclusion, SEAE recommended the amendment of the resolution, due to “strong indications of presence of regulatory abuse that leads to competitive distortion”.

Note: The SSE/THC2 is not the only disputed fee between port operators and retroport terminals. Indeed, CADE has already investigated and ruled on cases concerning the ISPS code and faithful deposit fees (Secretaria de Advocacia da Concorrência e Competitividade, 2021_[102])

Source: (Brasil, 2001_[105]) (ANTAQ, 2003_[106]) (ANTAQ, 2005_[107]) (Oliveira Fernandes, 2015_[101]) (ANTAQ, 2022_[96])

The legal and competitive implications of SSE/THC2 have been subject to debate for more than two decades in Brazil. Several Brazilian public bodies have looked into the matter in recent years. ANTAQ has assessed SSE/THC2 from a regulatory perspective, while CADE and SEAE have analysed its competition implications (see Box 3.18).

In 2019, ANTAQ published its Normative Resolution No. 34/2019, in which it provides different definitions of THC and SSE and thus states that SSE/THC2 does not overlap with the THC and relates to different services paid by the importer to the port operator (Prata de Carvalho and Frazão, 2020_[103]). Moreover, Normative Resolution No. 34/2019 provided that port operators are free to negotiate the remuneration concerning SSE/THC2, but the maximum prices must be previously disclosed in price lists, observing the commercial conditions stipulated in the leasing agreements and ANTAQ’s rules.⁵⁵

While in the past CADE and ANTAQ traditionally adopted divergent positions regarding SSE/THC2, in June 2021, they signed the Memorandum of Understanding No. 01/2021 regarding co-operation procedures in the analysis of SEE/THC2 (ANTAQ and CADE, 2021_[108]).⁵⁶ The MoU provides that the SSE/THC2 is not an illegal fee per se, but in certain circumstances, it can be abusive when it is possible to verify for example: 1) the abusiveness of the values (i.e. the amount charged through the SSE/THC2); 2) its discriminatory nature; 3) the lack of economic rationale; 4) double charging for items already covered by other fees, such as the terminal handling charge (THC); and 5) charging by service without effective performance of an additional service, among others.

Both agencies committed to making efforts to co-operate and establish procedures to identify abusive behaviours. Moreover, CADE and ANTAQ will inform each other about the initiation of new proceedings concerning this fee and will promote an exchange of experiences to improve regulation of SSE/THC2 collection (ANTAQ and CADE, 2021_[108]).

3.4.1. Lack of legal certainty

Description of the obstacle and policy makers’ objective

Several stakeholders have stressed concerns related to the legal uncertainty arising from SSE/THCs fee issues. The legal uncertainty seems partially related to the lack of a clear legal framework – due to frequent

changes in ANTAQ regulations – that defines the scope of services provided by port operators for handling containers in the port terminals and their remuneration mechanisms.

Harm to competition

Such an unclear legal framework may enable port operators to raise costs in the container-storage market by charging for artificial services. It allows port terminals to leverage their market power to implement abusive conduct toward retroport terminals, which may have negative implications for competition and potentially higher prices for importers who deal with retroport terminals (and so indirectly their consumers).

The current legal framework may create disincentives for retroport terminals and put them at a competitive disadvantage since they face higher costs compared to storage services in public and private port terminals. In this context, port operators would be able to offer integrated services including storage, without customers incurring any additional fees.

At the same time, port-service fees should reflect actual business costs in order to protect port operators' investments and profit expectations. As described, port operators are subject to concession contracts signed with the Brazilian Government that contain terms and conditions designed to protect investments and maintain economic incentives for contract performance in addition to preserving private interest in future concession rounds.

Finally, importers may be unable to assess properly the cost of imports given the legal uncertainty on port fees due to SSE/THC2.

Brazil would benefit from more legal clarity and stability on this matter, which would also have possibly positive implications for foreign investments and the overall competition framework in the country. Joint efforts may also help mitigate legal uncertainties, such as the MoU recently signed by ANTAQ and CADE regarding the legality of the SSE/THC2 fees. Moreover, objective, transparent and non-discriminatory regulatory provisions may also reduce risks of abusive conducts in the relationship between port operators and retroport terminals.

Recommendation

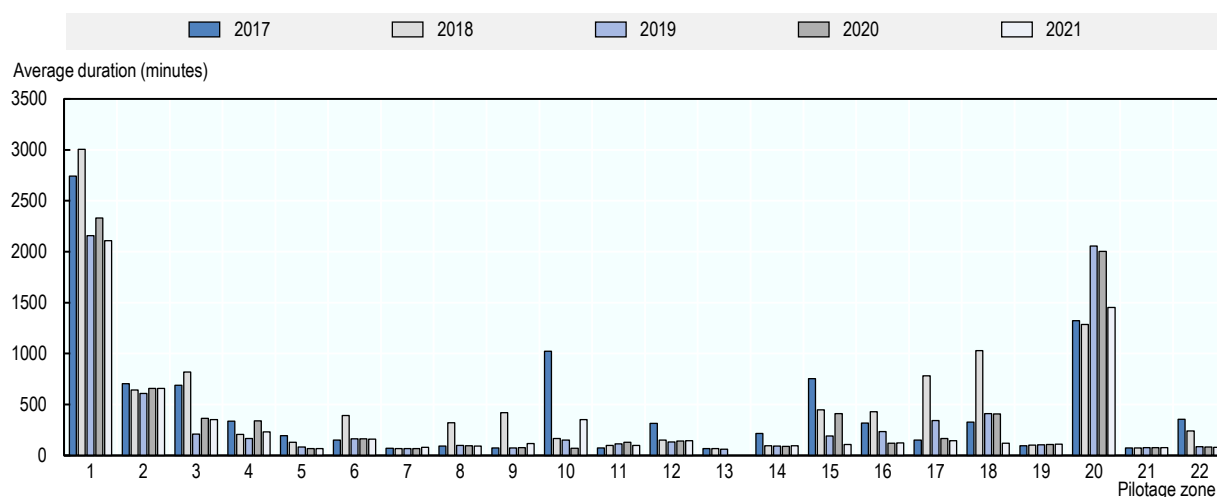
Brazilian authorities should address the lack of legal certainty related to the port fees for the handling of ship containers. Brazil should consider clarifying the current legal framework with transparent, non-discriminatory, and objective provisions to charge port fees including those related to the SSE/THC2 fee.

