

CONCESSIONING IN SEAPORTS: CHANGING PRACTICES, CHANGING MARKET POWER?

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ABSTRACT

The market power of port authorities has changed dramatically over the last few decades. Ports are important nodes in supply chains, but their role is determined rather by the big shipping companies and the powerful terminal operators that are active in it, than by the port authorities that govern them. One of the few trump cards left to port authorities is their concession policy. Port authorities can differentiate themselves through various concession characteristics: duration, price, throughput, value added and investment requirements, etc.

At the same time, concessions are more and more considered to be cost or revenue elements. From the terminal operator's side, they appear to be important selection criteria when deciding to locate a terminal at a certain location in a specific port. From the port's side, concessions are an increasing source of income, especially as further liberalization forces port authorities to be financially self-sustaining, and as other sources of income are under pressure.

This paper verifies in an empirical way to what extent concessions are an increasing source of cost and revenue to respective players. It is also analysed how strongly concessions are used as a means of diversification by port authorities in specifying their characteristics. It is checked whether a learning process can be discerned. This exercise is set up with the help of a number of case studies, which are spread geographically and in the nature of the cargo. This way, the paper allows getting more insight into concessioning and the way it is used as a strategic weapon by the different players involved in ports. Lessons are drawn which are of use to academics as well as to port practitioners.

1. INTRODUCTION

The market power of seaport authorities has changed dramatically over the last few decades. Ports are important nodes in the chain, but their role is determined rather by the big shipping companies and the powerful terminal operators that are active in it, than by the port authorities that govern them. One of the few trump cards left to port authorities is their concession policy.

It is widely recognised that ports play a crucial role in modern logistics, acting as key nodes in supply chains and as an interface between different modes of transportation, therefore requiring high standards of quality of services. Concessions are, in economic terms, a very efficient way of dealing with natural monopolies such as port infrastructures. The conceding entity needs, however, to introduce some rules in order to regulate the market properly and to introduce competition whenever possible.

As ports seek to be more competitive, there is a tendency towards expanding the role of the private sector in ports. Due to the generally unsatisfactory performance of public ports to adapt to the rapid changes in the industry together with the pressure for ports to be competitive in the international market and more financially independent from governments, private involvement in the port sector has increased, not only in the operations but in the construction of port infrastructure as well.

As a matter of fact, concessions are commonly used in the port sector today, since they relieve governments of substantial operational risks and financial burdens and simultaneously allow governments to keep ultimate ownership of the port land and the responsibility for licensing port operations and construction activities. On this account, governments remain in a position where they can safeguard public interests.

As an illustration, in 2004 the European Commission (2004) launched a White Paper on Services of General Interest and declared its intention to examine European Union legislation in order to ensure the transparent award of service concessions. Ensuing, a consultation on the procurement aspects of public private partnerships (PPP) was launched. Also in 2004, the European Commission (2004b) published a Green Paper on Public Private Partnerships and a debate on the desirability of adapting the Community rules on public procurement and concessions was launched, so as to accommodate the development of public-private partnerships (PPPs).

In its port policy, the European Commission started striving for more private involvement in the port sector through its 1997 Green Paper on seaports and maritime infrastructure. The main conclusion of the paper was that “a regulatory framework should be developed at Community level aiming at a more systematic liberalisation of the port services market in the main ports with international traffic. The aim of this framework would be to establish a level playing field between and within Community ports while ensuring compliance with port and maritime safety standards” (European Commission, 1997).

In 2001, the European Commission summarized the results of a debate on its 1997 Green paper, as follows:

1. Seaports are to be better integrated into the Trans-European Transport Network
2. A systematic approach is needed to regulate access to the market of port services
3. Public financing of sea ports and port infrastructures

(European Commission, 2001)

This resulted in the same year in a proposal for a directive on Reinforcing Quality Service in Sea Ports: A Key for European Transport, the so-called first Port Package (European Commission, 2001b). Key intentions were to create a level playing field as to competition between ports, to clearly define and apply state aid rules, and to set up a transparency directive on market access rules and financing. This first attempt was rejected by the European Parliament, which proves that resistance to far-reaching liberalisation is heavy.

In 2004, the European Commission undertook a second attempt to liberalisation, focusing this time on market access to port services (European Commission, 2004c). This second Port Package proposed to define the conditions under which access to the market could be limited, and opened the door for self-handling to take place. Again, the proposal was rejected. The main criticisms to both proposals were that they focused too much on a one-size-fits-all approach, they only dealt with intra-port competition, the role they left for port authorities was limited and rather bureaucratic, and they did not offer enough legal certainty (ESPO, 2006).

