

SECURITY REPORT

Port infrastructure security in Latin America

July 2023



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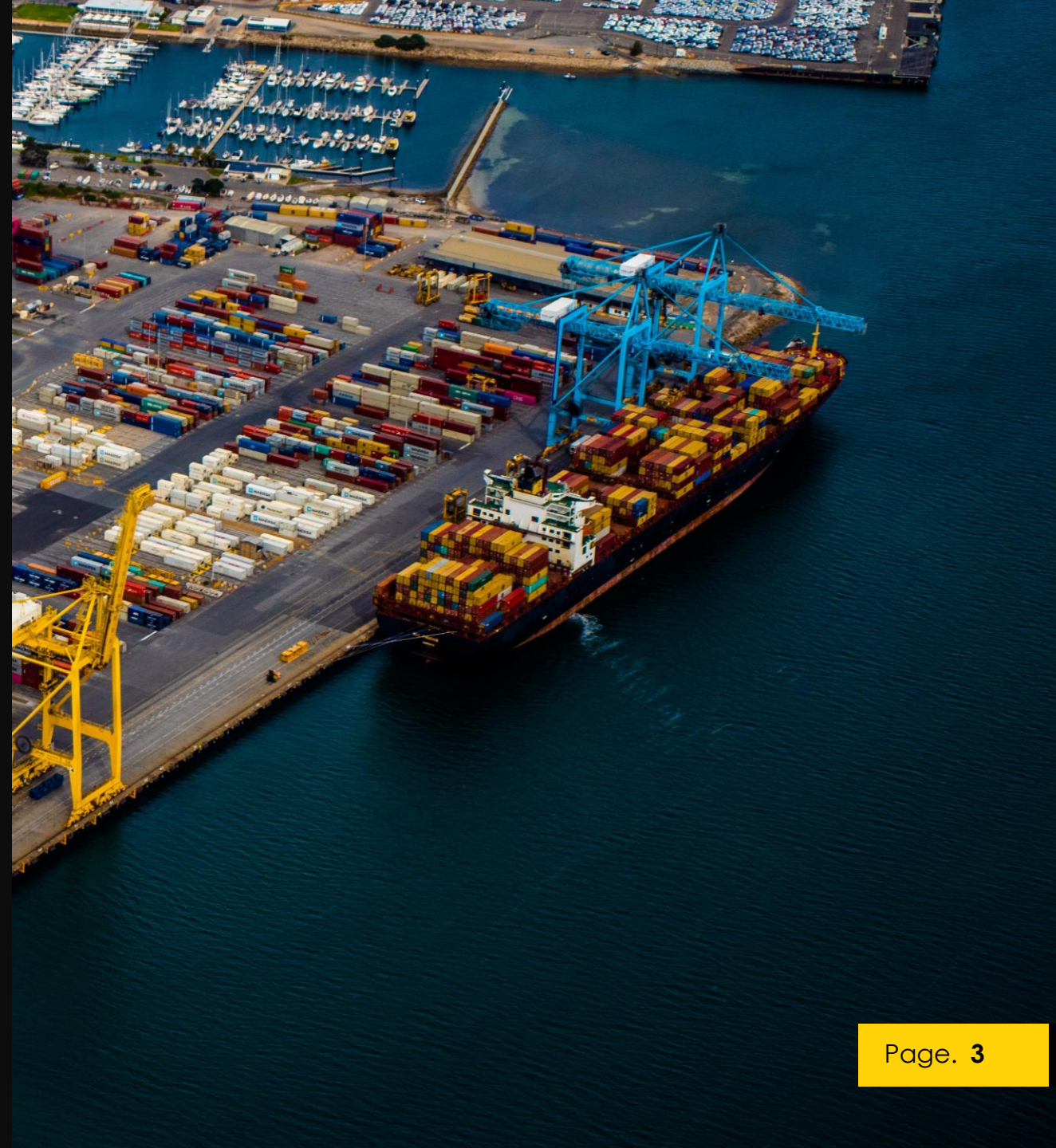
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01

Port snapshot

1.1. Port infrastructures

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Port Snapshot

1.1. Port infrastructures

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1.1. Port infrastructures

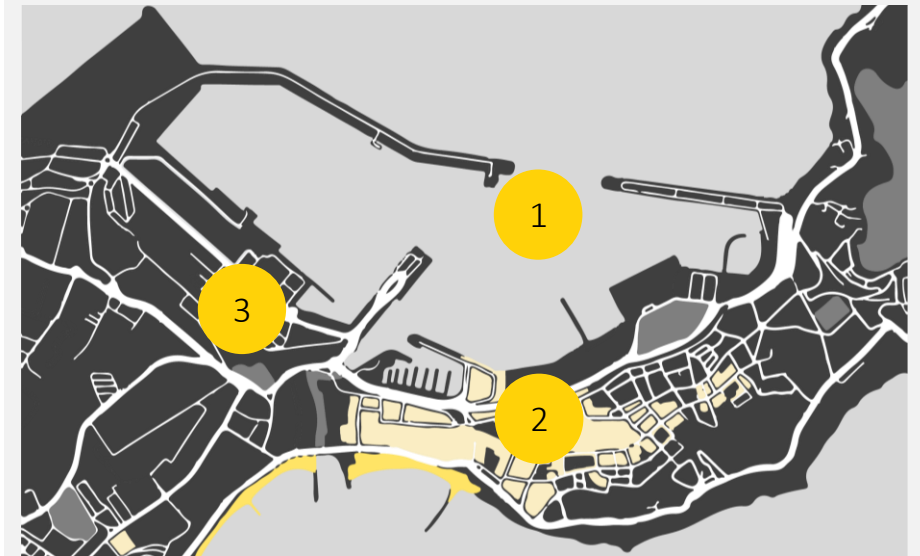
Traditionally, ports have been infrastructures located on the seashore or on rivers that meet the physical conditions for port traffic operations. Although there is no unanimity in the international community to conceptualize ports, there is consensus on their conception as strategic infrastructure.

Ports can be classified in different ways, although in general the typologies depend on the legal system of each country and the way in which it classifies them. Although with different names, the types are usually made according to their **nature** (natural or artificial), their **activity** (commercial or industrial) or their **administration**.

Depending on the size of the ports, these may be made up of different facilities: i.e. large ports will have port terminals for greater specialization of the cargo received, warehousing areas and powerful customs systems, while smaller ports will have more limited infrastructures.

From a management and legislation point of view, **each state determines its own strategy for ports**, although the international Law of the Sea is governed by various international conventions on the regulation of maritime trade, being the United Nations Convention on the Law of the Sea its main point of regulation.

FIGURE 1
ORGANIZATIONAL CONDITIONS OF A PORT



- 1 Maritime zone: includes the water surface and anchorage areas, docks and mooring areas.
- 2 Land area: it has spaces for the storage of goods and land infrastructures and accesses appropriate to the port's activity.
- 3 Administrative area: means, management and organization for port activities.

Source: Prosegur Research Intelligence and Foresight Unit, 2023.



