Advancing Public Interests Through State Ownership

The Case of Port of Rotterdam

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Advancing public interests through state ownership; the case of Port of Rotterdam

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Abstract This paper addresses the effects of state ownership on decisions of port development companies, through a case study of Port of Rotterdam (PoR). This issue is relevant, given the economic impact of port development and the important role of ports in the transition towards a more sustainable economy. The insights from this case study thus can be useful for shaping port (governance) reform. The paper reviews the rationale for state ownership of the port development company, and describes the case of PoR, focused on the public interests that the public shareholders aim to promote through ownership, and mechanisms through which the consideration of the public interests is incorporated in PoR's decisions. The following conclusions are drawn. First, the two public shareholders of PoR (the city of Rotterdam and the Dutch state) have made an explicit choice to 'permanently' use state ownership to achieve public interests. Second, PoR's shareholders have identified specific public interests and have developed specific mechanisms to secure that PoR takes these public interests into account in decision-making. Third, there are clear indications that PoR's decisions indeed have advanced the public interests as identified by the shareholders.

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Introduction

While state-owned enterprises (SOEs) were predicted to disappear, they remain important in the world economy, contributing about 10 per cent of the world's GDP (Bruton et al., 2015; Peng et al., 2016). There is a huge variety of SOEs in various sectors, including banking, investment funds, mining, oil and gas, transportation and utilities. Local governments across the globe also use SOEs[1] to deliver services like public transport and waste collection (Sansom & McKinlay, 2013, Thynne, 2003). While SOEs were once considered 'transitional', i.e. as an intermediate step in public sector reform towards full privatization, scholars increasingly argue for a *permanent* role of SOEs market economies for specific sectors and/or activities, and various governments have developed

[1] In this paper, we use the term state-owned enterprises (SOEs) for all enterprises that are owned by government, be it local, regional or national. This is the most common approach, but a specific set of studies uses the term municipality-owned enterprises (MOEs) and distinguish between MOEs and SOEs.

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explicit policies for identifying where SOEs are deemed appropriate (OECD, 2017). In line with this plea for a structural role of SOEs, SOE activity in most countries is concentrated in specific sectors, including energy, transportation, telecom, utilities and banking (OECD, 2017). Within the transportation sector, SOE's are widely used for public transport (train and bus), air transport, airports and ports.

Research attention for the role of SOEs in ports is limited,[2] even though ports are widely regarded as strategic assets (see Tessari & Muti; Jaffee, 2019). There is increasing consensus that there is a strong rationale for state ownership of a commercially operating port development company (PDC, see De Langen and Heij, 2014). In line with De Langen and Van der Lugt (2017a) I define such a PDC as a commercially and autonomously operating corporate entity, that may be public-sector owned, and is tasked with managing and developing the port complex. Port reform processes in Europe and various countries elsewhere move in the direction of the PDC model (see for instance the edited book 'Regulation and Finance in the Port Industry' (Ferrari et al., 2022), in the vast majority of countries with public sector ownership of the PDC.

State owned PDCs generally state that they do not strive for profit maximization but aim to generate sufficient return to be viable in the long run while the 'company purpose' is to create 'value for society' for instance through enabling trade and employment creation (see Van der Lugt et al., 2015).

However, a detailed understanding of *which* societal objectives PDCs pursue and *why* is lacking. This is relevant given the widely accepted risk that SOEs are underperforming, ineffective and not oriented on 'value for society' (Huber et al, 2019). Thus, detailed analysis of this issue is relevant for the ongoing debate about how to organize port governance (Zhang et al, 2019).

In this paper I present the analysis of the case of Rotterdam, the largest port in Europe. Havenbedrijf Rotterdam N.V. (referred to by their 'brand name' Port of Rotterdam, PoR for short) is the SOE tasked with developing Rotterdam's port complex. I address the question whether this SOE takes public interests into account, and if so, which ones, why and how?

First, I review the general literature on the rationale for SOEs. Next, the relevant public interests at play in port development and the role of state-owned port authorities are discussed. Third, I present the case study, which describes whether PoR takes public interests into account, and if so, which ones and how. A concluding section ends the paper.

A review of the rationale for SOEs

There is a huge literature comparing the efficiency of private and public companies with as emerging consensus that all else equal, state ownership has a modest negative effect on efficiency (see Boardman & Vining, 1989, Megginson & Netter, 2001, Aguilera et al, 2020 and Lazzarini & Musacchio, 2018).

To compensate for lower performance, the rationale for state ownership needs to be based upon the premise that SOEs behave *differently* compared to privately owned enterprises, and that such differences *are in the public interest* (Peng et al., 2016; OECD, 2015).

Sappington and Stiglitz (1987) assess the rationale for SOEs based on the outcome of a trade-off between (the risk of) reduced efficiency through government ownership (compared to private ownership) and negative effects of private ownership on public interests due to imperfections of a regulatory/contractual approach to secure public interests under private ownership. State ownership is considered appropriate only if there are substantial adverse effects of a regulatory/contractual approach to secure public interests (Shirley and Walsh, 2001).

