STUDY

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Chinese Investments in European Maritime Infrastructure

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Chinese Investments in European Maritime Infrastructure

Abstract

This study looks at Chinese investments in maritime infrastructures through the lens of 'de-risking' for the first time. It provides a comprehensive overview of Chinese investments in the European maritime sector over the past two decades and weighs the associated risks. The study borrows the framework adopted by the *National Risk Assessment of the Kingdom of the Netherlands 2022* for its risk assessment and further develops it to score the impact and likelihood of the investments across five major threat areas: EU-level dependency risk, individual dependency risk, coercion/influence risk, cyber/data risk and hard security risk. The analysis illustrates that the risks remain insufficiently understood by Member States, despite their high likelihood and/or impact. This is particularly true for economic coercion and cyber/data security risks.

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LIST OF ABBREVIATIONS

BMI	German Ministry of the Interior
BMWK	German Federal Ministry of Economic Affairs and Climate Action
BoD	Board of directors
BRI	Belt and Road Initiative
BSI	German Federal Office for Information Security
CAMCO	Central Aircraft Manufacturing Company
CBRT	Central Bank of the Republic of Turkey
CCCC	China Communications Construction Company
CCP	Chinese Communist Party
CIC	China Investment Corporation
CIMC	China International Marine Containers
CMG	China Merchants Group
CMP	China Merchants Port
CMPH	China Merchants Port Holdings
COSCO	China Ocean Shipping Company
CPL	COSCO Pacific Limited
CSPL	COSCO Shipping Ports Limited
CSSC	China State Shipbuilding Corporation
CTT	Container Terminal Tollerort
CXIC	Changzhou Xinhuachang International Containers
EIA	Environmental impact assessment
ENISA	The European Union Agency for Cybersecurity
FDI	Foreign direct investment
FEIR/IOBE	Foundation for Economic and Industrial Research

HHLA	Hamburger Hafen und Logistik
HPCS	Hellenic Port Community System
HRADF/TAIPED	Hellenic Republic Asset Development Fund
ICBC	Industrial and Commercial Bank of China
ICT	Information and communication technologies
M&A	Mergers and acquisitions
MENA	Middle East and North Africa
MEP	Member of the European Parliament
MSC	Mediterranean Shipping Company
NATO	The North Atlantic Treaty Organization
NIS	Network & Information Systems
OOCL	Orient Overseas Container Line
OSCE	Organization for Security and Co-operation in Europe
OSINT	Open-Source Intelligence
PCDC	Piraeus Consolidation & Distribution Centre
PCT	Piraeus Container Terminal
PEARL	Piraeus-Europe-Asia Rail Logistics
PLAN	The People's Liberation Army Navy
PPA/OLP	Piraeus Port Authority
SASAC	State-owned Assets Supervision and Administration Commission of the State Council
SEIA	Strategic Environmental Impact Assessment
SIPG	Shanghai International Port Group
SOE	State-owned enterprise
TEN-T	Trans-European Network for Transport

TEU	Twenty-foot equivalent unit
TOS	Terminal operating system
UN	United Nations
ZPMC	Shanghai Zhenhua Heavy Industries Company Limited

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EXECUTIVE SUMMARY

- This study identifies 24 Chinese acquisition deals and 13 announced greenfield investment projects in European maritime infrastructure from 2004 to 2021. Acquisitions accounted for the bulk of the capital invested – in total, according to our calculations, their value exceeded EUR 9.1bn, while the value of the capital pledged in the greenfield projects was about EUR 1.1bn.
- Investment activity by Chinese companies in the maritime sector subsided noticeably in 2020-2021, probably reflecting the effects of the COVID-19 pandemic and 'zero-COVID' policies, and also the introduction of stricter FDI screening mechanisms in the region.
- China Ocean Shipping Company (COSCO) and China Merchants have been the leading investors. Shanghai Zhenhua Heavy Industries Company Limited (ZPMC) is the main supplier of ship-to-shore cranes for European ports. Chinese state-owned enterprises (SOEs) involved in European maritime infrastructure benefit from a protected home market advantage and a vertically integrated value chain under the ownership of the State-owned Assets Supervision and Administration Commission (SASAC) – these facilitate anti-competitive market share expansion in Europe and risks concerning common market dependency on Chinese providers.
- The analysis of the three case studies - two in EU Member States and one in a EU candidate country - of the Port of Piraeus (Greece), the Port of Hamburg (Germany) and the Kumport Terminal (Turkey) show that Chinese investments can bring benefits such as upgrades and expansions of port capacity (i.e. at Piraeus and Kumport). However, of the cases analysed, only at the Port of Piraeus has this led to a substantial increase in transit and shipping. The Kumport Terminal has had a disappointing performance and is operating below its capacity.
- The risk assessment analyses five types of risk: EU-level dependency risk; individual dependency risk of each case; coercion and/or influence risk; cyber/data risk; and hard security risk. The analysis highlights that economic coercion and cyber/data security risks are higher and thus require more attention by the EU and Member States both in terms of preparedness and awareness.
- Awareness of and capacity to deal with cyber/data risk is identified as the most urgent issue where the EU and its Member States have poor capabilities. Cyber/data risks will quickly become more widespread as the digital transition, application of 5G, use of sensors, etc. develop in the shipping and port operation industries.
- The study shows that investments in one European maritime infrastructure increase the risks for the whole of the EU. The risk increase appears to be proportional to the investment: the larger the shares owned by a Chinese enterprise of a European maritime infrastructure, the higher the risks and their consequences.
- The study notes that risks arise from the deliberate strategy by China to leverage its investments in European maritime infrastructure to its own advantage, and as a result of conflict scenarios (i.e. the Taiwan conflict, or disputes between the EU and/or Member States and China).
- Finally, the risk scenarios envisaged in this study indicate a complex situation that is neither 'business as usual' nor 'apocalyptic sensationalism'. Some risks are likely to require monitoring and stronger enforcement of current rules, others will need moderate change or co-ordination between the European Institutions and Member States, and yet others will demand more complex solutions.

- Data and analysis of Chinese presence in cyber/data management in ports is poor and so is the analysis of related risks. Further research to collect data on the risks of Chinese companies' involvement in cyber and data security in critical infrastructures would provide a strong basis to inform Member States and develop related policies.
- The study outcomes suggest that Member States carry out a risk assessment of China's involvement in their maritime infrastructures that includes the impact on labour and the environment, as well as on dependencies. An assessment of bottlenecks in the shipping of goods from China to Europe that considers transshipment is missing. Following such assessment, redundancies and contingency plans should be created to prepare for a conflict with China. An early warning system should be established for the risks that require monitoring and according to the methodology proposed in this study.
- A proposal for a European maritime cabotage law needs to be developed. An EU solution already exists for air and land, but not for the maritime sector. As such, EU solutions for air and land provide the basis to adopt a pan-EU maritime cabotage law that could apply to non-EU shippers.
- Findings suggest a move toward the Europeanisation of screening of inbound investments. The European Parliament should use the opportunity provided by the review of the existing EU regulation on screening FDI[1] to propose a strengthening of the role of the EU in not only screening but also blocking Chinese investments in critical infrastructures. Maritime critical infrastructure is an area where the decision of one Member State impacts all Member States, and it could be a pilot case to advance the Europeanisation of FDI screening in critical infrastructures. This could be limited to majority shareholding of Chinese enterprises, leaving decisions on minority shareholdings in the hands of Member States.
- To mitigate cyber and data security risks, guidelines on dealing with high-risk actors, such as data-sharing best practices, should be published, then a regular (six-monthly and then annual) review of progress with annexed transparency and reporting requirements should be ensured. The initial report should map existing European ports that use Chinese software and/or data management platforms and the data being collected and transmitted via these.

[1] Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a framework for the screening of foreign direct investments into the Union.

1. INTRODUCTION

1.1. Scope of the study

Economic relations between the EU and the People's Republic of China (hereafter China) have been dynamically developing over the past two decades. Following China's remarkable economic ascent, the country has become the EU's third-largest export destination and its largest source of imports. Beyond trade, China has emerged as a major source of global FDI flows, including in the EU. Although total Chinese FDI stocks in Europe remain small compared to other investment partners, they have relevance in several sectors with strategic importance. As economic security risks (e.g. critical dependencies) stemming from foreign ownership become more apparent, the EU has committed to *de-risking* to a more resilient and autonomous economic structure, particularly vis-à-vis China, which it considers 'a partner, a competitor and a systemic rival'.

The EU framework for FDI Screening, introduced in 2020, aimed to create a co-operation mechanism for information sharing on FDI across EU Member States, and between Member States and the Commission. The Regulation is up for review in 2023. Furthermore, in 2022 the EU approved new rules for protecting the EU's essential infrastructure, according to which Member States should adopt national resilience strategies and cross-border communication should take place through designated points of contact.

One critical area that is addressed by the Regulation and in which Chinese firms have been accumulating growing stakes – not least through the flagship Belt and Road Initiative (BRI) – is transport infrastructure. Maritime ports form an indispensable component of this, serving as vital gateways for international trade and global connectivity. In this regard, the ownership structure of EU's ports deserves special attention, especially as, over the past decade, Chinese state-owned firms have acquired stakes in 15 European ports – including in Belgium, France, Greece, Italy, Malta, the Netherlands and Spain in the EU, as well as in EU Neighbourhood states such as Turkey.

The security risks associated with Chinese investments and ownership of European ports have been debated at national and international levels and have spurred increased scrutiny and awareness. However, an analysis of critical infrastructures, including transport infrastructures, through the lens of de-risking is yet to be undertaken.[2] Therefore, the main scope of this study is to carry out a thorough risk assessment that focuses on risk scenarios associated with Chinese involvement in the EU's maritime infrastructure via FDI. Although the scope of this study's risk assessment is narrow, the assessment can then be replicated to other infrastructures and other sectors to obtain a more comprehensive picture of the risks posed by Chinese investments in the EU.

Against this backdrop, this study aims to provide policy recommendations to guide EU decision-making, with particular attention to the competences of the European Parliament. To this end, the study is divided into three sections. **Section 1** is an introductory chapter, providing a background regarding the Chinese position as a maritime power in investments and shipping. In this section, detailed data on Chinese investments in the maritime sector in Europe are identified, collated and descriptively analysed to understand the magnitude and the trends in these FDI flows. **Section 2** provides a case study-based risk assessment of Chinese investments in the EU maritime infrastructure to provide the necessary depth to our analysis. The study assesses the risks using a framework designed by the *National Risk Assessment of the Kingdom of the Netherlands 2022* and adapting it to the requirements of this study by focusing on five key risk areas. The framework is applied generally to the EU, as well as to three case studies: the Port of Piraeus in Greece, the Port of Hamburg in Germany, and

[2] In this study, de-risking is used with the meaning of managing and decreasing risk.

the Kumport Terminal in Turkey. This section also considers the implications for the broader European context beyond the EU and its Neighbourhood states. Finally, **Section 3** summarises the study's main conclusions and presents evidence-based and actionable policy recommendations to mitigate and manage the identified security risks.

1.2. Overview of China as a maritime power

At present, 90% of global goods traverse through shipping routes. According to the World Trade Organization (WTO), in 2020 shipping accounted for 53% of the total value of China's trade. Within its borders, China boasts the highest concentration of shipping ports within a single country, with seven of these ports among the world's busiest.

Outside China's borders, investments in ports have constituted a significant facet of President Xi Jinping's ambitious Belt and Road Initiative.[3]

China's global maritime investments have predominantly been carried out by the state-owned enterprises China Ocean Shipping Company (COSCO) and China Merchants Group (CMG), and by CK Hutchison Holdings, a private enterprise based in Hong Kong. However, other entities have also played their part in bolstering the global presence of Chinese firms within port operations. Prominent among these are the Shanghai International Port Group (SIPG) and port authorities such as Qingdao Port. China Communications Construction Company (CCCC) has occasionally put forward investment proposals concerning critical maritime infrastructure, although its activities predominantly focus on investments and construction in other sectors. Among the entities listed, COSCO notably holds the distinction of being a pivotal container shipping company, and is thus uniquely positioned, with the capacity to re-route containers to alternative ports directly.

Beyond direct investments in port facilities, China has emerged as the predominant global manufacturer of essential equipment. Impressively, China's production encompasses 96% of the worldwide share of shipping containers and 80% of ship-to-shore cranes, and it claimed 48% of the world's shipbuilding orders in 2022. Chinese firms also deliver indispensable services critical to the modern functioning of ports. For instance, Shanghai Zhenhua Heavy Industries Company Limited (ZPMC) is the leading supplier of ship-to-shore cranes and it has offices in some of the European cities that host investments by COSCO: Rotterdam (the Netherlands), Valencia (Spain), Hamburg (Germany) and Savona (Italy), but is active in most European ports, including in Belgium, Greece and France.

In early 2023 *The Wall Street Journal* published an article arguing that the sophisticated technology of ZPMC's cranes allowed the equipment to collect data on the origin and destination of containers. This was not the first occasion on which concerns had been raised about Chinese companies' data management systems for ports within their investment purview. The lack of clarity over the capabilities of technologies present in ship-to-shore cranes highlights an important but overlooked aspect related to the presence of Chinese companies in the European maritime transport sector, that of cyber- and data security. The key risks centre on the potential access that Chinese companies might gain to sensitive data, both civilian and military. An example of such exposure is the signing of a co-operation agreement between Portbase, a Dutch company that improves communication and data exchanges between ports and inland infrastructures, and Logink, a Chinese company that operates in the same sector, in 2019. China's Data Security Law and the National Intelligence Law, furthermore, require data to be shared with the Chinese government if required.

[3] Not all investments amount to full ownership.

1.3. Specificities of Chinese direct investments

Attention towards Chinese investments in critical infrastructures and the associated risks has been increasing since the mid-2010s. Several factors contribute to Chinese investments being seen to challenge the EU's openness, economic resilience and security, more so than for investments originating from other major sources. The three primary reasons are:

1. **State ownership of investing companies.** The fact that many Chinese enterprises investing abroad are state-owned raises questions about their autonomy from the government and their integration within the broader system. While acknowledging the potential commercial motivations behind these investments, it is essential to recognise that Chinese SOEs might also pursue objectives beyond mere profitability, unlike their European equivalents with fiduciary responsibilities to shareholders. These objectives are often spelled out in China's strategic documents; they can range from expanding China's influence within a vital sector for global trade to acquiring strategic assets that bolster China's geopolitical standing. This is especially true since Xi Jinping came to power in 2013, as he has reversed the direction of SOE reform and has instead called for 'better, stronger, bigger' SOEs to advance Chinese interests. The nature of SOEs urges a comprehensive analysis encompassing both commercial and strategic considerations.