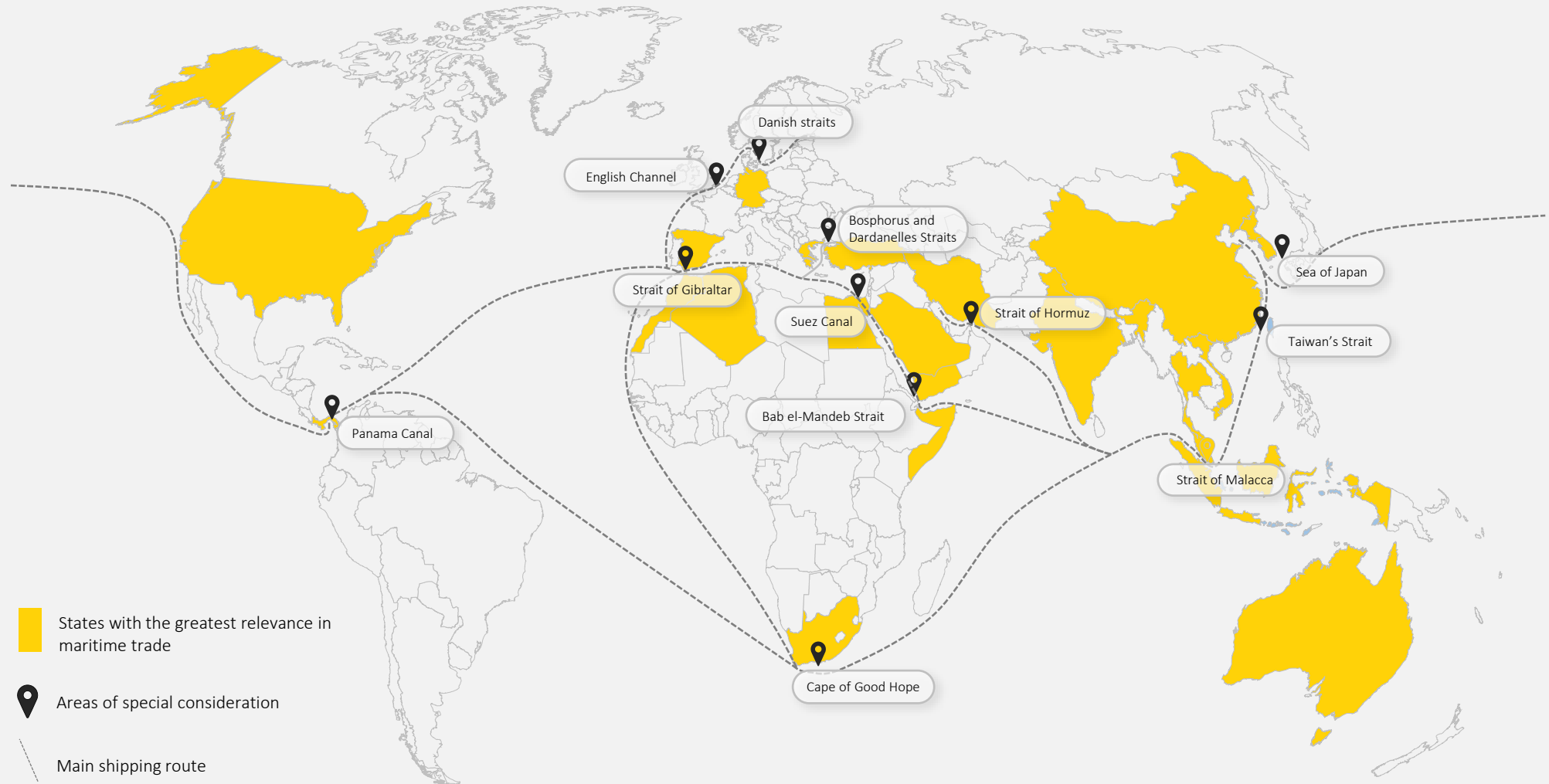
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FIGURE 2
THE INTERCONNECTION OF GLOBAL MARITIME TRADE



Source: Prosegur Research Intelligence and Foresight Unit, 2023.



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Port Snapshot

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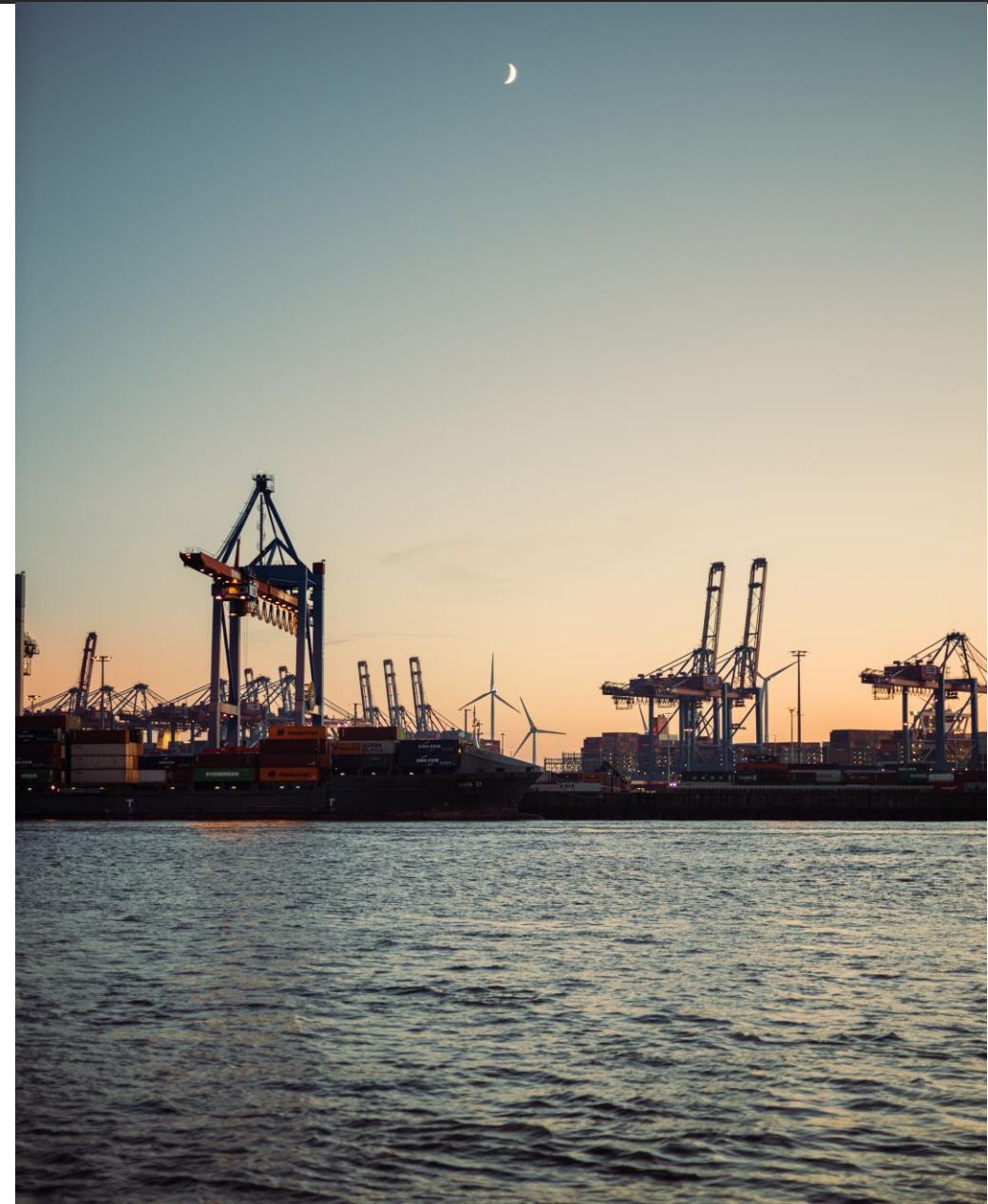
Maritime transport accounts for between [90%](#) and [80% of the volume of world trade](#). For countries with access to the sea, maritime routes and the infrastructures dedicated to transport by sea are strategic for **their security, development and prosperity**. **River transport**, on the other hand, is a minority, although it is expected to grow in the coming decades, given the expected melting of glaciers and the possibility that this will increase the flow of potentially navigable rivers.