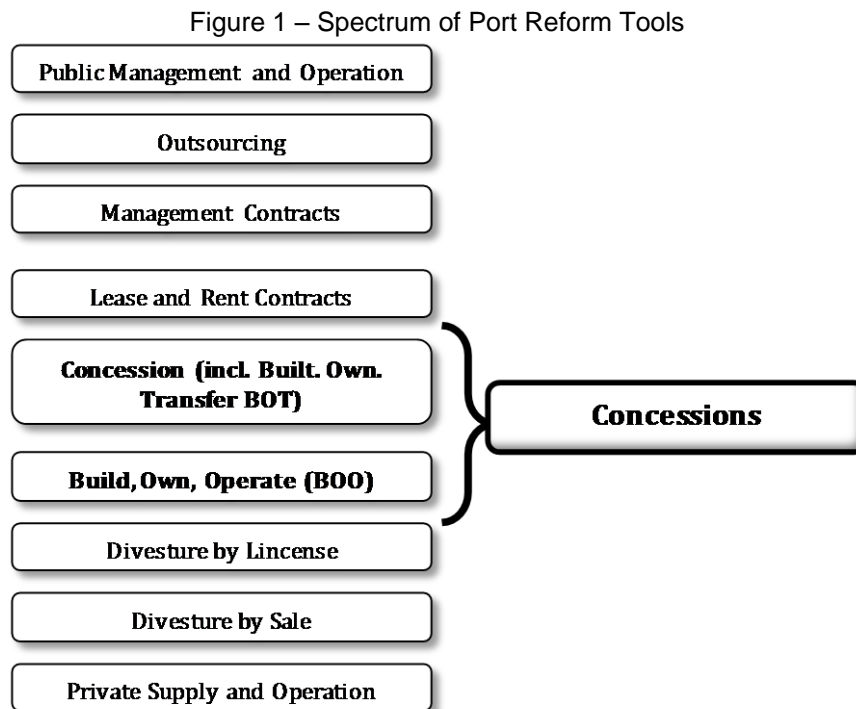
The previous setting, initiatives and failures clearly indicate that there is on the one hand a strong tendency towards more private involvement in ports, but on the other hand that there are limits as to what is acceptable to the society and the sector. A system with seaports governed by entities distributing concessions seems to be the limit at current, but equally seems to be widely accepted. This paper will therefore deal with the circumstances under which concessions can and do apply (section 2), concessioning characteristics and the way they have changed over time (section 3), the changing role of concessions as sources of cost and revenue (section 4), and empirical verification and a search for national differences in applying concessions (section 5). From this analysis, section 6 derives a number of conclusions.

2. CONCESSION CHARACTERISTICS

Generally speaking, a concession is a legal arrangement in which a firm obtains from the government the right to provide a particular service under conditions of significant market power. A concession can be defined as an arrangement whereby a private party – the concessionaire – leases assets from a public authority for a given, usually extended, period and has responsibility for new fixed investments during the period and for providing services associated with the assets. In return, the concessionaire receives specified revenues from

the operation of the assets. At the end of the contracted period the assets revert to the public sector or a new concession is awarded.

The following figure illustrates the spectrum of options available for ownership and operation of infrastructure, ranging from the traditional government supply and operation of facilities or services, to complete privatisation:



Source: Thompson et al., 1996

Lease contracts and concessions in the strict sense can all be regarded as concessions for this paper, as they share the following characteristics:

- A government entity defines and grants specific rights to a company (usually private);
- Agreements have a defined term;
- They are geographically delimited;
- An agreement describes the concession's objectives and directly or implicitly allocates risk.

In the case of lease contracts, the operator enters into a long-term lease on the port land and is normally responsible for superstructure and equipment. This situation most often applies to US ports: examples are Los Angeles, Long Beach, and New York for land leases. Terminal leases to operate among others can be found in Kingston. Applications of leases to build are found in some of the newer terminal developments in New York, Hong Kong, Yantian and Busan. In concession contracts, the operator covers investments costs and assumes all commercial risk. Typical examples are most European ports.

The most common option for private participation at ports is the use of concessions for port terminals, through either leases or Build-Operate-Transfer (BOT) contracts. Ports with considerable size may allow competition between different operators within the port but for small and medium size ports concessions are means to introduce competition for the market where competition in the market is not feasible.

The occurrence of concessions is to be linked to the port organisational type. There are different types of port authorities worldwide. Port authorities differ mainly in terms of i) decisional independence, ii) unicity of command, iii) financial independence and iv) commercial management methods (Op de Beeck, 1999; Bichou and Gray, 2005; Chouly, 2002).

These four dimensions can be grouped and reduced to two dimensions considering that on one hand, decisional and financial independence of the port authority are a function of the degree of public involvement, which corresponds to the institutional setting the port is embedded in. On the other hand, unicity of command and integrated commercial management methods depend on the degree to which the port authority is involved in day-to-day operations.

For each of these two dimensions (i.e. institutional setting and degree of operational involvement of the port authority), one can consider a number of possible states (Op de Beeck, 1999). These states are summarized in the typology of table 1 below:

Table 1 - Port organization matrix

	Public PA, national supervision	Public PA, Sub-national supervision	Public PA, Self-governing	Private PA	Corporate PA
Landlord PA	I. national – landlord	II. sub-national – landlord	III. self-governing – landlord	IV. private – landlord	V. corporate – landlord
Limited-operating PA	VI. national – limited operating	VII. sub-national - limited operating	VIII. self-governing - limited operating	IX. private - limited operating	X. corporate - limited operating
Operating PA	XI. national - operating	XII. sub-national - operating	XIII. self-governing - operating	XIV. private – operating	XV. corporate - operating

Source: Vanelslander (2005)

The type of port authority will influence its attitude towards concessions. A landlord port will be more receptive to this instrument, since possession, occupation and use of property is transferred by the landlord port authority to a potential user, in exchange for a payment or a rent. This arrangement usually takes the form of a concession or a lease.

