EUROPEAN PARLIAMENT

WORKING PAPER

EUROPEAN SEA PORT POLICY

Transport Series

TRAN 106 EN

04 - 1999
This document is available in the following languages:

IT (original)
EN, FR

The opinions expressed in this document are the sole responsibility of the author and do not necessarily represent the official position of the European Parliament.

Reproduction and translation for non-commercial purposes are authorized, provided the source is acknowledged and the publisher is given prior notice and sent a copy.

[At the end of this document please find a full list of the other publications in the Transport Series.]

Publisher: European Parliament
L • 2929 Luxembourg

Author: Franco Piodi
Directorate General for Research
Division for Economic and Monetary Affairs, Industrial Policy, Regional Policy, Transport and Tourism
Tel.: (00352) 4300-24457
Fax: (00352) 43 40 71
E-mail: fpiodi@europarl.eu.int

Manuscript completed in March 1999.
CONTENTS

INTRODUCTION ............................................................... 5
1. Origin and purposes of the document .................................. 5
2. The ports and the common transport policy ........................... 5
3. Outline of the document .................................................. 6

CHAPTER ONE . THE ROLE AND SITUATION OF THE PORTS .... 9
1. An attempt to define the word "port" ................................. 9
2. The change in the role of ports over the last 40 years .............. 10
3. Some specific features of the European ports ....................... 12
4. The situation and future prospects of maritime transport ........ 12
5. The geographical situation of the European ports .................. 15
6. A survey of Europe's port regions ..................................... 16
   Tab. 1 Cargo loaded and unloaded in the European countries
       from 1990 to 1994 in millions of tonnes ......................... 18
   Tab. 2 Port container traffic in the Member States in TEU .......... 19
   Tab. 3 World container ship fleet as at 1 November 1997 (by capacity) 20
   Tab. 4 Goods traffic by regions in 1993 - millions of tonnes ....... 20

CHAPTER TWO . THE ORGANIZATION OF THE EUROPEAN PORTS .... 21
1. The port as an institutional system confronted with a changing role 21
2. The institutional models of the ports .................................. 22
3. The institutional aspects of port administration in the Member States 23
4. The financing of the ports ................................................. 24
5. Investment costs ........................................................... 26
6. The financial resources of the ports .................................... 27
7. Port activities .............................................................. 30
8. Dockworking ............................................................... 32

CHAPTER THREE . LIBERALIZATION AND PRIVATIZATION ...... 35
1. The liberalization of the ports: administration in particular .... 35
2. The liberalization of the port activities ............................... 36
3. The liberalization of dock labour ....................................... 37
4. The privatization of the ports .......................................... 38
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Liberalization and competitiveness</td>
<td>40</td>
</tr>
<tr>
<td>6.</td>
<td>The institutional aspects of privatization</td>
<td>40</td>
</tr>
<tr>
<td>7.</td>
<td>Privatization and port development</td>
<td>41</td>
</tr>
<tr>
<td>8.</td>
<td>Towards a European port model?</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td><strong>CHAPTER FOUR .OVERCAPACITY AND COMPETITION</strong></td>
<td>45</td>
</tr>
<tr>
<td>1.</td>
<td>Changing technology in maritime transport</td>
<td>45</td>
</tr>
<tr>
<td>2.</td>
<td>Adapting the ports to the technological change in maritime transport</td>
<td>46</td>
</tr>
<tr>
<td>3.</td>
<td>The development of the infrastructure as a competitive factor</td>
<td>47</td>
</tr>
<tr>
<td>4.</td>
<td>The question of overcapacity: the oversizing of the infrastructure</td>
<td>48</td>
</tr>
<tr>
<td>5.</td>
<td>The question of overcapacity: the role of bottlenecks</td>
<td>50</td>
</tr>
<tr>
<td>6.</td>
<td>Infrastructure, competition and state aid: general aspects</td>
<td>51</td>
</tr>
<tr>
<td>7.</td>
<td>The internalization of the port infrastructure costs</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td><strong>CHAPTER FIVE .THE COMMUNITY’S PORT POLICY</strong></td>
<td>55</td>
</tr>
<tr>
<td>1.</td>
<td>The ports in Community policies</td>
<td>55</td>
</tr>
<tr>
<td>2.</td>
<td>The Green Paper on sea ports: the use of the infrastructure</td>
<td>56</td>
</tr>
<tr>
<td>3.</td>
<td>The Green Paper on sea ports: the port services</td>
<td>57</td>
</tr>
<tr>
<td>4.</td>
<td>The ports and the trans-European networks</td>
<td>58</td>
</tr>
<tr>
<td>5.</td>
<td>The position of the European Parliament</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td><strong>CONCLUSIONS</strong></td>
<td>61</td>
</tr>
<tr>
<td></td>
<td><strong>CRITICAL NOTE ON SOURCES</strong></td>
<td>63</td>
</tr>
</tbody>
</table>
INTRODUCTION

1. Origin and purposes of the document

This working document forms part of the 1999 research programme of the European Parliament’s Directorate-General for Research. It was commissioned by Parliament’s Committee on Transport and Tourism and drafted within that Directorate-General in order to provide a documentation base for the committee’s forthcoming work on this subject. Within the common transport policy, sea port policy is taking on the importance for which the European Parliament has several times expressed the wish in various resolutions and amendments in response to Commission proposals.

The interest of the Community institutions in the ports is the result of a process of development of the transport system as a whole and maritime transport in particular, and is partly economic, partly technological. This internal process of development has been matched by changing Community policy in the sector, intended improve the overall efficiency of the transport system while meeting the requirements of environmental protection.

This working document recapitulates the subject matter dealt with in the previous 1993 document, updating it to take account of the radical changes that have taken place in the sector. The pace of change, and the publication of works giving a highly detailed account of the features of the ports in the various Member States, have made it inadvisable to attempt to provide documentation on the same scale as in 1993. Attention has therefore been focused on analysing the situation of the European ports and their future prospects in the light of past and ongoing processes of liberalization and privatization, and of the more recent guidelines adopted on the subject by the Community, in particular the Commission Green Paper and the subsequent resolution adopted by the European Parliament.

2. The ports and the common transport policy

The starting point for the Community approach to the ports is the principle of sustainable mobility, which encompasses the whole of the common transport policy: in essence, this is an adaptation of the economic principle of sustainable development to the transport sector. This adaptation is in fact more of an extension, in that optimization of the use of resources, the

---

2 We refer in particular to the ESP0 loose-leaf publication, Report of an inquiry into the current situation in the major Community sea ports, Brussels, 1996.
3 European Commission, Green Paper on seaports and maritime infrastructure, Com 97/678.
4 Resolution of 18 January 1999 on the Green Paper on sea ports and maritime infrastructure, minutes not yet published at the time this note was written.
The objective of the doctrine of sustainable development, is broadened to include optimization of the conditions under which goods, passengers and animals are carried, as regards not only comfort and safety but also overall journey speed, not only increasing the speed of travel but also, and most importantly, reducing waiting times.

The implementation of this principle entails integration of the various modes of transport, optimizing their use over the distances and journeys to which each of them is best suited. In this way, a chain of modes of transport is established, where the ports act as *intermodal platforms*, specifically between sea and land transport (including inland navigation), a function which, as we shall see, had already been imposed upon them by the evolution of maritime transport. In order to encourage this integration, the common transport policy favours combined transport and the interoperability of the transport networks.

One obstacle to the integration of modes of transport is the distortion of intermodal competition. This enables road transport operators to charge very low prices, since they do not have to bear various types of costs, a considerable volume of traffic having shifted to this form of transport even for journeys where other modes would be more appropriate for the purposes of the general efficiency of the system. One of these cost items is the infrastructure cost\(^5\), for which, in line with the doctrine of sustainable development, the principle of *internalization of the infrastructure costs* has been devised. This principle, also known as "user pays", comprises making the user of an infrastructure bear the costs relating to it: construction, maintenance and management costs. It applies not only to intermodal competition but also to competition between the infrastructures dedicated to a single mode of transport or, which is what concerns us at present, between the ports. As we shall see, the ports are subject to problems of distortion of competition, which can be attributed, though with the reservations that will be described in due course, to excess infrastructural capacity.