Given the **global interdependence** in economic matters and the delocalization of the supply chain - increasingly evidenced by the productive diversification of manufacturing companies and the global distribution of demand - from a logistics point of view, those cities or urban environments that have large-scale ports are emerging as global **logistics nodes**.

Although the exact number of operational ports in the world is unknown, the World Trade Organization and numerous logistics associations have ranked Asia as the main hub in terms of port volume and importance - in reference to the number of goods they move and the costs associated with the activity-

Specifically, China is the most important country in terms of port activity in terms of the number of ports it owns, the amount of investment made by Chinese companies in ports around the world and the influence of the goods exported and imported from the country for the rest of the global market.

It should be noted that ports also host **sports and leisure activities**, and a multitude of events are held in them, although these are not the focus of this report.





01

Port Snapshot

1.1. Port infrastructures

1.2. The sector in Latin America

1.2 The sector in Latin America

The overall state of port infrastructure in Latin America varies from country to country and port to port. Some ports have modern and well-maintained infrastructures, these being the ones that carry the most weight at the international level - such as Colon in Panama or Santos in Brazil -, while others may face challenges in terms of capacity, efficiency and maintenance. Nevertheless, some general aspects are presented that identify the nature and main aspects that identify South American port infrastructure.

In recent years, South American countries have made significant **investments** in the **modernization** and expansion of their ports in response to the increase in trade and demand for maritime transport in the region, which has led to the construction of larger and more efficient port terminals where digitalization has played a leading role with the introduction of cutting-edge technology for handling cargo and unloading.

After the incidence of the COVID-19 pandemic, South American port activity recorded a strong recovery, surpassing pre-pandemic levels. Among the main drivers of this recovery, the Pacific coast of Mexico and the Caribbean stand out as the regions that have registered the highest growth in 2021 compared to 2019 according to the [latest data](#) published by ECLAC (Economic Commission for Latin America).

FIGURE 3
MAIN PORTS IN LATIN AMERICA



Source: Prosegur Research Intelligence and Foresight Unit, 2023.

02

Risks and threats analysis

2.1. General characteristics of the evaluation

2.2. Threats breakdown





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2.1. General characteristics of the evaluation

Given its strategic nature, port infrastructure is a **vulnerable** facility, exposed to the materialization of political, social, economic, technological, environmental and physical threats.

The materialization of such threats poses a risk to the **material and human resources and the virtual** space that make up these facilities. In addition, the disruptions that may arise in a port

have a direct impact on the location in which it is located, as well as on the logistics sector and, specifically, the **global supply chain**.

Although in general the maritime area, the land area and the administrative area are equally strategic and are affected by the impact of hazards on the port, from a specific point of view each of these areas is more exposed to specific risks, which will be analyzed later.

FIGURE 4
IMPACT OF THREATS ON THE AREAS THAT MAKE UP THE PORTS (I)

THREATS	MARITIME ZONE	LAND AREA	ADMINISTRATIVE AREA
Political and economic risks			
Geopolitics and interdependency	INDIRECT	INDIRECT	DIRECT
Legal uncertainty	INDIRECT	INDIRECT	DIRECT
Intra-state conflicts	NO IMPACT	DIRECT	INDIRECT
Corruption	INDIRECT	INDIRECT	DIRECT
Social risks			
Social activism / demonstrations	INDIRECT	DIRECT	DIRECT
Labor activism / unionization	DIRECT	DIRECT	DIRECT
Migratory flows	DIRECT	NO IMPACT	DIRECT

IMPACT LEVELS

DIRECT	INDIRECT	NO IMPACT
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FIGURE 5
IMPACT OF THREATS ON THE AREAS THAT MAKE UP THE PORTS (II)

THREATS	MARITIME ZONE	LAND AREA	ADMINISTRATIVE AREA
Technological risks			
Digitization	DIRECT	DIRECT	DIRECT
Infrastructure vulnerability	DIRECT	DIRECT	DIRECT
Cyberattacks	DIRECT	DIRECT	DIRECT
Industrial espionage / data theft	NO IMPACT	NO IMPACT	DIRECT
Environmental risks			
Natural disasters	DIRECT	DIRECT	DIRECT
Diseases	INDIRECT	DIRECT	DIRECT
Accidentability	DIRECT	INDIRECT	INDIRECT
Physical security risks			
Thefts / Robberies	NO IMPACT	DIRECT	INDIRECT
Contraband	INDIRECT	DIRECT	NO IMPACT
Sabotage/manipulation	DIRECT	DIRECT	DIRECT
Piracy	INDIRECT	NO IMPACT	NO IMPACT
Intrusion	NO IMPACT	DIRECT	DIRECT
Vandalism	DIRECT	DIRECT	DIRECT

IMPACT LEVELS

DIRECT	INDIRECT	NO IMPACT
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2.2 Threats breakdown

The following is an analysis of each of the threats that can directly and indirectly impact the port and **condition its activity** and security.

Threats to the port are considered to be all those that may affect any of the infrastructure's **interests to be protected**, namely: people (including employees of all types), infrastructure (in reference to the facilities as a whole), assets and values, data and information, and image and reputation.

a. Political risks

Because of their activity, ports are closely linked to **international issues**. Therefore, inter-state conflicts pose a major threat to the continuity of port activity. On the one hand, **diplomatic relations** between the country managing a port and the country from which vessels or goods arriving at the port originate are essential for maritime transit.

Furthermore, given the customs and tariff issues to be carried out at the port, the relationships between the parties and the legislation between countries regarding the movement of people and goods may or may not expedite operations at the facility.

On the other hand, war conflicts throughout the world also affect ports located in Latin America, even though no country in the region is directly involved in them.

For example, [Latin American countries have directly suffered the consequences of the war in Ukraine](#), in economic terms - with the rise in prices of many products - and it has affected maritime traffic and port activity. In this regard, since 2022, many shipping companies have warned of the accumulation of containers in ports and the damage caused to perishable goods, generating severe economic losses for companies and crises of shortages and shortages of certain products.