Annex 3.A. Quantification on pilotage

To calculate the benefits associated with the implementation of the recommendations, the OECD gathered data on all pilotage manoeuvres in Brazil between January 2019 and October 2021. This amounted to information about 328 000 manoeuvres, as well as data on vessels' characteristics, including the flag register, cargo type and gross tonnage. The OECD also obtained data on average prices charged in Brazil and in comparison countries, either from Brazilian authorities or the private sector, which were then aggregated to preserve confidentiality when applicable.

For safety reasons, the Brazilian Navy has established pilotage zones along the country's coastline and Amazon River in which professionals provide pilotage services. Brazil's 7 300-kilometre coastline has 624 pilots allocated by the DPC (under the Brazilian Navy), according to the needs of each of the 20 pilotage zones, as presented in Table 3.8. Three pilotage zones are notably distinct: PZ 1 encompasses the ports of Itacoatiara and Fazendinha, which lie over 1 000 kilometres inland on the Amazon river; PZ 2 is also located in the Amazon and serves the port of Manaus, over 1 200 kilometres up the Amazon River from the Atlantic Ocean; and, in the extreme south, PZ 20 serves the city of Porto Alegre, 315 kilometres from the mouth of the Lagoa dos Patos. These characteristics are observed in the average manoeuvre duration of these pilotage zones, as shown in Annex Figure 3.A.1; for example, in 2018, the average manoeuvre duration in PZ 1 was 3 000 minutes.

Annex Figure 3.A.1. Average manoeuvre duration in pilotage zones, 2017-21



Source: OECD calculations based upon Brazilian Navy data.

To guarantee availability of those professionals and allow them adequate rest periods, the DPC defines technical standards to be followed by the pilots, including a rotational shift. As described in Section 3.2.8 above, this regulation obliges an incoming vessel to hire the next pilot in line and limits competition between pilots. This setup leads to a monopoly-like market-power, as there is only one pilot to be hired at a given time, and equally splits the incoming vessels among the pilots. As an additional result, respecting the break period, the regulation also seeks to ensure pilots' availability at any time.

Pilotage prices in Brazil are significantly higher than in international ports for vessels of different gross tonnage, as shown in Annex Figure 3.A.2.

To quantify consumer benefit, assuming a constant elasticity of demand, the approach proposed in (OECD, 2019_[109]) is:

$$CB = (\rho + \frac{1}{2}|\epsilon|\rho^2)R_r$$
Equation 2

Where ρ is price difference (%)

R_r is revenue

ϵ is elasticity.

Using this data, the revenue (r) and the price difference (p) can be estimated to calculate consumer benefits, as set out in the OECD Toolkit, which takes into consideration that:

1. prices are averaged for an entry-exit port visit, and include all manoeuvres made from entry into the port until departure
2. prices are given for gross-tonnage categories
3. prices were not provided for all ports
3. the database does not specify the type of manoeuvre, such as entry, exit or anchoring.

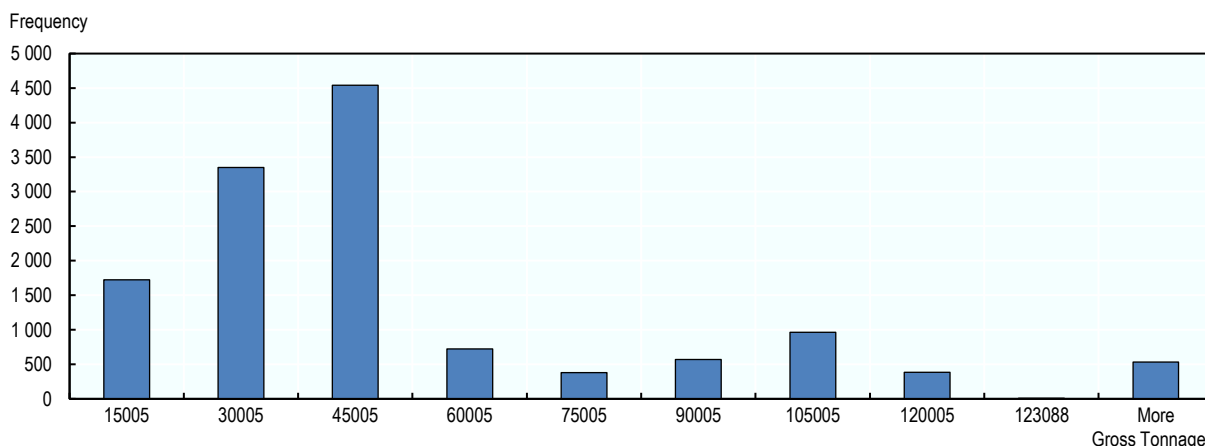
To estimate the price difference (ρ), the port with the highest price for each size category was selected as a benchmark to arrive at a conservative estimate of any price change due to the implementation of the recommendation. The selected ports for each gross tonnage category are displayed in Table 3.A.1 below. The ports and pilotage zones for which data are available in Brazil are presented in Annex Figure 3.A.3. For others the country average was used to estimate the revenue.