In the case of free markets and private firms, regulation and/or contracts may be needed to account for 'externalities' of the decisions of private companies. An 'externality' (see Pigou, 1920) can be loosely defined as a cost or benefit that is imposed on an uninvolved third party. Investments of firms can have both positive and negative externalities. The widespread use of SOEs in 'strategic sectors' is based on the conviction that investments by firms in these industries generate *positive* externalities for other sectors of the economy (see Christiansen, 2013 and Musacchio et al, 2015). Likewise, there are positive externalities

[2] One of the exceptions is Jensen (2022), who describes the 'expansionary state capitalist' efforts of Chinese SOEs (and specifically COSCO) in Valencia that attempt to reshape global markets through making investments that would be considered too high risk from a purely commercial perspective.

of investments in R&D on other companies and the economy at large (Jones & Williams, 2000).

Adverse environmental effects of the activities of private companies are important *negative* externalities. Regulation can be used to 'internalize' externalities or to increase environmental standards. However, regulation cannot secure companies move beyond compliance and lead in the transition towards sustainability. In cases where specific companies play a key role in the national/regional transition towards sustainability, a regulatory approach may not be effective. In such cases, state ownership may be instrumental in speeding up the transition towards sustainability (see Haney & Pollitt, 2013).

The root cause of the imperfections of a regulatory & contractual approach lies in the problems related to drafting, monitoring and enforcing contracts between government and private firms. Such contracts could incentivize private companies to promote public interests. However, drafting, monitoring and enforcing contracts is problematic due to opportunism, uncertainty and imperfect information.[3] The more difficult it is to develop and monitor specific contracts aimed at aligning the public interests with the interests of private companies, the more attractive is the option to use SOEs as an instrument to promote public interests.

An additional relevant consideration in the trade-off between regulation and state ownership is that competition regulation is an imperfect way to tackle the disadvantages associated with market power. Competition regulation is imperfect, as the regulator may have incomplete information. Thus, for natural monopolies the trade-off is more likely to tilt in favor of SOEs. This argument in isolation is an insufficient argument for state ownership, but it is a relevant consideration in the tradeoff between state ownership and a regulatory & contractual approach.

The disadvantages of state ownership are not similar across industries but depend on the importance of *innovation* (see Sappington and Stiglitz, 1987 and Peng et al., 2016).[4] SOEs are in general not as innovative and agile as their private sector counterparts (Shleifer, 1998) because state ownership reduces the risks of bankruptcy (Sheng et al., 2013). Thus, SOEs are more likely to have a low innovation performance (Lerner, 2009). Thus, in industries with a high innovation intensity, the imperfections resulting from state-ownership are larger than in industries with a low innovation intensity, and the trade-off is more likely to tilt towards regulation, even if such regulation is imperfect.[5]

The considerations for the policy choice to use SOEs as described above, suggest there only is a rationale for SOEs in a specific sectors, in which a regulatory/contractual approach to securing public interests is not effective. This is in line with empirical observations showing that across different countries with market economies, SOEs are mainly deployed in a few specific sectors (OECD, 2017).

The case for state ownership, in the approach discussed above, is based on the assumption that SOEs can take both financial performance (i.e. shareholder value) *and* public interests into consideration in their decisions and thus take different decisions compared to privately owned enterprises in 'like circumstances' (Christiansen, 2013). The best practice as discussed by the OECD is to explicitly define the public interests that the SOE needs to consider in their decision-making (OECD, 2015; see also Boyd & Solarino, 2016 and Klausen & Winsvold, 2021) in an explicit *shareholder policy*. Important elements of such an shareholder policy include identifying the public interests served through the state ownership, detailing the (executive and supervisory) board nomination

[3] For instance, the (external) benefits of high levels of air connectivity are widely acknowledged. However, developing and monitoring a contract to ensure that private airlines create high levels of 'connectivity' is problematic. Countries benefit from a 'home carrier' that develops (direct) connections with major overseas destinations (Bannò and Redondi, 2014).

[4] As argued in De Langen and Friese (2020), an additional consideration relates to the minimum efficient scale (MES). If the MES is large compared to the size of the national market, service provision by a SOE would only be an option when either the SOE expands internationally, with risks for the state involved, or by accepting the relatively high costs associated with operating below the MES. This consideration is especially relevant for small countries and industries with substantial scale or network economies, such as air transport.

[5] This framework is based on 'domestic considerations' in the sense that it does not address the potential value of SOE activities outside the country that owns the SOE. This international dimension is relevant. For instance, state-owned firms can influence affiliates and suppliers at the global scale and thus 'govern' Global Production Networks to benefit a certain state, as pointed out by McGregor & Coe, 2021).

process, and defining the targets (including the dividend policy) and risk tolerance levels (OECD, 2015; IMF, 2021). Once such a policy is established, additional direct political interference is not required. The SOE leadership, together with an independent supervisory board, is responsible for developing a strategy to create financial return as well as 'value for society', through taking specific public interests into account.

However, a typical risk of an SOE is that in practice it is not oriented to public interests (Scott, 2000). Rentsch and Finger (2015) show that shareholders often do not develop effective mechanisms to secure public interests are taken into account. Instead, local and national owners of SOEs often behave on a case-by-case basis instead of based on a clear policy framework[6] (Rentsch & Finger, 2015).

