

Why the Timing Is Right for Port Infrastructure Investments in Brazil

Port infrastructure: Economic recovery, regulatory updates and the need to upgrade Brazil's existing terminals are turning port terminals into attractive opportunities for investors.

Two years into its greatest recession, the Brazilian economy is slowly resuming growth (see Figure 1). Despite short-term political instability, structural economic measures will most likely be implemented to put the country on a growth track.

Economists believe that investment is the engine of growth for emerging economies. That's especially true for Brazil, which, after two years of increasing unemployment, will not see recovery come from a new wave of consumer activity but rather from investments — most likely in infrastructure, which supports other activities and contributes to higher productivity for the economy as a whole. Leading economists and financial institutions operating in Brazil expect GDP to grow approximately 0.5% in 2017 and 3% in 2018, which will positively drive demand after a strong recession.

In this context, investment in the country's ports is key to enabling economic recovery and an important opportunity for private investors. The 7,491-kilometer (4,654 miles) coastline of Brazil — one of the 10 longest coastlines in the world — is in need of development at several different locations to keep up with future requirements. In order to serve rising demand through 2042,

Brazil's Ministry of Transportation estimated that investments of R\$52 billion (~USD 16 billion) in port infrastructure are necessary. Furthermore, this need for future investment comes in addition to more than R\$16 billion already invested in private terminals since regulatory changes took effect in 2013.

Resilient bulk port transport industry

Brazil is an important global commodity exporter and, as a consequence, a relevant part of the port infrastructure in the country is related to agricultural and mineral production (solid bulk) and to oil and gas imports and exports (liquid bulk). In 2016, more than 80% of the total exporting port movement (in weight) was related to commodities, representing close to 50% of the USD FOB value.

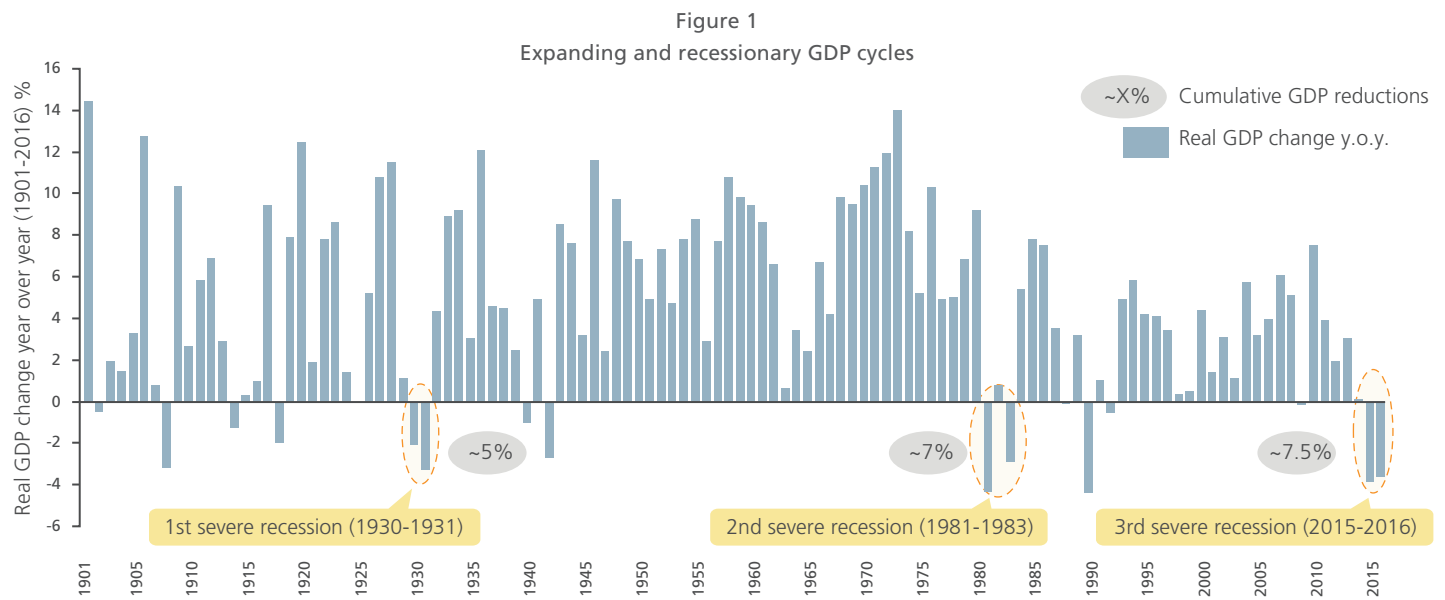
Port movement for liquid and solid bulk has been resilient, growing 2.9% annually between 2010 and 2016. In addition, major Brazilian exports such as soy, corn and iron ore are forecasted to continue growing with the agricultural expansion and further development of mining projects.