2. **Magnitude and expansion of Chinese investments.** The remarkable scale and rapid expansion of Chinese investments within the sector have been exemplified by prominent Chinese enterprises spearheading numerous acquisitions abroad throughout the 2000s, with a particular surge in activity during the 2010s. This surge has raised concerns that Chinese SOEs, and to some extent China as a whole, are progressively establishing dominance within the sector, leaving limited room for competitors. The apprehension centres on the emergence of issues such as unfair practices, market distortions, unfair competition and the absence of a level playing-field. Chinese SOEs possess inherent advantages rooted in their national ecosystem, which they leverage to outperform their counterparts (see Section 2.1).

3. **Political and security implications of Chinese investments.** The notion of China as a systemic rival reinforces the urgent need to consider the security implications associated with investments from a country that has exhibited deficiencies in the rule of law and in fundamental principles such as transparency and labour rights. Moreover, as geopolitical tensions between the United States and China escalate, China has embraced strategies including economic coercion[4] and other forms of influence. These strategies raise pertinent questions concerning the political and security ramifications of Chinese companies' presence within critical infrastructures that form the bedrock of our societies' functioning.

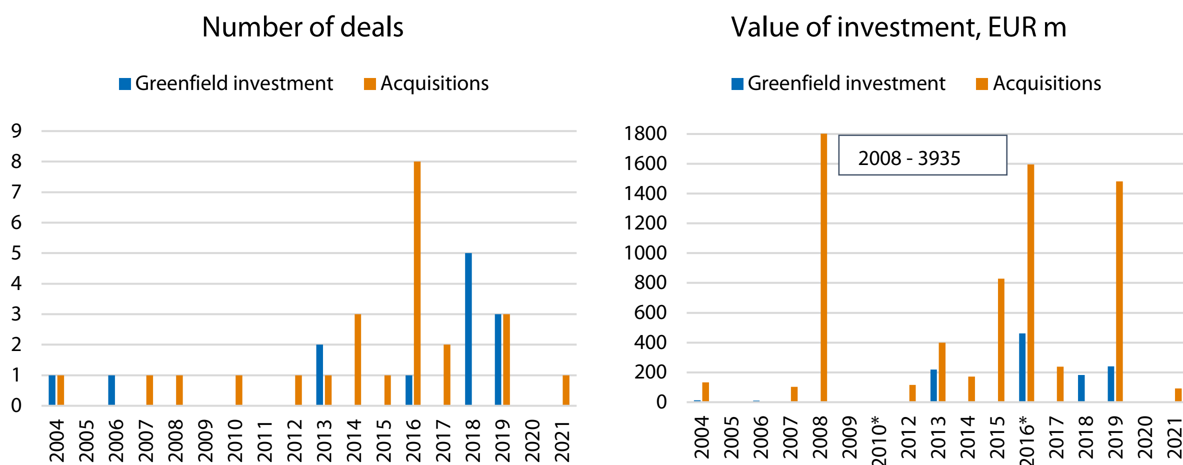
1.4. Chinese investments in the maritime sector in Europe

This section analyses the data on Chinese direct investments in the EU's maritime transport infrastructure. The data coverage of China's investment activity abroad is somewhat patchy. Hence, data from multiple sources are consolidated to present the most comprehensive picture possible of the Chinese investment presence in the EU's maritime sector. We convert USD-denominated values into EUR-denominated ones using average annual and monthly USD/EUR exchange rates reported by the European Central Bank.

[4] Using economic means and lever to achieve political goals. China's economic coercion (europa.eu)

Figure 1 shows the investment activity of Chinese companies in the maritime transport sector of the EU and its Neighbourhood[5] based on the data collected. During 2004-2021, a total of 24 acquisition deals, and 13 announced greenfield investment projects can be identified in the sector, with China Ocean Shipping Company (COSCO) and China Merchants being the leading investors. Acquisitions accounted for the bulk of the capital invested – during 2004-2021 their total value exceeded EUR 9.1bn,[6] while the value of the capital pledged in the announced greenfield projects stood at about EUR 1.1bn. This is in line with the general strategy of Chinese investors till recently to prefer cross-border M&A to access existing strategic assets as well as technologies, and quickly expand their market share. In 2020-2021 investment activity by Chinese companies in the sector sharply subsided, probably reflecting the effects of the COVID-19 pandemic and 'zero-COVID' policies on the Chinese economy, as well as the introduction of stricter FDI screening mechanisms in the region. More detailed information on the investment projects can be found in Table 1 and Table 2 in the Annex.

Figure 1: China's acquisitions and announced greenfield investment projects in the maritime sector infrastructure of the EU and its Neighbourhood



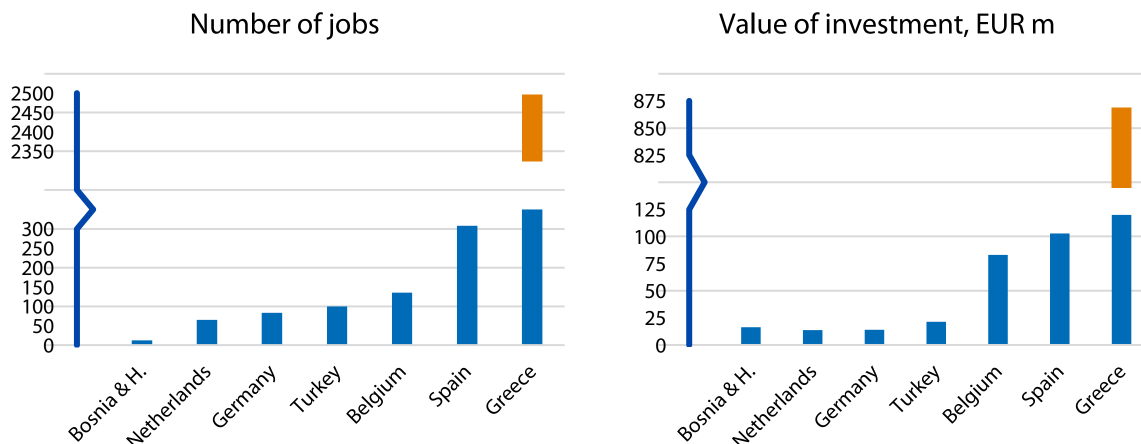
Sources: fDi Markets; China Global Investment Tracker; ECFR China-EU Power Audit Key Deals 2005-2017; China Overseas Port Project Dataset 1979-2019; https://www.truenumbers.it/cina-porti-europa/; authors' calculations.

* In 2010 and 2016 there were deals with unknown value: in 2010 Shanghai International Port Group acquired 25% of Zeebrugge Port; in 2016 ICBC acquired a stake in Antwerp Port.

According to fDi Markets data[7], China's greenfield investment projects in the sector generated around 3,200 jobs during the entire period, most of them in Greece in the projects related to Piraeus port in 2013 (700 jobs), 2016 (1,255 jobs), and 2019 (507 jobs) – see Figure 2. Spain comes second in terms of jobs created and capital pledged, but the numbers do not even come close to those recorded in Greece.

[5] The EU Neighbourhood is defined here as Western Balkan countries, Georgia, Moldova, Turkey and Ukraine.
[6] There is no available information on the value of two acquisition deals.
[7] fDi Markets, a Financial Times dataset on cross-border greenfield investments that covers all countries and sectors worldwide. It contains information on various characteristics of the announced greenfield investment projects, such as sector of the mother company and an affiliate that is being created, value of investment projects and estimate of the jobs being created.

Figure 2: Number of jobs created, and capital pledged in the announced greenfield investment projects in the maritime sector infrastructure of the EU and its Neighbourhood by China, 2004-2021*



Source: fDi Markets, authors' calculations.

* The Hamburg port investment was originally planned to be EUR 100m, but has since been reduced in scale, with a decrease in the shareholding to 24.99%. The revised investment value is not yet known and therefore not accounted for in the graph above.

Chinese SOEs have established a presence in 15 distinct EU ports in countries including Greece, Malta, Italy, Spain, France, Belgium, the Netherlands and Germany. China controls about 10% of European throughput (see Figure 3)[8]. However, not all of these investments entail a majority stake or full ownership. In many instances where a majority shareholding or ownership is achieved, the investment is concentrated within a specific terminal within the port, rather than encompassing the entire port complex. A notable exception that diverges from this pattern is the Port of Piraeus in Greece, one of the case studies we analyse, where COSCO holds majority shares in the port and maintains complete ownership of the container terminal.

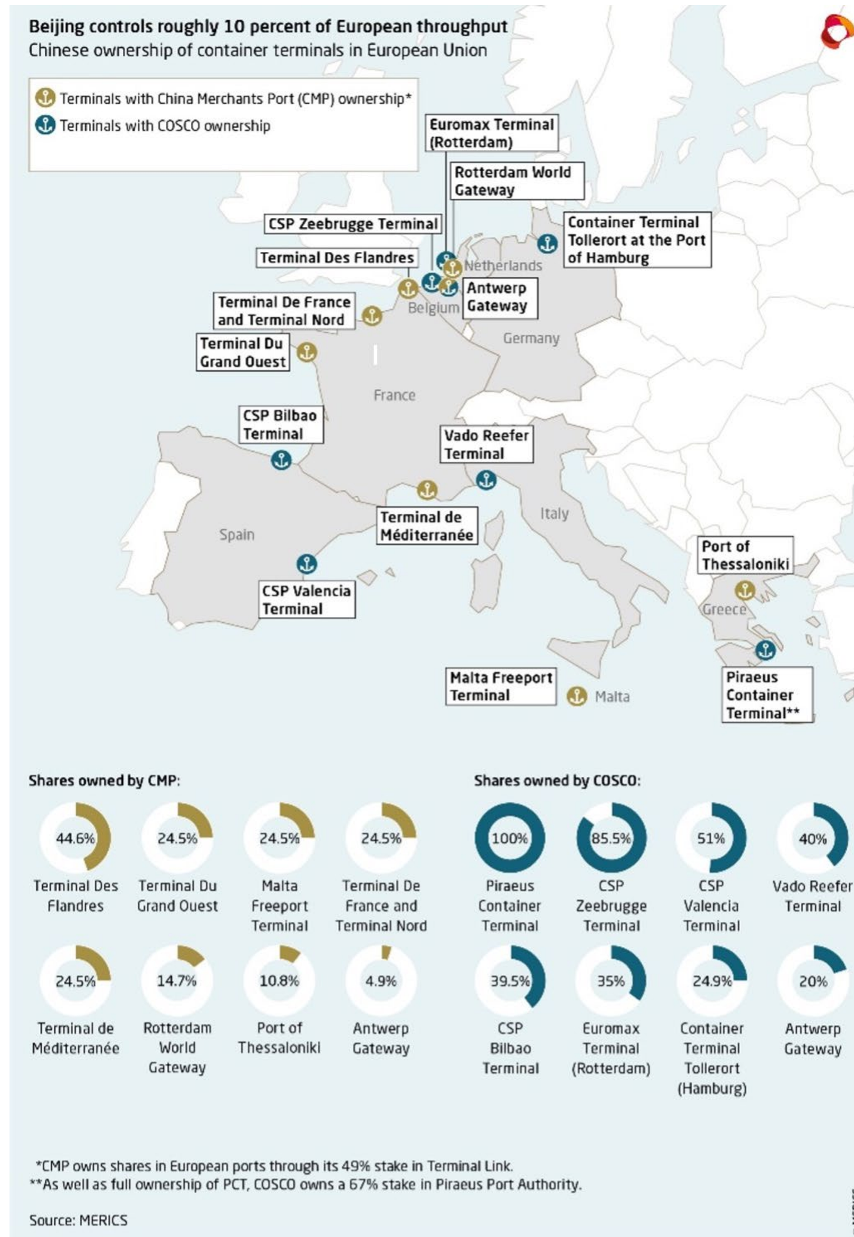
The predominant period for these investments in European ports dates from 2013 to 2020. Because China's economy has been slowing down, China's overseas investments in large infrastructural projects have been scaled back in some destinations. Investments have been further negatively impacted as a growing array of EU countries have begun instituting policies to scrutinise and potentially impede FDI. This trend has not spared investments in ports, although sporadic but pertinent investments continue to arise. One such recent instance involves COSCO's acquisition of stakes in the Container Terminal Tollerort (CTT) within the Port of Hamburg, Germany, a transaction finalised in 2023.

Many of the European ports in which Chinese enterprise have a stake are part of the EU's core trans-European transport network policy (TEN-T). The scope of the TEN-T is to develop "coherent, efficient, multimodal, and high-quality transport infrastructure across the EU" by connecting different means of transportations in one network. The aggregated Chinese presence in these ports in nodes of the core TEN-T carries important implications for the resilience of the network that range from minor disruptions in one node (i.e., in a small terminal such as the Tollerort terminal in the port of Hamburg) to disruptions to the whole core network (i.e., if all Chinese investments in EU ports are leveraged and/or suspended at the same time). Section 2 of the study will further elaborate on these cases and on intermediary steps.

[8] Other investments in Europe by Chinese companies that are not SOEs include two by Hutchison Ports Holdings (HPH): one in Poland, in Wolny Obszar Gospodarczy (WOG), a terminal at the Port of Gdynia; and one in Sweden, in a container terminal within Stockholm Free Port.

Even though TEN-T connects multiple European ports, and other transport infrastructures in the single market, the EU maritime cabotage regulation only “ensure(s) that maritime transport services within a Member State can be offered by companies of other Member States”. Transport services are still registered and regulated at national level not at EU level, meaning that different Member States have different levels of openness and restrictiveness vis à vis non-European vessels. That is not the case for, for example, air transports. Furthermore, due to the lack of a common market maritime cabotage, non-EU ships can move from one Member State to another to avoid the cabotage law of a specific Member States and can still interact with the common market at each port.

Figure 3: CMP and COSCO investments in European ports



2. CASE STUDIES AND RISK ASSESSMENTS

A general and case study-based risk assessment is conducted in this study, in order to provide an in-depth evaluation of the Chinese investment presence in European maritime transport infrastructure. The risk assessment framework applied adapts the methodology from the *National Risk Assessment of the Kingdom of the Netherlands 2022* compiled by the National Network of Safety and Security Analysts, which follows the main methodology usually adopted in risk analysis by other countries and in the private sector. The purpose is to evaluate various risks across two primary dimensions – *likelihood* and *impact* – across different potential scenarios.