The powers of a landlord port authority are limited to the decisions concerning land use, reservations of space for the port areas and construction and use of public port works. The port authority leaves it to individual operators (public sector or private enterprises) to

construct and operate the works and equipment necessary for the operation of ships and the storage and internal transport of traffic, and / or to operate other services provided for traffic (sea pilotage, towing, inshore pilotage, and so on). Such port authority will make the necessary sites available to individual operators on the basis of contracts specifying public service obligations or, conversely, permitting private use of the facilities. The port authority acts like the owner of the port property, grants short or long term leases or concessions to other private enterprises.

A limited operating port authority, also known as a tool port, will purchase and install certain heavy handling equipment (gantries, cranes) which are then run by port operators. The port authority will perform its role by financing, building or purchasing the works and equipment necessary for efficient operation of a port and making them available to operators under short term contracts generally incorporating public service obligations. The port then plays the role of a 'tool port', as it has created the 'tool' but does not operate it.

An operating port authority, whether national, sub-national, self-governing, private or corporate, will consider, not only that it should provide certain works and equipment, but that it should also act as their operator. It may also consider it to be in the public interest that it should in itself set up and operate certain services for the port traffic. Like other operators, it then maintains direct industrial and commercial relations with port users, while retaining its governmental powers vis-a-vis the port community. These ports are then known as 'operating ports', and normally form part of the public sector.

Theoretically, each cell from Table 1 can be an existing combination, but in practice port organizational forms often cluster around a limited number of cells. This is what Trujillo and Nombela (1999) indicate: landlord and limited-operating port authority institutions will typically be public, whereas operating port authority institutions are often in private hands.

Historical, geographical, political as well as cultural influences can cause a particular country or region to show concentrations of certain port organizational types. Suykens (1995b, p. 3) makes a broad distinction between three traditional systems: the Hanseatic tradition, the Latin tradition, and the Anglo-Saxon tradition. The first two are typical for the European continent. They distinguish themselves from the Anglo-Saxon system in that they allow public supervision and execute only part of the functions a port authority body could perform. Therefore, they comprise more or less the upper left section of Table 1 (Suykens and Van de Voorde, 1998, p. 255).

Latin-type sea ports conform best to type I, Hanseatic sea ports best conform to type II. The variety of local levels responsible for supervision again makes this a very diverse category. In Germany alone for instance, federal states, city-states, municipalities or hybrid authorities composed of the former each have control over a number of sea ports (Op de Beeck, 1999). The Anglo-Saxon system is often called a total port system. Through its characteristics it best matches the lower right types of Table 1 (Suykens and Van de Voorde, 1998, p. 255). Anglo-Saxon ports are most likely type XV sea ports. This explains why pure concessions are typically found more frequently under Hanseatic and Latin system ports.

It should furthermore not be forgotten that port categorization is not static: over time, sea ports shift over the categories of Suykens and Van de Voorde (1998). The typical national preferences often disappear so that port type dispersion is getting larger: countries traditionally applying one of the systems above, have often introduced different structures for newly developed ports, often for budgetary reasons. The Latin type for instance used to be applied in all countries denominated as 'Latin' in culture, which are generally southern-European countries. What has changed too over time is that the port authority institution is often no longer of one type to all terminals on its territory: For some historic terminals for instance, a port authority can remain an operating body, whereas for newly developed terminals, it can assume for instance a landlord role. This is a reason why a shift towards more private involvement occurs, which very often translates in an increased use of concessions.

3. CONCESSION DESIGN

3.1. Objectives

Establishing objectives is fundamental for the correct definition of the appropriate structure for any concession depends on a government's objectives. Once these objectives are established, the government can require the concessionaire to meet certain conditions in order to achieve them.

3.2. Risk allocation

Risk allocation is another concern when designing a concession, for a variety of risks are inherent to infrastructure projects. In theory, the criteria for risk allocation are quite simple: risks should be borne by the party best able to assess, control, and manage them or by the party with the best access to hedging instruments, the greatest ability to diversify the risks, or the lowest cost of the risks bearing.

The underlying idea is to incentivate the party with the ability to reduce risks to do so, leaving the remaining risks for those for which it is least costly. However, putting the theory into practice is not always easy, since it is tricky to determine exactly who should bear some types of risks, and the extent to which a party is in a position to adopt appropriate risk mitigation measures.

The main types of risks encountered in infrastructure projects are:

- Commercial risk, that arises mainly from the uncertainty of traffic levels. Furthermore, it is often difficult to gather the adequate information to achieve accurate demand projections.
- Government policy risk, which is related to the concessionaire's fears about government commitment throughout the duration period of the concession contract, apart from eventual government policy changes.