Bulk terminals are more attractive for cargo owners and trading companies

Most of Brazil's private port infrastructure serving the operation of bulk commodities is owned by metals and mining or oil and gas companies, such as Vale, Petrobras, Alcoa and CSN, and commodity trading companies, such as Cargill and Bunge. It is strategically

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Source: Banco Central, IBGE, Ipeadata, L.E.K.analysis

reasonable for large-scale players to own and operate these facilities, as a means not only to guarantee not only an adequate service level for their operations, but also to control a relevant cost item in their supply chain. Total bulk commodity movement through private terminals grew consistently in recent years, with an increasing relevance of solid bulks, mostly driven by large volumes of the main solid bulk commodities, such as iron ore, bauxite, soy and corn.

For liquid bulk, on the other hand, opportunities may arise for midscale liquid-focused terminals in order to serve, for example, the transportation of liquid fuels and chemical products. Petrobras' strategic plan to sell noncore assets in order to reduce its financial leverage, including port terminals and maritime fuel distribution facilities, creates an opportunity for new players to invest in these assets (see Figure 3).

Container terminals: an opportunity for investment in both public and private ports

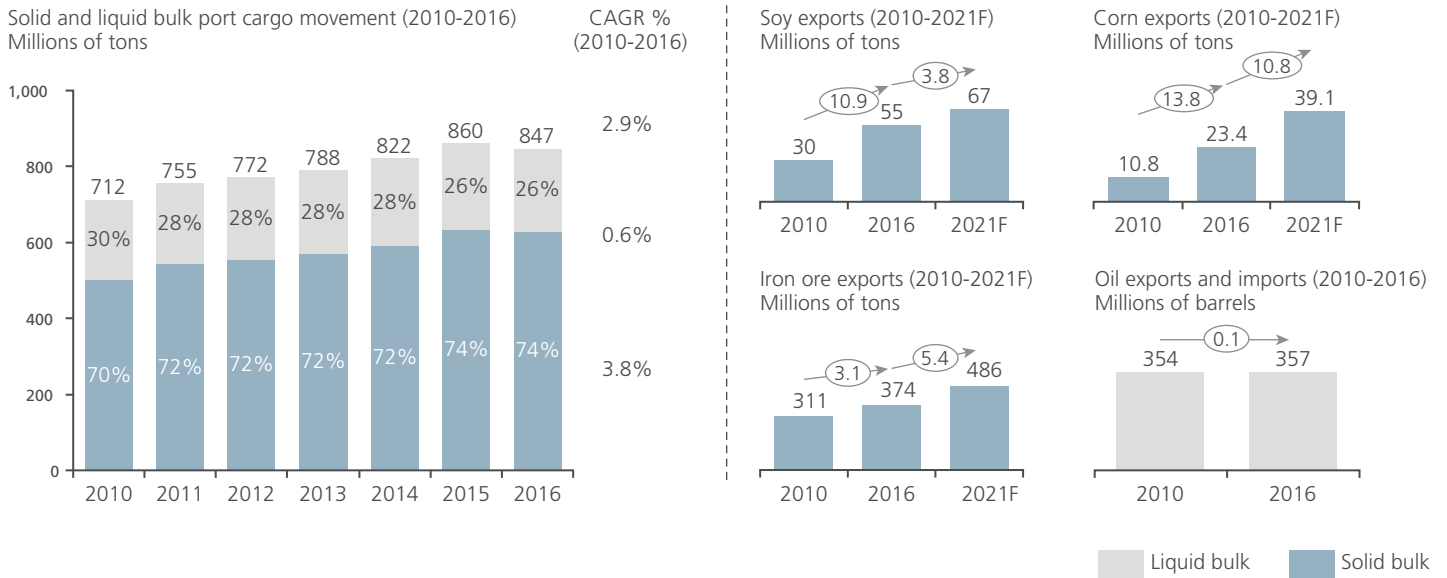
Container terminals represent a promising investment thesis, relying on the future economic growth of this sector. The drivers for container terminal investments include the ongoing economic recovery, a shift toward more efficient private terminals, larger vessels that require better infrastructure and equipment, and regulatory changes that promote private investment. In addition, a shift towards an economy with a larger proportion of value-added products can potentially drive growth for container terminals — which will only be possible with the implementation of much-needed reforms to improve industrial production and competitiveness.