Risks are categorised into five main groupings, which are most relevant to critical transportation infrastructure:

1. **EU-level dependency risk** (additional dependency risks to total single market dependency levels) – *How dependent is the single market on the Chinese investment in the port infrastructure*?
2. **Individual dependency risk** (dependency risks for an individual investment) – *How dependent is the host country on the Chinese investment in the given port infrastructure, including at the 'ecosystem' level?*
3. **Coercion and/or influence risk** – *Does this investment meaningfully raise the risk of Beijing's coercion/influence over the country's and EU politics, actively or passively?*
4. **Cyber/data risk** – *Does Chinese investment/participation in this infrastructure/project create new cyber threats to critical infrastructure and/or raise data security/privacy risks?*
5. **Hard security risk** – *Does the investment create traditional national security risks, mainly related to use by China's military or to its ability to inhibit or undermine European security?*

These five risk groups are used as lenses to examine the risk to critical transportation infrastructure across the EU and countries in the European Neighbourhood. To enhance the comprehensive assessment of risks, three case studies delve into specific risk scenarios that might emerge as a result of Chinese investments in, or utilisation of, critical maritime infrastructures across Europe. Each scenario is subjected to a thorough analysis, evaluating its likelihood of occurrence and potential impact. The findings of this assessment are subsequently organised into a table, plotting the scenarios based on their likelihood and impact levels. This visual representation aids stakeholders in promptly gauging which risks necessitate immediate attention and action and, in contrast, which require lighter monitoring and contingency planning.

The following three case studies are examined through the lenses of the risk groupings:

- The Port of Piraeus, Greece
- The Port of Hamburg, Germany
- Kumport Terminal, Turkey

The selection of these cases illustrates distinct scenarios involving Chinese SOEs and their investments within European ports. These cases encompass a spectrum, ranging from an instance where a Chinese SOE holds full ownership of container terminals plus a majority share of the port authority in an EU port (Port of Piraeus, Greece) to a case with a minority shareholding in a single terminal within an EU port (Port of Hamburg, Germany). The selection includes a case study from an EU candidate country (Kumport Terminal, Turkey).

2.1. EU-level dependency risk assessment

Background

Individual investments in European maritime infrastructure generate varying levels of dependency on a single-site or whole-of-country basis. Nevertheless, each investment also adds to a net dependency risk at the EU level. This section looks into the risks and opportunities that the collective footprint of Chinese investment in European ports and shipping operations has on the common market. Importantly, this big-picture assessment provides context for the subsequent case studies that look at individual cases in more detail.

Benefits drawn from China-sourced investment in European maritime infrastructure

For acquisitions of existing infrastructure, the shareholders in ports receiving investment from Chinese firms are the most immediate beneficiaries, when that investment surge is paid out through dividends. Beyond that, the port operators sometimes use the raised capital to pay off liabilities or reinvest it into the port to upgrade or expand operations.

However, the longer-term benefits, including through M&A and greenfield investment, can be considerable[9] – but only to the degree that the acquisition meaningfully expands trade flows and/or boosts the efficiency of port operations. As such, if the acquisition expands the capacity of total import and export potential, which is then utilised, the benefits at the EU level are significant. In other words, if investment and increases in shipping services – which boost ‘supply’ – are met with new demand as a result of, for example, lower prices or easier/better access to overseas markets, the benefit is notable. However, if this only manages to redirect existing demand to use one port over another, the benefits are negligible if not net-zero, and only materialize at the local level.

For example, suppose that the investment in the Port of Hamburg lowers prices and improves access to foreign markets to the extent that it leads companies in the hinterland to increase production for export. In that case, the benefits are considerable: more production means higher employment, increased demand for rail, barge and truck services to get products to the port, and more employment at and a better return on investment (ROI) from the port itself. But suppose that the investment and increased traffic in Hamburg only lead to already existing trade flows redirecting to Hamburg, and away from Rotterdam and Gdansk. In that case, the net benefit is marginal, even though it is good for the logistics chain leading to the Port of Hamburg, albeit at the expense of Rotterdam and Gdansk.

Downside of China-sourced investment in European maritime infrastructure

The primary downside to the expansion of the market share of Chinese SOEs such as COSCO and CMG in European shipping markets is that higher market share also means higher dependency risks. Many in Europe learned this lesson the hard way after Russia invaded Ukraine and they found themselves dependent not only on oil and gas infrastructure controlled by Russian firms, such as Nord Stream, but also on the oil and gas that flowed through it. Russian market share in those countries’ energy mix quickly translated into dependency on Russia that could be weaponised at the worst possible moment.

Even in circumstances falling short of a Russia-like scenario, dependency concerns are at the core of de-risking efforts – many risks exist only because of the level of reliance on China as provider of certain goods. The political/geopolitical connection, therefore, has already been made for China-dominated products such as refined critical raw minerals, solar panels and legacy chips. However, services such as port operation and shipping services, which underlie the global value chains that Europe heavily relies on, are often overlooked.

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[9] Such as investments to expand throughput capacity, which COSCO made in Piraeus.

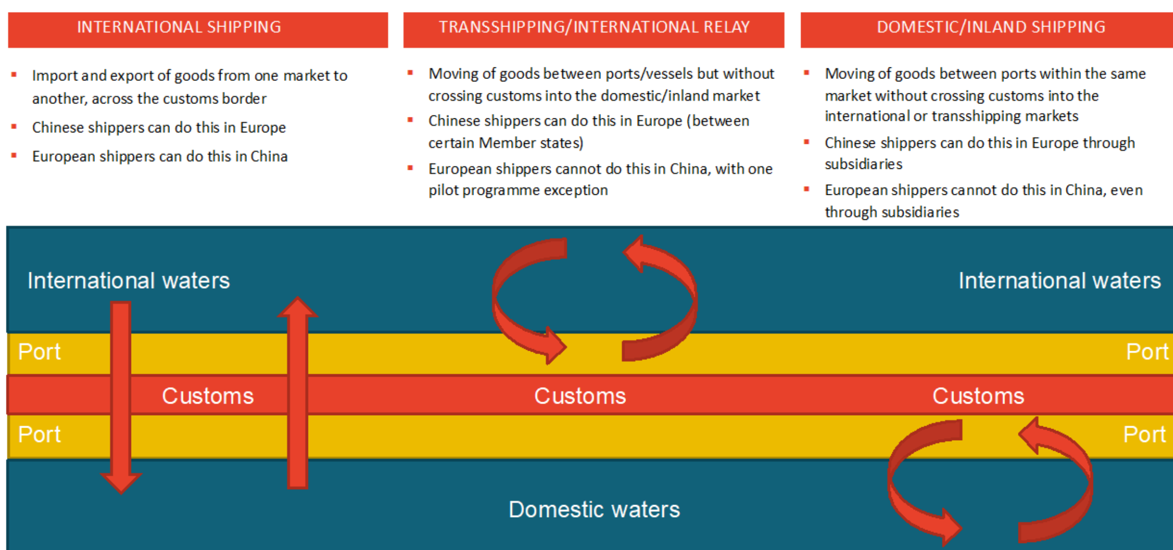
Although there is considerable risk that COSCO will be able to, over time, take market share from European shippers owing to the unfair advantages (outlined below) that it enjoys, European shippers do enjoy a substantial head start. Four of the five largest container shippers (measured by throughput) are European; the other is COSCO. That said, COSCO's global market share in container shipping has grown steadily, from 4.5% in 2013 to 10.8% in 2023.

COSCO has achieved rapid and sustained growth, and its expansion is fuelled heavily by advantages it enjoys in its home market, which can be projected outward. However, at its core, COSCO should be understood to be profoundly unlike its European competitors. Unlike the publicly listed European firms it strives to outcompete, COSCO is legally bound to advance the strategic goals of its country's government and it rejects the fiduciary responsibilities that others are bound by to their shareholders. Instead, COSCO can, to the degree that Beijing wants it to, cut into its margins in order to boost its market share.

COSCO benefits from extensive protectionism at home that enhances its EU market share growth

In its home market, COSCO benefits from extensive protection through extremely restrictive maritime cabotage law (see Figure 4). Foreign shippers can engage in standard international shipping at Chinese ports. However, they are banned from international relay[10] (except for one marginal pilot programme limited to a few ports) and domestic/hinterland shipping. To tranship or carry out inland shipping, China requires that vessels be Chinese-flagged and owned and operated by a Chinese company. As such, Hapag-Lloyd or MSC would be able to bring goods to and from the Port of Shanghai, but even if they invested in a local subsidiary and had Chinese-flagged vessels, they could not transship goods from Qingdao through Shanghai or bring goods from Wuhan down the Yangtze to be shipped from Shanghai to foreign markets.

Figure 4: COSCO's protected home market advantage



Source: MERICS

[10] Relay is a container transfer between two ships controlled by the same carrier. In case of international relay, coastal relay of international cargo is done by a foreign carrier.

Meanwhile, COSCO can and does engage in all types of shipping in Europe, directly or through subsidiaries. Its investments in the Port of Piraeus are explicitly for transshipping purposes, as is the case in other ports such as Hamburg and Rotterdam, while subsidiaries like COSCO (Europe) and Diamond Line are developing feeder services using locally flagged vessels to perform domestic and hinterland shipping.

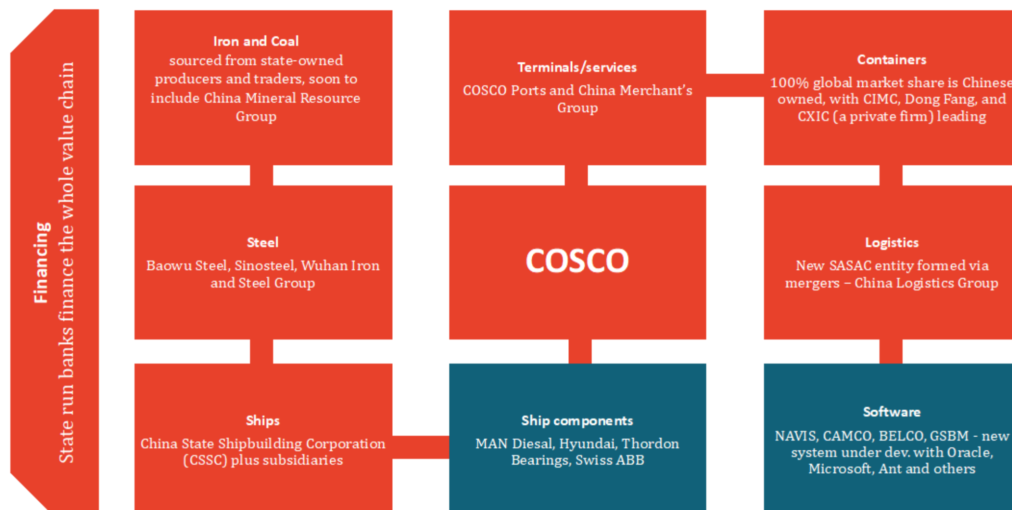
This means that COSCO can compete for and acquire market share in Europe in a way that European shippers cannot in China, thanks to this protected home market advantage. That may sound like a market access and reciprocity issue. However, the unequal playing-field that favours COSCO means growing market share for that firm, shrinking market share for European shippers, and hence greater European dependence on COSCO.

COSCO's vertically integrated value chain further empowers its ability to seize market share

Competing against COSCO for market share is not just a matter of competing with COSCO – it is about competing with the State-owned Assets Supervision and Administration Commission of the State Council (SASAC). This holding company controls and manages China's 97 centrally owned SOEs.

Much of the value, up and downstream in COSCO's value chain, is also SASAC-owned or state-owned by different entities. Upstream, more and more of COSCO's ships are made by CSSC, which gets its steel from Baowu and other SOEs, which themselves get their iron ore and coal from state-owned minders and traders – all under SASAC. Downstream is a similar story. Many of the terminals COSCO uses are owned by COSCO or CMG; the containers are all made in China, primarily by SOEs; and a key logistics service provider/co-ordinator is also SASAC-owned. All of these entities are also mainly financed by China's state-run banks.

Figure 5: COSCO's vertically integrated value chain



Source: MERICS.

Because of its robust competition law, such a vertically integrated value chain would be impossible within the EU. However, that competition law does not apply to the whole value chain in China but only to the 'point of contact' in COSCO itself through its activities in the EU. But that does not stop

the obvious and anti-competitive advantages that COSCO enjoys at home from causing distortions in the common market.

Leveraging those advantages, like leveraging its protected home market advantage, gives COSCO a clear edge when competing for market share in Europe and beyond, thus exacerbating dependency risks.

Generally, the individual dependency risk will depend heavily on how much market share in European ports and shipping markets Chinese firms such as COSCO and CMG can acquire. The higher the market share, the greater the dependency on Chinese providers and the less capacity European competitors (which presumably would have lost market share and become smaller) would have if they needed to fill in as alternate operators and providers.

In a scenario in which COSCO and CMG only marginally increase their market share in the EU over the coming decade, perhaps owing to economic slowdowns in China that lead Beijing to call on SOEs to prioritise boosting employment over global expansion, the risk is limited. China's SOEs are often tapped to fulfil such social stability roles during economic headwinds. China's economy is struggling to get back up to speed post-COVID, making this scenario more possible than in previous years. That would mean diminished benefits from investment and from potential increases in total trade, but from a risk mitigation perspective, this scenario is optimistic.

Risk assessment: EU-level dependency risk

Impact level / Likelihood					
Catastrophic					
Very serious		China's port and shipping firms drastically increase market share in the EU and heavily displace European firms			
Serious				China's port and ship-ping firms significantly increase market share in the EU and displace European firms	
Substantial					
Limited			China's port and shipping firms marginally increase market share in the EU		
	Very unlikely	**Unlikely**	**Somewhat likely**	**Likely**	**Very likely**

Source: Authors' analysis.

If COSCO and CMG manage to increase their investments and market shares in Europe at a pace comparable to that achieved in the past – albeit likely less on the investment side, which is now subject to greater scrutiny – they would be doing so in ways that come at the expense of European shippers' market share. Assuming no significant changes in the EU vs member-state dynamic, COSCO and CMG may continue to play off Member States against one another to maintain access and expand market share over the coming decades. This outcome would not only enhance the dependency risks for the EU but would also generate more significant exposure to other risk types, such as influence/coercion potential – after all, the ability to influence or coerce is intrinsically tied to how much could be at stake if Beijing attempts to weaponise dependencies.

Finally, there is a scenario in which European policy makers need to turn to Chinese firms for capital injection, as many did during the fallout years after the global financial crisis. Were this to occur, COSCO and CMG would seize the opportunities to invest in more ports and expand their shipping market

share. This scenario is unlikely, however, as an economic crisis severe enough to push European governments to take such steps would be likely to bring down China's economy as well – and, with current debt levels, Beijing could not again disburse the scale of stimulus it did in 2008. However, in such a wildcard scenario, dependency risks would grow considerably.