Annex Table 3.A.1. Pilotage zone and ports in the price database

Pilotage zone	Port, state
9	Recife, Pernambuco
10	Maceió, Alagoas
12	Salvador, Bahia
12	Ilhéus, Bahia
15	Angra dos Reis, Rio de Janeiro
15	Rio de Janeiro, Rio de Janeiro
16	Santos, São Paulo
16	Ilhabela, São Paulo
17	Paranaguá, Paraná
18	Itapoá, Santa Catarina
19	Rio Grande, Rio grande do Sul
21	Itajaí, Santa Catarina

Vessels entering Brazilian ports have on average lower gross tonnage than observed price categories (Annex Figure 3.A.2) in the gathered data, so to calculate the manoeuvre revenue, first a “dollars per gross tonnage” ratio was computed, which then was multiplied by vessels’ gross tonnage. Given those prices, the lowest price difference between the average price charged in Brazil and the highest price observed internationally is 71%. The TCU itself calculated an average price difference of 528% between Brazilian and international ports.

Annex Figure 3.A.2. Gross tonnage distribution of Vessels entering Brazilian ports, 2017-21

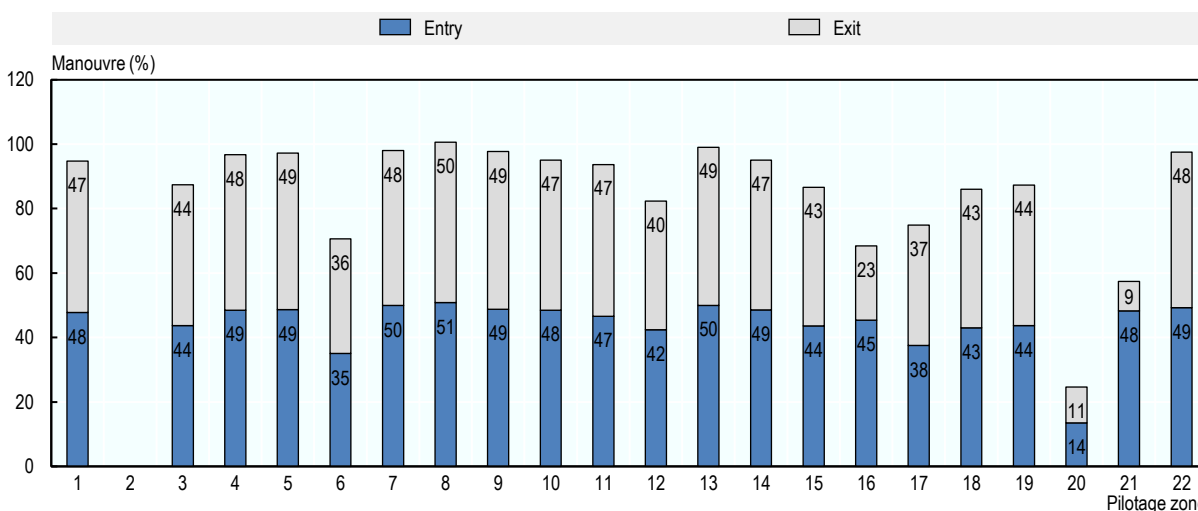


Source: OECD calculations, based upon Brazilian Navy data.

Before entering a pilotage zone, vessels are required to wait at a predetermined location for a pilot’s arrival. In the opposite direction, a vessel departing a pilotage zone is directed to a specific spot where the pilot disembarks and the ship continues to its next destination. This information was used to define vessels’ entry and exit into specific pilotage zones and to calculate the number of entry-exit cycles that could be multiplied by prices to estimate eventual revenue.

Annex Figure 3.A.3 shows the percentage of manoeuvres identified as an entry or exit in each pilotage zone, which was used to define the quantities of cycles. The DPC does not specify a specific waiting zone for PZ 2, but rather establishes that the vessels should wait in proximity to Itacoatiara port, reflecting the difficulty of identifying cycles.⁵⁷ For PZ 2 national averages of entry and exit were used, which is 83.1% of manoeuvres. PZ 6, 20 and 21 have different overall percentages, which might be the result of local specificities. Based on available data, PZ 16 had a relatively low number of exits compared to entries, so, in order to correct such data inconsistency, the number of entries was used. An annual average of 30 024 cycles in all the Brazilian pilotage zones was calculated; when multiplied by the lowest price charged in Brazil for pilot services and taking into account each vessel’s gross tonnage, gives revenue of BRL 757 million or BRL 3 million each month and pilotage zone.

Annex Figure 3.A.3. Entry and exit manoeuvre at pilotage zones, 2017-21



Source: OECD, based upon Brazilian Navy data.

Considering the average number of cycles and lowest price differences, we estimate a yearly revenue of BRL 757 million.

Using different hypothesis for the Demand Price-Elasticity, the benefit of implementing the recommendations was calculated as ranging from BRL 502 million to BRL 796 million a year.