Continuing with the geopolitical sphere, Latin America is configured as a **strategic point** in the **commercial competition** that is being waged between the United States and China. This, in addition to being an opportunity for port development in the area, both in terms of investment and business volume, may have negative implications for the operability of infrastructures. The configuration of South American ports as the main target of the commercial competition between the superpowers may lead to the imposition of interventionist measures that restrict port activity, given the strategic nature that infrastructure has acquired in foreign policy.

At the domestic level, the nature of national ports as **critical infrastructure** makes them attractive as targets both in the event of **armed conflict** and in cases of **internal unrest**, where the military advantage they provide or the potential economic damage their blockade can cause to the state are the main reasons for attack. In this respect, the blockade of the main supply routes during the recent protests in Peru also affected the operability of port infrastructure insofar as the loading and unloading of goods was disrupted.



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On the other hand, **legal uncertainty** is mentioned as another risk to which port infrastructure can be exposed. The inaccuracy or excessive legal volatility surrounding port activity may cause companies to avoid operating in that jurisdiction, thus leading to a reduction in their activity and causing economic damage. In addition, the **political instability** of some countries in the region, such as Peru and Ecuador, increases legislative uncertainty and exacerbates legal uncertainty for investors and companies that use these ports for their supply.

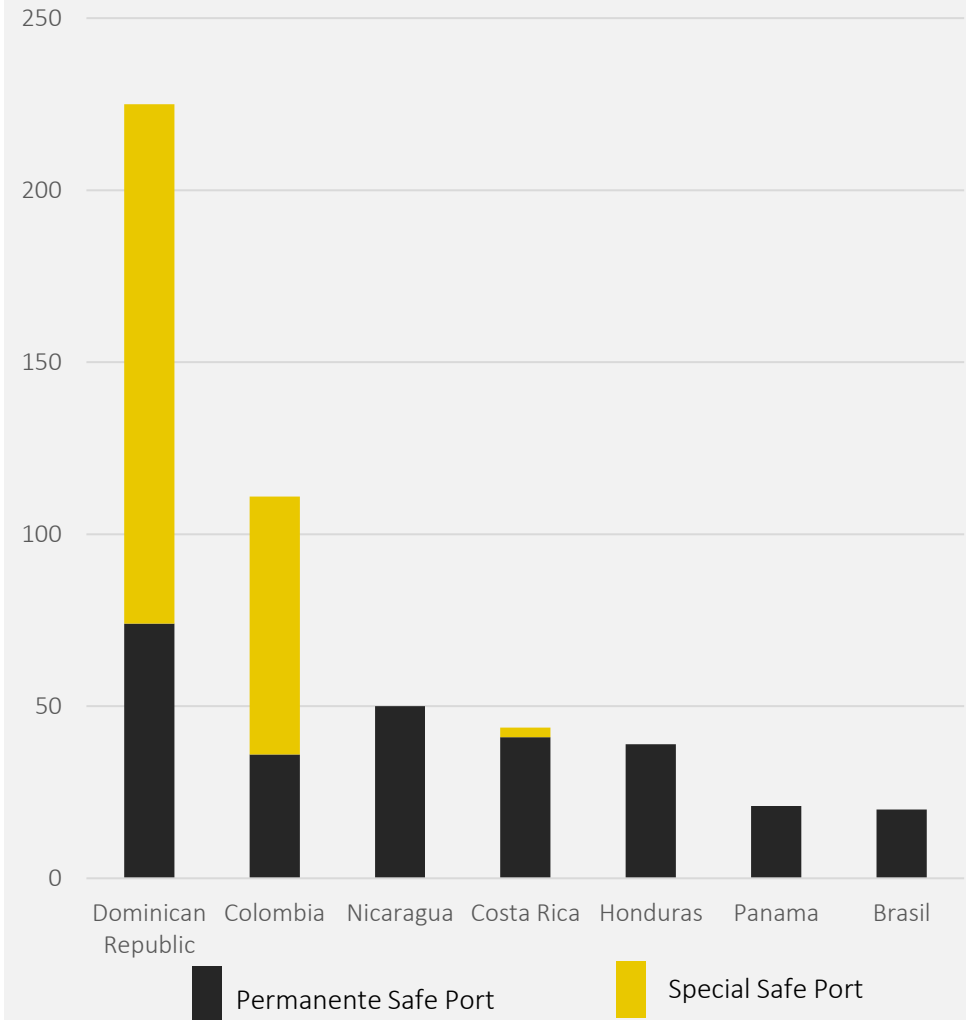
Finally, as a political threat, **corruption** is highlighted from a twofold perspective: one that directly affects the managers of port facilities and leads, to a large extent, to legal uncertainty; and one that responds to the money laundering activities that take place around port activities and that are related, in many cases, to smuggling.

- As a political threat, corruption is highlighted from a twofold perspective: one that directly affects the managers of port facilities and leads, to a large extent, to legal uncertainty; and one that responds to the money laundering activities that take place around **port activities** and that are related, in many cases, to smuggling.

According to data from the Free Trade Zones Association of the Americas (AZFA), [more than 12% of the world's free trade zones are located in Latin America](#) (a total of 486), with the majority in [Central America and the South Pacific coast](#). The most commonly used merchandise in the ports for money laundering are works of art.

- From the **management** point of view, it should be noted that according to the [Corruption Perceptions Index \(CPI\)](#), except for Chile, Uruguay and Costa Rica, Latin American countries show a high incidence of

FIGURE 6
COUNTRIES WITH THE LARGEST NUMBER OF FREE PORTS



Source: Prosegur Research Intelligence and Foresight Unit, 2023.



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corruption. In this sense, Latin American countries such as Cuba, Peru and Brazil have had cases of corruption related to port infrastructures.

These schemes usually involve politicians in the national government or in the area in which the port operates, and industrial companies involved in the improvement and expansion of existing infrastructures. Currently, anti-corruption mechanisms have increased in the awarding of port infrastructure contracts, although the level of risk for these illicit activities continues to be high, making it possible that when bad practices are detected, development works may be paralyzed or port activity may be disqualified.

b. Social Risks

Activism is the main social threat to port operations. As mentioned above, the development of social mobilizations around strategic ports is common in Latin American countries. Countries such as Peru, Ecuador, Colombia and Brazil have seen their port activities paralyzed in the last decade by barricades around these infrastructures coinciding with anti-government demands. In many cases, these disruptions are caused by the cutting of traffic and the limitation of the arrival of cargo trucks to these areas.

In addition, the transportation sector shows a **high level of labor conflict** in practically all the countries in the area, with **strikes by carriers and stevedores** being the events that can have the greatest impact on port activity due to their close relationship with port infrastructure, which is

usually blocked directly or indirectly in the course of their protests. For example, in April 2023, the *Sindicato Único de Fleteros de la República Argentina* (Siunfletra) carried out indefinite stoppages in different ports, causing losses of more than 100 million \$ a day.

Migratory flows are particularly relevant in relation to port infrastructure. Port activity, due to the international connections it offers, is one of the entry points for **clandestine migration**. Although the impact of clandestine migration on port infrastructure is low in the region, it is exposed to exhaustive security controls and surveillance by the authorities, which can prolong bureaucratic procedures and the development of operations.