The development of the ports in the context of integration of the modes of transport and the elimination of distortions of competition are the main objectives of the common transport policy in this field.

### 3. Outline of the document

The subject matter has been divided into five chapters. The first, *The role and situation of the ports*, seeks to provide an overview of the development of the ports in connection with that of maritime transport, both in general and in relation to the specific features of the European ports, which are divided, as in the Green Paper\(^6\), into four regions: Baltic, North Sea, Atlantic and Mediterranean. The result is a framework within which the development of the ports is closely linked to that of maritime transport and, through this, to economic development in the regions in which the traffic originates, and the economic development of the respective land catchment areas, which are becoming more and more extensive.

---

\(^5\) The topic of environmental costs is not addressed here.

\(^6\) Cf. note 4.
The second chapter, *The organization of the European ports*, reviews the way in which the Member States regulate the port institutions and activities. This has become increasingly harmonized over the last ten years, with increasing autonomy of the port authorities and liberalization of port activities and dock working, including widespread privatization of both activities and infrastructure. It should be emphasized at once that this evolution of the European port system is not, except perhaps indirectly, the result of Community legislation but has been brought about by the increasing competitiveness of the sector. The third chapter, *Liberalization and privatization*, is an attempt to draw up a balance sheet of the evolution of Europe’s ports, concluding with the question of whether a European port model is emerging.

The fourth chapter, *Overcapacity and competition*, addresses the crux of the argument, the focus of current conflict and debate. The problem arises in the context of the technological change that has taken place in recent decades and has introduced competition between ports for infrastructures, resulting in overcapacity and hence a reduction of fees and charges. This problem may be viewed in various ways: as an overcapacity to be dealt with as such, where any temporal connection can be left out of consideration, or as a temporary overcapacity destined to be absorbed by the future growth of the ports. From this standpoint, we examine the possible criteria for internalizing the infrastructural costs, trying to show their advantages and disadvantages in relation to the various levels of technological progress over which Europe’s ports are distributed.

The fifth chapter, *The Community policy on ports*, reviews the more recent documents on the subject produced by the Commission and the European Parliament, linking them to the findings of the previous chapters, and demonstrating in particular the relationship between the selected criteria for internalizing infrastructural costs and the analysis of those costs to be found in Chapter Four.
CHAPTER ONE

THE ROLE AND SITUATION OF THE PORTS

1. An attempt to define the word "port"

The definition of port has changed over the course of time as a function of the development of maritime transport technologies and the role of maritime transport in national and world economies. Port, originally synonymous with harbour, first meant an area of sea which, as a result of the depth of the bottom and the morphology of the coastline which surrounds it, provides a suitable refuge for ships. Of course, the depth of the bottom is related to the draught of the vessels, and therefore the less the draught, the less the depth will be, which is equivalent to saying that ports are a function of shipyard technology. This is the definition of a natural port, which requires no infrastructure except a jetty, and not necessarily that.

The need to increase the capacity of natural ports, or to create ports where the morphology of the coastline provides no shelter, has made it necessary for man to construct infrastructures: for defining the area of sea to be used as a harbour (outer harbour wall), for mooring (jetties) and for service. The port thus became a set of infrastructures intended to provide shelter for ships and activities connected with them, and, from that point, a basic element of maritime transport, which in its turn has come to be a mode of transport of primary importance to a country's economy and external communications. The importance of ports has been so great that they have determined the growth of coastal towns and prompted national authorities to regard them as instruments of regional planning, thus introducing development arguments extraneous to their primary function as harbours.

Gradually, ports have become connecting points between maritime transport and the other modes, particularly the landborne modes. This state of affairs arose centuries before the modern, intermodal concepts of transport were formulated, and the infrastructures which make up a port became more extensive and brought it new functions. The development of the ports and the activities that take place within them suggest that they should be defined as

"commercial areas located beside water deep enough for sea-going vessels and having several or many port undertakings [and which] have special maritime as well as conventional road and rail infrastructure, and ... are supervised or administered by a public or private port authority".

While this definition has the virtue of grasping the economic importance of the port, it must not be allowed to divert attention from the specific functions of this collection of infrastructures:

---

7 European Parliament resolution of 13 January 1999 on the Commission's Green Paper on seaports and maritime infrastructure, Recital A.
providing shelter and revictualling facilities for ships, and an internodal connection - in other words, the loading and unloading operations.

With this in mind, the **Community guidelines for the development of the trans-European transport network** defines sea ports as follows:

"Sea ports shall permit the development of sea transport and shall constitute shipping links for islands and the points of interconnection between sea transport and other modes of transport. They shall provide equipment and services to transport operators. Their infrastructure shall provide a range of services for passenger and goods transport, including ferry services and short- and long-distance shipping services, including coastal shipping, within the Community and between the latter and third countries."^a

This is a definition which emphasizes the functions of the ports without playing down their integration into the economic system, and thus has an all-encompassing value. The importance of a port depends, in any case, on the volume of commercial traffic which it attracts, and the ports of a geographical area as a whole will be as important to the economy of that area as their volume of traffic determines. The port zone, meanwhile, is the land element of the port, in other words the **limited area, including docks and land areas, in which the port activities take place**, these activities being the **services provided for vessels and cargo and all the administrative, organizational and supervisory functions relating to such services**. Apart from its economic role, then, the port also serves as a location for administrative activity, which justifies the interest of the public authorities in these infrastructures.

2. **The change in the role of ports over the last 40 years**

The changes that have taken place in the world economy between the 1960s and the present day have intensified international trade and so increased the volume and changed the nature of maritime transport. These changes have been of several types. First and foremost, the gradual elimination of national barriers to international trade, which has now become almost total; secondly the fact that many countries with economies primarily geared to the internal market have turned toward exports; and thirdly the fact that large undertakings have undergone a global process of expansion and integration. The increase in trade has brought about, or coincided with, a considerable advance in maritime transport technologies, especially an increase in ships' tonnage, and in the handling of cargo.

These advances in maritime traffic and technologies have had repercussions on the ports, requiring them to adapt their technologies and undertake substantial investment, and it is highly probable that the need to recover the costs incurred is the main reason for the increase in competition between ports to attract traffic. This competition relates to their capacities to:

---

accommodate vessels of ever-increasing tonnage and length (and therefore adapt their wharves and handling structures), to handle cargo twenty-four hours a day, seven days a week, and so to minimize the storage of cargo in the port area;

- offer carriers and transporters an intermodal and transhipment platform, which requires the capacity to attract intermodal transport undertakings to the port area and to create a network of satellite ports; the issue is to make the port a real "load centre port", comprising both the most modern structures and the computerized handling of loading and unloading operations, together with facilities for access to the land transport networks.

All these changes in the role of the ports have resulted in the further development of their hinterland, meaning the catchment area for users of the port activities, and this is one of the factors behind a port's success. The success of the major American ports is based on the fact that their hinterland is coterminous with the territory of the United States. In Europe, the North Sea ports can draw upon a hinterland of enormous size.

The expansion of the hinterland has radically changed relations between the port and its more immediate surroundings, where the port city was in the past regarded as an important pole of development. From the 1960s onwards, the changes in maritime technology (especially those connected with freight terminals, container ports and roll-on, roll-off methods of handling cargo) have weakened the strong functional ties between the ports and the port cities, but this trend has in a sense been more marked between the ports and their hinterland, generally making it more apparent that a sea port is a service infrastructure for national and international transport.