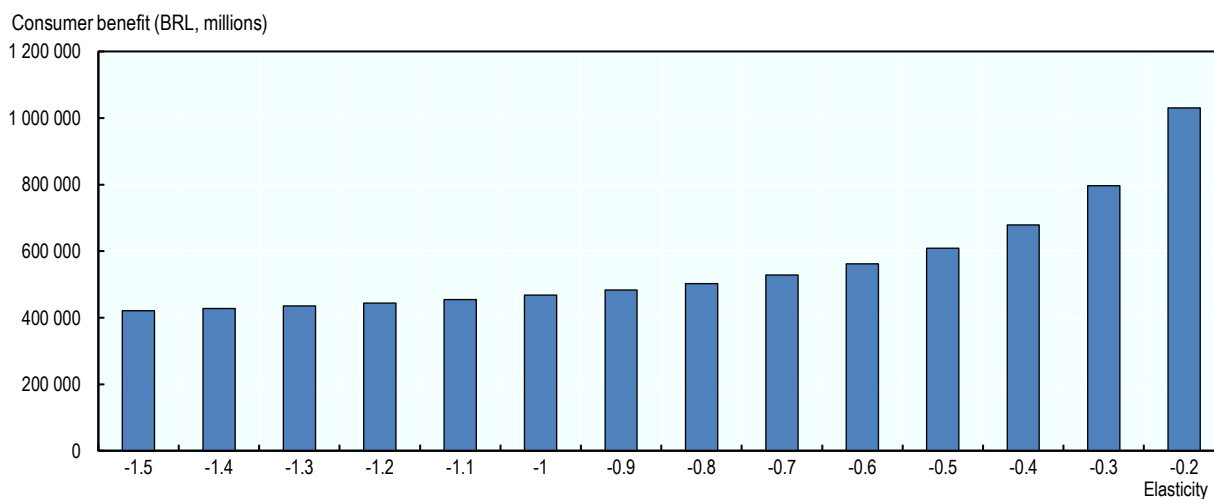
The estimation refers to direct estimated impacts on the price of the studied market and excludes dynamic effects such as of innovation or productivity.

Annex Table 3.A.2. Annual consumer benefit results

Number of cycles	Lowest price difference	Revenue (BRL)	Elasticity	Benefit (BRL)
30024	-43.1%	757 406 032.55	-0.8	502 752 688.07
			-0.3	796 250 857.26

To evaluate the sensitivity of the estimates to changes in elasticity, Annex Figure 3.A.4 presents estimates calculated using a wide range of elasticity. The estimates vary from around BRL 400 million with an elasticity of -1.5 to just over BRL 1 billion with an elasticity of -0.2.

Annex Figure 3.A.4. Benefit depending on elasticity



Annex 3.B. Quantification on pool of workers

To assess the expected impact of the implementation of the recommendations the OECD evaluated the potential cost reduction in public container-handling terminals. Using the collective agreement signed between the unions and the terminals in the Port of Santos (Brazil's largest), the cost incurred by the public terminals for each container handled was estimated. As a benchmark, average salary was calculated and a set of hypotheses used to estimate the costs incurred by private ports in Brazil.

Data were collected from RAIS, an annual social information report containing demographic, occupational and income data, between 2014 and 2020 to characterise workers' profiles and the demand for work in Brazilian ports. As the RAIS database registers information on all employment relationships between workers and companies, including occupation, salary, age, and qualifications, and companies' locations, it was possible to identify companies based on their economic activity code, as presented in Annex Table 3.B.1 or their unique registrations.

The economic activity codes for port-sector activities are classified in CNAE Class 52.31-1, under Port Management (52.31-1/01) and Terminal Operation (52.31-1/02), which includes public and private terminals. The activities are also listed under ISIC Rev. 4 Class 5222.

Annex Table 3.B.1. CNAE and ISIC codes associated with port activities

Division	Group	Class	Subclass		ISIC Rev.4
52				Warehousing and support activities for transportation	52
	52.3			Service activities related to water transportation	5222
		52.31-1		Port and terminal management	5222
			5231-1/01	Management of port infrastructure	5222
			5231-1/02	Terminal operations	5222

Source: IBGE and United Nations, 2008.

Given that information in the RAIS database is self-declared, there may be a certain level of accidental misreporting of CNAE codes or occupations. This could lead to miscalculations of the number of workers in terminal operations or management of port activities. To minimise this issue, the Inter-Union Department of Statistics and Socioeconomic Studies (DIEESE) filters in companies located in cities with ports, as presented in Annex Table 3.B.2, to which the OECD added a number of extra locations.

Annex Table 3.B.2. Selected port cities and states

City, State	City, State
Angra dos Reis, Rio de Janeiro	Manaus, Amazonas
Antonina, Paraná	Natal, Rio Grande do Norte
Arraial do Cabo, Rio de Janeiro	Paranaguá, Paraná
Bélem – Vila do Conde, Pará	Pelotas, Rio Grande do Sul
Cabedelo, Paraíba	Porto Alegre, Rio Grande do Sul
Vitória, Espírito Santo	Recife, Pernambuco
Fortaleza, Ceará	Rio de Janeiro – Sepetiba – Forno – Niterói, Rio de Janeiro
Ilhéus, Bahia	Rio Grande, Rio Grande do Sul
Imbituba, Santa Catarina	Salvador – Aratu, Bahia
Itaguaí, Rio de Janeiro	Santarém, Pará
Itajaí, Santa Catarina	Santos, São Paulo
Itaqui, Maranhão	São Francisco do Sul, Santa Catarina
Macapá, Amapá	São Sebastião, São Paulo
Maceió, Alagoas	Suape, Pernambuco

Source: DIEESE (2020) and OECD.