2.2. Piraues, Greece

SUMMARY OF KEY MESSAGES

- The Port of Piraeus is seen by China as a **valuable asset in inter-regional supply chains**. A shutdown or a change to the management of the facility would be likely only under extreme circumstances.
- COSCO's presence is perceived as beneficial to the port and to Greece, although this is based primarily on Chinese narratives. **An impact assessment of the investment has never been considered by Greek authorities**.
- **A major crisis with China would have a very serious impact** – primarily on the Piraeus economic ecosystem and to a lesser extent on the overall Greek economy – and could lead to coercion on the part of Beijing.
- **COSCO's presence next to critical civilian and military infrastructure is highly problematic**, in terms of cyber risks and potential sensitive data leaks.
- **Greece's level of preparedness in view of a major crisis with China is low**. This applies to COSCO's investment in the Port of Piraeus as well.
- **A thorough risk assessment of COSCO's investment requires close co-ordination with Western** partners in terms of technical assistance.
- Similarly, the creation of a crisis management mechanism and mitigation of various potential risks are possible only in **concert with EU and NATO partners**.

Background

In November 2008 the Greek government and China's COSCO Pacific (subsequently COSCO Shipping) signed a concession agreement worth EUR 831.2m. The deal covered two of the three piers of the Piraeus port, which have been since managed by a COSCO subsidiary, Piraeus Container Terminal (PCT). The initial duration of the agreement was 35 years, but in 2012 it was extended until February 2052.

In 2016, at the height of Greece's fiscal and economic crisis, COSCO obtained a 51% majority stake in the Piraeus Port Authority (PPA/OLP) for EUR 280.5m, plus EUR 88m in an escrow account.[11] Under the terms of the deal, COSCO had the right to claim an extra 16% of the PPA/OLP stock five years later, if within that timeframe it had completed a set of 11 mandatory investments worth EUR 294m in the infrastructure of the port (see Annex Table 3). Under the 2016 agreement, COSCO reserves the exclusive right to use and exploit the land and infrastructure inside the port area.

In August 2021 the Greek government agreed to give COSCO the extra 16% of the PPA/OLP stock, even though the Chinese company still needed to complete the mandatory investments set out in the 2016 agreement. COSCO undertook to complete the mandatory investments by 2026 or, in case of further delays caused by *force majeure*, by 2031.

[11] Escrow account is an account opened by a third party for the purposes of holding cash on behalf of two or more contracting parties until certain agreed contractual conditions for release of the funds from the account have been met. https://uk.practicallaw.thomsonreuters.com/0-107-6230?transitionType=Default&contextData=(sc.Default)&firstPage=true

Governance structure

The Port of Piraeus has the following governance structure:

Piraeus Container Terminal (PCT), a 100% subsidiary of COSCO, has been operating Piers II and III at the Port of Piraeus since 2009. PCT and PPA/OLP are separate legal entities, but are both managed by COSCO.

Based on the agreement renegotiated in 2021, COSCO now holds a 67% stake in PPA/OLP. The Hellenic Republic Asset Development Fund (HRADF/TAIPED), Greece's privatisation agency, holds roughly 7%, while the remaining 26% stake is in the hands of investors who have bought PPA/OLP shares through the Athens Stock Exchange. If COSCO's stake becomes even higher than 67%, this will further strengthen its hand in managing PPA/OLP. In theory, if HRADF/TAIPED sells its remaining shares and COSCO buys the shares of the remaining investors, the Chinese company's stake in PPA/OLP could reach 100%.

The PPA/OLP Board of Directors (BoD) comprises six Chinese and three Greek members, with COSCO providing the chairman and the chief executive officer (see Annex Table 4). None of the three Greek representatives is an executive member of the BoD. The Greek members are: an HRADF/TAIPED representative; the incumbent mayor of Piraeus*;* and an honorary president of the International Maritime Union, a Piraeus-based association of shipping agencies. Notably, the mayor of Piraeus is not included as an *ex officio* member, but as an independent individual – and so it is not clear if his position will be filled upon the expiry of his term of office.

Yet another legal entity, 100% owned by COSCO, is the Piraeus Consolidation & Distribution Centre (PCDC), a facility providing logistics services at PCT. It handles and stores general/dry cargo, refrigerated and deep-frozen goods, flammable products, chemicals, etc. While goods are at PCDC, duties and taxes are not levied on them. A further entity under COSCO's control is the former Greek company Piraeus-Europe-Asia Rail Logistics (PEARL). In November 2019, during the state visit to Greece of Chinese President Xi Jinping, 60% of the stock of PEARL was purchased by Ocean Rail Logistics, a 100% subsidiary of COSCO.

Benefits drawn from COSCO's investment

There have been apparent benefits generated since COSCO's arrival in 2008. Before that, Piraeus was primarily a passenger port, with a limited container handling capacity (throughput) in the range of 700,000 twenty-foot container equivalent units (TEUs). COSCO's investment has helped to increase the container throughput by a factor of eight, to 5.6m TEUs in 2019.

Piraeus port's current throughput is estimated at 7.2m TEUs. The PPA/COSCO management insists on the construction of Pier IV and seeks to boost the port's throughput to between 10m and 11m TEUs. In this way, Piraeus could compete on an equal footing with Hamburg, Antwerp and Rotterdam. However, the Greek authorities have yet to approve this proposal. In the absence of such approval, COSCO is upgrading the existing facilities through rearrangements within the PPA territory (see Annex Figure 7)

However, the container volume at Piraeus has shrunk from its record high of 5.6m TEUs in 2019. This can be attributed to two main factors: the negative impact of China's zero-COVID strategy in 2020-2022; and a series of strikes at PPA due to disputes between the management and local trade unions. Tensions peaked in late 2021 after a fatal accident affecting a worker at Piraeus. As a result, Piraeus has lost its dominant position in the Mediterranean as a container port and has been overtaken by Tanger-Med in Morocco and Valencia in Spain.

At present, the Piraeus port is performing very well in terms of passenger traffic, as the tourism boom in Greece has led to a growing number of cruise arrivals. Additional proposals by COSCO envisage the construction of four hotels. This reflects the priority given by the PPA/OLP management to Piraeus as

a passenger home port and a significant destination for cruisers. 2022 was a profitable year for PPA/OLP, mainly owing to the cruise/ferry traffic through the port.

COSCO has stated that in 2021 its investment had the following impact: the economic value added corresponded to 0.76% of Greece's GDP and the jobs created accounted for 0.12% of the country's total employment. These estimates cannot be confirmed by any other source, as Greek authorities have not commissioned an impact assessment of COSCO's investment in Piraeus.

Downside of COSCO's investment

Several disputes in Piraeus and adjacent municipalities have marred COSCO's investment.

In particular, in 2020 Piraeus City Council expressed disquiet about the absence of an environmental impact assessment (EIA) for the construction of a new cruise terminal worth EUR 136m. The project has now been approved, and a contractor selected by COSCO is building the terminal, but with funding provided through the EU structural funds.

Although environment aspects are not taken into consideration in the risk assessment of this study, there have been concerns about the environmental impact of mandatory investments and the need for adequate environmental impact assessments. For instance, all the local and regional authorities initially dismissed the Strategic Environmental Impact Assessment (SEIA) submitted by PPA/COSCO. In 2022 Greece's Council of State ruled that PPA had to approve a comprehensive SEIA before implementing its expansion plan. The SEIA has now been submitted and approved by Greek authorities.

In addition, there have been concerns about pollution caused in the port and the city of Piraeus. For instance, the transportation of debris through the streets of Piraeus increased congestion levels in the city. This mobilised local activists, who blocked the movement of PPA/COSCO lorries in Piraeus in late 2020. Furthermore, local ship repair businesses have strongly objected to COSCO's plan to construct a new shipyard in Perama, to the west of Piraeus. Their grievances have been taken to Parliament by the opposition. The official position of the Greek Ministry of Shipping is that such a shipyard, controlled by COSCO, is not envisaged in the 2016 agreement.

A proposal put forward by COSCO/PPA in 2020 envisaged the creation of an e-platform for the management of all functions of the port. The so-called Hellenic Port Community System (HPCS) was opposed by a number of business actors in Piraeus who argued that this would lead to a 'monopoly on services' in the hands of COSCO and open the door to unfair competition by other Chinese companies. In the end, the Ministry of Shipping announced that it would replace HPCS with a National Integrated Port Community System controlled by the state and included relevant provisions in a law adopted by parliament in January 2021.

Initial expectations were that a considerably higher number of jobs would be created. In 2016 the Foundation for Economic and Industrial Research (FEIR/IOBE) carried out a study which referred to 31,000 potential new jobs, whereas the current level of employment is 4,279 jobs (direct, indirect and induced). As a large SOE, COSCO benefited from the Chinese state's political support to ensure better contractual terms. Thus, in early 2015 EU state aid regulators ordered the Greek government to recover certain illegal fiscal benefits granted to PCT and its parent company COSCO. Under the 2008 agreement, the Greek state had granted COSCO tax exemptions in value-added tax (VAT) and depreciation obligations, which were more favourable than Greek entities' standard obligations, including those of PPA/OLP.

Risk assessment: Piraeus, Greece

Impact level / Likelihood					
Catastrophic					
Very serious		**Individual dependency risk:** Suspension of COSCO operations at Piraeus **Hard security risk:** COSCO is activated as a maritime militia. PLAN uses Piraeus as an indirect resupply hub			
Serious		**EU-level dependency risk:** Complete breakdown of trade through COSCO		**Coercion/influence risk:** COSCO threatens to shrink cargo traffic via Piraeus to influence Greek policy or European Council's decision on a China issue **Cyber/data risk:** COSCO port operations give access to local networks and lead to irregular but sensitive data leaks of civilian and military data with broader implications	
Substantial					
Limited					
	Very unlikely	Unlikely	Somewhat likely	Likely	Very likely

Source: Authors' analysis.

Individual dependency risk

In the event of a major crisis in relations between the EU and Beijing, for example in the case of an armed conflict over Taiwan or an incident in the South China Sea, the EU is widely expected to consider imposing sanctions on China. Greece would be likely to follow suit – even if reluctantly.[12] This would probably lead to reprisals by China.

The Piraeus ecosystem depends entirely on PPA/OLP, and any disturbance in its operation would be felt immediately. Greece's growing dependence on Chinese high-tech imports should also be factored in. For instance, one Chinese solar panel producer claims up to a 50% share of the Greek market and all its products are imported via Piraeus. Possible scenarios of Chinese reprisals would include a suspension of COSCO operations at Piraeus (which would effectively shut down the entire port) and imposition of restrictions on Chinese exports to Greece.

However, if COSCO were to shut its operation in Piraeus altogether, China would lose – temporarily, at least – access to 'the jewel in its BRI crown' and a significant transshipment hub in the Eastern Mediterranean and Southeast Europe. Moreover, COSCO does not have another equally well-developed hub in the Eastern Mediterranean. What Beijing is more likely to consider is imposing targeted restrictions on strategically important Chinese exports to Greece.

The impact would be severe for the local ecosystem regarding employment and spin-off economic benefits in the broader area of Piraeus. On a national scale, Greece might face an acute shortage of equipment for the country's green transition, e.g. as solar panels, electric vehicles and batteries, etc. Further, unless COSCO shuts down its operation in Piraeus altogether, Greek authorities will face a

[12] Interview with a Greek state official, 14 January 2023.

tough choice over the legal status of the port. In case COSCO does decide to pull out of Piraeus, the Greek government will find it difficult to swiftly mobilise another port operator.

EU-level dependency risk

A rough estimate as to the share of Chinese imports into the European market transshipped via the Port of Piraeus points to a figure between 10% and 15%.[13] Given that in 2022 the worth of Chinese exports to the EU amounted to some EUR 620bn, Piraeus could potentially account for the entry of Chinese goods worth between EUR 62bn and EUR 93bn into the EU market. However, the one above is a highly arbitrary analysis, for the reasons set out below.

The Greek market accounts for only a small share of all the Chinese goods delivered at the Port of Piraeus. Most containers are transshipped to other countries and are unsealed at the final destination. Therefore, credible data on the nature, worth and strategic importance of Chinese imports via Piraeus takes time to come by.

In addition, the railway transport corridor from Piraeus to Budapest, which is part of the core TEN-T (priority axis No22), still absorbs small amounts of containers at this stage – less than 200,000 TEUs in 2021.[14] While COSCO motherships arrive at Piraeus, goods are then transshipped to other Mediterranean and Black Sea ports on smaller cargo vessels, known as 'feeders'. Some of these ports may be in EU Member States, such as Cyprus, Italy, Malta, France, Spain, Portugal, Bulgaria and Romania. North African states also claim a considerable share of the cargo traffic via Piraeus. As many goods transshipped via Piraeus go to North Africa rather than to Europe, the role of the Piraeus port in the overall European supply chain may be more limited than generally assumed.

Furthermore, Greece has yet to adopt an FDI screening mechanism. The Greek government has prioritised FDI attraction. Although Regulation 2019/452 came into force in October 2020, a year later, the Greek parliament passed Law 4864/2021 on Strategic Investments, which moves in the opposite direction.

The Greek government is extremely reluctant to consider changing the status of the Piraeus port. Even in the case of a major international crisis and a collapse of relations between the EU and China, Greece is unlikely to challenge the 2016 agreement with COSCO, as amended in 2021.

A complete breakdown of trade through COSCO, arising from an immediate suspension of the operation of the Chinese forwarder in European ports, including Piraeus, is unlikely. Given the headwinds that China's economy is currently facing, Beijing would have to consider the risk of losing – even if temporarily – Piraeus as a logistics hub and entry point to markets in the EU and the broader Southeast Europe-MENA region. Chinese producers affected by this development would find it difficult to divert their exports to other parts of the world swiftly. However, the impact would be severe, given the EU's dependence on Chinese imports transported by sea, including via Piraeus. The Port of Piraeus is part of the core TEN-T as major hub in the Eastern Mediterranean region (for highways, railways and transshipment), disruptions in Piraeus therefore would have direct spillovers to other connected hubs in the EU (i.e., the Helsinki-Valletta corridor and the Hamburg/Rostock-Burgas/TR Border/Piraeus - Lefkosia corridor).

The imposition of partial countersanctions by China, for example restrictions on essential exports to the EU, is more likely. Partial Chinese countersanctions, such as restrictions on specific exports to the EU, could include rare earths (which is already the case with gallium and germanium), batteries for

[13] Interviews with representatives of the business community in Piraeus, 26 July 2023.
[14] Interview with PPA chairman Yu Zenggang, 27 May 2022.

electric vehicles, solar panels, etc. Piraeus would be a relatively small, but not insignificant, entry point in the overall European supply chain.