- Exchange rate risk: arises essentially from input prices and tariffs that may be charged in a currency different than the one of the initial investment. This is not a great concern in the ports' case for tariffs are usually charged to international companies and in US dollars. There can also be exchange rate risk associated with the repatriation of profits; however international investors by rule guarantee repatriation of profits as a pre-requisite for investment.
- Exclusiveness: although competition encourages efficiency, revenues are likely to be higher and more predictable when there is no competition. Therefore granting exclusiveness may ease concession problems associated with financing and meeting payments.
- Tariffs: this is a sensitive aspect of a concession and is related to the existence or not of market competition. Tariffs tend to be regulated where some form of monopoly power exists. In case the government sets the tariffs, the mechanisms for change must be defined. In a competitive environment, concessionaires usually have a considerable scope to define their own tariffs, even if subject to utility rate regulations.

Only the risks against which the company cannot protect itself should normally be passed on to the consumers. All others should be borne by the public or private party or divided by both.

Appropriate allocation of potential risks, although very complex, must be entailed when designing a concession in order to reassure both concessionaire and government. There is no uniform format for risk allocation and the most appropriate combination must be considered for each case.

3.3. *Concession elements*

Another concern is the combination of the concession's elements, which is critical in risk allocation between the public sector and the concessionaire. Port authorities can differentiate themselves through various concession characteristics: duration, price, throughput, value added and investment requirements, etc. The main elements are:

Package size - The adequate package size depends on factors such as monopoly power, market size and feasibility of division. Large packages permit scale or scope economies, but may reduce competition because only a few bigger companies will have the necessary financial and technical resources. In the port sector, where monopolies were common, the separation is usual in functions with often more than one company for the same function, hence promoting internal competition. Small packages have the advantage of promoting competition for the concession, even if the selection process results more complicated.

Term - The duration of the contract period is related to the economic life of immobile assets. There is the generalised idea that the term of a concession has to coincide with the economic life of the assets due to the necessity of sunk investments, that is of expenditures that the firm cannot recover if it does not stay a given period in the market.

However, the contract may be shorter than the economic life of the assets if the concessionaire can easily remove capital investments and employ them elsewhere or if the government makes the investment and leases the assets to the concessionaire. Even in situations where assets are totally sunk, if there is an arrangement to ensure the investment is not lost (for example, guaranteeing payments for the depreciated value of sunk investments) it is possible to design concession shorter than the economic life of the infrastructure.

Nevertheless, the longer the contract, the more motivated the concessionaire feels to invest and develop the business, but the greater the risk of regulatory capture, that is, the close relationship developed through time between the parties may interfere with the public sector capacity to regulate properly. The shorter the term, the greater the competitive pressure although the incentive to invest is reduced.

Ownership - The ownership is associated with the type of asset, its market and its importance for the concession. Normally, in basic transport infrastructure, such as ports, governments for strategic reasons prefer to retain ownership of these assets.

Service specifications - This element is particularly important in infrastructure concession where the government retains the ultimate ownership, since the existence of service specifications ensures the good condition of the assets when they revert to the government and that performance levels do not decay in the concession's final years.

Tariff authority – Depending on the degree of the concessionaire's monopoly power and on government objectives, the concession contract will set stronger or lighter tariff control. Strong tariff control diminishes the concessionaire's ability to respond to market changes but specifying tariff levels and even the formula to change them in response to inflation reduces instability.

Payment terms – There can be payments from the concessionaire to the government for concession rights (positive concession) or the government may pay the concessionaire to supply the services under the agreement (negative concession).

Award criteria – The award criteria are intrinsically connected with government objectives and must be established at the beginning of the concessioning process.

Renegotiation terms – When defining the renegotiation terms, the government needs to consider the quality of the service under the present conditions and the cost and term of future concession. It should also bear in mind that, in the case of an easily renegotiable long or short-term contract the incentive to invest is reduced. To prevent this, the contract may include a reimbursement clause of the specific investments in case of breach by the regulator before the term.

Performance assurance – Performance assurance stresses the importance of performance measures to verify if the concessionaire is fulfilling the contractual obligations. The reporting

requirements should be established in the contract and performed throughout the concession.

Investment planning – In infrastructure concessions investments planning usually remains the ability of the government that defines the general line and required capacity. As the instrument of concession is frequently used to secure new investments in the contract, the government may specify the overall level or minimum amount of investment in a given period or throughout the concession.

Network planning - Depends on the market structure and, by rule, in the port sector the responsibility of network planning remains with the government.

Exclusiveness – Although governments normally retain ultimate control of the right to own, operate or construct infrastructure, it is frequent to grant exclusiveness to the concessionaires for the full or partial term of the concessions. Exclusiveness rights make concessions more attractive to potential bidders since competition tends to lower firm profits and introduce new risks. However, the threat of entry can sometimes spur an incumbent monopolist to perform better, even in natural monopolies. Moreover, if the industry turns out to be, in time, potentially competitive, exclusiveness puts off competition.

The ultimate goal of concession design is to achieve an appropriate balance between the different objectives pursued by the concessionaire and the government, appeasing the concerns of the parties involved.

3.4. End of concession

At the end of a concession, the port authority will have basically three options:

4. Extend the existing concession contract,
5. Re-tender the concession, opening the tender process to other interested parties, and
6. Assume the direct management of the facility.

4. CONCESSIONS AS COST OR REVENUE ELEMENTS

Concessions are more and more considered to be cost or revenue elements. From the port authority's side, concessions are an increasing source of income, especially as further liberalization forces port authorities to be financially self-sustaining, and as other sources of income are under pressure.