In these cases, the general security context is susceptible to being affected by the development of police operations that can become violent and produce collateral damage to the environment. In this context, the migratory routes located in the north of the South American continent, where the port infrastructure of countries such as Venezuela or Cuba presents a high risk of harboring clandestine immigrants, are worth mentioning.

c. Technological risks

Increasing **digitization** in logistics extends to both the means of transport and the transition locations of the goods, where the port infrastructure is located. Such digitization entails the **specialization of the workforce** as well as the adaptation of infrastructures to support digital sophistication.



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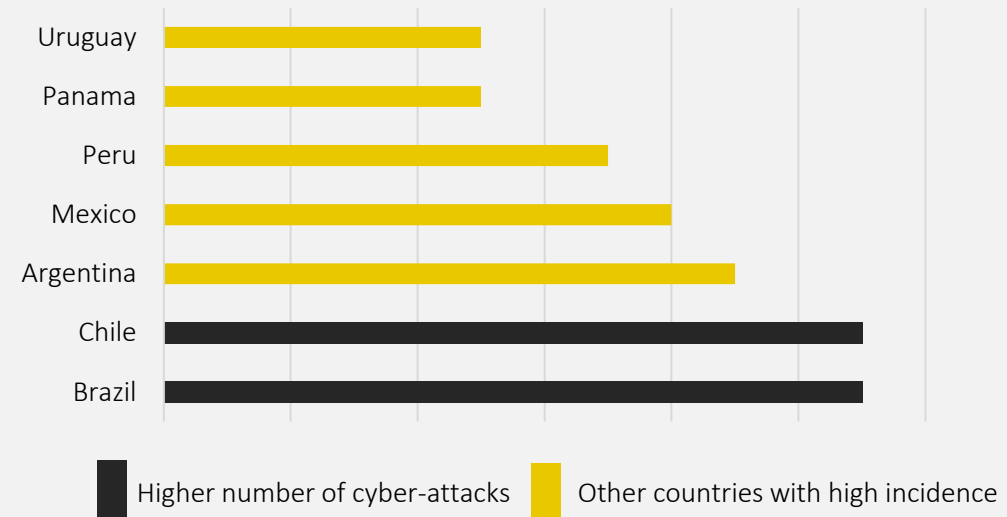
According to consulting firms specializing in new technologies, the qualification of the technology workforce is one of the main challenges facing companies in Latin America. Technological inequality and the low qualification of the workforce in charge of the data centers increase **security breaches** in the systems. To mitigate the risks posed by low digitalization skills and technological inequality, various governments, such as those of Mexico, Brazil and Chile, have implemented **national strategies** for training in Information and Communication Technologies (ICT).

The transfer of part of port activities to the digital domain entails exposure to new threats emanating from the IT environment. The characteristics of port activity make ports particularly vulnerable to cyber-attacks from a double perspective:

- On the one hand, ports can become a direct target of any cyber-attack directly directed against the countries in which they are located or against multinational entities exposed to cyber-attacks due to the international impact of their activities. By way of example, the numerous cyber-attacks received by the company Maersk in recent years have had a direct impact on the ports in which it operates.
- On the other hand, the critical information housed in ports and the amount of data available on digital devices in the facilities exposes ports to cybercriminal activity by organized groups or individuals who subsequently seek to enrich themselves with such information.

The incidence of cyber-attacks on ports in Latin America is very high. According to [data provided by ECLAC](#), since 2016 these have grown by 175% and have hosted global cyber-attacks, such as the WannaCry ransomware, in 2017, and NotPetya in 2018. Moreover, the trend of this type of actions is growing and the increase is expected to occur exponentially, coinciding with the increasing digitization and adoption of technology by facilities.

FIGURE 7
MOST CYBERATTACKED COUNTRIES



Source: Prosegur Research Intelligence and Foresight Unit, 2023.



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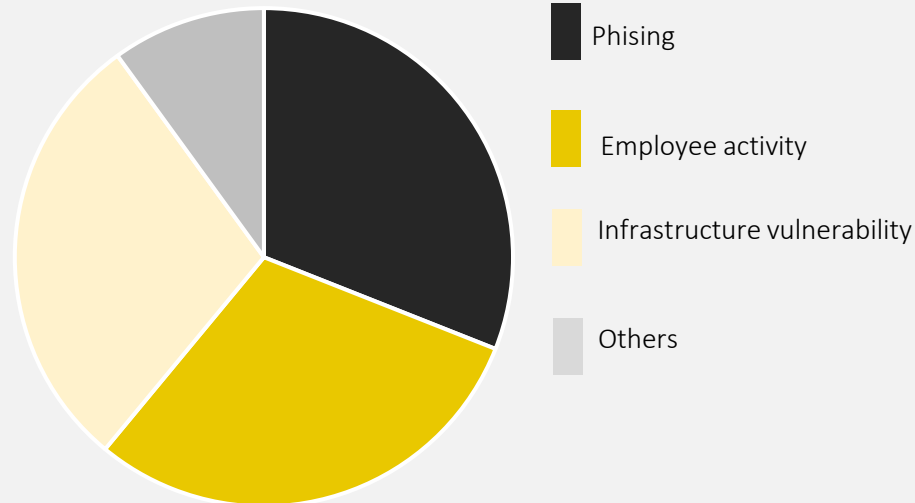
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The incidence of **cyber-attacks** can compromise both the operations carried out in real time and other aspects linked to the activity of the actors involved.

Although since the first cyber-attacks phishing has been the main cause of these incidents, recently the number of actions that have occurred due to the activity of **employees themselves**, both insiders and malpractice, has increased.

FIGURE 8
CAUSES OF DIGITAL INCIDENTS



Source: Intelligence and Foresight Unit, with data from ECLAC. 2023.

In this sense, cyber-attacks are especially linked to **industrial espionage** and the theft of sensitive information, which can have severe implications in cases where the operations carried out in port infrastructure are related to aspects linked to national security.

On the other hand, the incidence of cyber-attacks aimed at creating misalignments in the radar systems that produce a total disruption in the digital media operating in the port can generate implications **at the physical level**, affecting the safety of the personnel of the facility itself or present on active vessels in the vicinity.

In addition to the above, digitalization increases the **energy dependence** of infrastructures, with power outages, humidity and fire being the most critical threats to these facilities.

The continuous operation of machinery in ports requires large amounts of energy, which, in addition to generating high maintenance costs, has a negative impact on the environment. Governments in different countries are implementing sustainability strategies in their port systems to improve energy efficiency by promoting the use of renewable energies.

Other requirements for keeping the energy supply in good condition is the **environmental control** required to maintain temperature and humidity standards. Deterioration of temperature and humidity conditions can lead, mainly, to fires and water leaks, as well as affecting the working conditions of workers. Likewise, other conditions such as fumes, dust and airborne particles can damage the products to be distributed and the health of employees.



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d. Environmental risks

Ports are particularly exposed to climatic events. Natural disasters affect these infrastructures from a double perspective. On the one hand, port infrastructure must adapt to the extreme eventualities of the environment in which it is located. In the case of Latin America, the incidence of this type of climatic risk affects differently depending on the coastal location. The natural disasters with the greatest impact in the area are:

- **Tropical storms and hurricanes.** They mainly affect the Caribbean zone and the North Pacific coast. The hurricane season in this zone officially runs from June to November, with August and September being the months that most frequently host the most severe phenomena.