A different method was required to identify employees registered with OGMO, as they can be assigned to multiple CNAEs. Using the same approach as above would have resulted in an overestimation of the employment in the port sector, as other sectoral unions share the same CNAE codes. For that reason, 30 OGMO's were identified using the Brazilian register of legal entities, CNPJ, to acquire data on employment characteristics (Annex Table 3.B.3).⁵⁸

Annex Table 3.B.3. OGMO workers in Brazilian public ports

Region	State	Pool of port workers	Region	State	Pool of port workers
North-East	Alagoas	OGMO Maceió	North-East	Paraíba	OGMO Cabedelo
North-East	Bahia	OGMO Ilhéus	North-East	Pernambuco	OGMO Recife
North-East	Bahia	OGMO Salvador e Aratu	North-East	Pernambuco	OGMO Suape
North-East	Ceará	OGMO Fortaleza	North-East	Rio Grande do Norte	OGMO Areia Branca
North-East	Maranhão	OGMO Itaqui	North-East	Rio Grande do Norte	OGMO Natal
North	Amazonas	OGMO Manaus	North	AC	OGMO Cruzeiro do Sul
North	Amapá	OGMO Macapá	North	Pará	OGMO Santarém
North	Pará	OGMO Belém e Vila do Conde	North	Rondônia	OGMO Porto Velho
South-east	Espírito Santo	OGMO Espírito Santo	South-east	São Paulo	OGMO Santos
South-east	Rio de Janeiro	OGMO Angra dos Reis	South-east	São Paulo	OGMO São Sebastião
South-east	Rio de Janeiro	OGMO Forno	South-east	Rio de Janeiro	OGMO Rio de Janeiro, Itaguaí and Niterói
South	Paraná	OGMO Antonina	South	Rio Grande do Sul	OGMO Rio Grande
South	Paraná	OGMO Paranaguá	South	Santa Catarina	OGMO Imbituba
South	Rio Grande do Sul	OGMO Pelotas	South	Santa Catarina	OGMO Itajaí
South	Rio Grande do Sul	OGMO Porto Alegre	South	Santa Catarina	OGMO São Francisco do Sul

Data from 2020 indicates that over 13 000 employees hired by OGMO are port workers (stevedores), who can be assigned as casual workers and represent about 90% of the OGMO workforce. As shown in Table 3.12 (Section 3.3.3), 94.9% of all employees registered with OGMOs are employed in just four types of roles. Under CNAE code Operation of Terminals Activities (private terminals), stevedore is the most common position with 1 441 professionals with an average salary of BRL 3 317.

Cost comparisons

According to the collective agreement established between the operators of the public Port of Santos and its OGMO, the OGMO provides a fixed sized team of nine stevedores, four of whom work on lashing and unlashing activities and five perform loading and unloading tasks. Moreover, the collective agreement establishes that the stevedores lashing and unlashing are paid a fixed rate for a six-hour work shift, while the stevedore responsible for the loading and unloading activities is paid for each container handled, with differentiated prices for full or empty containers. The contract also establishes that the workflow is in a rotating system, so the team used by one company for one shift will not be the same for the next shift.

The total average cost of a six-hour shift is given by:

$$C_{shift} = C_{Lashing} + C_{Loading}$$

Equation 3

$C_{Loading}$ is given by:

$$C_{Loading} = Containers (prop_{full} * p_{full} + prop_{empty} * p_{empty})$$

Equation 4

Where:

containers is average number of containers handled by a fixed stevedore team.

prop is proportion of full or empty containers handled in the terminal.

p is price paid by full or empty container handled.

Using the contract parameters and certain hypotheses, C_{shift} can be calculated, which when divided by the average number of containers equals the average cost per container or $C_{container}$:

$$C_{container} = \frac{C_{shift}}{containers}$$

Equation 5

From the collective agreement the value of the following variables can be identified:

- a six-hour lashing shift costs: BRL 12 833 for each worker
- cost for a full container: BRL 5.03
- cost for an empty container: BRL 1.35

The hypotheses are:

- number of containers handled by a team in a six-hour shift: 150
- share of empty containers: 25%

$$C_{Loading} = 150 * (75\% * 5.03 + 25\% * 1.35)$$

Equation 6

This adds up to BRL 3 476.05 for a six-hour shift, or BRL 23.17 per container. Adding in an additional 120% in social-security and pension contributions, using casual port workers leads to an average cost for each container of BRL 50.98.

Private terminals have the flexibility to define their own teams, both in terms of size and in the proportions of each lashing or loading team. According to documentation shared with the OECD, a fixed team in a

private port averages five stevedores, of whom four work lashing and one is loading. These directly hiring stevedores can also be reused in the same team in subsequent activities (subject to the requirement to comply with mandatory breaking times requirements but without any obligation to respect a rotating scheme), which leads to a higher work productivity, or a higher number of containers handled in a six-hour shift. According to studies shared with the OECD, on average, 300 containers are handled during each six-hour shift in private terminals.

The average stevedore's monthly salary in a public port is BRL 5 194.84 or BRL 173.16 for each six-hour shift, meaning a team of five in a six-hour shift costs BRL 865.81 (Annex Table 3.B.4). This figure is likely biased by the Port of Santos being far above the national average regarding both, the average salary and percentage of containers handled.⁵⁹ The average cost for each container handled in a shift equals BRL 2.89 or BRL 6.35 with social contributions. Moreover, adding in a 10% idleness cost, directly hired stevedores' average cost for each container is BRL 6.98. The average difference in cost between the two hiring methods equals BRL 44.

To evaluate how many containers are handled by casual workers, the number of casual port workers (14 039), and the regular workers (2 930) were counted. Considering the number of containers by private-port workers as the double of those handled by fixed workers, 70.5% of containers were found to be handled by casual workers. This was multiplied by the number of containers handled in the Brazilian public ports in 2020 – 4 432 180 – which equals 3 124 687 containers. Finally, the number of containers was multiplied by the price difference.