Concessions are commonly used in the port sector today, since they relieve governments of substantial operational risks and financial burdens and simultaneously allow governments to

maintain ultimate ownership of the port land and the responsibility for licensing port operations and construction activities. On this account, governments remain in a position where they can safeguard public interests.

From the shipping lines' side, there are several important criteria that influence the decision to call a specific port. In order to identify those and obtain a more detailed view on this, shipping lines were interviewed. More specifically, top management¹ was interviewed, covering 11 shipping lines that operate 45.7%² of the world fleet of container vessels. Interviews were held during a period of almost 2 months from 7 April till 15 June 2009.

The interviewees were presented a list of port selection criteria and asked to rank them and give comments on them. The most important criteria in order of importance for shipping companies are cost, quality of hinterland connections, capacity, reliability, port location (at sea or inland) and cargo base. Criteria of lesser importance are flexibility, customer service quality, location in port (if locks need to be used), total door-to-door transport time and feeder frequency. Risk of loss/damage is of low importance. The cost criterion as it is used here is the out-of-pocket expenses that are linked to the choice of a certain port by a shipping line.

During the interviews, respondents were also asked to evaluate the performance of different ports on criteria identified with a scale from 1 (very bad) to 5 (very good). For this, a set of ports was constructed looking for ports that are diversified in size, as well as in the origins of traffic. The results are shown in table 2.

Table 2: Evaluation of port selection criteria for selected seaports (AVG (MIN - MAX))

	Felixstowe	Zeebruges	Antwerp	Hamburg	Le Havre
Cost	3.2 (2 - 4)	4.0 (3 - 5)	4.4 (3 - 5)	3.4 (3 - 4)	3.1 (1 - 4)
Hinterland Connections	3.4 (3 - 4)	3.3 (2 - 4)	4.5 (4 - 5)	4.4 (4 - 5)	3.6 (2 - 4)
Port Capacity	2.7 (1 - 4)	4.3 (3 - 5)	4.6 (4 - 5)	3.7 (2 - 5)	4.4 (4 - 5)
Reliability	3.0 (2 - 4)	4.3 (4 - 5)	4.5 (4 - 5)	4.1 (3 - 5)	2.4 (2 - 4)
Port Location	3.2 (2 - 4)	3.4 (2 - 4)	4.2 (3 - 5)	4.4 (3 - 5)	3.8 (2 - 5)
Cargo Base	3.4 (1 - 4)	3.1 (2 - 5)	4.4 (3 - 5)	4.2 (3 - 5)	3.3 (2 - 4)
Flexibility	3.0 (2 - 5)	4.0 (3 - 5)	4.5 (4 - 5)	3.8 (2 - 5)	2.4 (1 - 3)
Customer Service	3.5 (3 - 5)	3.8 (3 - 5)	4.2 (3 - 5)	3.9 (3 - 5)	3.1 (2 - 5)
Frequency	2.7 (1 - 4)	2.9 (2 - 4.5)	3.4 (2 - 5)	4.8 (4 - 5)	2.6 (1 - 4)
Risk of Loss/Damage	4.0 (2 - 5)	4.4 (4 - 5)	4.8 (4 - 5)	4.6 (4 - 5)	4.3 (2 - 5)
Customs Service	3.6 (2 - 5)	3.4 (3 - 4)	3.0 (2 - 4)	3.9 (3 - 5)	2.9 (2 - 4)

Source:

The best scores for most criteria among the considered ports are found in Antwerp. On the most important criterion, the cost, a wide divergence among ports is observed. Respondents furthermore commented that the port of Le Havre is scoring low in reliability and flexibility because of the social instability created by trade unions and frequent strikes. Some shipping lines mentioned that this is one of the main reasons why they decide to stop calling Le Havre. Also, lack of hinterland connections is mentioned as a disadvantage in Le Havre and particularly also in Felixstowe and Zeebruges. For Felixstowe, port capacity is one of the main problems.

The relative importance of the criteria, obtained during the interviews, was used to calculate weighted average scores for each port, as shown in table 3 below.

Table 3: Weighted average scores of the ports

Port	Weighted Average Score
Antwerp	4.35
Hamburg	4.02
Zeebruges	3.73
Le Havre	3.26
Felixstowe	3.14

Simultaneous research (Aronietis et al, 2010) shows that the ranking of the most important selection criteria for shipping lines has changed over time, but out-of-pocket costs remain on top. This shows that concessions and their characteristics, which are seen as cost elements more and more by port users, remain an important factor in the actual selection of a port.

These results can be used as a point of comparison of the competitiveness of the selected ports. The competitiveness of a port with its characteristics in the perception of the shipping lines in turn can be linked to the strategic decisions from the shipping line. As a result, often we see shipping lines taking part in the ownership structure of terminals in ports. A summary of the deep-sea container carriers having a stake in some container terminals is shown in table 4.