In view of this risk, case studies of whether and how SOEs take public interests into account are relevant.

Public shareholders and public interests; considerations for port development

The distinction between *port development* and *port operations* is relevant for understanding public interests in ports. Port development is the development of a port business ecosystem, which consists of transport, warehousing, processing as well as leisure activities, which are often carried out by private companies (De Langen, 2020; ESPO, 2022). While port operations are mainly and increasingly carried out by private terminal operators (see for instance Akinyemi, 2016), port development (e.g. investing in port land and port infrastructure) is mainly carried out by a government owned port development company (Sornn-Friese et al, 2021). As argued in Sect. "A review of the rationale for SOEs", the public interests that may justify state ownership are related to externalities. In the case of port development four externalities are relevant (see De Langen & Van der Lugt, 2017b).[7]

First, investments in port development generate national and regional economic effects (see Musso et al., 2006 and Wang & Wang, 2019), including indirect effects on trade-intensive sectors. Better ports lead to a better logistics performance, resulting in growth of seaborne trade and economic growth overall; the impact of ports is especially large for developing countries (Munim & Schramm, 2018).

Regulation or contracts are ineffective policy tools to take these externalities into account.[8] Providing state funding to private port development initiatives is complicated as it distorts the 'playing field', i.e. it leads to unfair competition between ports. In addition, state funding increases risks of politically motivated choices, e.g. for investments in ports in underdeveloped regions, which in various cases have not achieved the expected results, see European Court of Auditors, 2016). State funding often goes hand in hand with overly optimistic demand projections and cost underestimates (Flyvberg, 2007).

Port development projects often require lengthy decision processes as well as construction periods and are often contested projects in the sense that there is serious opposition from one or more stakeholders (Aerts et al., 2015). The resulting high costs for developing port expansion plans[9] and high uncertainty regarding approval of investment plans can deter private initiative (Asteris & Collins, 2010). These considerations suggest a contractual approach, in which

[6] Ramamurti (1987) already concluded that bureaucrats involved in evaluating SOEs often also focus on financial performance, and often pay limited attention to public goals, even though these are the reason for public ownership in the first place.

[7] As argued in more detail in De Langen and Van der Lugt (2017B), there are more public interests that may be relevant for port development. For instance, nautical safety is clearly a public interest. However, as argued in De Langen and Van der Lugt (2017B), this public interest is not 'problematic' in the sense that it can be secured through regulation. In addition, the public interests discussed here could be phrased somewhat differently, for instance what is termed 'economic development' in this paper includes what could be termed 'labour market effects' (i.e. effects on job creation).

[8] A PDC cannot internalize these externalities. For instance, land prices of privately owned land adjacent to newly developed terminals may rise if the PDC expands the port. This is a positive external effect, the PDC does not have effective instruments for 'capturing' the value due to increasing land prices.

[9] Especially the need for stakeholder engagement increases costs for a port development plan. For instance, the total costs for the *planning* of the port expansion project 'Maasvlakte 2' in port of Rotterdam exceed €20 million (the overall project costs were around 2.7 billion).

private port developer would invest in port infrastructure, based on an agreement with the government, does not guarantee a sufficiently high level of investments in ports (i.e. take the positive economic externalities of port development into account), especially in countries in which the 'country risks' are considered to be high.

Thus, state-ownership of the PDC may often be more effective to secure sufficient commitment to port development than private port development in a contractual approach. State-ownership of the PDC leads to a 'business case driven' approach to port development/expansion projects, but with a more long-term orientation and higher risk tolerance levels than would be expected from a private PDC.[10] This risk tolerance dimension is important given the uncertainty of demand and the long pay-back period of investments in port infrastructure.[11]

Second, reducing negative environmental externalities is a relevant public interest in port development. As argued above, commitment 'beyond compliance' cannot be secured through regulation. If a PDC plays a key role in the transition towards sustainability, this strengthens the rationale for state ownership of the PDC. Indeed, a port complex may be an important source of environmental pollution in a region/country (Damman & Steen, 2021).

Third, port development in metropolitan areas often requires port expansion and enables the transfer of land from port functions to urban functions in old port areas. There are many examples of re-development of port areas into urban waterfronts (see Brown, 2009 for examples in the US). In many port cities, waterfront redevelopments create public space for the city residents.[12] In the private PDC approach, a government could retain land ownership and transfer the port development to a private concessionaire (with a long-term concession), specifying under which conditions land would have to returned, or purchase port land for transforming it into (public) waterfronts. However, specifying land transfers in a contract is problematic as it depends on many uncertain factors such as re-location decisions of port users, port expansion and technological developments.[13] Therefore, a concession model provides a weak basis for effective spatial transitions of port areas in metropolitan regions.[14]

Fourth, externalities from a 'port innovation system' (Rohrbeck et al. 2009) are relevant. A well-functioning port innovation system has positive effects for firms active in the port and port users, but investments in the port innovation system do not have a direct positive financial return. Private port companies would be expected to invest in research and capacity development within the boundaries of their own enterprise, not for third parties active in the port.[15]

In conclusion, there are four public interests in port development that cannot be effectively secured through regulation and contracts and may therefore provide a rationale for state ownership of the PDC. The case study of PoR addresses whether, as would be expected, PoR is oriented towards the four public interests as discussed above.