These considerations are reflected in the gradual abandonment of the port areas closer to the cities, and raise the problem of changing the way in which regional policy views the ports, which are too often seen as an instrument for the development of the coastal areas of the less favoured regions, with results which, despite the success of the port, are not always reflected in the immediate hinterland.

Hence the necessity to see the ports as what they really are: an intermodal connector for the benefit of extensive regions which can be, and in the best cases are, transnational. It follows from this that a correct port policy must take account of existing geography, the flow patterns imposed upon the territory by the distribution of the population and economic activities, the port

---

9 Transhipment here means specifically transhipment from the large container vessels to smaller feeder ships which carry the containers to other ports. It also covers transhipment to river craft or to vessels capable of plying both at sea and on inland waterways.

10 This argument applies to the major ports, which are a focus of transoceanic traffic and will become the hub of a port system. However, the need to establish an intermodal platform providing a link to the landborne transport networks also applies to those destined to become satellite ports.


12 Teillet B., Intermodal traffic in international sea trade, in ibidem, p. 223.
infrastructures and the connecting land transport network, rather than trying to influence the distribution of economic activities through the creation of ports.

3. **Some specific features of the European ports**

The ports of Europe have extensive differences, which have an effect on their efficiency and can be classified as follows:

- **size**: there are ports of local, national and international interest;
- **geographical situation**: there are coastal and estuarine ports, while the region in which the port is situated also has an influence on its commercial success;
- **administration**: there are ports with local, public, autonomous and private administrations;
- **activities**: some ports follow the comprehensive organization model, others favouring the landlordports or service ports model;
- **labour**: port operations may be undertaken by workers on piece rate or wages, and dockers may also be organized in pools or have permanent contracts.\(^{13}\)

In the next part of this chapter, we examine the situation of the ports: first, the maritime traffic flow situation, and then the geographical diversity of the ports, as an introduction to an overview of the European port regions.

4. **The situation and future prospects of maritime transport**

The ports' economic situation and development prospects depend on those of maritime transport, which in turn depend essentially on the progress of the world economy: there is a close correlation between economic growth and total freight volumes. It is important to emphasize that, if a distinction is made between traffic volumes on the basis of the type of goods, the pattern of progress may vary depending on that of the production sector concerned.

If traffic volumes are studied from the standpoint of the type of transport (for example, the use of containers instead of bulk carriers), the situation is different: the economic aspects of the various technologies become important, as in some cases does the introduction of environmental safety standards, which may make it more appropriate to use technologies that are more expensive per unit of volume carried.

---

The OECD\textsuperscript{14}, referring to 1995, recorded an annual increase in international trade of 8.6%, which is higher than the average rate for the period 1986-95 (5.5%). In line with this trend, there has been an increase in the maritime transport of solid bulk goods: the five main raw materials in this category\textsuperscript{15} have increased worldwide by 6.1%, while the rate of increase for the maritime transport of petroleum products has been 2.1%. In the case of secondary products, the pattern is more differentiated by the type of goods.

Viewed over a period of years, world trade is showing a strong upward tendency, as witness the annual rate of growth referred to above, and this pattern has repercussions on maritime transport. However, a market breakdown of traffic in terms of the types of goods carried may also be useful, given its impact on the use of the various port structures. A similar comment was made in the previous edition of this working document\textsuperscript{16}.

"The port sector [which amounts to the same thing as maritime transport] handles more than 90% of the Union's trade with third countries and approximately 30% of intra-Community traffic, as well as more than 200 million passengers every year\textsuperscript{17}."

Table 1 shows the pattern of change in cargo carried by sea and in cargo loaded and unloaded. At Community level the trend is different for the two types of handling, since the first - goods loaded - is a function of trade inside and outside the Community, in other words a function of the global economic climate, while the second is a function of economic activity within the Community, which in the event of a recession includes a reduction in imports.

Goods loaded recorded an increase of 18.4% over the period under consideration, and a fairly steady average increase of around 4.5%, disregarding the year in which the trend was reversed. Goods unloaded have recorded an overall increase of 6.5%, with a more irregular pattern and two years against the trend.


\textsuperscript{15} Coal, iron ore, cereals, bauxite/aluminium, natural phosphates. The OECD publication referred to contains a detailed study of the market for each of these raw materials, and for petroleum products, with reference to the main economic areas, including the EU, but the impact which the market has on maritime transport is not always specified.


\textsuperscript{17} European Commission, Green Paper on sea ports and maritime infrastructure, p. 6, which refers to "figures provided by the Member States" without going into further detail (footnote 1).
The volume of goods of national origin unloaded depends on the geographical features of the country: in the case of Belgium and the Netherlands, continental countries of small surface area, it is zero, while in the other States it becomes a significant proportion of the total volume of goods unloaded if the country has islands that are not unimportant economically, or if a strong maritime tradition encourages greater use of internal maritime transport.\(^\text{18}\)

It follows from this that the future prospects for the growth of international maritime transport are linked to those of international trade, in particular trade with countries outside Europe, while the prospects for internal maritime transport are linked to the state of the transport system within the Union and, in particular, the costs of and services provided by the alternative land modes. As far as road transport is concerned, the competitive situation of internal maritime transport is analogous to that of rail transport: it is identical as regards the impossibility of providing a door-to-door service, but different as far as the cost of the transport is concerned. The Community’s choices in the matter of transport policy may have an impact on this competitive situation: the diversion of freight from road transport to the other modes, which is a fundamental objective of the common transport policy, is bound to benefit rail transport first and foremost, but this fact in turn may also benefit maritime transport as a link in the intermodal transport chain.

In the more specific sector of container traffic, which represents the most important instrument of combined transport, to which shipbuilding and port technologies are constantly adapting, 1996 saw it reaching a global volume of TEU 147,348,255, a growth rate of 7.3\% as compared with the previous year’s 137,238,569. The 13 maritime States of the Union saw an increase from TEU 28,279,862 to TEU 30,799,494, a rate of 8.9\%. The share of the global market is 20.9\%.

On the basis of the OECD’s global economic development forecast for the five-year period 1999-2003 (2.3\%), an assumption that has also been adopted for the following five-year period, it can be predicted that container traffic involving Europe will be TEU 52 million in 2003 and TEU 75 million in 2008.\(^\text{20}\)

The maritime State of the Union with the highest volume of container traffic is the United Kingdom, whose island situation obliges it to supply its own production apparatus by sea; while the Netherlands, whose traffic is slightly less than that of the United Kingdom, offers its port system, and Rotterdam in particular, to a vast European industrial catchment area which includes even remote regions of other States, including some maritime States.

---

\(^{18}\) The United Kingdom is the country with the highest proportion of unloaded cargo of national origin, at about 48\% in 1994, and no doubt the country’s maritime tradition has contributed to this result; in the case of other countries such as Greece, Spain, Italy and Portugal, the importance of this factor is increased by the need to provide internal transport to their islands.

\(^{20}\) The data on container traffic cited in the text are taken from *Containerization International Yearbook 1998*, London (EMAP), 1998, pp. 8-12.

5. The geographical situation of the European ports

The discussion of the role of ports in a modern maritime transport context opens the way to some consideration of the geography of European ports, which may be relevant in different ways:

- their location relative to the coast (coastal and estuarine ports),
- their location relative to other ports,
- their regional location as such.

As regards the first aspect, according to some researchers in the field\(^1\) the development of containers benefits the coastal ports as opposed to those within river estuaries, because of the limitations on vessel size imposed by the stretch of river downstream of the port.

In actual fact, the river estuary seems to be an easy handicap to overcome, as demonstrated by the fact that the largest shares of container traffic are held by ports within estuaries\(^2\), despite the work required to maintain and dredge the course of the river. In the opinion of the present writer, the geographical situation has a greater impact on links with the hinterland. For example, the impossibility of carrying containers over 45 feet in length on Europe's roads has a more serious impact on the coastal ports than on the estuarine ones, which can move the containers by river; it is no coincidence that the port of Rotterdam is perhaps the only one equipped to handle containers of this size.