Table 4: Deep-sea container carriers having a stake in container terminals (2007)

	Rotterdam	Antwerp	Le Havre	Bremerhaven	Zeebruges	Hambourg	Amsterdam
NYK	x						x
Evergreen	x						
Maersk	x		x	x	x		
MSC		x	x	x			
CMA-CGM	x	x	x		x		
Cosco	x	x					
K-line	x	x					
Hapag Lloyd						x	
ZIM		x					
Yang Ming	x	x					
Hyundai	x						
MOL	x						
APL	x						
Hanjin	x	x					

Source: shipping line and port websites

From the terminal operator's side, concessions and their characteristics appear to be important selection criteria when deciding to locate a terminal at a certain location in a specific port. Therefore, a globally working terminal operator³ was interviewed during the research. The interview revealed that for terminal operators, the most important port selection criteria in order of importance are concession duration, concession conditions,

quality of hinterland connections, general frequency of vessel and hinterland calls and available cargo base, table 5 shows detailed ranking of responses.

Table 5: ranking of evaluation criteria for locating a terminal

List of Criteria	Definition	Ranking
Reliability	Certainty of administrative operations	8
Frequency	General Frequency of vessel and hinterland calls	4
Type of Service	Hub function, feeder function, captive hinterland traffic character	9
Concession Tariff	Price paid to the port authority	6
Concession Duration	Length of concession period	1
Concession Conditions	Conditions imposed by governments, in terms of investments, jobs, etc.	2
Port Capacity	Free capacity	10
Port Location	At sea or inland, both with their advantages and disadvantages	7
Hinterland Connections	Multimodal options, quality of connections	3
Cargo Base	Captive hinterland market, transshipment cargo base	5

5. CASE STUDIES

In order to get more insight into concession characteristics and goals, four country case studies are analysed: Portugal, Belgium, the Netherlands and the United States.

5.1. Portugal

In Portugal, the approach used to introduce private participation into the port sector was through a concession process. The rationale behind the port sector reform was that a competitive environment, with greater participation of private capital in investment and in port related services provision, would lead to the improvement of the Portuguese ports' efficiency and competitiveness. This would contribute to price reductions and better quality of service generation and therefore greater satisfaction of port users (Monteiro 2003).

Dedicated terminals are not allowed under the current regulatory framework. However, a private entity may entail the exclusive use of a terminal for a specific industrial facility, under a private concession use, if public interest is recognized by the government. Other than for cargo handling, only in 2001 was the possibility of licensing or concessioning for other port services legally set.

Concerning port operation, the private participation in port activity is presently high. Currently 62 concessions / licenses have already been implemented at the main ports (i.e. Port of Leixões, Port of Aveiro, Port of Lisbon, Port of Setúbal and Port of Sines) as shown in table 6.

Table 6 – Concessions/licenses in the main Portuguese ports

	APDL	APA	APL	APSS	APS	Total
Cargo Handling, storage, yards, others	9	2	20	12	4	47
Other Services	---	1	---	2	2	5
Cruise	---	---	---	---	---	---
Recreational boating	1	---	---	3	1	5
Fishing	1	1	---	2	1	5

Source: MOPTC, 2006

The concession process in Portugal is still ongoing with more concessions / licenses expected in the near future related to cruise terminals, recreational boating and fishing.

Concerning cargo handling, it is by now mostly concessioned. The concession process began in 1984 with the Alcântara Container Terminal in the Port of Lisbon, followed by Portesines in the early 90's in the Port of Sines. In addition to container handling, the concessioned activities include the handling of dry bulk, general cargo and Ro-Ro for a total of 11 contracts, as shown in table 7:

Table 8 – Existing Concessions in Portuguese Ports

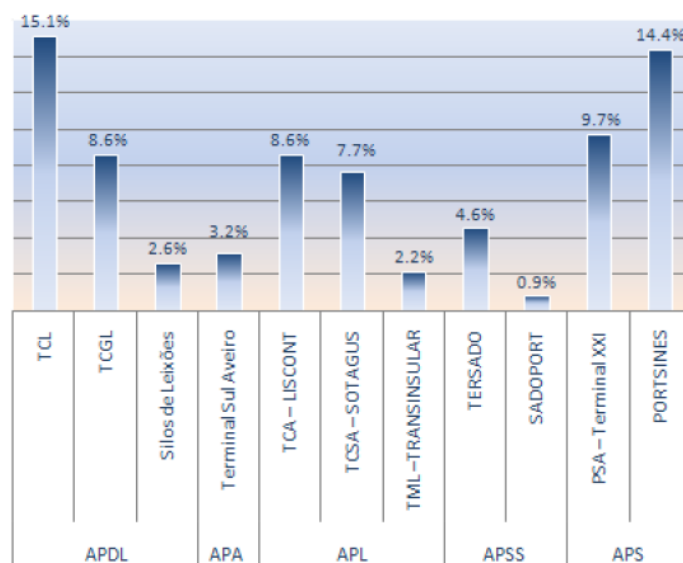
PA	Name	Cargo	Term	Duration	Area (ha)	Rent (10 ³)	Revenue (10 ³)	Throughput (10 ³ ton)
APDL	TCL	Containers	25	9	18,5	12562	42153	4627
	TCGL	Break General Cargo and Bulk	25	8	12,5	3026	16502	2657
	Silos de Leixões	Dry Bulk	25	3	Na	230	7689	797
APA	Terminal Sul Aveiro	General cargo and bulk	25	9	4,7	398	5182	1006
APL	TCA-LISCONT	Containers	57	25	12,7	3062	44954	2622
	TCSA-SOTAGUS	Containers	20	9	17	6915	23561	2353
	TML-TRANSINSULAR	Break General Cargo and containers	25	24	4,9	1023	46667	679
APSS	TERSADO	Break General Cargo, Ro-ro, containers and dry bulk	20	6	10,4	1802	12631	1421
	SADOPORT	Break General Cargo, Ro-ro and containers	20	6	20,2	2551	3122	284
APS	PSA-Terminal XXI	Containers	25	11	43	143	10995	2966
	PORTSINES	Coal and others	25	18	40,1	4097	15858	4405