[10] The experience in the UK, where most ports are privately owned shows ownership of port companies is attractive for companies such as banks and pension funds, which focus on stable and relatively certain dividends (see Rodrigue et al, 2011).

[11] The expected effect of state ownership relates both to major port expansion projects as well as to decisions concerning services that strengthen this ecosystem. As an example, the port business ecosystem benefits from an effective port community system (PCS, see Caro et al., 2008), but the individual companies in the port do not have the incentives to invest in such a system and a 'for profit approach' may be problematic as this may deter private firms in the port community from using such services if this would lead to a 'lock-in'.

[12] Land use decisions of private owners of port land may also create negative externalities. For instance, closing down port facilities and convert the port area for luxury housing, may imply that commodity flows that used to be handled by the port will be re-routed, with potential negative external effects for other stakeholders, for instance an increase in congestion and pollution elsewhere.

[13] For instance, larger ship sizes that may reduce the viability of terminals with draft limitations, which often are close to city centers. But the increase of ship sizes was not and cannot be accurately forecasted. The same applies for the development of processing plants in the port.

[14] U purely 'transactional' approach, in which government would have to purchase land if it wanted to redevelop if with public functions, is also problematic, as it implies a huge dependence of government on private landowners.

[15] In addition, the incentive policy instrument to promote investments in an 'port innovation system' is imperfect, as incentives work well for specific R&D projects of individual firms, but less so for investments in innovation systems.

Case analysis: mechanisms to secure attention for public interests at Port of Rotterdam

Rotterdam is the largest port in Europe, with a cargo handling volume of over 460 million tons in 2022 (Port of Rotterdam, 2023a, 2023b, 2023c), around 8% of the total cargo handled in Europe (Eurostat, 2023). PoR is widely regarded as a leading port developer (see Van der Lugt et al, 2017, De Langen and Hey, 2013, Dooms et al., 2013). Port of Rotterdam N.V. (PoR) is the port development company (see De Langen & Van der Lugt, 2017a), that operates based on a landlord model, i.e. PoR leases the port land to private terminal, logistics and manufacturing companies. In total around 4600 hectares of land is leased (Port of Rotterdam, 2022).

PoR has two shareholders, the municipality of Rotterdam and the Dutch state, a minority shareholder with about one third of the shares. The case study of Port of Rotterdam is executed through an analysis of publicly available documents from PoR, the municipality of Rotterdam and the Dutch national government.

The rationale of public ownership of PoR

Both the city Rotterdam and the Dutch State have policy documents describing the rationale for public ownership of corporate entities. For the Dutch state, until 2007, the focus was on executing a "privatize, unless" approach. This approach identified state participations without a convincing rationale, and these were divested (including KPN, the Dutch telecom company and TNT, the Dutch postal services company). From 2007 onwards, the focus shifted to 'active shareholding' of the (remaining) state participations, while during the financial crisis in 2008/2009, state participations were used to rescue two banks and the Dutch national airline. In 2013, the Dutch state published as policy on state participations, in which for all state participations, it has been determined whether they are 'permanent'. The developers of the so called 'mainports', i.e. Schiphol Airport and the port of Rotterdam (NV Luchthaven Schiphol and NV Port of Rotterdam Authority) which have a central place in the Dutch economic development policies (see Van Duinen, 2013 and Nefs et al, 2022) were designated as permanent state participations. Specifically about PoR, this policy document states:

> 'The participation of the government (...) underlines (...) the societal importance that the state attaches to the strategic position of the mainport. This justifies public shareholding in addition to laws and regulations to safeguard public interests around the port' (Ministry of Finance, 2013, p. 31).

In 2015, the Ministry of Finance developed an evaluation model for state shareholding, in order to answer the question to what extent the state's shareholding still has added value as an additional mechanism to secure public interests. The approach is in line with Sappington and Stiglitz (1987) and followed in this paper: state ownership is regarded as a valid policy instrument only if regulatory & contractual approaches are imperfect.[16] In 2020, an evaluation of the State participation in PoR was executed. This evaluation concludes as follows:

> 'Public ownership can continue to play an important role in influencing the direction of PoR (and thus the port as a whole) with regard to the preservation of added value and employment in the increasingly sustainable and digital Rotterdam mainport.' (Ministry of Finance, 2022, p. 26).

The most recent policy document on State participations has been adopted in 2022. This document further emphasizes SOEs are aimed at securing public interests.[17] The 2022 policy continues to position PoR as a

[16] The evaluation model provides instruments to answer four main questions: 'is there a public interest for which the national government is responsible?', 'Are the public law instruments inadequate?', 'Does the task lend itself to design in a company?' and 'Does shareholder power (i.e. the ability to determine the mission and strategy of the company) have added value, given the shortcomings of public law instruments?'.