One change in port geography has come about as a result of transhipment, which requires the ports to be organized territorially as hubs: a major port provides a port of call for large container ships and acts as the central port for a network of satellite ports linked to it by smaller container carriers.

As regards regional location\(^3\), this has a decisive effect on a number of factors, both physical and human, involved in success or failure. Among the physical factors is the climate, which may render access to the port difficult, as ice does in the cases of some Baltic ports, and the configuration of the land area, which may have an effect on access to the hinterland. In the European Union, this configuration is particularly fortunate, since its indented coastline means that no point in the interior is more than 350 km distant from the sea.

Among the human factors, the European Union has areas of significant demographic concentration which represent an important catchment area for the development of certain ports: this is true of the North Sea ports, which can rely on a catchment area of 120 million inhabitants.

---


\(^2\) For example, Rotterdam and Antwerp.

\(^3\) The most important reference for regional location has been Kormoss IBF, "Geopolitical changes in sea traffic", in *Ports of Europe*, pp. 23 1-251.
close to the coast (the so-called Megalopolis of the North-West), while the northern Italian ports benefit from the rich area of the Po valley and the Alpine arc (Switzerland and Austria).

Geography can also change as a result of political events: for example, the fall of the Berlin Wall increased the importance of the east-west trade route alongside the north-south one. This reorientation has imposed upon the European Union an infrastructure policy - the trans-European transport networks - which will influence the development of ports by changing the flows of trade within the continent.

6. A survey of Europe’s port regions

The Commission identifies four port regions with distinct characteristics: Baltic Sea, North Sea, Atlantic and Mediterranean Sea.

The ports of the Baltic Sea are going through a period of development - the result of the economic growth of a region where maritime links often provide the shortest distance between two points. The Baltic port system is made up of a large number of small and medium-sized ports. Its growth is likely to go hand-in-hand with improved intermodal connections.

The North Sea ports handle approximately half of the Community’s maritime traffic, and about half of its transoceanic traffic. Nevertheless, the critical factor behind the success of these ports has been their closeness to the most industrially developed regions of Europe. This has played a more important part in their achievement of their present positions than in their continued development. Today, other things being equal, they probably owe their continuance and growth more to their acquired know-how, which in the future will lie mainly in the container sector. In all probability, the success of the ports in this region is also attributable to particular maritime traditions that have been reflected in the form of more efficient port administration and activities.

The main problem for the ports in this region is the inland transport network, and more precisely its capacity to absorb traffic, rather than the absence or inadequacy of infrastructure: the remedy may be to boost the development of the existing road and rail infrastructure, but particularly that of the inland waterways. Some North Sea ports are also confronted with problems caused by tides, water depth - which is barely sufficient for large-tonnage vessels - and the width of the sea locks which obstruct transport between sea and river.

The ports of the Atlantic have a largely regional importance. They are closely associated with their hinterland, to which they are important as poles of development of industrial activities. In many cases, however, their hinterlands extend no more than 200 kilometres from the coast, and as a result they have not developed the container sector but are used primarily for the transportation of bulk and liquid cargoes.

The Atlantic ports suffer from the problem of not being linked to major land transport axes, particularly those running from east to west. This situation reduces their outlets and, as a result, limits their future development prospects.

The Mediterranean ports were, until a few years ago, lagging behind the ports of the other regions in the quantity and quality of their infrastructure, their tariffs, their administration and their land links to the rest of Europe. In the second half of the 1990s, they have become more important and competitive, particularly in recent years when various national reforms have enabled them to abandon traditionally Mediterranean characteristics and take on a more “Nordic” form.

The growth of the ports in this region has taken place mainly in its western part, and in the container sector.

The modernization and improved efficiency of the Mediterranean ports has made them competitive with the North Sea ports for links between Europe and the Far East. A slow down of the economies of the Asian countries could also slow the development of the Mediterranean ports.

The Mediterranean ports suffer from a problem of overcapacity, and in order for them to achieve a higher level of use it will be necessary for them to be better integrated into the transport networks, to allow better access to the more industrialized regions of the continent, and to develop short sea traffic to provide links between the countries of the region.

The ideas set out here indicate a form of specialization among the European ports, or rather the port regions, in terms of their maritime links. Table 4, containing data on traffic for each of these regions, provides useful analytical tools for this purpose.

The four regions differ greatly in their overall volume of traffic: the most important, the North Sea, accounts for 48.16% of the total, well ahead of the Mediterranean region in second place on 26.33%, while the other regions’ shares are 10.6% (Baltic) and 14.9% (Atlantic). Trans-oceanic traffic is concentrated essentially in the North Sea and the Mediterranean (44.21% and 34.25% respectively), but the importance of this traffic to overall traffic in each of these regions is significantly different: 40.84% in the case of the Mediterranean and 29.65% in the case of the North Sea. This suggests that the Mediterranean is less integrated into intra-Community traffic, a view confirmed by the weak contribution made by the Mediterranean to inter-regional traffic, meaning long-distance intra-Community traffic: 14.9% of total inter-regional traffic and 22.1% of all Mediterranean traffic. The Atlantic region, by contrast, is highly integrated into intra-Community traffic, and the same can be said, allowing for its smaller scale, for the Baltic region.

Even in the absence of a table showing the origin/destination of traffic between the four regions, the respective inter-regional traffic volumes provide a clear indication of a high degree of maritime integration, including integration by way of transhipment, between three regions, and a lower level of integration for the Mediterranean region, which, like the Baltic, as a result of its special geographical situation, is intensely involved in regional traffic: regional traffic as a percentage of all traffic for these two regions amounts to 37.1% and 36.7% respectively.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loaded</td>
<td>Unloaded</td>
<td>Loaded</td>
<td>Unloaded</td>
<td>Loaded</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>55.1</td>
<td>104.1</td>
<td>52.5</td>
<td>104.0</td>
<td>55.9</td>
</tr>
<tr>
<td>DK</td>
<td>15.6</td>
<td>30.0</td>
<td>9.3</td>
<td>17.4</td>
<td>32.7</td>
</tr>
<tr>
<td>D</td>
<td>44.3</td>
<td>97.5</td>
<td>2.0</td>
<td>44.5</td>
<td>102.3</td>
</tr>
<tr>
<td>GR</td>
<td>22.3</td>
<td>35.2</td>
<td>22.2</td>
<td>20.1</td>
<td>36.6</td>
</tr>
<tr>
<td>E</td>
<td>39.2</td>
<td>108.1</td>
<td>33.0</td>
<td>40.0</td>
<td>114.7</td>
</tr>
<tr>
<td>F</td>
<td>74.1</td>
<td>201.3</td>
<td>12.2</td>
<td>73.9</td>
<td>207.8</td>
</tr>
<tr>
<td>IRL</td>
<td>6.5</td>
<td>16.9</td>
<td>0.6</td>
<td>6.7</td>
<td>16.8</td>
</tr>
<tr>
<td>I</td>
<td>42.2</td>
<td>228.7</td>
<td>67.0</td>
<td>46.6</td>
<td>243.7</td>
</tr>
<tr>
<td>NL</td>
<td>91.8</td>
<td>281.3</td>
<td>12.2</td>
<td>90.5</td>
<td>286.7</td>
</tr>
<tr>
<td>P</td>
<td>8.5</td>
<td>28.5</td>
<td>8.0</td>
<td>7.5</td>
<td>27.7</td>
</tr>
<tr>
<td>FIN</td>
<td>24.0</td>
<td>34.8</td>
<td>8.0</td>
<td>26.6</td>
<td>32.3</td>
</tr>
<tr>
<td>S</td>
<td>44.8</td>
<td>54.9</td>
<td>14.3</td>
<td>45.6</td>
<td>53.5</td>
</tr>
<tr>
<td>UK</td>
<td>136.2</td>
<td>183.5</td>
<td>60.9</td>
<td>143.2</td>
<td>182.1</td>
</tr>
<tr>
<td>EU</td>
<td>604.6</td>
<td>1,404.8</td>
<td>541.5</td>
<td>1,233.1</td>
<td>644.2</td>
</tr>
</tbody>
</table>