Source: IPTM, 2009

The total amount of rent (fixed and variable) paid by the concessionaires to the respective grantors amounted to 41 849 million euros in 2008. In the same year, the group of public service concessions for cargo handling in the Portuguese ports, moved around 23.8 million tons of cargo, representing approximately 77.6% of the total dry cargo (that amounted to

30.6 million tons). TCL is the concession with greater weight in tonnage (15.1%), followed by Portesines with 14.4%, as shown in the following figure.

Figure 2: Weight of Concessions in Total Dry Cargo for Portugal



Source: IPTM, 2009

5.2. Belgium

Concessions are used too in all Belgian seaports (Antwerp, Ghent, Zeebruges and Ostend) as shown in table 9. It is indicated that these have to obey to the general directives emanating from the European Commission.

Table 9: Service provision in Belgian ports

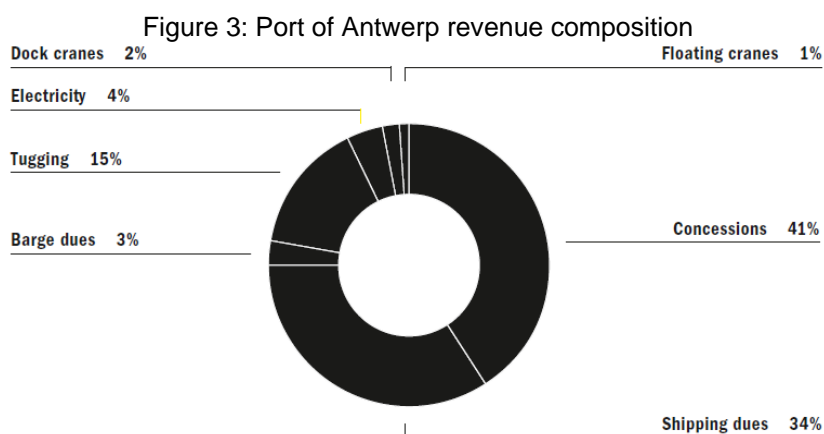
Service	Provider
Cargo handling	Private operators under concession
Pilotage	Port services within port basins; Flemish government services in port approach channels; shared with Dutch services on Dutch territory
Towage	Port services within port basins; Flemish government services in port approach channels; shared with Dutch services on Dutch territory
Mooring and unmooring	Port services
Fuel supply	Private operators without concession
Warehousing	Private operators without concession

In Antwerp, concession stipulations are laid down in the General Conditions Handbook of the Port of Antwerp. Their main distinguishing feature still is the tariff structure which applies.

Concession conditions appear to differ according to the location of the estate under concession, the type of pavement, and the sort of activity.

Under the new conditions, the typical concession duration depends on the level of investments made. Investments are measured as a monetary amount per unit of surface. A typical duration is in the order of 30 years, which appears to be the case for the entire Hamburg-Le Havre range. Rotterdam seems to be an exception with a lower average duration of 25 years. For good reasons, so as to stimulate economic expansion, and to seal activities locally, longer periods can be allotted. This is the case for e.g. the petrochemical cluster. For prolongation, till recently, no public tendering was used in Antwerp. Under the new regulations, this is now compulsory.

Durations maybe the most crucial variable left for a port authority. As opposed to tariffs, competition is much less immediate and obvious on this characteristic.



Source: Port of Antwerp (2009)

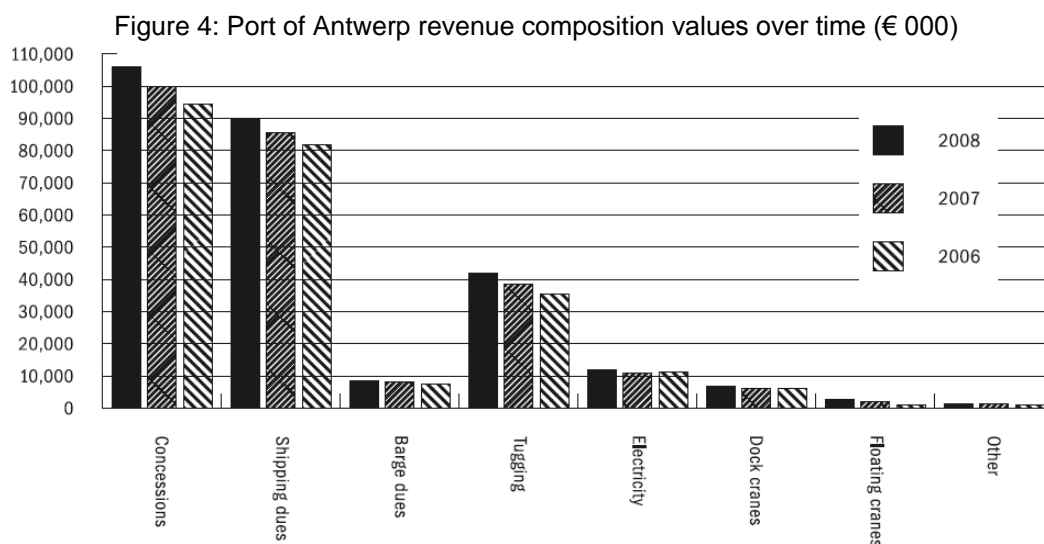
Not only is the duration of terminal concessions a function of the level of investments, but also the tariffs. Lower tariffs can be given as a motivator for more investment, in line with longer durations that are awarded. Concessions are subject to indexation, the level of which can be linked to strategies at overall sector level.