[17] This policy review includes two conclusions. First, by strengthening the shareholder role and professionalizing the interpretation of the control rights, the State has acquired and exercised further substantial influence on the management of state participations. It is plausible that the above developments have had an important positive effect on the safeguarding of public interests. The frequent consultations between the shareholder and the state participations allow the state as a shareholder to act more directly than as a legislator and therefore to steer more effectively on the relevant public interests. Second, due to the form of the shareholding instrument, it is important that the state as a shareholder also steers on the financial value of the company and contributes to good corporate governance. After all, these are inextricably linked to the primary objective: the safeguarding of public interests. Both conclusions clearly

permanent participation. The participation policy recognizes that the public interests are partly safeguarded through (inter)national laws and regulations, licensing, covenants and policy documents, such as the Dutch port policy of Ministry of Infrastructure and Water Management, approved in 2020. The public shareholding is regarded as a valid additional instrument to safeguard the Dutch public interests. The 2022 policy document explicitly mentions the role of state participations in the energy transition[18]:

> The Netherlands is at the beginning of the energy and climate transition (...). This government is pursuing the climate objective (...) of the Paris Climate Agreement. The Netherlands wants to be a leader in Europe (...). Good cooperation between government and business is crucial in this respect. Participations can play an important role, as a link at the interface between public and private, and thus contribute to the successful realization of this transition (Ministry of Finance, 2022, p. 5).

The 2022 policy document also describes the state's approach to the goals with regard to financial return. For every individual participation, a specific goal is set for financial return, based on an analysis of profitability of a group of 'peers' (some of which are publicly owned, others privately owned). The 'desired' return of PoR was revised downwards in 2017 and is set at a return on equity of between 4 and 6%. The 2022 policy document establishes a link between standard returns and the sustainability transition:

> In some cases, investments in the energy transition are characterized by long payback periods and relatively high risks. The risks can arise from, among other things, a certain degree of unpredictability and the large number of stakeholders to make a project successful. Compared to the risks, the returns of these types of investments are relatively low in those cases. When assessing, it is therefore important to consider the risk-return balance in a broad perspective. Any social consequences of not continuing an investment must also be taken into account. Ultimately, it is essentially important that participation as a whole achieves an appropriate return in order to provide for its financial continuity. It is therefore possible that at the level of an individual investment, a positive decision is accompanied by a somewhat less favorable risk-return profile (Ministry of Finance, 2022, p. 38).

The majority shareholder of PoR, the municipality of Rotterdam owns various companies, such as the public transportation company (RET) and water and energy companies and PoR and also has a SOE policy framework, that is very similar to the national policy framework. The latest policy document from 2020 assesses the rationale for a participation based on four questions (Gemeente Rotterdam, 2020):

1. Is there a public interest for Rotterdam?
2. Are there other, better ways for the municipality to protect the public interest instead of a participation? For example, by regulations, granting a subsidy, providing a loan or guarantee?
3. Can the municipality outsource the task? If so, outsourcing is preferable to a participation.
4. Does the public task lend itself to provision by a commercial venture? Or is the task so essential that the municipal organization has to carry it out in-house?

The municipality considers PoR to be a 'permanent' participation. The policy document states that:

> 'As a public undertaking, PoR is in the legitimate position to (…) give public interests and long-term objectives a place in (agreements with) customers, something a private port manager would be much less inclined to do so. This does require an active public shareholding policy. The municipality (…) explicitly advocates an approach in which positive social effects in the longer

Footnote 17 (Continued)

show that the government considers steering on (safeguarding) public interests as the primary goal of a state participation, and that instruments have been developed to do this better.

[18] In the evaluation the argumentation for this additional argument summarized as follows: 'Many of the public law instruments (including legislation) are generic in nature and not aimed at the specific port that Rotterdam is. The Mainport Rotterdam is of great importance for the national economy (both in terms of added value and in terms of employment) and of strategic importance for the business climate in the Netherlands. However, the retention of this function is difficult to lay down in laws or regulations or agreements. In other words, this interest is difficult to "contract".' Dutch Ministry of Finance, 2021, p. 12.

term are taken into account, even if they do not immediately translate into short-term profits' (Gemeente Rotterdam, 2020, p. 62).

The public interests to be pursued by PoR

As described above, both the municipality and the state regard PoR as a 'permanent' participation and regard their participation as a suitable instrument to promote public interests. The state identifies the relevant public interests as follows (Ministry of Finance, 2022)[19]:

1. continuity and quality of the port of Rotterdam as a vital link in the mainport,
2. efficient market conditions (open and transparent processes for markets where entry is limited),
3. nautical safety
4. the efficient use of port land.[20]
5. Sustainability and specifically the reduction of CO_2 emissions (the document with the evaluation of the States participation in PoR states that approximately 17% of CO_2 emissions in the Netherlands occur in the port of Rotterdam.

The Municipality of Rotterdam also has defined public interests that PoR should contribute to. Like the national government, it identifies 'nautical safety', and 'continuity and quality of the port of Rotterdam' as relevant public interests and also stresses the relevance of the sustainability transition as an additional public interest:

> The Municipality of Rotterdam has committed itself to the national objectives for sustainability in terms of policy, and a sustainable port industrial complex plays a crucial role in this. The interest of the municipality to be involved in how the Port Authority deals with its land and in which infrastructure (shore power, hydrogen pipelines) is invested is therefore beyond dispute (Gemeente Rotterdam, 2022).