Container terminals in Brazil can be located inside public ports, which is the case for Santos and Paranaguá, or private ports, which is the case for Portonave or Itapoá. All container terminals currently in operation in the country are privately operated, and 70% of all container cargo transported in these terminals is located inside public ports.

The Port Law 8.630 — 1993, and more recently the new Port Law 12.815 — 2013, which changed the definition of “own cargo” to allow private terminals to also operate cargo for third parties, increased the competitiveness of private ports. As a consequence, investments in private ports became more attractive, and these businesses have been capturing market share from public ports regarding container movement. Since 2010, container movement in private ports has grown 18% annually, and private ports' share rose from 15% in 2010 to 30% in 2016 (see Figure 4).

In order to balance the competitive conditions for investments in private container terminals in both public and private ports, the government has very recently approved Decree 9.048 – May 2017. This change in regulation, mostly impacting private terminals in public ports, now covers the possibility of extending the term of concession up to 70 years, as long as the concessionaire makes new investments in capacity and performance. It also includes the possibility of expansion of the terminal, in contiguous or noncontiguous areas, since there is proven public interest and expansion is more efficient than creating a new concession. Finally, it also includes the possibility

Figure 2
Growth in port movement



Sources: ANTAQ, ANP, ABRATEC, Ministério da Agricultura, IBRAM – Instituto Brasileiro de Mineração, L.E.K. analysis

of reviewing the investment plan in accordance with the reaction of demand and market conditions, among other minor aspects.

In contrast to the development of container operations in new private ports, investing in private container terminals inside public ports has significant advantages regarding the environmental licensing process, a very relevant part in assessing a potential investment. The privately owned Itapoá port, for example, had a six-year environmental licensing process, which directly impacted the start of commercial operations.

According to market players, from a global efficiency perspective for container operations, the Brazilian coastline could be properly served with at least three large port hubs to dock seagoing ships, combined with multiple smaller-scale terminals for coastal navigation. Also, currently seven out of the 10 most productive container terminals in the country, as measured by units/hour, are already located inside large public ports, averaging an output of close to 60 containers/hour.

With the recent changes in the regulatory environment for private terminals in public ports, along with the development of coastal navigation and the ongoing economic recovery, container movement through the main public ports in the south, southeast and northeast regions is expected to increase even further, with the docking of larger vessels. This expected increase in demand will drive the need for investments to expand and improve the efficiency of container operations.