Authors' analysis based on CEMT, Statistical trend 1965/1994, Paris, 1997, tables on pp. 211, 212 and 225. The data do not include traffic with the oil platforms.
### Table 2 - Port container traffic in the Member States in TEU

<table>
<thead>
<tr>
<th>MEMBER STATES</th>
<th>1995 TRAFFIC</th>
<th>1996 TRAFFIC</th>
<th>96/95 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>2.863.397</td>
<td>3.211.476</td>
<td>12.16</td>
</tr>
<tr>
<td>Denmark</td>
<td>467.085</td>
<td>475.798</td>
<td>1.87</td>
</tr>
<tr>
<td>Germany</td>
<td>4.451.390</td>
<td>4.656.952</td>
<td>4.62</td>
</tr>
<tr>
<td>Greece</td>
<td>811.290</td>
<td>814.354</td>
<td>0.38</td>
</tr>
<tr>
<td>Spain</td>
<td>3.164.512</td>
<td>3.458.487</td>
<td>9.29</td>
</tr>
<tr>
<td>France</td>
<td>1.692.965</td>
<td>1.803.079</td>
<td>6.50</td>
</tr>
<tr>
<td>Ireland</td>
<td>505.867</td>
<td>523.904</td>
<td>3.57</td>
</tr>
<tr>
<td>Italy</td>
<td>2.992.325</td>
<td>3.767.820</td>
<td>25.92</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4.879.584</td>
<td>5.081.182</td>
<td>4.13</td>
</tr>
<tr>
<td>Portugal</td>
<td>443.827</td>
<td>489.979</td>
<td>10.40</td>
</tr>
<tr>
<td>Finland</td>
<td>547.733</td>
<td>655.663</td>
<td>19.70</td>
</tr>
<tr>
<td>Sweden</td>
<td>733.959</td>
<td>770.552</td>
<td>4.99</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4.725.928</td>
<td>5.090.248</td>
<td>7.70</td>
</tr>
</tbody>
</table>
**TOTAL**      | **28.279.862** | **30.799.494** |         |

Sources: *Containerization International Yearbook 1998*, p. 8. NB: *a* port of Emden excluded; *b* port of Coruia excluded; *c* ports of Lame and Teesport excluded; *d* ports of Harwich, Immingham and Lame excluded.
### Table 3 - World container ship fleet as at 1 November 1997 (by capacity)

<table>
<thead>
<tr>
<th></th>
<th>up to T E U 1000</th>
<th>from T E U 1000 to 1999</th>
<th>from T E U 2000 to 2999</th>
<th>from T E U 3000 to 4499</th>
<th>from T E U 4500 upwards</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational ships' capacity average</td>
<td>1.656.255</td>
<td>1.403.933</td>
<td>940.773</td>
<td>969.656</td>
<td>295.128</td>
<td>5.265.745</td>
</tr>
<tr>
<td>Orders ships' capacity average</td>
<td>343.55</td>
<td>1371.03</td>
<td>2502.06</td>
<td>3715.15</td>
<td>5177.68</td>
<td>805.28</td>
</tr>
<tr>
<td>Operational ships' capacity average</td>
<td>4.821</td>
<td>1.024</td>
<td>376</td>
<td>261</td>
<td>57</td>
<td>6.539</td>
</tr>
<tr>
<td>Orders ships' capacity average</td>
<td>184</td>
<td>5</td>
<td>77</td>
<td>57</td>
<td>46</td>
<td>543</td>
</tr>
</tbody>
</table>

From the table on p. 6 of Containerization International Yearbook 1998.

### Tab. 4 - Goods traffic by regions in 1993 - millions of tonnes

<table>
<thead>
<tr>
<th>Region</th>
<th>Deep sea</th>
<th>Inter-Regional</th>
<th>Regional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltic Sea</td>
<td>47</td>
<td>121</td>
<td>98</td>
<td>266</td>
</tr>
<tr>
<td>North Sea</td>
<td>359</td>
<td>494</td>
<td>355</td>
<td>1.209</td>
</tr>
<tr>
<td>Atlantic</td>
<td>136</td>
<td>219</td>
<td>19</td>
<td>374</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>270</td>
<td>146</td>
<td>245</td>
<td>661</td>
</tr>
<tr>
<td>Total</td>
<td>812</td>
<td>980</td>
<td>717</td>
<td>2.510</td>
</tr>
</tbody>
</table>

CHAPTER TWO

THE ORGANIZATION OF THE EUROPEAN PORTS\textsuperscript{25}

1. The port as an institutional system confronted with a changing role

The complexity of port activities and of the duty and tax problems affecting their commercial operations, together with the need to develop a number of shipping-related administrative functions on site, mean that the ports are very important centres of administration.

Some public functions are based in the ports simply because the ports are the locations of the commercial operations or the vessels to which those functions relate\textsuperscript{26}. Others relate to the administration of the port and the port zone and the supervision of the activities taking place there. In considering the public functions in a port, it is essential to regard them as a system within which public authorities and private undertakings carry on, respectively, administrative and business activities. The administrative authority may therefore be either public or private. In the second case, the port may be administered by a private company (Felixstowe) or by a company under private law controlled by the public authorities (Zeebrugge).

The changing role of the ports has had a quite significant influence at institutional level, both in order to give their administration the greater flexibility needed to deal with the increase in competition and, in the specific case of privatization of ports or port activities, to involve private capital in the financing of the infrastructures and the necessary structures for the technological adaptation of the ports\textsuperscript{27}. In point of fact, the two processes - institutional reform and privatization - differ only in cases where privatization has affected the port as a whole; in the majority of cases some or all of the port activities have been privatized, the public authority retaining control over the port area. This mutual interpenetration of the two processes makes it necessary to precede a study of privatization with an account of the institutional models of port administration.

\textsuperscript{25} The information on the individual countries contained in this chapter is taken from ESPO, \textit{Report of an inquiry into the current situation in the major Community seaports}, Brussels, 1996.

\textsuperscript{26} These functions are outside the scope of the present document. They include, among others, functions relating to customs activities and taxes on commercial operations in the port areas, and those relating to the arrival and departure of ships, maritime transport policy and safety. The former are overseen by the tax authorities; the latter by appropriate maritime authorities governed by national legislation; the European Community has issued directives on the bodies empowered to undertake safety and environmental protection checks on vessels putting into the Community ports.

\textsuperscript{27} The participation of the private sector in the financing of infrastructures was the subject of EP DG IV, \"Il finanziamento delle reti transeuropee di trasporto [The financing of the trans-European transport networks]\". Working Paper, \textit{Transport Series, E4, 1997}, and in particular its final chapter.
2. The institutional models of the ports

There are major subdivisions in public administration, which may be governmental, regional or municipal. In many cases the competent level of government entrusts the administration of a port to a body that is answerable to it; by this route, public administration becomes autonomous, and in such cases the degree of autonomy of the administrative body becomes significant. In the Mediterranean counties, the level of government responsible for the ports is the State, whereas municipal or regional administration is more typical of the northern States. From a substantive point of view, the two types of administration are important: the comprehensive port authority and the landlord port authority. Both types presuppose public administration and the difference between them lies in the "room for manoeuvre" allowed to private enterprise.

The comprehensive port authority undertakes all or nearly all port activities. This form was for many years the one favoured in the Mediterranean States and in France, but it has now been almost completely abandoned.