Like the central government, the municipality recognizes a role for PoR in accelerating the energy transition:

> In 2022 (and further years), PoR and various partners will focus on further developing infrastructure to reduce CO2, including through initiatives such as Porthos (CO2 capture and storage), facilitating a heat network in the port (WarmtelinQ) and hydrogen infrastructure. In addition, in the coming years, the company will make efforts to attract companies that specialize in circular production processes and renewable energy such as import and conversion of hydrogen, landing of wind energy and generation of renewable energy in the port' (Gemeente Rotterdam, 2022).

The Municipality of Rotterdam mentions that its shareholder policy focused on the sustainability transition is translated into specific KPIs regarding the energy transition, more specifically CO2 emissions in the port area and the amount of sustainable energy generated in the port area.

Mechanisms to secure that public interests are taken into account in PoR's decisions

Defining public interests is necessary to secure a SOE behaves differently compared to a private company. However, the incorporation of public interests in decision-making does not arise 'spontaneous' but requires an active role of the shareholders (see for instance Apriliyanti & Randøy, 2019 for an analysis of decision-making in Indonesian SOEs). This section details the mechanisms to incorporate the stated public interests (as described above) en PoR's decision-making.

PoR has a *two-tier* governance structure. The Executive Board is in charge of the company: the independent Supervisory Board supervises the General Management (Port of Rotterdam, 2023a, 2023b, 2023cA). The responsibilities of the Supervisory Board and Shareholders are detailed in the 'articles of association' (Port of Rotterdam, 2014). The shareholders provide directions to PoR through three mechanisms, described more in detail below.

[19] These public interests are broadly the same (but with different wording) as the public interests as defined in a policy document on securing public interests in seaports, published by the Dutch Ministry of Infrastructure and Water Management (2015).

[20] From the national perspective, the core consideration is that land use decisions impact the utilization of national transport infrastructure (road, rail and inland waterways), and the state argues that this impact should be taken into account in port development decisions.

General shareholders duties as specified in Dutch corporate governance laws

Twice a year there is a formal General Meeting of Shareholders (AvA in Dutch). From the Municipality of Rotterdam, the 'directors' (i.e. aldermen involved) are present, for the Dutch state, civil servants from the Ministry of Finance are present. In addition, once a quarter there is an 'informal' (in the sense that no official decisions are taken) meeting between the PoR executive board and the shareholders. The main powers of the AvA are[21]:

1. Approving large investments; The Dutch State has developed a structured approach to deciding on investments of its SOEs: "Large investments resulting from the strategy must be submitted by the company to the shareholder for approval. The relevant criteria for assessing investments from the 2013 note have been further elaborated in an assessment framework to assess investments in a consistent manner (…). The result is that investments are always assessed against the public interest, the return and the risks' (Dutch Ministry of Finance, 2020, p. 79).
2. Approving significant changes in the identity or character of the enterprise;
3. Appointing and/or dismissing the supervisory board and appointing and/or dismissing directors. The PoR 'Supervisory Board regulations' (Port of Rotterdam, 2023a, 2023b, 2023cC) specify the functioning of the supervisory board, including its responsibilities, composition, expertise and independence. PoR and its shareholders work according to the principles of the Dutch Corporate Governance Code. The regulations specify PoR has a supervisory board of at least 5 members, all of them fully independent and selected based on a specific profile. The profile description contains various competencies related to incorporating public interests in decision-making. The PoR 'Management Regulations' (Port of Rotterdam, 2023a, 2023b, 2023cB) specify the functioning of the executive board, including its composition, expertise, independence, and the division of responsibilities between the members of the Executive Board. The PoR regulations include profiles for executive board members that include experience with/in the public domain. The supervisory board proposes candidates for the executive board members (CEO, CFO and COO), for approval at the shareholder meeting.[22]

[21] The PoR governance can be characterized as an 'enlightened regime' in which the AGM has powers, for example, when appointing and dismissing directors.

The PoR articles of association and the operational agreement' PoR-Gemeente Rotterdam

The mission and objectives of PoR are described in the articles of association of PoR. The PoR 'articles of association' (Port of Rotterdam, 2014) were established by the shareholders when PoR was corporatized, and were modified in 2014. This document contains two 'statutory objectives' of PoR:

1. 'Development, construction, management and operation of the port and industrial area in Rotterdam' (…);
2. Promoting the safe, effective and efficient handling of shipping traffic and ensuring nautical and maritime order and safety, as well as acting as a competent port authority in the Rotterdam port area' (port of Rotterdam, 2014).