Larger vessels drive the need for investments in infrastructure

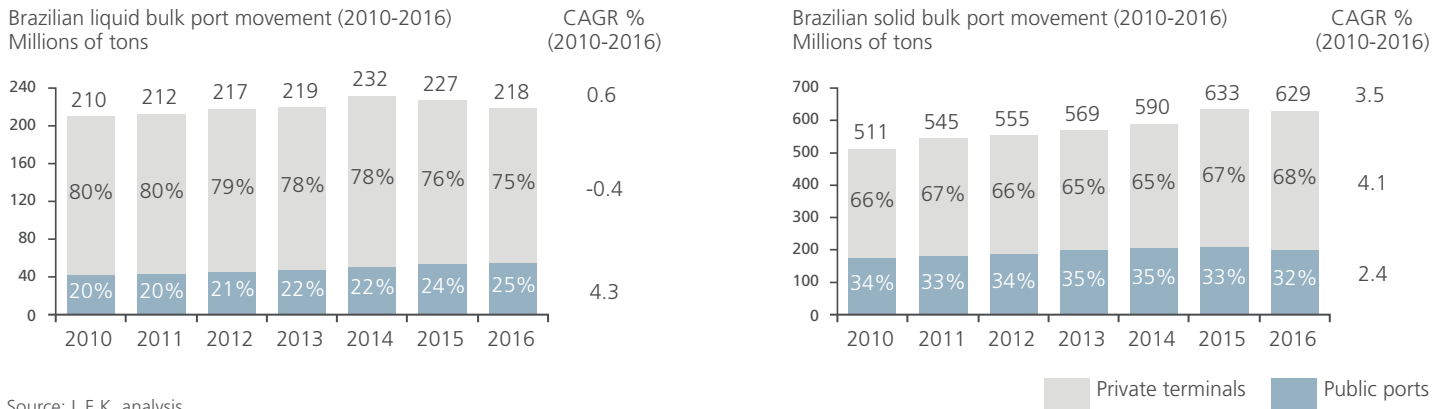
Technological developments in the shipyard industry, combined with a steep increase in production and demand for products, have resulted in a gradual and steady increase in the average size of vessels worldwide (see Figure 5).

Larger ships have the capacity for more cargo, thereby achieving scale-driven cost improvements and making transportation more efficient and agile. Container vessels' average capacity (global fleet) grew 40% from 2010 to 2016, from 2,760 twenty-foot equivalent units (TEUs) to 3,869 TEUs, while the average capacity of new ships delivered in 2016 exceeded 8,000 TEUs.

This impact is noticeable along the Brazilian coast. In 2005, the largest ship that docked at the country's ports had a capacity of ~5,000 TEUs, in comparison to ships of more than 10,000 TEUs docking in 2015 for the highest-cargo-volume routes, such as Europe and Asia. However, the growth in the average capacity of Brazilian ports has been lower than the growth of the vessels docking at the country's coast, mainly due to insufficient investment in port infrastructure, especially regarding the dredging of port channels.

At the four largest container terminals in Brazil, in terms of TEUs transported, the maximum depth does not exceed 14 meters, which is insufficient to accommodate Post-Panamax I class ships or larger vessels. As the world's larger vessels — which nowadays operate in the primary shipping routes between China,

Figure 3
Changes in liquid and solid port movements



Source: L.E.K. analysis

Europe and the U.S. — get older, they tend to be reallocated to secondary shipping routes — such as to South America.

Experts affirm that structural changes in ship cargo movement in Brazil are already on course, with the main concentration of container cargo in at least three large hub ports, which will need to accommodate larger vessels; in addition, more midscale terminals will be needed to accommodate smaller transshipment vessels.

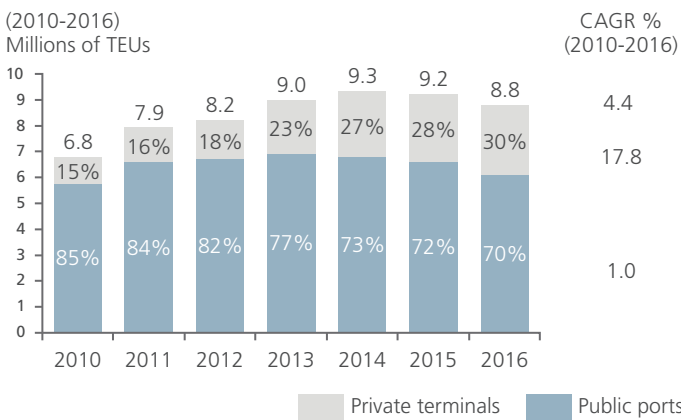
The expected economic recovery and concentration of container cargo in large port hubs will soon make the need for upgrades in the Brazilian port infrastructure more urgent, and the terminals that are faster to modernize their infrastructure will have a

competitive advantage. In the short term, ship owners and port operators are already planning to dock ships of 366 meters with 11,000 TEUs in 2018.