The landlord port authority is confined to the administration of the port zone, which in effect means the infrastructure, private enterprise being left to compete for the port activities. Alongside administration, this type of authority also normally undertakes promotional functions, thus developing competition between ports.

Although these two types are "ideal", and in actual fact every port has a form of administration which is intermediate between the two, it is important to emphasize the philosophies on which each of the types is based. The comprehensive port authority is inspired by the philosophy of public service, in which the basic objective of administration is guaranteed access for all on equal terms, which involves strict public control of all activities taking place in the port. This philosophy, accepted in the Mediterranean States and in France, did not prove adequate to ensure the efficiency of the ports and has now been virtually abandoned.

On the other hand, the landlord port authority is based on the concept of a port as a zone of trading activities, which include the actual port traffic. The efficiency of these activities has to be ensured by an entrepreneurial approach to management. This concept of a port, formerly typical of the northern States, proved more efficient than the other and is now spreading through the Community; as we have already seen, it was this concept that was favoured by the European Parliament’s report on the Green Paper on ports.

A special position is occupied by the United Kingdom, where private enterprise plays a substantial part in port management. Nevertheless, there are substantial differences even between the privately managed ports, the result of the past history of ports in the United Kingdom. Thus there are "company ports", such as Felixstowe, in which a single company, acting as a private comprehensive authority, undertakes all the port activities under a monopoly system; and there are the ports privatized in 1991 and linked under the name of Associated British Ports (ABP), in which the port activities are undertaken by enterprises independent of the administrative
authority. The difference becomes important for the purposes of internal competition within the port, which is non-existent in company ports.

3. The institutional aspects of port administration in the Member States

In detail, the institutional forms adopted in the various countries are as follows.

a. In Belgium, the ports are municipally run, with the exception of the port of Bruges-Zeebrugge, administered by a private company with public participation under the supervision of the Flemish Community; in the municipal ports, the bodies which run the port are the municipal authorities, and the Municipal Council elects a Port Director; the Port Director of Ostend, a port which is integrated into the civil administration, is appointed by royal decree.

b. In Denmark, there are four institutional types: municipal or autonomous ports, special statute ports, State ports and private ports; however, in all these forms the administration of the port is entrusted to a specific collegiate body chaired by the Mayor in some of the municipal ports, and by a Port Director on the administrative level.

c. In Germany, the majority of ports are not administered by bodies with legal personality: their territory, including the waters included within them, belongs to the Lander or other local authorities, whose services undertake the functions exercised elsewhere by the port authorities. As a result, importance attaches to the various forms of organization whereby these functions are carried out: there are ports in which they are undertaken by various departments of the authorities concerned, each with responsibility for some of the functions; in other ports a specific agency has been set up or administration has been entrusted to a private company; and there are also instances of private ports.

d. In Greece, the ports fall into two institutional categories: the public corporations (Piraeus and Thessaloniki), and the foundations, which have different levels of autonomy under the overall supervision of the Ministry for the Merchant Marine and are more specifically subject to the control of the Prefectures. Since 1994, ports have been classified in three categories: national, prefectorial and local, which may be administered by local authorities; the private ports serve the maritime transport requirements of specific industries.

e. In Spain, the public interest ports are under the control of the state, while the others are controlled by the Regions; in institutional terms the port authorities are public bodies which act autonomously, but for the public-interest ports the Puertos del Estado [State Ports] Public Authority performs functions integrating the individual ports into the national system.

f. In France, there are six autonomous ports and 11 non-autonomous ports of national interest; the former are legal persons with administrative and financial autonomy but subject to state control essentially as regards their financial administration; the non-autonomous ports are mainly those of national importance or those linked to naval bases, while others are under the control of local authorities.
In Ireland, the ports enjoy autonomy, although the law provides institutional links to the Ministry of the Marine; in general, they are answerable to the local planning bodies.

In Italy, the ports are directly administered by the state or by autonomous port authorities, or are of hybrid form in which state administration is flanked by companies which carry on various public interest activities.

In the Netherlands, most of the ports are administered by the towns, whereas others are privately run. The organization of the municipal ports varies from town to town, but three models can be identified: direct administration by the municipal authority; the Havenbedrijf, a port authority separate from the municipal authority; and the Havenschap, in which a collegiate body representing the various levels of government administers the port, appointing a director for everyday administration.

In Portugal, the ports are State-owned, with the exception of those in the Azores and Madeira, which are controlled by the appropriate Autonomous Regions; they may be administered by a port authority or by an "autonomous council" in accordance with the provisions of the port statutes, which also regulate the functioning of the port.

In Finland, the ports are publicly or privately owned; the former are municipal in type and managed by a specific municipal institution, but each municipality has very extensive autonomy in the organization of the port.

In Sweden, the ports are primarily managed by port undertakings, which are generally municipally owned, though private sector involvement is increasing; in many cases the infrastructure is owned by the municipality and the port undertaking runs it under an agreement. There are also ports managed directly by the municipalities.

In the United Kingdom, there are independent statutory ports (trust ports), municipal ports (generally small) and private ports; the internal organization of the ports and their functioning are determined independently by statute.

4. The financing of the ports

As in any administration of economic activities, finance also plays an essential part in the development of ports. Competition between them has added importance not only to aspects of financial resources but also to their profitability and, hence, transparency of management.

The accounting rules applicable to ports, and especially to the compilation and publication of their balance sheets, depend on the legal form of the body administering the port and, in particular, will be those generally applicable to companies in all cases in which the managing authority is in the legal form of a company, irrespective of whether the shareholders are private or public.

In other cases there is generally a budget compiled by the administrative body in accordance with the rules applicable to it and with budgetary autonomy; if the ports are an integral part of a municipality, the accounting principles that apply will determine whether or not they have budgetary autonomy. Absence of such autonomy has repercussions on management, both as
European sea port policy

regards approval of expenditure, which will depend on the municipal authority’s procedures and may require approval by the political authorities even for sums which are insignificant in the management of a port, and as regards loans which, apart from structural loans whose purpose is indicated by the contract, form part of the municipality’s general income. In any case, it seems more difficult to determine the profitability of the port.

If the budget is produced by the port authority itself, however, it is possible to determine its actual economic situation, and the port may be regarded as a genuine business undertaking, which has effects on its ability to negotiate loans with the banks. In such cases, a clear budgetary policy is also possible.

Regarding the variety of statutes by which the ports are governed, it is impossible to allocate all the ports within a single State to one particular type of accounting practice, though it can be said that specific profitability targets have been set in Spain alone; in other States, a profitability margin is calculated by the individual ports but not as a specific objective of the port, unless the latter is privately owned.

With regard to loans, market conditions apply virtually everywhere, with a few exceptions or additions.

- In Ireland, the ports may also have access to the Local Loans Fund, which grants loans for a period of up to 35 years at a rate below bank rate.

- In Greece, the sources of loans available to the ports are the Public Investment Programme, run by the Ministry for Public Works, and the Prefectorial Funds, which draw on the former source, both offering zero interest rates and advantageous repayment terms, together with the Deposits and Loans Fund, which provides loans at interest.

- In Italy, the authorities can also obtain access to loans granted by special credit institutions for the medium- and long-term financing of public bodies at reduced rates.

- In the Netherlands, the municipal ports can also obtain access to the Algemeen Leningfonds, reserved for local authorities, which charges rates determined on the basis of the weighted average for the year.

The constitution of the port also has an influence on tax matters. In general, ports which are of public legal form are not subject to income tax and in some cases enjoy exemptions from VAT. This is the situation with the non-private ports in Belgium, Denmark, Germany, Ireland, the Netherlands, Portugal and Finland, while in France they are subject to income tax only on income not deriving from port activities. In Spain and Italy, the ports, even if publicly owned, are subject to taxation.