It is estimated that the employment of casual workers has an average annual cost of BRL 137.5 million.

Annex Table 3.B.4. Comparison between casual and fixed workers

	Containers handled during each shift	Team size	Cost for each container	Number of containers handled by casual workers in 2021	Yearly additional cost for the use of casual workers
Casual	150	9	BRL 50.98	3 124 687	BRL 137 480 355.61
Fixed team	300	5	BRL 6.98		

Data from ANTAQ show that in 2021, the number of containers handled in Brazilian public ports was 4 815 278, 73.4% of which were full and 26.6% empty.⁶⁰ Private terminals handled 2 272 856 containers, with a similar ratio of full (77.8%) and empty (22.2%) containers.

Annex Table 3.B.5 presents a sensitivity test for estimates of price differences that fixes casual workers' cost and varies private-port costs through changes in team size and the number of containers handled during shift. It is worth noting that the estimates presented decrease with increases of the number of containers handled while they increase with raises in the team size. Furthermore, when considering the number of containers handled and team size in the public ports, the private terminals' cost reaches BRL 25 per containers, which represent about half of the public ports' cost under the same hypothesis, as shown in Annex Table 3.B.4.

Annex Table 3.B.5. Sensitivity test for price differences between ports

Containers handled by shift	400	1.05	2.10	3.14	4.19	5.24	6.29	7.33	8.38	9.43	10.48	11.52	12.57	13.62
	375	1.12	2.23	3.35	4.47	5.59	6.70	7.82	8.94	10.06	11.17	12.29	13.41	14.53
	350	1.20	2.39	3.59	4.79	5.99	7.18	8.38	9.58	10.78	11.97	13.17	14.37	15.56
	325	1.29	2.58	3.87	5.16	6.45	7.74	9.03	10.32	11.60	12.89	14.18	15.47	16.76
	300	1.40	2.79	4.19	5.59	6.98	8.38	9.78	11.17	12.57	13.97	15.37	16.76	18.16
	275	1.52	3.05	4.57	6.10	7.62	9.14	10.67	12.19	13.71	15.24	16.76	18.29	19.81
	250	1.68	3.35	5.03	6.70	8.38	10.06	11.73	13.41	15.09	16.76	18.44	20.11	21.79
	225	1.86	3.72	5.59	7.45	9.31	11.17	13.04	14.90	16.76	18.62	20.49	22.35	24.21
	200	2.10	4.19	6.29	8.38	10.48	12.57	14.67	16.76	18.86	20.95	23.05	25.14	27.24
	175	2.39	4.79	7.18	9.58	11.97	14.37	16.76	19.16	21.55	23.95	26.34	28.73	31.13
	150	2.79	5.59	8.38	11.17	13.97	16.76	19.56	22.35	25.14	27.94	30.73	33.52	36.32
	125	3.35	6.70	10.06	13.41	16.76	20.11	23.47	26.82	30.17	33.52	36.88	40.23	43.58
	100	4.19	8.38	12.57	16.76	20.95	25.14	29.33	33.52	37.71	41.91	46.10	50.29	54.48
	75	5.59	11.17	16.76	22.35	27.94	33.52	39.11	44.70	50.29	55.87	61.46	67.05	72.64
	50	8.38	16.76	25.14	33.52	41.91	50.29	58.67	67.05	75.43	83.81	92.19	100.57	108.95
		1	2	3	4	5	6	7	8	9	10	11	12	13
		Private-port team size												

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Notes

¹ This figure of 0.16% is from 2019, before the COVID-19 pandemic, and is the most recent available data. The volume of services provided by water transportation has a close relationship to ports' cargo handling skills and capacities (IBGE, 2022^[99]). The data of water transportation encompass section H -Transportation and Storage, division 50 – Water transportation, from the CNAE 2.0 (National Classification of Economic Activities). The data from 2019 is the most recent available for the level of segregation.

² One measure of a sector's importance to an economy is the level of employment it requires to function. Employment in the Brazilian sector of water transportation and activities incidental to water transportation has increased in recent years. In 2006, the sector had nearly 51 000 jobs; by 2002, this had risen to nearly 89 000, a 75% increase. Support navigation was the main reason for this increase: jobs rose from less than 2 000 in 2006 to more than 18 000 in 2020 (an 851% increase) (Ministério do Trabalho e Previdência, 2022^[90]). The data covers section H – Transportation and storage, division 50 – Water transport; section H – Transportation and storage, division 52 – Warehousing and support activities for transportation, group 52.3 – Service activities incidental to water transportation, from the CNAE 2.0 (National Classification of Economic Activities).

³ The OECD's STRI identifies restrictions across five policy categories – barriers to competition; regulatory transparency; restrictions to movement of people; restrictions on foreign entry; and other discriminatory measures – in 19 major services sectors in 45 countries. STRI scores on a scale of 0 (complete openness to trade and investment) to 1 (completely closed to foreign services). See <https://stats.oecd.org/Index.aspx?DataSetCode=STRI>.

⁴ The composed result considers the five categories of restrictions: restrictions on foreign entry, restrictions to movement of people, other discriminatory measures, barriers to competition, and regulatory transparency.