Solid financial performance from the main current container terminals in private and public ports

Operating revenues from the most important container terminals in private ports in Brazil are consistently increasing, and the scenario for the two largest players on a revenue basis — Portonave and Itapoá — is very positive, with EBIT margins approaching 40% (see Figure 6). Embraport, the second-largest private container terminal in number of TEUs transported, is the

Figure 4
Brazilian container movement



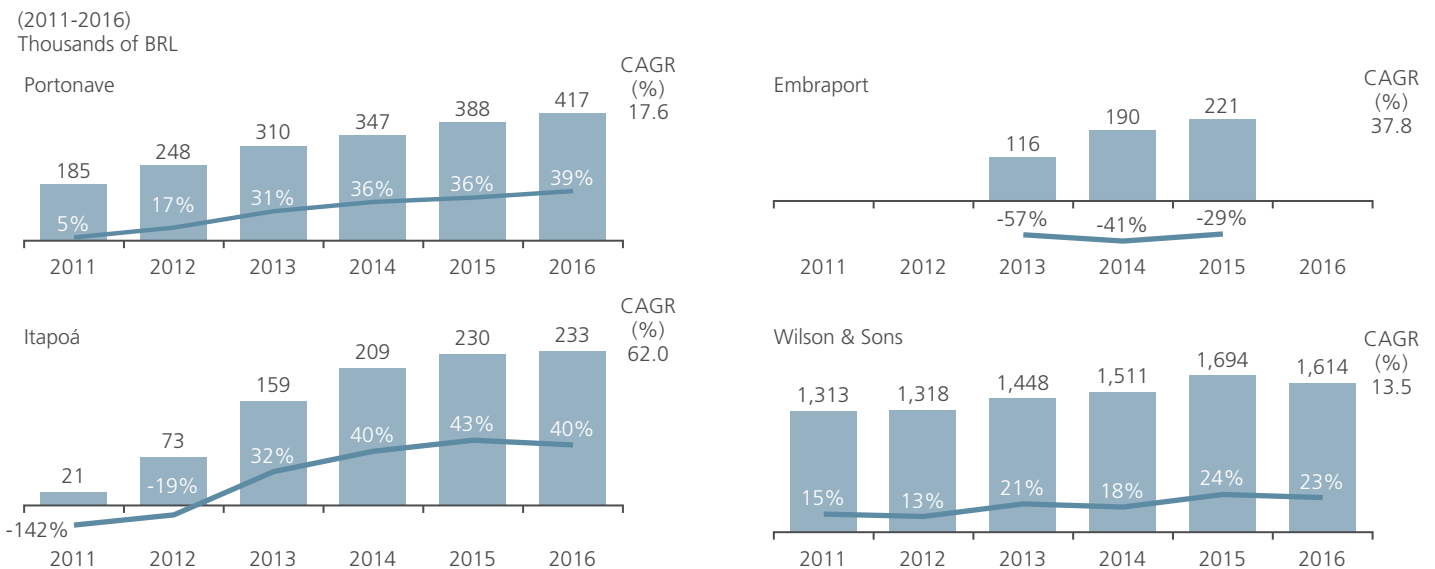
Source: L.E.K. analysis

Figure 5
Average size of vessels worldwide

Ship class	Capacity (TEUs)	Length overall (m)	Beam (m)	Draft (m)
Feeder	750	180	20	9.0
Handy	1,500	225	20	11.5
Panamax	4,500	275	32	13.5
Post-Panamax I	8,000	345	42	14.5
Post-Panamax II	11,000	366	49	15.2
Post-Panamax III	15,000	396-430	59	15.5-16.0
Malacca-Max (Triple-E)	18,000	400-450	59	15.5-21.0

Sources: ANTAQ, ABRATEC, Ministério da Agricultura, IBRAM — Instituto Brasileiro de Mineração, L.E.K. analysis

Figure 6
Total operating revenue and operating profit



Source: EMIS, L.E.K. analysis

only one presenting negative EBIT margins between 2013 and 2015, mainly due to current excess installed capacity.