The second statutory purpose is public in nature. PoR has a separate harbor master's division, which is mandated to perform a number of tasks on behalf of the national government, and the municipalities of Rotterdam and other municipalities where PoR acts as harbor master. The tasks for which PoR is mandated include vessel traffic management and the execution

[22] The supervisory board as of October 2023 consists of four members, all of which have a career in commercially operating companies, while also an involvement in other societal or public sector organisations. The executive board currently has two members (a COO acting as interim CEO pending a newly appointed CEO), both also with a previous career in the private sector. In 2023, it became clear that there is a different view between the majority shareholder of PoR (the Municipality of Rotterdam), the minority shareholder (the Dutch state) and the supervisory board, with regard to the renumeration of the executive board members and other senior managers of PoR. This has stalled the appointment of a new CEO. This renumeration debate for SOE executives is a wider debate in the Netherlands and elsewhere (see OECD, 2022).

of ship inspections (Port State Control). For these PoR activities, the harbor master division of PoR operates under the direct responsibility of the mayor of Rotterdam (as the primary point of contact) and the Ministry of I&W. The harbor master division provides quarterly reports on the harbor master duties.[23]

Due to the numerous issues over which PoR and the Municipality of Rotterdam both have an influence and a responsibility, such as nautical safety, maintenance of public roads, public spaces and cycle paths in the port area, redevelopment of urban port areas, an ‘operational port agreement’ between PoR and the Municipality of Rotterdam, was agreed in 2004. This agreement was amended in 2014 (Gemeente Rotterdam, 2014). The agreement specifies the roles and responsibilities of PoR and the municipality of Rotterdam. The following important items are included in this agreement.[24]

First, the agreement specifies that PoR periodically needs to develop two strategy documents. PoR needs to periodically develop a ‘corporate strategy’ which will be discussed in the city council before it is submitted to the general shareholder meeting for approval and PoR needs to develop a’port vision’ document. This port vision document needs to be approved by the supervisory board and the city council. If the city council withholds approval, a new/modified port vision needs to be developed and approved. Second, PoR is mandated to execute the ‘harbor master’ activities; the municipality needs to approve the appointment of the ‘harbor master’ which is in charge of the harbor master division of PoR. PoR also needs to provide this department with sufficient resources to enable it to perform its duties. Third, the agreement specifies that all municipal port land remains in the ownership of the municipality and is granted in a concession ‘in perpetuum’ to PoR. The agreement also specifies any future port land will be transferred to PoR.

Decision-making on the port vision and the business strategy

As described above, both shareholders have a formal role in developing and approving the port vision and the corporate strategy of PoR. The most recent port vision documents were drawn up jointly by five stakeholders: PoR (that leads the development of the port vision), the port industry represented by Deltalinqs, the Municipality of Rotterdam, the province of Zuid-Holland and the Dutch government (more specifically the Ministry and Infrastructure and Water management and the Ministry of Economic Affairs), together ’the covenant partners’.[25] The Port Vision is approved by the city council of Rotterdam and all covenant partners are involved in the implementation. Yearly, a progress report is published that reports on the extent to which objectives are achieved and new developments that require (joint) actions by the covenant partners to realize the port vision.[26] Roughly every 10 years, a new port vision is drawn up.

The Port Vision contains measurable goals that can all be linked to the public interests as specified by the shareholders: connectivity, added value, employment, decarbonization,[27] public–private investments, safety, air quality and the ’position of Rotterdam as a maritime capital’.

Under the articles of association, PoR is obliged to draw up a business plan at least once every five years and to submit it to the Supervisory Board and shareholders. In 2020, the new Corporate Strategy of PoR was approved by the shareholders. This Corporate

[23] On top of the harbor master activity for which PoR is mandated, PoR is also mandated to manage and maintain the municipal public roads in the port area (these cover the local roads and exclude highways and large secondary roads). The operational port agreement states that ’PoR NV will carry out the management as a careful (road) manager in such a way that the public interest is safeguarded’.

[24] In addition, the agreement specifies amongst others the responsibility of PoR for the development and maintenance of public local roads, pipelines and public spaces in the port area and specifies the required crisis response resources and capabilities of PoR.

[25] The Port Vision is available at Havenvisie Rotterdam | Port of Rotterdam.

[26] These ‘progress reports’ are also available at Havenvisie Rotterdam | Port of Rotterdam.

[27] The public interest of the sustainability transition has a clear place in the PoR strategy. On this point, the port vision states: ’PoR is committed to attracting sustainable cargo flows (including biomass, biofuel, hydrogen) and attracting sustainable industry, such as green hydrogen, circular activities and green chemistry’.

Table 1 Incorporation of the identified public interests in the policies of PoR's shareholders.

Public interests identified in academic research	Incorporated by Rotterdam Municipality and Dutch State
Impact of port on economic development	Incorporated, through the public interest 'continuity and quality of the port of Rotterdam'
Negative environmental externalities of activities in the port business ecosystem	Incorporated, as the public interest of the 'energy transition'. Stronger emphasis in the 2022 policy document (Dutch Ministry of Finance, 2022) compared to the 2015 document on public interests in the Dutch seaports (Dutch Ministry of Infrastructure & Water Management, 2015)
Societal impact of spatial transformations of port areas	The Dutch state has identified the efficient use of port land as a public interest. The Municipality of Rotterdam has not explicitly identified this public interest, even though a large part of the port area is transitioning to a mixed port/urban use[28]
Externalities from the 'port innovation system'	Neither the state nor the municipality have incorporated this public interest

Strategy specifies PoR's mission as: 'we create economic and societal value by working with customers and stakeholders to achieve sustainable growth in the world-class port' (Port of Rotterdam, 2023d). This mission makes explicit reference to 'societal value'. The quarterly shareholder meetings provides the shareholders with a platform to discuss progress with regard to achieving the objectives as set in the Corporate Strategy and Port Vision.