The diversity of accounting rules examined here may have adverse effects on competition between ports, since a lack of budgetary transparency may conceal state aid, while the diversity of fiscal treatment and the possibility of access to special forms of credit are two forms of

---

29 For example, expenditure by Belgium municipal ports in excess of 120 000 € must be approved by the municipal council, and expenditure in excess of 240 000 € requires the approval of the President of the Region.
European sea port policy

distortion, though the second is becoming less important as a result of the gradual reduction of interest rates in the States participating in monetary union.

5. Investment costs

As regards the sharing of the costs involved in sea access and access to the port infrastructures and superstructures, a general distinction can be made between State (or Federal) responsibility for structures located outside the port area as such, and the responsibility of the port, or other levels of government, within it. Nevertheless, there are many exceptions: the port authorities and regional or municipal authorities are involved in the access arrangements where the port has greater autonomy, and conversely, there are cases in which the State intervenes in connection with the internal structures. Private intervention is exclusively confined to the internal aspects, where it exists at all. It could be said that the spreading of the financial load is based on two overlapping criteria: the criterion of location of the structure concerned and the institutional criterion - in other words, the status of the port. In some cases, this overlap results in responsibility for the financial burdens being shared between the various responsible bodies. State by State, the framework is as follows.

- In Belgium, the State is responsible for decisions and investments relating to the infrastructures and shipping support equipment outside the port, including port access facilities, but the use of the latter is the responsibility of the municipal authorities or the port authority; they are also responsible for investment inside the ports, but with regional participation that may be as high as 60-80%; private participation in the superstructure appears to be increasing.

- In Denmark, the port authority is responsible for the infrastructure and the access and port equipment, subject to State approval as far as the outer harbour walls are concerned, but the private sector is responsible for the costs of some infrastructures, especially those of the specialized terminals.

- In Germany, the Federal Government bears the cost of sea access, while the infrastructures within the port are the responsibility of the Lander or municipalities; as for the superstructure, this is generally the preserve of private enterprise.

- In Greece, the State has general responsibility for the construction of infrastructure both inside and outside the ports, while the prefectures have general responsibility for maintenance and the port authorities for administration; however, the port authority is responsible for the superstructure.

- In Spain, the port authority bears the cost of the infrastructure and superstructures inside the port, and outside it as regards access and the coast within its zone of responsibility. The private sector finances certain infrastructure facilities whose use is more directly commercial, such as silos, warehouses, etc.

- As far as France is concerned, a distinction has to be made between the autonomous ports and the non-autonomous ports. In the former case, investment connected with sea access is shared between the State and the port authority to the extent of 80% and 20% respectively, but maintenance is entirely borne by the State as regards the locks, access
channels, outer harbours and outer walls; lighthouses and buoys are the exclusive responsibility of the State if located outside the port, while in the case of expenditure on infrastructure within the port State participation is 60% for warehouses, wharves and certain specialized terminals, whereas the port authority or private enterprise pays for the superstructures.

- **In France (non-autonomous ports)**, the State’s burden is reduced for infrastructures providing access to the non-autonomous ports; its participation is in the region of 30-50%, while the remainder is borne by the Chamber of Commerce. The State also participates to the extent of 30% in the internal infrastructures, and as far as the remainder is concerned, private enterprise provides support for the Chambers of Commerce, which are also responsible for the superstructures.

- **In Ireland**, the port authorities are entirely responsible for sea access, the internal infrastructure and the superstructures, making additional use of Community funds; private enterprise provides the equipment, excluding cranes in some cases.

- **In Italy**, sea access and the major infrastructures, including those within the port, are the responsibility of the State, the regions or the port authority, depending on the classification of the port. They are normally maintained by the body that was responsible for providing them; private enterprise may build infrastructures in the areas conceded to it, but it is generally confined to the superstructures. The situation is currently being restructured as a result of the 1994 reforms.

- **In the Netherlands**, the distribution of investment and expenditure between state and port authority follows the line dividing sea access from port infrastructures, while the superstructures are generally privately owned. Specific agreements with Belgium divide the costs of the access channels when these are of value to both countries.

- **In Portugal**, the state intervenes financially in works and expenditure connected with sea access and the port infrastructures if the resources of the port authorities are not sufficient and the use of credit is impracticable, while the port authorities are entirely responsible for the superstructures. The private sector contributes to certain specialized terminals.

- **In Finland**, the port authorities are fully responsible for sea access and the internal infrastructure, with the sole exception of the access channels within territorial waters. The private sector is involved in some port infrastructures and equipment.

- **In Sweden and the United Kingdom**, the port authorities are entirely responsible for sea access and the internal infrastructures.

### 6. The financial resources of the ports

From the standpoint of income, the way in which it is determined and collected matches quite closely the varying levels of autonomy between ports in the north and south of the Community. The greatest autonomy here exists in Sweden, where the State has relinquished any form of control over the finances of the ports in favour of the setting of fees is concerned of the local authorities. The lowest degree of financial autonomy is probably to be found in the Italian
European seaport policy

ports, where the port dues are set and collected by the State and then passed on, in whole or in part, to the port authority. Financial independence, where it exists, is generally governed by rules designed to ensure that the ports break even, at least as far as administration is concerned if not in terms of investment.

Fiscal matters and the determination of the tax base are more consistent: in almost all cases, tax is levied on access to and time spent in the port, irrespective of the use of the infrastructure and services. While use of the infrastructure is still generally the subject of a charge, the other services are tending to become commercial, and are sold on the basis of price lists.

A general view of the ports’ income looks like this.

- In Belgium, the main revenue is from port dues, calculated as a function of tonnage on the basis of the international standards of tonnage measurement\(^{30}\), payment of which allows ships to moor, make use of any locks and undertake commercial operations for one month; in addition to these dues, a further charge is made for specific services or for the use of land areas within the port.\(^{31}\)

- In Denmark, the port dues are imposed on the basis of tonnage (ship dues) and cargo (cargo dues).

- In Germany, the port dues are calculated on the basis not only of tonnage but also of the geographical area visited during the voyage, the type of cargo and the duration of stay. In the majority of German ports, the weight of the cargo handled is also taken into account. Other dues or revenue of various kinds include fees for pilotage and the use of the port’s berthing structures.

- In Greece, the port dues are fixed at national level. Dues for entering port, mooring and berthing are paid to the Port Fund, while the costs of laying up vessels form part of the general state revenue.

- In Spain, there is a system of port tariffs, laid down by the State and forming part of an overall scheme for financing the port system, which provides income both for the ports and for a national fund that helps to finance them. The principle underlying the setting of the tariffs, which may be varied by the individual port authorities, is that the port should be financially self-sufficient.

- In France, the port dues are laid down by law, are set, except for passenger dues, by the government, and are paid to the port authority or to the local financing bodies. They are charged: on ships entering and leaving port on the basis of their gross tonnage; on berthing on the basis of their tonnage and length; on cargo handled within the port on the basis of weight or number of units, depending on the type of goods; and on passengers embarked, disembarked and carried in transit.


\(^{31}\) At Zeebrugge, port dues are payable for the embarkation and disembarkation of passengers and motor vehicles.
In **Ireland**, the port dues are set and collected by the port authority on the basis of the gross tonnage of the ships concerned and the cargo handled within the port.

In **Italy**, the port dues are widely diversified, and are charged on berthing, based on tonnage, with a surcharge for deck cargo and other charges or surcharges levied only in certain ports on loading and unloading and on passengers. These are collected directly by the tax authorities and then paid, in whole or in part, to the port authority.

In the **Netherlands**, the port dues in sea ports are payable only by ships entering from or leaving to the open sea\(^\text{12}\), as a function of gross tonnage, cargo loaded and/or unloaded and, in some ports, passengers; these dues and the wharf and area dues are determined, depending on the statutes of the port, by the municipal authority of the town, the port authority or - in the case of privately owned ports, wharves and areas - by the company which administered them; wharf and area dues are calculated in accordance with infrastructure use based on various parameters; fees for pilotage, a completely privatized service, are paid to the company which provides it, and depend on draught.