⁵ The World Economic Forum calculates the Global Competitiveness Index (GCI) using statistics from international organisations and an executive opinion survey. The GCI is composed of 103 indicators, organised into 12 pillars. The infrastructure pillar encompasses 12 indicators including the “efficiency of seaports services” to measure business leaders’ perceptions of the efficiency (frequency, punctuality, speed, price) of seaport services, including ferries and ships in a given economy. (Landlocked countries are assessed by their access to seaport services.) It varies from 1 (extremely inefficient and the worst in the world) and 7 (extremely efficient and the best in the world). See <https://govdata360.worldbank.org/indicators/>

⁶ In the landlord model a port authority is public and is in charge of basic and operational infrastructure, while terminals are leased or conceded to private terminal operators. In the fully privatised model, the services and assets are owned by private entities and the port is managed by a single private company (World Bank, 2007^[56]).

⁷ Annual investments made in TUPs are not disclosed by ANTAQ; however, the Association of Private Port Terminals (ATP) publishes data on its website about planned investments in private terminals.

⁸ Port superstructure is a facility or port terminal “constructed on the port surface, according to the types of goods to be handled”, for example, containers for general cargo, vehicles and other goods, such as agricultural products, minerals and fluids. These terminals are supported by fixed (warehouses, pipelines) and mobile (cranes, vehicles) equipment, elements that constitute the port superstructure: they stand on the infrastructure and allow cargo to be handled in the port (OECD, 2011^[2])

⁹ Ministry of Infrastructure (Executive Secretariat); Executive Office of the President of Brazil; Ministry of Justice and Public Security; Ministry of Defence (Navy); Ministry of Economy; Ministry of Agriculture, Livestock and Food Supply; Brazilian Health Regulatory Agency (ANVISA); and National Agency for Waterway Transportation (ANTAQ).

¹⁰ Before the Law 12.815/2013 TUPs could be located inside the public ports area. For this reason, some of them contracted before the Law still remain inside the public port area. In December 2021, there were 18 TUPs inside public ports.

¹¹ The six SOEs responsible for managing public ports made losses of BRL 1.042 billion in 2018. In 2019, they had a BRL 911 million surplus and in 2020 the surplus was BRL 162.3 million, as they had to assume extraordinary expenses, such as the agreement to remedy the Portus pension fund's actuarial deficit and voluntary redundancy programmes.

¹² Codesa is responsible for managing the ports of Vitória and Barra do Riacho. According to preliminary studies conducted by BNDES, the four ports managed by Codesa have a diversified cargo profile (liquid fuels, dry bulk, pig iron, fertilisers, and containers), handle about 7 million tonnes of gross weight annually, and had BRL 155 million in total revenues in 2019.

¹³ The OECD's Competition Assessment Toolkit helps governments to eliminate barriers to competition by providing a method for identifying unnecessary restraints on market activities and developing alternative, less restrictive measures that still achieve government policy objectives; see www.oecd.org/competition/assessment-toolkit.htm.

¹⁴ Two types of tariff reviews exist: ordinary and extraordinary. An ordinary tariff review is carried out periodically, every three or, at most, every five years, according to a calendar determined by ANTAQ. An extraordinary review of the tariff can take place upon the initiative of ANTAQ or a request from the port authority affected by an economic and financial imbalance caused by the tariff structure in place; for example, unforeseen circumstances beyond the port administration's control may occur and affect the inputs upon which the setting of the tariff was based.

¹⁵ ANTAQ highlights that the first tariff revisions in light of the Law 12.815/2013 have been more thorough and lengthier, as historical liabilities were being eliminated and the entire commercial strategy of each port had been re-discussed, which led port managers to carefully rethink their business.

¹⁶ Brazilian legislation establishes that port concession is the granting of the port administration and operation for a certain period. The basic difference, in Brazilian regulation, between concession of public ports and lease lies in the fact that the concessionaire is responsible for the port administration and exercises the function of port authority, while under a leasing model, the lessee only acts as port operator. There are certain differences between Brazil's definition of port concession and leasing and the definition found in global academic literature. For international comparisons, the general sense of "concession" is applied in Brazil to the legal definition of "leasing".

¹⁷ Auction 11/2021 – IMB05 – Contract 02/2022 and auction 04/2021 – SSD09 – contract to be signed.

¹⁸ The economic-financial rebalancing, price recomposition or revision are instruments to restore the balance of the financial equation of the relationship signed between the Administration and the contractor, harmed by an unpredictable or predictable event, but with incalculable, delaying or impeding consequences on the execution of the agreement, or even, in case of force majeure, fortuitous event or fact of the prince, configuring extraordinary and extra-contractual economic circumstances, in accordance with the rules established by Law 8666/1993 (Universidade Federal de São Carlos, 2021^[112]).

¹⁹ After 2021, with the addition of the paragraph 9th to the Article 42 of the Decree 8.033/2013 and the paragraph 1st to the Article 8 of the Ordinance 530/2019, there is an "extraordinary process" in which the lessee may make investments not provided for in the contract, without the approval of the granting authority and prior analysis by Antaq, provided that they are exclusively at their own expense and without altering the economic-financial balance of the contract.

²⁰ There are three situations that can permit a granting authority to authorise investments immediately and urgently prior to ANTAQ analysis: 1) investment necessary to comply with requirements of bodies or entities of the public administration with competence to intervene in port operations; 2) investment needed to restore the port facility to operability due to a supervening situation that prevents or hinders the provision of port services; 3) investment to increase operational efficiency or expand the capacity of the port facility when the measure has been proved urgent for users (Ministério da Infraestrutura, 2020^[64]).

²¹ Article 14, sole paragraph, Law No. 537/1997.

²² Article 0103, NORMAM 12/DPC.

²³ Article 5, item f, Law No. 1 658 of 4 August 1952.