Ports are infrastructures that are highly exposed to the incidence of these phenomena, given that their location in coastal areas makes them one of the first places where the phenomenon makes landfall. **Central America** is the most vulnerable area given the characteristics of the infrastructure.

- **Rainy season.** The jungle areas of Latin America are very exposed to the rainy season. In the Amazon region, this occurs between October and March, bringing flooding to urban and rural areas. The river ports of the Amazon are the most affected by this situation.
- **El Niño.** Peru and Ecuador, mainly, are in the passing zone of this phenomenon, which brings with it tropical storms susceptible to cause floods, as well as drastic changes in temperatures.

FIGURE 9
NATURAL DISASTERS WITH THE GREATEST IMPACT





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- **Seismology and volcanology.** The Pacific countries are located in what is considered the Ring of Fire: an area highly exposed to the occurrence of earthquakes. Although these are usually of low intensity, larger tectonic movements occur from time to time. In addition, recurring tremors weaken the state of infrastructure, making it increasingly vulnerable.

In general, storms can be warned according to **weather forecasts**, and their effects can be anticipated by knowing the orographic conditions of the area. In this sense, ports, being facilities located on the coastline, are more prone to flooding associated with river flooding and waves. However, according to studies issued by various entities on climate change, it is very likely that extreme weather events will have an increasingly higher incidence and will be more difficult to predict sufficiently in advance, so this threat will increasingly acquire a greater impact.

It should also be noted that the impact of these natural phenomena in other areas of the world also has an impact on port activity in Latin America, given the interconnection analyzed above, and it is therefore recommended that the climatic seasons that affect other areas of the world also be considered in order to mitigate the possible disruptions that they may cause.

Other risks associated with the environment that can have an impact on port activity are diseases. On the one hand, these have a negative impact on the workforce of these infrastructures, causing disruptions in operations. By way of example, coinciding with the incidence of COVID-19 and the severe restrictive measures imposed by China, the shutdown of the port of Shanghai caused economic losses worldwide.

In addition, entomological surveillance and preventive measures have recently been stepped up in port areas in the event of the possible arrival at terminals of contaminated goods or passengers infected with diseases of various kinds. The International Labor Organization [already warned in 2005](#) about the health risks for people working in these facilities due to the transit of people from different origins and the unhealthy thresholds that in many cases certain ships harbored.

Since then, safety measures have been reinforced in the facilities in terms of occupational hazards and vigilance has been enhanced with respect to what arrives from other areas of the world. The latter has been boosted by the COVID-19 epidemic, which highlighted the interconnectedness in biological and sanitary matters.

Finally, the **accident rate of ships** is highlighted as a major threat to the facilities. In addition to the climatic repercussions generated by the discharge of toxic substances in the event of an accident, when a ship is stranded, the disruption affects the entire port operations.

e. Physical security risks

The physical security of the infrastructure is highly conditioned by the threats associated with the security context of the environment in which it is located. Thus, theft is one of the main threats to the physical security of port infrastructure the incidence of cargo .

Although **piracy** plays a leading role in maritime trade, this concept refers



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to thefts that take place in the middle of transport by land or high seas, so it only affects the port infrastructure indirectly in the event that it is carried out in its vicinity, thus deteriorating the local security context. port infrastructure indirectly in the event that it is carried out in the immediate vicinity, thus deteriorating the local security context.

However, **cargo theft** or **hijacking of goods** in ports is one of the main criminal activities to which logistics transport in the region is exposed. Brazil and Mexico stand out in this regard, where in recent years there have been cases of theft from containers located in port storage areas.

It is also noted that this type of activity is closely **linked to organized crime**, which usually has the means to breach security measures in ports, especially those containing high-value goods - such as minerals - and then introduce them into **contraband**-related markets. According to the [Organized Crime Index](#), Mexico, Brazil, Colombia, Honduras, Panama and Venezuela are the Latin American states with the highest incidence of organized crime.

On the other hand, the shipment of certain types of material can make port infrastructure a target for hostile actors linked to various sectors, who may commit **intrusions**, acts of **vandalism** or **sabotage**. For example, the shipment of certain goods that are configured as a focus of conflict between groups of activists or groups linked to indigenous

movements - such as weapons or raw materials - may increase the risk that the port infrastructure suffers directly or indirectly from the effects of an attack on such cargo.

In this case, Chile, Peru and Ecuador are the countries where **indigenous conflicts** linked to the exploitation and transport of goods are high, although it is more common for their actions to be concentrated on land transport or in the exploitation areas.

Finally, the critical and strategic nature of port infrastructure, beyond the possible storage of valuable materials or objects, increases the risk of it being configured as a target for actions linked to **terrorist** action, both in the context of their financing activities and direct hostile operations.



03

Trends and challenges





03

Trends and challenges

3.1. Technological challenges and opportunities

3.2. Trade competition with Latin America at the epicenter

The port infrastructure presents a series of challenges motivated by its configuration as a strategic facility and increased by technology and the economy.

3.1 Technological challenges and opportunities

Technological trends in port operation and management are many and varied. These are mainly focused on process optimization and increasing the overall efficiency of the infrastructure, although security applications are also observed, especially in the digital sphere.

The digitization and automation of port processes allow optimizing the use of resources, improving efficiency and reducing costs and environmental impact. On the physical level, the constant development and improvement of **robotics**, which has an important impact on the productivity of the main port activities, such as loading and unloading of goods, has been noted.

However, it is in the digital area where the most important technological trends for the present and future of port activity operate. Thus, some of the emerging technologies with the greatest application and positive impact on infrastructure are the following:

- **Blockchain.** The implementation of blockchain responds to the need to strengthen the security of port management in the digital sphere, also improving the traceability of supply and greatly preventing the commission of fraud.

- **Artificial Intelligence.** The development of Artificial Intelligence brings significant advantages and benefits to port operators. The ability of this technology to analyze large volumes of data in real time allows it to perform high-value predictive analysis for both traffic management and supply storage management, improving the efficiency of tasks related to planning, coordination, maintenance and threat detection.

Likewise, market monitoring and analysis using artificial intelligence can improve anticipation of supply and demand disruptions, ultimately resulting in greater economic benefits and risk mitigation.

- **Digital Twins.** This technology is based on a real-time digital replica of a physical asset - in this case a port - that integrates real-time data, analysis and simulations to provide an accurate and complete virtual representation. Performing simulations using this technology represents a significant improvement in planning capabilities and can increase their accuracy and, ultimately, the operational efficiency, management tasks and predictive maintenance of the infrastructure.
- **Quantum computing.** [Quantum computing is an emerging technology](#) with the potential to have a significant impact on industrial activity, including freight ports. Although it is still in its early stages of development and practical application, it is expected to become one of the greatest technological breakthroughs of recent times in the medium term.



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Thus, the vast improvement in analytical capabilities offered by this technology with respect to classical computing can generate a high impact on tasks related to route optimization and the performance of simulations and predictive analysis. However, it is in security where this technology offers a greater advantage, allowing the implementation of much more robust cryptographic solutions than those currently existing, which greatly reduces the vulnerability of data and communications in cyberspace, a crucial aspect for the viability of port activities.