Coercion/influence risk

Greece is one of the most China-friendly EU Member States and, like many other European governments, wishes to avoid a head-on clash with Beijing. While the current government is unlikely to repeat the goodwill gestures made to Beijing by its predecessor in 2015-2019, Athens carefully avoids stepping on China's toes on 'sensitive' political issues, such as the status of Xinjiang, Tibet and Taiwan, and consistently abstains on related UN resolutions. Greece has neither commented on China's coercion against Lithuania[15] nor criticised Beijing's 'neutral' stance towards Russia's invasion of Ukraine. However, Greece has not opposed EU sanctions against China on human rights related issues and cyber-attacks.

In the event of a major international crisis, Beijing would seek to split the EU through 'China-friendly' voices, including Greece. Coercion cannot be precluded, but it is likely to be discreet rather than undisguised. China may consider a range of possible responses, such as: exerting pressure on the Greek government by threatening to freeze bilateral relations; restricting strategic exports to Greece, without announcing an official embargo; quietly diverting traffic to other ports in the Mediterranean; and explicitly informing Greek authorities that, if they support EU decisions, COSCO will halt investments and will redirect flows to other destinations.

Although the complete shutdown of the Piraeus port as a consequence of economic coercion is deemed highly unlikely, the port could be used by Beijing as a lever, given that COSCO's investment is a significant part of the Greek government's FDI attraction strategy. However, Piraeus is a major Chinese asset in the Mediterranean, and Beijing would not like to jeopardise its status through extreme political pressure on Athens.

Cybersecurity/data risk

The Hellenic Port Community System (HPCS) dispute illustrates COSCO's interest in data collection and management, which could have economic and security implications. COSCO certainly has the opportunities and resources to create an infrastructure that would allow it to 'eavesdrop' on Greek state and military services in the broader area of Piraeus. The impact could be severe for state, international and military infrastructure (Ministry of Shipping, Coast Guard, Greek Navy, visiting NATO military vessels and global telecoms networks). PPA has granted nine offices and exterior space totalling a surface of 1,100 sq metres to the Special Forces (KEA) of the Greek Coast Guard. COSCO has borne the cost of the development and renovation of these sites. It is unclear to what extent the facilities are equipped with the requisite safeguards in case Chinese listening equipment is installed in the area.

The 'symbiosis' of COSCO and several Greek state institutions in the same area (Ministry of Shipping, Coast Guard and the Salamina naval base) is highly problematic. It is noted that the Greek naval base at Salamina is less than five nautical miles away from Piraeus, i.e. within a range that allows – in theory, at least – for the use of listening devices. There are (unconfirmed) reports of a secret telecoms unit at PCT, with access granted to very few Chinese representatives.

A critical factor is the low level of awareness and understanding of cyber threats among Greek public authorities. Notably, in early 2020 COSCO presented its HPCS platform to the Greek Ministry of Digital Governance, which initially accepted it. However, the local business community in Piraeus reacted vehemently and only then did the Greek government realise the potential threat.

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[15] In 2021, Lithuania became the sixth European country to face an episode of Chinese economic coercion. The episode followed the opening of a "Taiwanese Representative Office" in Vilnius in November 2021. https://merics.org/en/executive-memo/dealing-chinas-economic-coercion-case-lithuania-and-insights-east-asia-and-australia

Greece has a National Cybersecurity Strategy, published in 2018 and updated in 2020. It focuses on security policies for ICT systems in the public sector, and co-operation with the competent national authorities, The European Union Agency for Cybersecurity (ENISA), etc. It is likely that this strategy requires an update, or a specific chapter on potential cyber threats related to COSCO's presence in Piraeus.

Piraeus is often visited by military vessels from other NATO members, including the US. For instance, the aircraft carrier USS Gerald R. Ford visited Piraeus in late July 2023, although it did not enter the port. It is the US navy's most advanced aircraft carrier, with 23 new technologies that operate with a 20% smaller crew than Nimitz-class carriers. Furthermore, there are indications that calls by US military vessels will be more frequent in the future. It is reasonable to assume that Chinese intelligence services will be interested in collecting data about US advanced military technologies.

Hard security risk

The Chinese navy occasionally visits ports throughout the region, usually after concluding counter-piracy patrols in the Gulf of Aden and before returning to China. Chinese warships have visited Piraeus several times since 2002, most recently in October 2017, when the Greek and Chinese navies held one-day joint drills. Despite the symbolic nature of this exercise, port calls of Chinese warships feed into the debate on the potential dual use of COSCO's investment project. Concerns over possible military use are not entirely unwarranted, despite assurances by Greek authorities that they would never allow this.

In June 2015 the Chinese government announced that all civilian shipbuilders had to ensure that their new vessels were suitable for military use in emergencies. This new strategy is designed to enable China to convert the considerable potential of its civilian fleet into military strength to protect strategic lines of communication and maritime support capabilities. In other words, all new COSCO container ships docking in the port of Piraeus will – in theory, at least – be capable of being converted into military vessels at short notice and used in military operations.

As argued elsewhere, Piraeus port is seen by Chinese authorities as a valuable asset. They would be unwilling to sacrifice it by turning it into a military facility, as this would justify the suspension of diplomatic relations between Greece and China. Above all, Greece's commitment to NATO, in conjunction with the defence agreements between Greece and the US on the one hand, and Greece and France on the other, render Chinese military activism in the Mediterranean virtually impossible.

In case of unrest in North Africa and a repeat of the Libya-2011 crisis, China will be called upon to protect its assets and evacuate its citizens. Yet, it is unlikely that Greek authorities, as well as NATO partners, would agree to the Piraeus port being used by China's navy in such a rescue operation. In addition, China may have other options in the Mediterranean, such as existing facilities or terminals under construction in Egypt (at Alexandria, Port-Said and El-Dekheila) or Algeria (Cherchell).

Last but not least, in a major international crisis involving China, the main battle theatre is expected to be in the Indo-Pacific, not the Mediterranean Sea. In such a scenario, the US 6th Fleet would probably block the Suez Canal and thus prevent Chinese military and merchant ships from entering or leaving the Mediterranean.

2.3. Hamburg, Germany

SUMMARY OF KEY MESSAGES

- COSCO's acquisition of 24.99% of the Container Terminal Tollerort in the Port of Hamburg is seen by COSCO as a **strategic investment in a port that it aims to develop as a regional hub**.
- Hamburger Hafen und Logistik has argued that, because 30% of trade flows through Hamburg either come from or go to China, cementing the relationship with stakes in a terminal will generate development and employment opportunities in Hamburg and Germany more broadly.
- The investment is still new, and hence measurable impacts have yet to materialise. However, **to the degree that the investment unlocks new demand for import and export, it will benefit the city, the country and the EU**.
- However, if the investment and increased trade flows result merely **in redirection of existing total flows** through to Hamburg, the benefits will be localised, probably at the cost of other ports, and **there will be limited or no net benefits at the EU level**.
- **Dependency risks will be scaled to the amount of additional throughput** generated by COSCO and to what degree it is able to win market share.
- **Influence risks are the most likely to materialise**, as they already have in many ways, with much of the debate on approving the investment highlighting fears that its rejection would prompt COSCO to go elsewhere, and so Hamburg would lose opportunities. Future influence risks will grow relative to COSCO's overall market share in the port, although compared with the broader Germany-China economic relationship, these are likely to remain a small part of broader dependency risks.
- **Cybersecurity/data risks are marginally increased**, but with COSCO already having two offices in the city and with COSCO vessels already using the port extensively, those risks are present irrespective of the CTT investment.
- Hard security risks are very limited, owing to Hamburg's geographic location, which is surrounded by NATO and far from any theatre that the PLAN would be active in for the foreseeable future.

Background

a. Chronology

In June 2021 Hamburger Hafen und Logistik (HHLA) announced that it was negotiating with Cosco Sea Ports Limited (CSPL) a strategic minority share participation in the Container Terminal Tollerort (CTT). In September 2021 HHLA announced that COSCO and HHLA had finalised the deal, with CSPL to become a 35% equity owner in CTT. COSCO announced that it would use CTT as a 'preferred hub' and facilitate two Far East services, one Mediterranean service and one Baltic feeder service through the terminal.

However, in late 2021, the German Federal Ministry of Economic Affairs and Climate Action (BMWK) asked other ministries for information and opinions on the deal. The Ministry of the Interior (BMI) tasked the Federal Office for Information Security (BSI) to ascertain whether CTT is critical infrastructure. The BMI forwarded this to the BMWK and noted that this is a sensitive deal. In January 2022 new KRITIS regulations, which determine what counts as critical infrastructure and how it should be managed, came into effect. It is determined that CTT should be registered as critical infrastructure, although the CTT IT systems had already been deemed such since 2018.

The European Commission reportedly reviewed the deal through the Investment Screening Mechanism (although this was not publicly confirmed, as reviews are done internally and recommendations are made directly to Member State authorities, with no public comment on individual cases) and recommended against approval. However, as the mechanism is not binding, it is left to the Member State to approve or reject an investment, and in this case, Berlin seems to have chosen its own path.

In October 2022 the federal government announced that COSCO would be allowed to invest in CTT so long as shareholding is below 25%, as it would have little direct power over strategy-making, nor would it have a position in the supervisory board, thus making COSCO a largely 'silent partner'. However, while not through legal means, COSCO is likely to have a meaningful impact on the direction of the terminal through its position as a sizeable investor, but also as a significant user and customer of the terminal through its shipping services, which it has the stated intention of expanding in the port. Six ministries opposed the approval, but the Chancellery reportedly pushed the approval through. Several months later, HHLA registered CTT as critical infrastructure (after the deadline, but the authorities decided not to pursue this in court). Finally, in June 2023, HHLA and COSCO signed contracts handing over a 24.99% share in the HHLA subsidiary Container Terminal Tollerort GmbH to COSCO subsidiary CSPL.

b. Governance structure

The deal set CSPL's shareholdings below 25%, leading to a 24.99% final shareholding level in the final contract. Notably, one provision of the agreement includes that CSPL must not, through other means, obtain effective participation in control rights, meaning that CSPL or COSCO could not, through another Chinese SOE that bought shares in CTT and then sold them to CSPL, exceed its current ownership level. As such, unless a new arrangement is agreed to, COSCO will only have a 'silent partner' level of ownership and, therefore, cannot directly influence CTT and HHLA operations or strategy making. Finally, the 24.99% ownership does not leave COSCO with exclusivity rights for CTT. Other shipping companies will be able to use CTT as paying customers.

Benefits drawn from COSCO's investment

When first announced, the sale of 35% of CTT was set for EUR 99m, with EUR 65m for the shares and EUR 34m to pay off CTT debts as part of the investment deal. The transaction has yet to be completed or disclosed at the time of writing. It therefore remains to be seen if or how much the cost has changed since the shareholding has dropped to 24.99%. If the whole sum is proportionally reduced to a 24.99% level, the total cost is EUR 70.686m.[16] If the debt is paid off in full and the reduced shareholding has no bearing, the total cost will be EUR 81.41m.

CTT was 100% owned by HHLA before the sale, so HHLA and its shareholders will be the beneficiaries. However, it is still being determined whether that sum will be reinvested into the port or elsewhere, or if it will be distributed to shareholders through dividends, be used to pay off other liabilities, or any combination thereof. In any case, the HHLA and shareholders will be the immediate beneficiaries of the deal.

HHLA also argues that COSCO's investment will make Hamburg a preferred hub for COSCO and will secure sustainable development and job opportunities, as it stated in a press release on the final agreement. COSCO largely agrees, as it made clear in its press release on the same occasion. Both sides noted that around 30% of the trade that passes through the port goes to or comes from China.

[16] As various sources are used to compile the data on Chinese FDI in the European maritime sector, the currency as provided by the data source is reported.

These assessments are generally accurate. The benefits of the investment are tangible for Hamburg and for Germany and some of its neighbours, especially if it leads to further expansions of COSCO's operations in Hamburg as a critical hub for hinterland shipping and as a transshipping hub for the Baltic countries and Germany with the rest of the world. That potentially could generate further demand for companies upstream from COSCO in the region – the Port of Hamburg itself, the inland terminals along the Elbe basin, the freight rail providers and truckers that engage in intermodal transit by bringing goods to Hamburg to then ship by sea, and all of the suppliers of those firms as well. That would be potentially beneficial for economic development, employment, economies of scale for those upstream companies, and tax revenue for the relevant jurisdictions.

Those benefits for the HHLA itself and its shareholders; for the City of Hamburg, its hinterland, and its transshipping hub connections; and for the workers, companies, and jurisdictions upstream of the value chain; are all potentially real if a meaningful increase in COSCO's activities in and through Hamburg materialise. But, like all opportunities, they must be weighed against their risks.

Downside of COSCO's investment

As the final transaction has (at the time of writing) not yet been completed, let alone any follow-up and change in COSCO's activities in the port, there are no examples of downsides explicitly related to the investment. Some downsides unrelated to security and resilience risks could emerge as they have in other COSCO invested ports, such as issues around labor rights and protections as well as environmental impacts. However, those issues are already well covered under German and EU jurisdictions, so should they emerge, it would be due to failure by the relevant authorities to enforce rules when COSCO is noncompliant. Risks are undoubtedly present as a consequence of the investment and are explored in the risk assessment below.

Risk assessment. Hamburg, Germany

Impact level / Likelihood					
Catastrophic					
Very serious		**Cyber/data risk:** COSCO operations become a platform for cyber-attacks and espionage, China gains extensive access to vital systems and data, including German and NATO military secrets			
Serious		**Individual dependency risk:** COSCO threats to shift trade flows materialise **Coercion/influence risk:** Coercion leads Germany to block a European Council decision	**EU-level dependency risk:** COSCO significantly expands its footprint in the Baltic, cementing access and hubs across the entire common market		
Substantial		**Individual dependency risk:** Hamburg becomes a critical hub, then Taiwan conflict breaks down trade flows			**Coercion/influence risk:** Discreet or implicit coercion risks influence German policy making
Limited		**Hard security risk:** PLAN indirectly supplied by COSCO through Hamburg in covert manner			**Cyber/data risk**: COSCO as a platform for cyber-attacks and espionage obtains irregular but useful information on target subjects
	Very unlikely	**Unlikely**	**Somewhat likely**	**Likely**	**Very likely**

Source Authors' analysis.

Individual dependency risk

The individual dependency risk will depend heavily on how COSCO's investment in CTT develops over time. Suppose that the investment has a limited or marginal effect on the trade facilitated by COSCO vessels using Hamburg as a hub. In that case, dependency risks are low as the demand for shipping

services could, in principle, be quickly met by a European shipper. But in the long term, if the investment leads to significant new trade flows, there is greater potential for dependency risks to emerge. If such conditions occurred, they could impact the port in various ways.