Next to the general conditions, some specific conditions do apply, which depend among others on the efficiency of space usage. These for instance provide special conditions to the petrochemical sector, which features strategic reserves and risk borders around plants, resulting in lower occupation rates.

Overall, between ports, there seems to be an apparent difference in the level of flexibility in applying concession conditions. Antwerp turns out to be one of the more flexible ones in the Hamburg – Le Havre range.

In Antwerp, concession revenues turn out to represent 41% of all port revenues in 2008, as shown in figure 3. With that, they are the most important revenue category; concessions stand for more than €105 mn of revenues, as shown in figure 4. The general trend is for

concession revenues to become even more important: the relative importance increased from 40% in 2006 and 2007, and figure X shows that total concession revenues increased from €82 mn in 2004 over €95 mn of revenues in 2006. One of the ways to achieve this is the so-called right of ‘priority buying’. This entails that in cases were a property becomes available on the market, certain indicated parties, governments in most cases, can have the first right to buy the property. Often, this has to do with achieving social or public objectives. One such objective in ports might be to have a better control over port estate.



Source: Port of Antwerp (2009)

5.3. The Netherlands

In The Netherlands, the services for which concessioning does occur, are similar to those prevailing in Belgium. For a revenue case study, the Port of Rotterdam is looked at. It appears from table 10 that the revenue share that concessions represent, is highly in line with what it represents in Portugal and Belgium. All of those ports are Latin in nature.

Table 10: Port of Rotterdam concession shares and values over time

Year	Concession share in revenues (%)	Total concession value (€ mn)
2008	41	214.286
2007	40	196.036
2006	41	187.293
2005	42	184.404
2004	39	171.068
2003	43	172.792
2002	38	150
2001	35	136

Source: Port of Rotterdam annual reports

5.4. United States

In the US, several ports also apply the concession system. An example is the Port of Tacoma, which is an Anglo –Saxon type of port. As shown in figure X, in 2008, concessions represented 75% of all port revenues, which is noticeably higher than in Europe. Total value of concession agreements for the port is \$74 mn in 2008. This is a sharp increase as compared to 2001. The share in total revenues does seem to fluctuate relatively much over time.

Table 11: Port of Tacoma revenue composition and values

Year	Concession share in revenues (%)	Total concession value (\$ mn)
2008	75	74
2007	75	73.4
2006	77	71.1
2005	79	59
2004	63	55.4
2003	65	55.6
2002	70	50.7
2001	73	44.7

Source: Port of Tacoma annual reports

6. CONCLUSIONS

This paper dealt with analysing the role that concessions play in the strategies of port owners, port service providers and port users. First of all, it was shown that concessions apply to a specific type of port organizational forms. As the tendency is towards more private involvement the share of port operations under concession increases.

Equally, it was shown what characteristics feature seaport operations. Here too, a shift is noticeable, towards more complex arrangements, where more emphasis is put on requests with respect to employment and investments.

Thirdly, it was analysed to what extent concessions are indeed seen as cost or revenue components from a user respectively supplier point of view. It appears that concessions are an important determinant of terminal efficiency and service price, which then of course get of immediate interest for the port user. This gets all the more important over time. Equally, from a service provider point of view, when focusing on terminal operators, it can be seen that concession characteristics are one of the most important criteria in deciding whether or not to install into a certain port. For the port owner, it is clear that concessions increasingly are an important source of revenue.

The above observations were also analysed through a number of case studies. It comes across that the type of ports services to which concessions apply, strongly diverge according

to the port under consideration. A stronger polarisation occurs with respect to the share that concessions represent in the total port revenue. It appears that for most ports under the so-called Latin system, concessions are a more important source of revenue than for Anglo-saxon ports.

This initial view on the role of concessions in seaports should certainly be a good trigger for more research in this field, in particular on the strategic behaviour of different types of operators and their outcome.

¹ Due to confidentiality reasons the people and companies interviewed can not be disclosed. In all cases the decision makers on transportation options and solutions were interviewed.

² On 31 December 2008 AXS-Alphaliner-based capacity ranking.

³ Due to confidentiality reasons, the name of the terminal operator interviewed cannot be disclosed.

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