In addition, it is likely that in order to streamline certain processes and optimize resources, technological elements such as drones will be incorporated into the daily tasks of ports, such as loading and unloading containers or in perimeter surveillance tasks, among other uses.

3.2 Trade competition with Latin America at the epicenter

The last decade has seen a deterioration in trade relations between the United States and Latin American countries. This deterioration has occurred in parallel to the gradual loss of U.S. influence in South America. In view of this situation, countries such as Russia and China have been gaining weight in the region's trade balances.

Nowadays, China's influence in Latin America is palpable in trade, investment, infrastructure and, with increasing weight, demographics.

However, the attention paid to China by Latin American countries has also been diminished by international rivalries between the U.S. and China and by international recognition of Taiwan. In the latter respect, for example, countries such as Paraguay, Belize, Guatemala and Nicaragua recognize and maintain close ties with Taiwan. However, Honduras has recently changed its position and severed relations with Taiwan in favor of China.

The New Silk Road, or [Belt and Road Initiative \(BRI\)](#) plan, of which 21 Latin American and Caribbean countries are currently part, is also highlighted, thus strengthening ties between the subcontinent and China. The New Silk Road is an ambitious Chinese project that seeks to establish a network of trade connections at the global level. Within this initiative, China has identified Latin America as a strategic region due to its natural resources and geographical position. As a result, the Asian country has been investing in the construction of new ports and the expansion of existing ones in several Latin American countries, including both those that are officially part of the project - such as Argentina, Uruguay, Chile, Peru or Ecuador - and those that are not - such as Brazil-

These Chinese investments in Latin American port infrastructure have allowed China to consolidate its presence in the region and improve its access to Latin American markets and, ultimately, to U.S. markets. According to [data published](#) by the World Bank, China has displaced the United States as the main trading partner of some of the region's main economies, such as Brazil, Chile and Peru.

Thus, the commercial struggle between the two superpowers has intensified, as the United States has also sought to counteract Chinese



03

Trends and challenges

3.1. Technological challenges and opportunities

3.2. Trade competition with Latin America at the epicenter

activity in the region and maintain its economic and political dominance by signing new trade agreements or increasing its pressure through its political influence, making port infrastructure one of the key factors in this competition. Thus, as the establishment of the New Silk Road progresses, the role of Latin American port infrastructure in the geopolitical strategy of both powers is expected to continue to grow stronger.

In December 2022, the Inter-American Development Bank (IDB) published a [report](#) with estimates of international trade flows for Latin America and the Caribbean (LAC). According to the report, in 2022 the value of LAC exports grew by 18.8%, **although a change in trend towards a slowdown in external sales is consolidating** after the recovery from the economic shock produced by the COVID-19 pandemic.

The second half of 2023 presents a pattern of fragility related to the downward trend in commodity prices, the slowdown in Chinese growth, legal-economic uncertainty due to monetary policies and the consequences of the Ukraine crisis.

Figure 10
COUNTRY BREAKDOWN AND RELATIONS WITH CHINA

COUNTRY	TRADE RELATIONSHIP
Brazil	<ul style="list-style-type: none"> • 28% of total trade. • Around 60% of its exports go to China.
Chile	<ul style="list-style-type: none"> • BRI member. • Free trade agreement. • 34% of total trade.
Colombia	<ul style="list-style-type: none"> • 18% of total trade.
Costa Rica	<ul style="list-style-type: none"> • BRI member. • Free trade agreement. • 9% of total trade.
Ecuador	<ul style="list-style-type: none"> • BRI member. • 19% of total trade.
El Salvador	<ul style="list-style-type: none"> • BRI member. • 10% of total trade.
Mexico	<ul style="list-style-type: none"> • 10% of total trade.
Guatemala	<ul style="list-style-type: none"> • 8% of total trade.
Honduras	<ul style="list-style-type: none"> • 12% of total trade.
Nicaragua	<ul style="list-style-type: none"> • BRI member. • 8% of total trade.
Paraguay	<ul style="list-style-type: none"> • 16% of total trade.

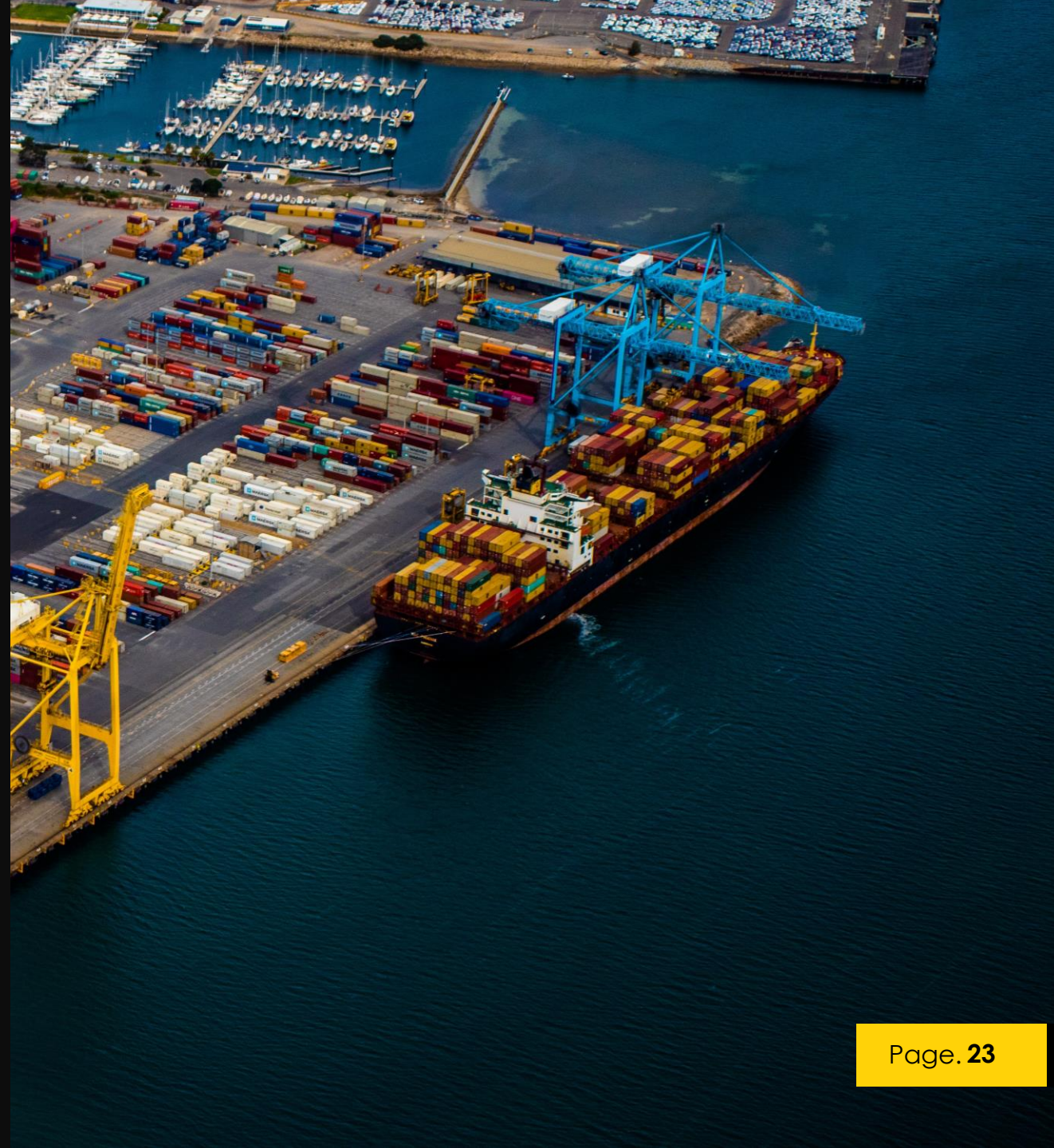
Source: Prosegur Research Intelligence and Foresight Unit, 2023.