²⁴ Article 0102, NORMAM 12/DPC.

²⁵ Article 0122, NORMAM 12/DPC.

²⁶ Annex 4-F, NORMAM 12/DPC.

²⁷ Annex 4-D, NORMAM 12/DPC.

²⁸ (Florida Harbor Pilots, 2022^[111]); (Subsecretaría de Formación, Capacitación y Titulación del personal embarcado de la Marina Mercante, 2021^[117]).

²⁹ Article 12(1) (B), Decree-Law No. 48/2002.

³⁰ Article 0201, item b, NORMAM 12/DPC.

³¹ See www.marinha.mil.br/dpc/processo-seletivo-categoria-de-praticante-de-pratico.

³² Article 0405, NORMAM 12/DPC.

³³ Article 0245, NORMAM 12/DPC.

³⁴ According to the Superior Tribunal Court, pilotage is a private service entrusted to individuals that satisfy requirements established by the Maritime Authority for their selection and qualification (Superior Court of Justice, 2017^[77]).

³⁵ Article 0226, NORMAM 12/DPC.

³⁶ The Pilots' Representative of the Pilotage Zone is the pilot that gathers all the Pilots of a PZ and that represents them before the Navy. When there is more than one pilotage entity, it will be the one indicated by consensus among the qualified pilots. If there is no agreement, it will be up to the Navy to choose this representative (Article 0 120 of NORMAN 12/DPC).

³⁷ Decree-Law No. 2 596 of 18 May 1998.

³⁸ For example, Ordinance No. 135/DPC of 7 July 2010 and Ordinance No. 84/DPC of 22 September 2003.

³⁹ For instance, see Ordinance No. 383/DPC, of 25 October 2019.

⁴⁰ Prices for pilotage are not paid when the vessel arrives or leaves. Where there is no payment agreement, ships can still enter or leave the port, but they may refuse to pay and pilots may then file a lawsuit demanding payment.

⁴¹ PECs are subject to the following conditions: 1) captains must have been in their role on the vessel for at least 24 months; 2) within the port and terminal of interest, the captain must have performed a minimum of 18 pilotage tasks, including 12 mandatory berthing-unberthing manoeuvres, in the previous 24 months, and hold proof of these tasks; and 3) according to the specificity of each pilotage zone, the harbourmaster may establish additional requirements.

⁴² While hiring piloting services adds to shipowners' costs, relying on pilots' specialised services can lower risk perception and reduce insurance costs, which might be significant when compared to the overall transportation cost. For iron ores transported to or from Brazil, insurance costs reached 10% in 2016, while OECD estimates show that aggregated insurance costs range from 0.6% to 4.6% in 2016. In case of an accident, in addition to the vessel and its cargo, there are third-party costs, such as those related to port operations that might be incurred by the shipowner.

⁴³ Given that part of the tasks performed on a vessel did not necessarily have the same captain, this figure is in the upper range of the number of PEC licenses that could be granted in the period 2017-21.

⁴⁴ In Brazil, the term "port worker" includes workers who perform foremanship, stevedore, cargo checking, cargo repair, vessel surveillance and maintenance (cleaning and upkeep of merchant vessels and their tanks, including rust beating, painting, minor repairs and related services) (Ministério da Infraestrutura, 2014^[116]).

⁴⁵ Article 2 of ANTAQ Resolution No. 72/2022.

⁴⁶ The other activities consist of the management of risks of dangerous cargo, the registration of companies or people, the permanence of vehicles for removal, the release of documents or circulation of agents.

⁴⁷ According to Article 1, Law No. 8630/93, the organised – or public – port is one "built and equipped to meet the needs of navigation, the movement of passengers or the movement and storage of goods, granted or operated by the Executive Federal Branch, whose traffic and port operations are under the jurisdiction of a port authority".

⁴⁸ There were three instruments provided in Law No. 8 630/93 provided for delegation of the port services to private undertakings: leasing, concession, and authorisation.

⁴⁹ Movements from the deck or hold of the ship to its side.

⁵⁰ Movement on land, from the side of the ship to the terminal gate.

⁵¹ Article 1 of Decree No. 1910/96. After the issuance of Decree No. 4543/2002, retroport terminals were also called as “dry ports”.

⁵² Customs clearance means the conclusion of a container’s “nationalisation”, comprising document analysis and container checks by a Federal Revenue Service of Brazil inspector (Receita Federal do Brasil, 2014^[114]).

⁵³ For the competences of the retroport terminals, see (Receita Federal do Brasil, 2022^[115]).

⁵⁴ Article 4 of Law No. 13 874/2019.

⁵⁵ Article 5, Normative Resolution No. 34/2019.

⁵⁶ The MoU No. 01/2021 was also co-signed by the Minister of Infrastructure.

⁵⁷ See www.marinha.mil.br/dpc/sites/www.marinha.mil.br.dpc/files/NORMAM%2012%20-%20MOD%2023_0.pdf.

⁵⁸ Dieese (2020) identifies 31 OGMO across the country; see www.dieese.org.br/perfildecategoria/2013/perfilTrabalhadorPortuarioRAIS2013.html.

⁵⁹ In 2020 the Port of Santos handled 1992 541 containers, or about 44% of total containers handled by public ports.

⁶⁰ ANTAQ, “Estatístico Aquaviário 2.1.4”, <http://ea.antaq.gov.br/QvAJAXZfc/opendoc.htm?document=painel%5Cantag%20-%20anuario%202014%20-%20v0.9.3.qvw&lang=pt-BR&host=QVS%40graneleiro&anonymous=true>.



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