If, for example, years from now, COSCO responded to a significant decision by German policy makers by shifting logistics chains away from Hamburg and the Elbe hinterland towards Rotterdam and Antwerp and the Rhine hinterland, localised impacts could be substantial as demand at the port would drop. COSCO would have to eat into its margins to cover its costs, but it would hardly be the first time a Chinese SOE prioritised politics over profitability. This concern was expressed during the debate around the screening of COSCO's investment – that if it were blocked, Hamburg would be punished, and investment and trade flows would instead go to other ports.

The impact would depend on the amount of port throughput dependent on COSCO, which could be redirected. That could lead to localised job losses and other ecosystem impacts in Hamburg, while generating more demand in other ports, which could lead to a political backlash from Hamburg's port workers and those who rely on them, who would be angry that their government 'instigated' the conflict that led to redirection and benefited workers in other countries at their expense.

A similar, more considerable impact could result if open conflict breaks out in the Taiwan Strait. If European sanctions, Chinese suspension of trade, or a general breakdown of trade occurs, leading COSCO to suspend operations in Hamburg (and elsewhere), the knock-on impacts for Hamburg could be significant. A major reduction or complete breakdown of trade between China and Europe would be catastrophic for all ports and the economy overall. But, if COSCO had made Hamburg its hub for the Baltics and northern-central Europe with feeder operations, regional supply chains could be disrupted as well if Hamburg is too dependent.

EU-level dependency risk

Regarding the port investment, acquiring a minority share in CTT adds only a small amount to EUR 10.2bn of Chinese investment in EU maritime infrastructure accumulated during 2004-2021. Instead, EU-level dependency risk, if it emerges, will come about if COSCO does indeed make CTT its preferred hub for northern Europe and the Baltics. If this leads to significant new COSCO operations in the region, that would mean that COSCO, and its close relative CMG, has extended itself across the entire range of European shipping markets: Hamburg as the new hub to build market share in the north and the Baltic region, as well as the Elbe hinterland; Rotterdam and Antwerp to build market share in the English Channel region, as well as the Rhine hinterland; Valencia and Vado for the western Mediterranean; and Piraeus for the eastern Mediterranean, Black Sea and as a gateway into Europe more broadly.

If COSCO significantly expanded its Baltic and Northern Europe operations over the coming decade, that could mean lower shipping costs for regional importers and exporters. However, this would be likely to come at the expense of European shippers that, as private companies, struggle to compete on price because of their fiduciary responsibility, which COSCO, as a Chinese SOE, lacks. That enhances dependency risks, not just for Germany but for the EU as a whole as COSCO and other Chinese firms secure a comprehensive footprint across Europe's shipping markets that facilitates further market share acquisition and the dependency risks that could come with it.

Coercion/influence risk

Unlike some other EU Member States, Germany and German companies have not faced instances of direct and explicit economic coercion from Beijing.[17] Nevertheless, some politicians, officials and business leaders in Germany have publicly commented in support of/opposition to China-related decisions explicitly and implicitly owing to fear of economic retaliation, which has become more widespread under Xi Jinping. The debate around approvals for COSCO's Hamburg investment featured such commentary, including HHLA spokespeople who argued that jobs were at risk, as was the port's competitiveness with Rotterdam and Antwerp.

There is potential implicit coercion that China could shrink cargo traffic via Hamburg to pressure Germany, given German policies that may not be to Beijing's liking. In the debate about COSCO's investment in Hamburg, implicit threats were voiced not by China itself but by local leaders in support of approving the investment. These were focused on theoretical and potential shifts in yet-to-materialise investment and subsequent increases in port usage by COSCO. It is not difficult to imagine how much more influence COSCO and China will have *after* the investment and subsequent port usage increase have materialised.

It is unlikely that COSCO's implicit influence on its own would be enough to change any major policy or decision in a significant way. Instead, the serious nature of the problem arises not from any individual issue, but from small but meaningful influence over many decisions – after all, the overall level of interdependencies in the broad Germany-China relationship (or the EU-China relationship) already influences policy making and is an omnipresent feature of the debate in Germany (EU). While this is true of all major commercial actors operating within a country – companies are wary of incurring the wrath of their local jurisdiction, just as local jurisdictions are wary of scaring off companies – the fear is heightened with China's SOEs, because they are a potential channel for coercion as part of Beijing's toolkit. The effect can accumulate over time and even small concessions can eventually have larger impact on Germany-China relations.

That said, the level of influence is likely to be lower than that of Piraeus on Greek policy making. If, for example, Beijing wanted to use either port as a point of pressure on German or Greek authorities to disrupt or block a European Council decision requiring unanimity, it would be likely to find it easier to make that argument through Piraeus. However, the investment in Hamburg is one small part of a much larger economic relationship between Germany and China, which means that it could be part of a more significant pressure point that could influence Germany's decisions in the Council.

One additional area of concern is the impact that the investment and potential increase in usage by COSCO would have on the TEN-T projects related to Hamburg, its hinterlands, and its transhipping network. As TEN-T focuses on intermodality and connectivity, the maritime, inland waterway, rail, and road projects that interface with the port of Hamburg could be open to positive or negative impacts from increased activity from COSCO. Positive impacts could include additional use of TEN-T supported projects, which could boost their ROI, though only if it means that new demand is unlocked – as discussed above, if it just means COSCO has replaced other companies as transportation suppliers to hinterland and transshipping customers, then it won't yield additional throughput. However, the same market share/dependency concerns mentioned above could also apply to TEN-T supported projects.

On a similar note, if COSCO's investment and potential increased use of the Port of Hamburg leads to shifts in transportation flows – say, from the Rhine basin and Rotterdam and Antwerp, or from the

[17] One minor exception has been Leica Camera, in response to an advertisement featuring the Tiananmen Square massacre. There is also the indirect example of German automotive component firms impacted by Chinese coercion directed at Lithuania for their supply chains there.

Vistula basin and Gdansk – this could positively impact investments connected to Hamburg at the expense of those connected with Rotterdam, Antwerp, and Gdansk.

Cybersecurity/data risk

Cybersecurity and data risks presented by COSCO in Hamburg potentially exist without the investment in CTT and are likely to be expanded only in marginal ways through that investment. Regarding cyber/data risk potential, COSCO already has two offices in the city centre of Hamburg, through which it could access networks, gather data, covertly transfer data, etc. Furthermore, COSCO vessels regularly pass through the port terminals and could be platforms for cyber and data risks. HHLA has stated that, given COSCO's 24.99% stake, the firm would not have access to internal IT systems. However, if COSCO intends to use CTT as a primary berth for its container ships in the future, it seems unlikely that COSCO would not insist on its own preferred hardware and software solutions for its port operations. Those might not interface with the CTT and HHLA IT systems, but they could present other risks.

Nevertheless, COSCO, like all Chinese firms, is subject to the National Security Law, which can enlist Chinese persons in intelligence gathering, even overseas. As a 'backbone enterprise' for national security purposes, COSCO certainly possesses the potential motivation to support intelligence gathering, including through its operations in Hamburg. That does not mean it has been actively doing so, but as geopolitical tensions grow between China and Europe, so will the desire for access to better intelligence in Beijing. Additionally, NATO vessels regularly visit the Port of Hamburg, giving even further reason for Beijing to use its national champion in gathering data and intelligence.

Such risks should be monitored, and rules such as those relating to GDPR should be robustly enforced. This burden is likely to grow quickly and extensively, not necessarily because of any assumptions about COSCO itself, but because of the rollout of more technologies into shipping and port operations. As more smart shipping, digital transition, 5G, sensors and other technologies are integrated, overall exposure to cyber and data risks will increase significantly.

Hard security risk

COSCO plays a critical parallel role with the PLAN, and its involvement in unforeseeable events should be considered. That said, unlike in other ports, COSCO's operations in Hamburg have limited hard security risks regarding its formal logistics role.

As to COSCO's logistics role, it is difficult to imagine scenarios in which COSCO would be able to use a north European port where it only controls 24.99% of one terminal to transfer PLAN supplies clandestinely. For the foreseeable future, beyond exercises with strategic partners such as Russia and developments in the Arctic region (as has occurred in the past), there are no evident reasons why PLAN vessels would be anywhere near Northern Europe and need resupplying. That said, this risk could, in principle, be mitigated with closer monitoring and through robust customs compliance regimes.

2.4. Kumport, Turkey

SUMMARY OF KEY MESSAGES

- **China appears to have been relatively unsuccessful in using the full potential of the Kumport Terminal**, and the project has had limited impact on the Turkish economy. The terminal faces operational challenges and has been operating below its potential.
- **The potential impact of the Kumport investment project on the overall maritime operations in the region is limited**.
- Turkey's macro-financial and political instability, as well as geopolitical issues, have deterred further Chinese investment into the country.
- **Should China decide to invest in other Turkish ports, the potential risk of excessive Chinese influence** on the country's maritime infrastructure **would be significantly higher**.
- Higher investment from China could further exacerbate Turkey's macroeconomic imbalances.
- Turkey's active engagement with the BRI raises **concerns for the EU about China's increasing influence in the region**. Further deepening of economic and political ties between China and Turkey and increased investment into Turkey's maritime infrastructure could increase Turkey's vulnerability to China's political and economic influence. This would raise risks for the EU and other Western countries.

Background

China and Turkey have enjoyed a remarkable surge in trade activity since the 2000s, characterised mainly by the exchange of semi-finished products from Turkey and finished goods from China. As Turkey's relations with the EU and the US cooled, the country has come to see China as a promising partner for further development and improvement of political, military and economic relations. However, although Turkey's BRI membership has been formally in effect for over seven years, Chinese investments in Turkey remain relatively limited. According to data from the Central Bank of the Republic of Turkey (CBRT), Chinese FDI accounted for just 0.6% of the country's total FDI stock in 2022. BRI investments in Turkey amounted to EUR 3.2bn, representing only 1.3% of BRI investments globally. But even though the size of China's FDI in Turkey is relatively small, its sectoral structure shows that China's footprint in Turkey's critical infrastructure is sizeable.

Turkey's strategic geographic location in the Mediterranean and Black seas makes it a significant regional power in maritime transportation and an important EU Neighbourhood country to analyse. Turkey enjoys extensive sea connections, with a network of nearly 200 ports and piers, making it a vital element of the extension of the Trans-European Network for Transport (TEN-T). Within its maritime infrastructure, 27 ports are classified explicitly as container ports.[18] The seaports with most significant trade capacity are concentrated in the Ambarli district of Istanbul, considered a central hub for transshipment.

In this area lies the Kumport Terminal, one of the largest Chinese FDI projects in the country, with a total investment of EUR 829m.[19] Situated on Istanbul's European side, Kumport was the third-largest container terminal in Turkey as of 2011. Serving as a strategic gateway to the Black Sea region, the terminal caters to Istanbul's import and export demands. It also plays a significant role in facilitating trade and logistics activities, making it an essential component of Turkey's maritime infrastructure.

[18] Maritime transport accounted for 57% of Turkey's total exports and 53% of its total imports in 2022.
[19] The remaining 35% of Kumport's shares are directly owned by Turkac No.1 SARL.

The project saw three Chinese SOEs – China Merchants Port Holdings (CMPH), COSCO Pacific Limited (CPL) and China Investment Corporation (CIC) – building a consortium (Euro-Asia Oceangate SARL) to acquire 65% of the shares in Kumport Terminal for a total of EUR 829m. COSCO justified the investment by emphasising the potential business synergy with its existing investment in the Piraeus Container Terminal in Greece and the opportunity for co-operation with CMPH, given its expertise in overseas port operations.

The speech by the Turkish president, Recep Tayyip Erdogan, at the Belt and Road International Forum in Beijing in May 2017 indicated Turkey's interest in expanding co-operation with China; however, other investment projects have yet to materialise. China has hesitated to invest in Turkey, with macro-financial and political instability seen as among the main obstacles. Geopolitical factors, including Russia's influence in the Northern Corridor and strained relations between Istanbul and Beijing over issues concerning the Uyghurs, have also impacted investment prospects. Additionally, the port and railway infrastructure in the region exhibits notable deficiencies, making it challenging to achieve economies of scale. Currently, around 90% of the total port capacity in the country needs rail connections, presenting a significant obstacle to efficient transportation and trade.

Turkey sought to attract Chinese investment into numerous other projects, such as the port of Çandarli, the construction of the Istanbul Canal (Kanal İstanbul) and the Third Bridge over the Bosphorus in Istanbul. All the negotiations so far have been unsuccessful as the disagreements between both sides were too major to close the deal. It is believed that the Chinese side stalled negotiations, demanding conditions that Turkey could never have accepted.

Benefits drawn from COSCO's investment

Following its acquisition, the Kumport Terminal underwent development with new investments, significantly increasing its container handling capacity from 1.3m TEUs in 2015 to 2.1m TEUs by 2022. However, the actual container handling in the port has not increased so far, and Kumport has operated below its potential, experiencing volatile profits and a diminishing share of Turkey's overall container handling (see Annex, Table 5Table 5). The main reasons for the lacklustre results are believed to be logistical difficulties arising from the absence of a rail connection, with the nearest logistics centre located 20 km away in Halkali. The nearby presence of other major ports, which offer better connections and provide direct access to larger markets, makes it difficult for Kumport to maintain its competitiveness. Overall, the complementarity with nearby ports appears not to have materialised as anticipated by COSCO at the time of the investment, with macroeconomic and institutional challenges further hampering the port's prospects.

Risk assessment : Kumport, Turkey

Impact level / Likelihood					
Catastrophic					
Very serious	**Hard security risk:** Use of the terminal for military purposes				
Serious		**Individual dependency risk:** China invests in other major Turkish ports expanding its influence over the country's maritime infrastructure	**Coercion/influence risk:** Worsening Turkish trade deficit with China opens space for soft power influence		
Substantial	**Cyber/data risk:** Disruptions in national security due to cyber-attacks and espionage		**EU-level dependency risk:** Deepened partnership between China and Turkey, amid cooling relations with the EU		
Limited					
	Very unlikely	**Unlikely**	**Somewhat likely**	**Likely**	**Very likely**

Source: Authors' analysis.

Individual dependency risk

Assessing the risks associated with the Kumport Terminal suggests that significant individual dependency on China is unlikely. Even if the consortium were to cease operations at the terminal, maritime activities are not expected to suffer substantially. Istanbul port, also known as the Port of Haydarpasa, and Kocaeli port, also known as Derince port, handle most foreign trade freight operations in the region. Both ports are under state control and are operated by the Turkish State Railways. Therefore, the potential impact on the overall maritime operations in the region is limited, mitigating the risk of over-reliance on a single player.