04

Annexes

4.1. Glossary

4.2. Methodology





04

ANNEXES

4.1. Glossary

4.2. Methodology

4.1 Glossary

THREATS	DEFINITION
Political risk / Economic risk	Possibility of directly or indirectly affecting the economic expectations of a company and the image and reputation of the brand, with the possibility of a decrease in brand value due to political decisions. Possibility of generating economic or investment losses that hinder or prevent the fulfillment of a company's strategic and commercial line.
Geopolitics and interdependency	Influence of political, armed, social or other crises, whose course takes place in the more or less immediate environment of the country in question, but with sufficient capacity to influence its future. In reference to the relationship of a system or entity with the international dynamics that condition the global political, social and economic context.
Legal uncertainty	Low degree of certainty of the development and application of the legislative framework of a specific territory.
Intra-state conflicts	Lower degree of effectiveness of the system of government, scarce implementation of democratic rules and stability of the government and its institutions, regardless of the political party in power and the system of government. Possibility of the existence of an abrupt rupture with respect to the political order due to the occurrence of coups d'état, uprisings, rebellions and those phenomena occurring in a rupturist manner that entail, or have the potential to entail, a change in the preceding political order. It also includes the existence of territories whose control is outside the rule of law, with anarchic or criminal structures controlling them illegally.
Corruption	The practice of using the functions and means of a company for the economic or other benefit of its managers.



04

ANNEXES

4.1. Glossary

4.2. Methodology

THREATS	DEFINITION
Social risks	Posibilidad de generar climas de descontento, polarización, incertidumbre o conflictividad por parte de la ciudadanía ante organizaciones públicas o privadas.
Social activism / demonstrations	Canalización de las causas sociales a través de canales y estructuras susceptibles de llegar a influir en el orden actual para obtener los cambios demandados. Esta presión puede estar dirigida tanto contra estructuras públicas como privadas.
Labor activism / unionization	Afiliación y asiduidad con que se realizan llamamientos a la huelga, ya sea general o del sector concreto.
Migratory flows	Desplazamiento geográfico de individuos o grupos, generalmente por causas económicas y sociales.
Technological risks	Possibility of generating disruptions in the company's activity associated with the use of technology and the vulnerability of infrastructures.
Digitization	The process by which digital technology is implemented in the economy as a whole, affecting production, consumption, organizations, business structure and management. Disparity or unevenness with respect to the digitization or ownership of new technologies by individuals.
Infrastructure vulnerability	Ability to prevent, resist and overcome an impact that conditions the security situation.
Cyberattacks	Related to the security of electronic and computational devices.
Industrial espionage / data theft	Practices that competitors undertake to obtain confidential information from rivals in an unlawful manner, with the objective of gaining a commercial or strategic advantage, or to harm the competition. Theft of data stored on a victim's computers, servers or other devices with the intent to compromise privacy or obtain confidential information.



04

ANNEXES

4.1. Glossary

4.2. Methodology

THREATS	DEFINITION
Environmental risks	Possibility of direct and indirect impact on infrastructure, workers and the company's activity due to the occurrence of events associated with the environment in which it is located.
Natural disasters	Natural phenomena whose impact generates serious disruptions in daily activities and causes damage to infrastructures, regardless of their vulnerability. Extreme weather phenomena are tropical storms, earthquakes, volcanic eruptions, tornadoes and their evolution.
Diseases	Health crises arising from the country's socio-sanitary conditions that may have repercussions on infectious, gastrointestinal and viral diseases, etc. The determination of these crises also takes into account the country's sanitary conditions and its infrastructure (quality of medical service, degree of professionalism, medical infrastructure, sanitary equipment, dispensing of medicines, etc.). The general healthiness of the social environment is also analyzed.
Accidentability	Traffic-related incidents.
Physical security risks	Possibility of causing damage to tangible or intangible assets of an organization, either through physical acts such as theft, vandalism or physical aggression, or through actions on intangible assets such as sensitive information, patents or reputation.
Thefts / Robberies	Theft: the taking of another's property against the owner's will without the use of any type of violence or intimidation. Robbery: appropriation of another's property for profit by using violence or intimidation against the person.
Contraband	Damage or destruction that is intentionally done to a service, a facility, a process, etc., as a form of struggle or protest against the body that directs them or as a method to benefit a person or group that is contrary to said body.
Sabotage/manipulation	Unauthorized access of persons to the company's facilities with the purpose of hindering, interrupting the activity or causing damage that makes it impossible to maintain its operability.
Piracy	Unauthorized access of persons to the company's facilities with the purpose of hindering, interrupting the activity or causing damage that makes it impossible to maintain its operability.



04 ANNEXES

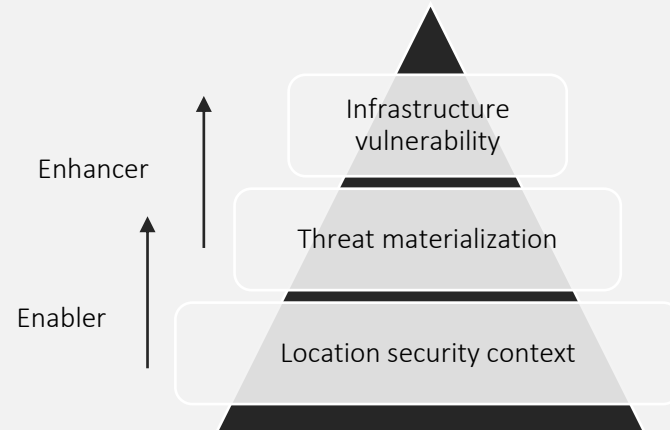
4.1. Glossary

4.2. Methodology

4.2 Methodology

There is a **direct relation between the risks that condition the security context of a country or a specific location, where a company is located or where an event takes place, and the level of danger due to the materialization of the threats that put these contexts at risk and make them vulnerable.** Therefore, an exhaustive analysis of the incidence of the threats described above on specific ports requires a prior analysis of the security context of the country or location in which the facility is located.

Figure 11
THREAT STRUCTURE



Source: Prosegur Research Intelligence and Foresight Unit, 2023.

Figure 12
MITIGATION PLAN



Source: Prosegur Research Intelligence and Foresight Unit, 2023.



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Prosegur, 2023