Wilson & Sons, consolidated into one of the largest port, maritime and logistics services operates in Brazil, operates two of the main container terminals in public ports in the country (Tecon Rio Grande and Tecon Salvador) and also reported good financial results. Even though the company does not report separate results for its port activities, the group's EBIT has been increasingly recently and is currently above 20%, considering that close to 50% of the group's total revenue comes from its port and logistic terminals.

Key success factors for container terminals: modern installations and cost-efficient location

In order to invest successfully in container terminals, it is important to ensure high productivity and high service levels at terminals. Important aspects of a successful container port operation include the following:

- Depths of 15 meters or more: Vessels with capacity over 8,000 TEUs at the Brazilian coast are a reality, and they need a depth of at least 15 meters to maneuver at the main ports
- High-productivity berths, with modern ship-to-shore gantry cranes, that extend at least 400 meters
- Large retro area that can accommodate peak traffic hours for large ships

- Adequate ground access (road and rail) that is free of urban traffic
- Favorable geographic position on the Brazilian coast
- Proximity to industrial areas and integrated logistics operations

Favorable regulatory changes: better environment for private investment in port infrastructure

Ports in Brazil are regulated by the Agência Nacional de Transportes Aquaviários (ANTAQ), under the supervision of the Ministry of Transportation, which is responsible for planning investments in expansion, dredging, support infrastructure and other areas and organizing auctions to private investors and operators.

The changes in regulation, mainly with the Port Law 12.815 — 2013 and Decree 9.048 — May 2017, are bringing Brazilian legislation closer to best international practices and improving the potential benefits for private investors. The improving regulatory environment will help eliminate the competitive gap between terminals in private and public ports and help reduce the bureaucracy involved in port investment in Brazil.

Investors should move fast and find the right partners to develop the projects

The first two terminal concession bids in 2017, both inside the Santarém (PA) port, were successful, being acquired at 62% and

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230% premiums from the minimum bid defined by the regulator. In total, the grants to be paid are R\$68.2 million, indicating that the planned concession model is finally properly suiting investors' requirements.

The ongoing economic recovery, already increasing container volumes for both imports and exports, along with structural changes in port infrastructure and regulation, provide clear opportunities to invest in modern, well-equipped, efficient container terminals in Brazil. These projects, however, must use adequate demand studies and have the right partners to address the key issues of the investment.

In particular, for investors that have the right partners, there are clear competitive advantages in understanding the perspectives of the shippers, carriers, logistics businesses, current port concessionaires and other cargo-related stakeholders; assessing the required support infrastructure; accelerating bureaucratic issues, and guaranteeing sufficient access to finance.

Editor's note:

This article is being published in memory of Ricardo Balau, who passed away on May 27, 2017. It is Ricardo's last professional contribution in this world. Although the article was developed jointly by B2Port and L.E.K., we would like to attribute all the credit to him. Ricardo was a dedicated professional, ethical, funny and a great colleague to work with, whose stories we will never forget. He was a naval engineer and passionate about ships, logistics and ports. We dedicate this article to his wife, Fabiana, his two kids, Pedro and Isabela, his father, Jose Balau, his mother, Regina, his sister, Tatiana and all the family members and friends who will always remember this great man. May Ricardo rest in peace and may all the family and friends keep and continue the values Ricardo supported during his life.

About the Authors



The late Ricardo Balau was a Partner in B2PORT, an investment structuring boutique, focused on infrastructure-related projects in Brazil. His experience focuses mainly on M&A advisory, project finance and turnaround of brownfield assets for the port infrastructure sector. He received a B.S. in Naval Engineering with a focus on Transport from Escola Politécnica at São Paulo University (USP), with specialization in Business Administration at Fundação Getúlio Vargas / EAESP and an MBA from the Kellogg School of Management at Northwestern University.



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