Additionally, the Kumport Terminal serves a diverse range of shipping lines, with 15 companies operating across 11 routes. Only two of these companies are Chinese: COSCO and OOCL. Notably, COSCO is actively involved in one specific way, known as the NET route (Figure 6), using the port mainly for feeder lines. This indicates that the terminal's dependency on COSCO Shipping is limited, adding to the overall assessment that economic risks appear unlikely to be significantly impacted by COSCO's operations at Kumport.

Figure 6: COSCO Shipping Lines - NET Feeder Route

Sources: COSCO Shipping Lines; European Transport Maps

Should China decide to invest in Mersin port, situated on the north-eastern coast of the Mediterranean Sea in southern Turkey, the potential risk of individual dependency would be significantly higher. Given its status as one of Turkey's largest harbours and the country's primary gateway to the Mediterranean Sea (alongside Iskenderun port), Mersin plays a vital role in handling around 9.1% of Turkey's overall foreign trade (together with Iskenderun, the share is 27%). Any substantial Chinese investment or operational changes in Mersin port could significantly impact Turkey's maritime operations and trade dynamics, accentuating the need for a thorough risk assessment before such ventures.

EU-level dependency risk

Overall, as the Kumport Terminal operates below its potential, the EU-level dependency risk is not high. However, deepening ties between China and Turkey could mean substantial risks for the EU,

particularly in view of Turkey's EU candidate status. Although the EU and the US have not explicitly reacted to the BRI investments in Turkey, they have expressed concerns about the geopolitical implications of the BRI and China's growing influence in the countries involved. One of the key EU concerns is the potential impact of China's FDI on the distribution of economic influence and trade dynamics in the region, which could challenge the EU's position and role.

Furthermore, given the strategic nature of the Black Sea region from the perspective of the EU, the presence of China in the wider region needs to be carefully assessed. Turkey is a member of the OSCE (Organization for Security and Co-operation in Europe) and NATO. In this light, Turkey's aspirations to strengthen military co-operation with China, driven by potential security concerns along the project's maritime route, could have serious implications for regional security and stability. Moreover, it brings about questions of broader influence on human rights and geopolitical dynamics.

Coercion/influence risk

There is also an indirect risk for Turkey, linked to the increasing deficit in its trade with China, which, according to the Turkish Statistical Institute, accounted for over 20% of Turkey's total trade deficit in 2022. Higher investment from China would lead to the accelerated growth of imports, which could further exacerbate Turkey's macroeconomic imbalances. In this context, a severe risk stems from Turkey's growing trade deficit with China, which could open up space for soft-power influence. Furthermore, given that less developed economies find themselves in capital-constrained positions, they are more prone to seek out investments with heightened security risks. In this sense, the risk of coercion and influence is higher for Turkey than for the more developed EU economies.

However, from Turkey's perspective, the investment in the Kumport Terminal by Chinese SOEs is seen as a minor risk in terms of Beijing's coercion or influence over the country's politics, either actively or passively. The government's primary focus is on enhancing economic co-operation with China, and the investment is viewed as an opportunity to enhance its underdeveloped infrastructure and expand trade opportunities. Thus, the economic benefits of Chinese investments are believed to outweigh the security concerns. Although the Turkish government has implemented measures to alleviate the impact of Chinese imports in specific industries, the maritime sector is not among the prioritised areas for such actions. This points to the need for a comprehensive evaluation of the potential risks of the BRI infrastructure investments in Turkey and increasing EU dependency on China.

Cybersecurity/data risk

Given that Kumport represents only one of the multiple ports in the Istanbul area, with more economically significant ports falling under the control of the Turkish State Railways, the incentive for it to be used for data breaches and economic espionage is very low. The diversified port structure and the reality that Kumport operates below its potential also limits the threats related to operational disruptions brought on by potential cyber-attacks. Meanwhile, Turkey has been making substantial progress in cybersecurity, as demonstrated by its very high score in the Global Cybersecurity Index, outpacing even some of the most economically developed countries in the world. This allows for sound mitigation policies to be implemented, minimising cybersecurity risks associated with FDI.

Hard security risk

As emphasised before, Turkey is located in a highly geostrategic location on the southern Black Sea, and is the easternmost NATO member. The country is also home to NATO's second-largest army and well-established military capabilities, as well as close links to the Middle East and the Caucasus. In this regard, despite setbacks in Turkey-EU relations, Turkey remains a critically important ally of the EU and the US. Around the time of the Kumport acquisition in 2015, Turkey's navy traded port calls with the Chinese navy, signifying Turkey's commitment to deepen relations. Even so, there are at present no

reasons to believe that the Kumport Terminal would be mobilised for military purposes, although the impact of such a development would be very serious.

2.5. Impact on EU of Chinese investments in European Neighbourhood

As the case of Turkey has shown, developments in the European Neighbourhood can be impactful for the EU. Turkey is one of many countries in the Mediterranean to have received investments from China in the maritime sector. In the Mediterranean, Chinese companies have invested in 18 ports.[20] To provide a complete analysis of the risks that such investments bring to the EU is outside the scope of this research. However, by looking at Chinese investments in the Bayport of Haifa in Israel, the following section provides an example of how the risks may play out and impact the EU.

Bayport of Haifa, Israel

The most notable Chinese investments in the Mediterranean are the investment by Shanghai International Port Group (SIGP) in the Bayport of Haifa and that of CCCC in Ashdod port, both of which are major port areas in Israel. As in European ports, the Chinese ZPMC is active in the Israeli Bayport of Haifa and the Port of Ashdod. The EUR 1.5 bn investment in the Bayport of Haifa by SIPG allows it to operate the wharf for 25 years from 2021. However, SIPG does not own the port but is leasing it from Israel Ports Company. When the 25-year lease expires, SIPG will have to win a new bid to continue to operate the port. The Bayport of Haifa should not be confused with the Port of Haifa portion recently acquired by a consortium led by India's Adani Group for about EUR 1.1bn. Both ports aim to make Haifa the reference point for shipping in the region and transshipment to Europe.

A significant difference between the investment in the Bayport of Haifa and investments in European ports lies in the operating system of the port. At the Bayport of Haifa, SIPG uses its own terminal operating system (TOS), probably with an English interface as workers at the port are Israeli. Although the specificities of the TOS used are unclear, it is reasonable to assume that SIPG has full access to data related to the port operations and to their management. That data includes all the information on cargo origin and destination, as well as content. Most European ports use Navis's TOS, an American leader in the sector. The use of this or any other TOS from a trusted provider does not guarantee that Chinese companies involved in the port will not access data – that depends on the shares acquired and the agreement signed – but provides an extra layer of insurance that the Chinese company will not automatically manage data.

The agreement with SIPG contains an essential requirement that in case of a conflict, it is obligated under the contract to allow the security forces to enter the port area and even take over its operations. Ensuring that maritime infrastructures can be retaken by the government and/or the state in case of conflict with the country of a SOE invested in the port is something that should be taken on board by Europeans too.

Unlike other countries in the Mediterranean region, Israel does not seem to be reconsidering its decision to foster closer ties with China. If anything, the country is going in the opposite direction, with negotiations for a free-trade agreement.

Risks for Europe

Israel's strengthening of relations with China seems to be following an established trajectory that does not appear to be coupled with a plan to distance itself from the US and the EU. Testament to this is Israel's adoption of FDI screening, which the US had urged.

[20] Data collected by MERICS. The ports are in Algeria, Egypt, Israel and Turkey, and, in EU countries, in France, Greece, Italy and Malta.

Any departure by Israel from its alignment with its Euro-Atlantic partners would seriously impact Europe. However, regardless of any such move, SIPG's operation of a port in Israel and its provision of the TOS for the port increases the possibility of China redirecting shipping to the Bayport of Haifa.

Although the redirection of Mediterranean shipping to Haifa would substantially impact the EU, this scenario is unlikely. Neither Israel nor the MENA region has the large and mature market the EU provides. Hence, substantial redirection would amount to a heavy loss for China. It is assumed that in such a scenario and to 'punish' Europe, transshipment from Israel to European ports would not occur or would decrease, hurting China and Israel, which aims to become a Mediterranean maritime hub for transshipment to Europe. Furthermore, depending on the companies that will ship to the Port of Haifa, now owned by a consortium led by an Indian company, transshipment could occur via that port. The main obstacle to alternative planning is COSCO's shipping power.

Israel is an important security partner for the EU and there is a different likelihood of risk related to cybersecurity in critical civilian and military port infrastructure in Haifa, where there are several military bases. As data collection and management are carried out by SIPG and/or ZPMC and as data are exchanged between port infrastructure, China could use the Bayport of Haifa as an entry point to European port networks or to access sensitive European shipping data. China can use other existing means that give it more direct access to the European port network – as previously presented – but should the EU be able to secure those channels, Haifa would amount to a good option, especially if Haifa were classified as a trusted port, as opposed to non-trusted Chinese ports.

2.6. Comparison of key regulations between the EU and US related to FDI screening and maritime cabotage law

The EU and US have significantly different investment screening regimes. The EU's Investment Screening Mechanism has relatively limited scope, and is still building up a record of cases that build precedents for future screening. It is only able to make non-binding recommendations to member-states, which then need their own mechanism – if they have one - to block an investment along with the will to use it. The US' primary FDI management is through the Committee on Foreign Investment in the United States (CFIUS) that brings together members representing nine federal departments and offices and which has an increasingly broad scope through a definition of national security that is expanding in terms of how infrastructure and certain technologies are covered by the committee. CFIUS decisions are binding and managed at the federal level, and there is a long history of cases going back to 1988 that has established precedence, norms, and procedures that strengthen the legitimacy of the committee. CFIUS also has detailed rules regarding foreign investors in American real estate that is specific to geographic areas of national security concern within the US, which includes certain critical infrastructure as well as military bases and key government offices.

Perhaps most importantly is that the EU regime is one where the decision is down to the member-states despite them all being in a common market. When assessing whether or not a given investment is of concern, member states are likely to consider that the investment may nevertheless enter the common market and bring those risks anyway by going to another member state. In that case, the risk still emerges, but the other member state gets the capital injection and other benefits. In comparison, by federalizing the issue in the US under CFIUS, there is no 'race to the bottom' dynamic between states which share a common market.

Furthermore, the EU and US have starkly different maritime cabotage law regimes. The EU has no common-market-level maritime cabotage law that governs the kinds of transportation services that non-EU firms can provide within the common market. Instead, maritime cabotage is determined at the member-state level, leading to patchwork regulations throughout the bloc. In comparison, the US has

an extremely limiting maritime cabotage law through the Merchant Marine Act of 1920 (better known as the Jones Act). The US rules require that all transportation of goods or people between American ports be done by US companies using US-owned and flagged ships that must have been built in America, all crewed by US citizens or permanent residents. Vessels that fail to match that description are only able to perform direct international trade – they bring goods into and out of a single US port and then must head for a foreign port. They also cannot perform any kind of transshipping.

The Jones Act is generally regarded as a failure. Its stated intention was to preserve a strong merchant marine and shipbuilding industry to be more resilient to global disruptions to shipping services (it was made in response to World War One when foreign merchant marines were called up and the US was left without a large enough shipping fleet to pick up the slack) and for the possible outbreak of future wars. The domestic port-to-port shipping is extremely limited in the US despite being common elsewhere, and high domestic maritime shipping costs have led rail and truck freight to be the best option for many customers. The US merchant marine has atrophied within its comprehensively protected home market and there simply aren't any major American shipping companies internationally, and there are no state-owned shipping firms that could tolerate low profitability in order to maintain shipping and broader logistics capacity.

3. CONCLUSION AND POLICY RECOMMENDATIONS

This study highlights the need for a holistic understanding of the opportunities and risks of Chinese investment in European maritime transportation infrastructure, particularly concerning the EU as a whole rather than with a focus exclusively on individual Member States.

Arguably, the benefits have been high in the case of investment in Piraeus, which has contributed meaningfully to local development, employment, tax revenue, etc. Yet, at the EU level, the benefits are less clear, as nearly all activity in Piraeus has either come from or is going to other EU ports; they are simply transshipped through Piraeus when carried by COSCO vessels. A similar trend, on a smaller scale, may emerge from COSCO's acquisition in Hamburg – it may lead to greater flows to Hamburg if COSCO uses it as a transshipping hub for the Baltic/North European region. However, unless the investments unlock real and new demand for imports and exports to meet any new supply that COSCO brings, the end result might be just redirecting of the existing demand from other European ports to Hamburg at the cost of the former. It is unlikely to happen at scale in the short term, but if it does take place it could be good for the city but would not create any positive net impact for the EU as a whole.

As such, there are limits to how valuable further investments into regional maritime infrastructure could be without corresponding import and export demand increases. This was seen in China's investment in Kumport, which has stagnated in throughput and has seen little benefit from the investment, while also being saddled with risks.

Risks from Chinese investment are apparent past certain thresholds of ownership levels, specifically in terms of having influence over ports strategy and in terms of cyber/data risks if Chinese firms can access IT systems and local networks. That presents a risk at the local level, but could also bring broader risks for Europe, especially as it pertains to Member States' militaries and to NATO.

However, some of the most significant risks emerge not only from the investment in the infrastructure but in subsequent expansions of operations from COSCO. These include localised influence/coercion risks, such as if COSCO threatened to divert its transshipping to other Mediterranean ports if Greece took action that displeased Beijing. It also has a potential impact at the EU level, mainly through the European Council, which on certain issues must vote unanimously. Similarly, although a source of specific benefits, meaningful growth of COSCO operations also generates dependency risks for Member States and the EU as the state-owned shipper seizes market share. The more market share that COSCO wins in the European market, which is made easier due to COSCO's protected home market advantage and its unfair vertically integrated value chain, the higher the dependency risk for shipping services which underlie the entire system of global value chains.

None of this means that Chinese investment in European ports or participation in European shipping markets represent unmitigable risks and must therefore be expelled from the common market. On the contrary, many of the risks can be mitigated with better monitoring and regulation and better co-ordination between the EU and Member States. However, the current regimes to manage such risks at the EU and national level are insufficient for the challenges at hand and need to be reformed.

Finally, while this study provides a broad risk assessment framework, it has also revealed areas in need of further study – particularly on measuring and managing cyber and data risks in greater detail, as well as in developing and applying quantitative models to measure more precisely the impact that these investments have on trade flows in terms of changes in volumes as well as changes in the share of trade with specific partners.