Do the policy documents reflect the theoretical insights on public interests in ports?

The insights discussed in Sect. "A review of the rationale for SOEs" and "Public shareholders and public interests; considerations for port development" cover two items: the rationale for state ownership and the public interests at stake in ports. Both shareholders have explicitly assessed this rationale in the case of PoR and conclude that the participation of the state / municipality is permanent. The assessment method of both shareholders was very similar, starting with assessing the relevance of public interests and next assessing whether regulation or other policy tools can be used to secure this public interest. This approach is broadly in line with the theoretical insights as discussed in Sect. "A review of the rationale for SOEs". However, while the theoretical insights suggest that potential negative effects of state ownership require analysis, with specific attention for the risks of ignoring (disruptive) innovation in the industry, this risk is not explicitly addressed by both shareholders.

Both shareholders have explicitly identified the relevant public interests. These identified public interests are partially in line with the public interests discussed in Sect. "Public shareholders and public interests; considerations for port development" (see Table 1).

Conclusions

This paper addressed the effects of state ownership on decisions of port development companies, through a case study of PoR. This issue is relevant, given the role port development plays in the overall development of the (national and or regional) economy as well as the important role of ports in the transition towards a more sustainable economy in general, and a transition to clean energies in particular. Given the importance of ports, it is relevant to understand if state owned PDCs take public interests into account, and if so, which ones and how. The insights from this case study thus can be useful for shaping port (governance) reform, an important challenge in the ports industry (see Debrie et al, 2013). The following conclusions can be drawn from the analysis presented above.

First, the two public shareholders of PoR have made an explicit choice to 'permanently' use state ownership to achieve public interests. This choice was based on an analysis which concluded that alternative ways of securing public interests (i.e., through regulations and/or contracts) are not sufficiently effective. This approach and resulting policy choice is in line with the existing body of knowledge on conditions under which there is a rationale for state ownership in general (Sappington and Stiglitz, 1987; Peng et al., 2016; OECD, 2015) and specifically for ports (de Langen, 2020; Van der Lugt et al, 2017).

Second, the shareholders of PoR have identified specific public interests that PoR should take into

[28] See https://m4hrotterdam.nl/ (in Dutch) for a 'district' the size of the Rotterdam city Center that the municipality and PoR develop together.

account in their decision-making. These public interests are broadly in line with the public interests identified in academic research (see de Langen & van der Lugt, 2017b). However, neither the redevelopment of port areas nor innovation are explicitly specified as relevant public interests. This is surprising, as PoR, in partnership with the municipality of Rotterdam has invested (and plans to continue to invest) substantially in redeveloping large areas in the port into mixed use areas and also makes considerable investments in the innovation ecosystem. This suggests that even though both are not explicitly stated as a public interest, they are treated as such. Both items are included in the current port vision document (Port of Rotterdam, 2021). A deeper understanding of how the public interests as stated in the shareholder documents were identified could provide additional insights into this issue. In addition, an analysis of differences between the municipality and the state in terms of which public interests are most relevant could yield relevant additional insights. Such an analysis could serve as a basis for exploring whether regional level (as for instance in the Netherlands, Belgium, Germany and Scandinavia), state level public ownership (as for instance in France, South Africa and Portugal) or a mixture of both (as is the case for PoR) is best suited for PDCs.

Third, the shareholders of PoR have developed specific mechanisms to secure that PoR takes the public interests into account in decision-making. This suggests that providing direction through specifying the relevant public interests and monitoring progress at the shareholder meetings is not enough. In addition, the shareholders provide input for the development of a 'port vision' (a long-term vision for the development of the port complex) and the 'corporate strategy' (the measurable goals PoR sets for a period of 5 years). These mechanisms to turn the public interests into tangible objectives may also be relevant for other state-owned PDCs. This analysis suggests that the 'SOE model' requires a well-functioning public sector that is focused on using the SOE to secure public interests and has the capabilities to design mechanisms to make sure public interests are incorporated in the SOE decision-making.

Comparative research across different 'institutional contexts' can add to the understanding of how governments influence their state owned PDCs. While we have shown in this paper that public shareholders actively influence PDC decisions through various mechanisms, an analysis of outcomes in terms of measurable performance differences compared with private companies in like circumstances was beyond the scope of this paper. Further research could empirically assess differences between public and private PDCs, for instance in terms of investments in sustainability, innovation, pricing, redevelopment of port areas and employee engagement (Sun & Bunchapattanasakda, 2019). This is an important issue as the rationale for state-ownership is that the state owned PDC will act differently compared to a private PDC in like circumstances.

A final avenue for future research concerns the ongoing internationalization of port development SOEs, such as DP World, PSA, Cosco Ports, China Merchant Ports and PoR. This internationalization can result in the paradoxical situation that a *foreign* SOE has a leading role in port development in a specific port (or country). Research into the public interests at stake and mechanisms to secure them in such models has a direct policy relevance.

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