Policy recommendations

Collect data and deepen understanding

- Commission further research to collect data on the risks of Chinese companies' involvement in cyber and data security in critical infrastructures. The research should clarify which are the Chinese companies involved, where Chinese software is used either to collect or manage data and what are the risks both to trade flows and to security of Chinese companies' involvement. Such a study would provide a strong basis to inform Member States and develop related policies.
- Commission further sustainable research to measure the specific impact on local and EU-level trade flows from Chinese investment in European ports to more accurately understand implications for total imports and exports and the effect on the share of trade with China compared with other trade partners. Data to be collected should include the impact on trade flows (size, location and whether preferential treatment is grated to Chinese shipping companies) of Chinese companies involvement in European ports, if any, and their characteristics.

Assess risks

- Encourage Member States to carry out a risk assessment of China's involvement in their maritime infrastructures that includes the impact on labour and the environment, as well as on dependencies.
- Assess bottlenecks in the shipping of goods from China to Europe, considering transshipment, and accordingly create redundancies and emergency plans to prepare for a conflict (kinetic[21] or otherwise) with China.

Develop a European response

- Develop a proposal for a European maritime cabotage law. An EU solution already exists for air and land, but not for the maritime sector. As such, EU solutions for air and land provide the basis to adopt a pan-EU maritime cabotage law that could apply to non-EU shippers.
- Increase the Europeanisation of screening of inbound investments. The European Parliament should use the opportunity provided by the review of the existing EU regulation on screening FDI[22] to propose a strengthening of the role of the EU in not only screening but also blocking Chinese investments in critical infrastructures. Maritime critical infrastructure is an area where the decision of one Member State impacts all Member States, and it could be a pilot case to advance the Europeanisation of FDI screening in critical infrastructures. This could be limited to majority shareholding of Chinese enterprises, leaving decisions on minority shareholdings in the hands of Member States.
- To mitigate cyber and data security risks, first publish guidelines on dealing with high-risk actors, such as data-sharing best practices, then set up a regular (six-monthly and then annual) review of progress with annexed transparency and reporting requirements. The initial report should map existing European ports that use Chinese

[21] A kinetic war is warfare that includes active warfare (i.e., lethal weapons used), non-kinetic warfare is information warfare, cyber-attacks etc.

[22] Regulation (EU) 2019/452 of the European Parliament and of the Council of 19 March 2019 establishing a framework for the screening of foreign direct investments into the Union.

software and/or data management platforms and the data being collected and transmitted via these.

- Take the example of Israel and ensure that all Member States have laws to retake control of ports/terminals and other maritime infrastructures ownership and/or considered contingency plans in case that is required in a scenario of conflict (kinetic or otherwise) with China, in co-ordination with EU and other Member States.
- Set up early warning systems for the risks that require monitoring according to the methodology proposed in this study.
- Closely monitor all early warning signs of a potential major conflict in the Taiwan Strait, the South China Sea or elsewhere.
- The Chinese system support for COSCO and CMG in building global market share enhances their competitiveness vis-a-vis European shippers in the European market. Advancing the building of system of EU investors that operate in the framework of Global Gateway in the maritime sector (both at home and abroad) will help to level the playing-field by creating new opportunities for European shippers to expand their market share in developing countries.
- Effective cybersecurity mitigation strategies would require national-level action, first to officially recognise port infrastructures as critical infrastructures and then to define who would be responsible for what kind of cybersecurity risks. In addition, a mitigation strategy would require co-ordination with Western partners regarding counterintelligence. A capacity/risk management assessment is recommended if government and/or the EU do not have such an overview.

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ANNEX

Table 1: Value of acquisitions in the maritime infrastructure sector of EU and its Neighbourhood by Chinese companies

	Investor	Value, EUR mln	Share size	Transaction party	Country	Source
2004	China Ocean Shipping (COSCO) Pacific	133.6	25%	Antwerp Port	Belgium	https://www.truenumbers.it/cina-porti-europa/
2007	China Ocean Shipping (COSCO)	102.2	80%	Burg Industries	Netherlands	China Global Investment Tracker
2008	China Ocean Shipping (COSCO)	3,935.1	NA	NA	Greece	China Global Investment Tracker
2010	Shanghai International Port Group	NA	25%	Zeebrugge	Belgium	ECFR China-EU Power Audit Key Deals 2005-2017
2012	China Ocean Shipping (COSCO)	116.7	NA	Piraeus Port	Greece	ECFR China-EU Power Audit Key Deals 2005-2017
2013	China Merchants	399.0	49%	CMA CGM	France	China Global Investment Tracker
2014	China National Building Materials	97.8	NA	NA	Croatia	ECFR China-EU Power Audit Key Deals 2005-2017
	China Ocean Shipping (COSCO)	25.0	24%	Zeebrugge	Belgium	https://www.truenumbers.it/cina-porti-europa/
	China Oil and Foodstuffs Corporation COFCO	49.0	100%	Port of Constanta, USA/USC Terminal	Romania	https://www.romaniajournal.ro/business/nidera-acquires-usausc-terminal-in-the-port-of-constanta/
2015	China Merchants, China Investment Corporation (CIC), China Ocean Shipping (COSCO)	829.0	65%	Fina Liman	Turkey	China Global Investment Tracker
2016	China Ocean Shipping (COSCO)	126.5	35%	Euromax Terminal Rotterdam	Netherlands	ECFR China-EU Power Audit Key Deals 2005-2017
	China Ocean Shipping (COSCO)	289.2	51%	Piraeus Port	Greece	China Global Investment Tracker
	China Ocean Shipping (COSCO)	135.6	40%	Maersk	Italy	China Global Investment Tracker
	Qingdao Port International	15.1	9%	NA	Italy	https://www.truenumbers.it/cina-porti-europa/
	China Communications Construction	99.4	NA	Port de Riga	Latvia	ECFR China-EU Power Audit Key Deals 2005-2017
	Genting	225.9	NA	Nordic Yards	Germany	ECFR China-EU Power Audit Key Deals 2005-2017
	China Ocean Shipping (COSCO)	704.9	67%	Piraeus Port	Greece	ECFR China-EU Power Audit Key Deals 2005-2017
	ICBC	NA	NA	Antwerp Port	Belgium	ECFR China-EU Power Audit Key Deals 2005-2017
2017	China Ocean Shipping (COSCO)	203.5	51%	Noatum Port	Spain	China Global Investment Tracker
	China Ocean Shipping (COSCO)	34.5	76%	NA	France	China Overseas Port Project Dataset from 1979 to 2019
2019	China Ocean Shipping (COSCO)	330.3	330.3	NA	Greece	China Global Investment Tracker
	China Merchants	375.0	375.0	KLG Europe	Netherlands	China Global Investment Tracker
	China Merchants	776.7	776.7	CMA CGM	France	China Global Investment Tracker
2021	China Ocean Shipping (COSCO)	93.0	16%	NA	Greece	China Global Investment Tracker

Sources: fDi Markets;[23] China Global Investment Tracker; ECFR China-EU Power Audit Key Deals 2005-2017; China Overseas Port Project Dataset from 1979 to 2019, https://www.truenumbers.it/cina-porti-europa/, https://www.romaniajournal.ro/business/nidera-acquires-usausc-terminal-in-the-port-of-constanta/ authors' calculations.

[23] fDi Markets, a *Financial Times* dataset on cross-border greenfield investments that covers all countries and sectors worldwide. It contains information on various characteristics of the announced greenfield investment projects, such as sector of the mother company and affiliate that is being created, value of investment projects, and estimate of the jobs being created.

Table 2: Pledged capital in announced greenfield investment projects in the maritime sector infrastructure of the EU and its Neighbourhood; EUR m

Project date	**Parent company**	**Destination country**	**Capital investment**	**Jobs created**
May 2004	China Ocean Shipping Company (COSCO)	Germany	13.8	80
Feb 2006	China Ocean Shipping Company (COSCO)	Greece	9.6	10
Jun 2013	China Ocean Shipping Company (COSCO)	Greece	218.6	3
Sep 2013	Brightasia Holding	Germany	0.2	700
Jul 2016	China Ocean Shipping Company (COSCO)	Greece	461.5	3
May 2018	Shanghai Lingang Economic Development	Belgium	83.1	1255
May 2018	China Ocean Shipping Company (COSCO)	Spain	38.5	135
Aug 2018	China Ocean Shipping Company (COSCO)	Spain	23.3	102
Sep 2018	China Ocean Shipping Company (COSCO)	Bosnia-Herzegovina	16.4	104
Dec 2018	China Ocean Shipping Company (COSCO)	Turkey	21.3	12
May 2019	China Ocean Shipping Company (COSCO)	Netherlands	13.8	100
Aug 2019	China Ocean Shipping Company (COSCO)	Greece	185.5	65
Oct 2019	China Ocean Shipping Company (COSCO)	Spain	41.0	507

Source: fDi Markets ; authors' calculations.

Table 3: Mandatory Investments in the Port of Piraeus

No.	Mandatory Enhancements (According to the 2016CA)	Reference cost (€)	Participation PPA (€)
1	Passenger terminal expansion (South zone – Phase A)	136,283,800.00	5,451,352.00
2	Repair of pavements, rails and RMG cranes of Pier I container terminal	8,000,000.00	8,000,000.00
3	Conversion of pentagonal warehouse to passenger's terminal	1,500,000.00	1,500,000.00
4	Underground tunnel for the connection of G2 car terminal to the ex-ODDY area	5,000,000.00	5,000,000.00
5	Upgrade and maintenance of port infrastructure	15,000,000.00	15,000,000.00
6	Supply of equipment	25,000,000.00	25,000,000.00
7	Dredging of central port	8,000,000.00	8,000,000.00
8	Studies	5,000,000.00	5,000,000.00
9	Construction of new oil terminal	15,000,000.00	15,000,000.00
10	Expansion of Ro-Ro (car) terminal – Hrakleous pier	20,000,000.00	20,000,000.00
11	Upgrade of Perama Shipyards area (including floating docks)	55,000,000.00	55,000,000.00
	Total of mandatory investments	**293,783,800.00**	**162,951,352.00**

Source: Piraeus Port Authority S.A. annual financial report 2020

Table 4: PPA/OLP Board of Directors

Name	Function
YU ZengGang	Chairman of the BoD, Executive Member of the BoD
ZHU Changyu	Vice Chairman of the BoD, Non-Executive Member of the BoD
ZHANG Anming	CEO, Executive Member of the BoD
LI Jin	CFO, Executive Member of the BoD
KWONG Che Keung Gordon	Independent Non-Executive Member of the BoD
ARVANTIS Nikolas	Independent Non-Executive Member of the BoD
YU Tao	Non-Executive Member of the BoD
POLITIS Dimitrios	Non-Executive Member of the BoD
MORALIS Ioannis	Non-Executive Member of the BoD

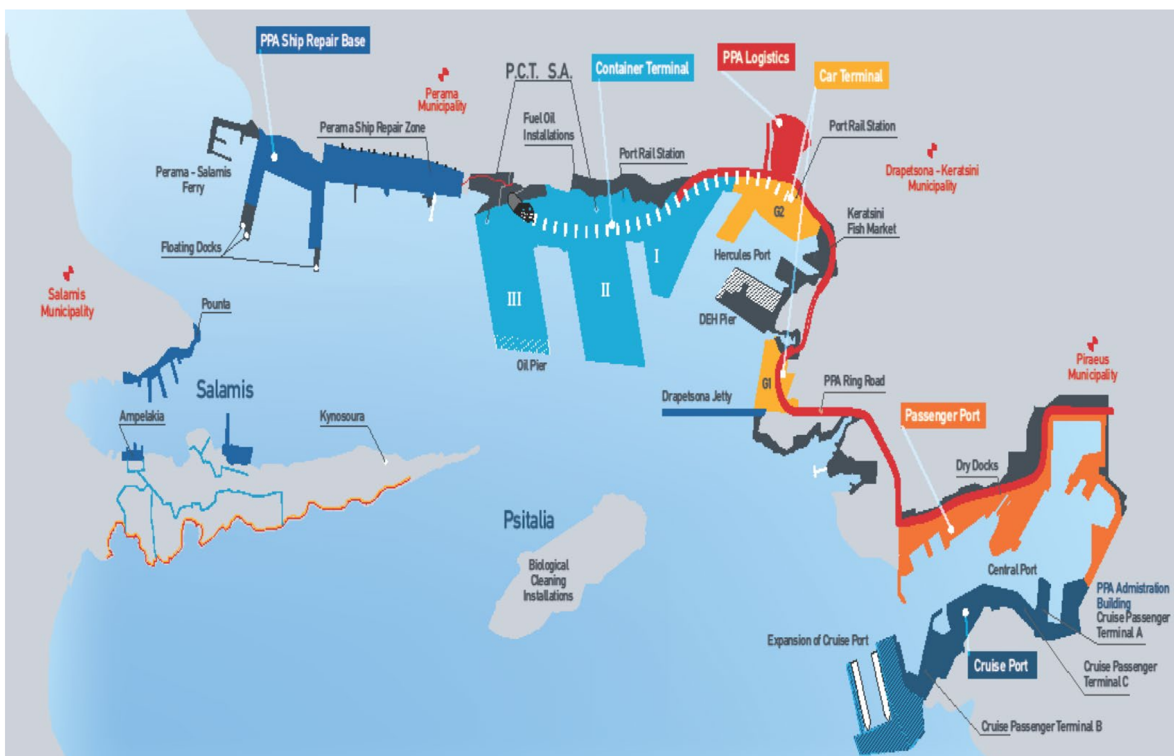
Source: https://www.olp.gr/en/about-us/corporate-governance/board-of-directors

Table 5: Gross throughput volume of Kumport Terminal

Year	Container throughput handled by Kumport		
	TEU '000	% change	% share in Turkey
2015	1,170	-17.3	14.4
2016	655	-44.0	7.5
2017	1,063	62.3	10.6
2018	1,258	18.3	11.6
2019	1,281	1.8	11.1
2020	1,217	-5.0	10.5
2021	1,248	2.5	9.9
2022	1,209	-3.1	9.9

Sources: COSCO Shipping Ports Limited; Kumport; Port Operators Association of Turkey

Figure 7: Map of Piraeus Port



Source: PPA S.A. (2018). https://www.olp.gr/images/OLP_2018.pdf

This study looks at Chinese investments in maritime infrastructures through the lens of 'de-risking' for the first time. It provides a comprehensive overview of Chinese investments in the European maritime sector over the past two decades and weighs the associated risks. The study borrows the framework adopted by the *National Risk Assessment of the Kingdom of the Netherlands 2022* for its risk assessment and further develops it to score the impact and likelihood of the investments across five major threat areas: EU-level dependency risk, individual dependency risk, coercion/influence risk, cyber/data risk and hard security risk. The analysis illustrates that the risks remain insufficiently understood by Member States, despite their high likelihood and/or impact. This is particularly true for economic coercion and cyber/data security risks.

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