In **Portugal**, the harbour charges and dues, set and collected by the port authorities, are charged on entry and berthing and based on gross tonnage and length of stay, while the cost of typing up to a wharf is calculated in accordance with the same parameters plus the length of the vessel. Port dues, however, are charged on cargo handled within the port.

In **Finland**, port dues and taxes are decided upon by the port authority or local government and are calculated on the basis of cargo handled, apart from a charge for waste disposal. Other dues or tariffs relate to the actual use of the infrastructure or services.

As a result of sweeping liberalization decided on in \(1981\), port dues in **Sweden** are set by the local authorities at their discretion, and it is therefore impossible to produce a sufficiently specific overall summary covering the various port situations.

In **the United Kingdom**, the 1964 Act provides for a number of port dues based on use of the infrastructures and port services, which in the majority of cases are determined and collected by the port authority.

\(^{12}\) In other words excluding those arriving by river; the dues payable in the river ports are regulated differently.
7. Port activities

These are highly diverse, and may be divided into two broad categories: services to ships and services to cargo. The former may be further subdivided into those relating to ship handling (pilotage, towage, and mooring) and those provided to vessels after they have docked (emptying of bilges, revictualling, cleaning, etc.).

In the comprehensive authorities, these form part of the port administration and cannot therefore be identified as a separate area from the institutional aspects, but the situation is different in the landlord model, which now covers virtually the whole of the Union. Seen in this light, the type of activities market established within the port and the relations between the undertakings responsible for the activities and the port authority are becoming particularly important. The resulting framework is as follows.

- **Belgium**: the situation varies from port to port; in general, the State provides the pilotage service at sea and in the estuaries, while other services relating to ship handling are provided - with significant exceptions involving the private sector - by the municipalities or port authorities. However, private companies administer the provision of services to moored ships. Also privatized, with some exceptions, are cargo-related activities.

- **Denmark**: port activities relating to ship handling (including ice-breaking) are generally State-controlled, with certain exceptions relating in particular to towage, which is undertaken by private enterprises in virtually all ports; other activities, too, are undertaken by private enterprises.

- **Germany**: port activities are generally undertaken by private enterprises, or by pilots’ associations for that particular activity, which is provided under public, federal or regional control, depending on the port concerned.

- **Greece**: pilotage is provided by the Pilotage Service, which comes under the Ministry for the Merchant Marine, except in certain minor ports where it is handled by private companies under the supervision of the port authority; private bodies, not necessarily enterprises, are responsible for towage, while moorage is the responsibility of the port authority. Services to moored ships are provided by private enterprises, while those relating to cargo are undertaken by cargo handling associations which use the equipment of the ships themselves and of the port.

- **Spain**: port activities relating to ship handling are the responsibility of the port authorities, which normally put moorage services out to tender by enterprises and cooperatives; other activities are privatized.

- **France**: pilotage is provided by pilotage stations which employ pilots hired as a result of public competition, and are subject to government control. Other port activities are handled by the private sector.

---

33 No account is taken here of services which are not specific to the ports, such as power supplies, telephone services, etc.
**Ireland**: services relating to the handling of ships are provided by the port authorities, which in the major ports assume the capacity of district pilotage authorities for the purposes of the application of the relevant law. The other activities are in the hands of private enterprise.

**Italy**: pilotage is the responsibility of pilots’ associations, whose legal form (publicly or privately owned) is uncertain, though their activities come within the sphere of the Maritime Director and the rules and charges for the service are approved by the Minister of Transport. Towage is provided by private undertakings, which operate under franchises awarded by the port authorities that lay down their obligations. Moorage is supervised by the harbourmaster, except in a few ports where it is the responsibility of the port authority. Activities relating to moored vessels, some of which are subject to licences, are handled by private undertakings; those relating to cargo are the responsibility of the carrier, who uses his own resources or employs private companies, including the dock workers’ associations.

**Netherlands**: pilotage is the responsibility of pilots’ associations which are private in form and are established in each of the four maritime regions of the Netherlands. The remaining port activities are carried out by private enterprises, though in the case of moorage a distinction has to be made between berths in common use, which are administered by the port authorities, and those in zones allocated to a single user, which are administered by that user.

**Portugal**: pilotage is the responsibility of the National Pilotage Institute, a public body under the supervision of the Ministry of the Marine. Other activities concerned with the handling of ships are undertaken by the port authority or private enterprises, depending on the specific case, while the remaining activities are generally undertaken by private enterprises.

**Finland**: pilotage is generally under State control, though some port authorities are responsible for pilotage within the port; other activities connected with the handling of ships are primarily undertaken by the port authority, the private sector being involved in towage in some ports. Other activities are privately run.

**Sweden**: the situation varies greatly from port to port. As a general rule, pilotage is provided by public authorities while other handling activities are generally publicly owned, the private sector being represented especially in towage. Activities connected with moored vessels are mainly private, while a hybrid situation exists in cargo-related activities.

**United Kingdom**: pilotage is the responsibility of the harbourmaster, which in general means the port authority, and is provided by pilots who may be either employees of the authority or freelances, though in either case they must hold a licence. Other port activities are undertaken by specialist private companies other than those which administer the ports, with the exception of towage within the port, which in some cases

---

34 Cf. next paragraph.
is undertaken by the port enterprise or by joint ventures between the latter and a specialist enterprise.

The situation, in general terms, is that pilotage has remained within the public sector or, when it is in the private sector (generally in the form of an association), it is nevertheless run as a monopoly. The other shiphandling activities are characterized by a strong presence (or even predominance) of the port authorities, while the private sector is strongly represented in the provision of services to moored ships and cargo services. It should be noted, however, that many activities carried on by private enterprises are subject to more or less strict supervision by the port authority or public bodies.

8. Dock working

The title of this section refers to manual workers in port activities (generally described by the English word "dockers"), whereas other workers employed within a port enjoy the legal status provided within each State for employees of the public authority that administers the port, or a contractual system based on the rules governing private labour in other cases.

Although this is not, from the strictly systematic point of view, an institutional aspect, the organization of labour in the specific sector of ports has diverged from the form taken in other sectors and has acquired features which link it closely to the institutional model of the port. This situation is particularly apparent in the comprehensive authorities, which hold a monopoly on the provision of services to users and on the dock workforce, as a result of which the workforce is totally integrated into the structure of the authority. Even in institutional models of the landlord type, however, the negotiating power of the dockers had given rise to forms of trade monopoly that are unknown in virtually any other sector of production. The situation in the various countries is as follows.

- **Belgium:** dock labour is restricted to qualified dockers, and an appropriate committee of workers and employers deals, by law, with issues arising in this area. The dockers are hired by the port undertakings by the day and work under a special unemployment benefit system which is financed separately in each port.

- **Denmark:** in the port of Copenhagen, the dockers have an open-ended contractual scheme; in other ports, working conditions are governed by a collective agreement concluded for each port separately. The dockers form a pool, and are required to report at a predetermined time to be hired by the day, a system for which no priority criteria are laid down; provision is made, however, for a docker who has been taken on to be transferred to another task once his original one has been completed, without going through the reporting procedure. The dockers are paid on a piecework basis and covered by an unemployment insurance scheme.

- **Germany:** the dockers work under the normal contractual system laid down for the private sector, with the single special feature that the employers, in each port, have created and financed a pool (Gesamthafenbetrieb) which supplies additional or temporary labour and is subject to the same contractual arrangement as that which applies generally. The port undertakings have the option of taking on temporary personnel from those registered as unemployed at the job centre administered by the Federal Government.
European sea port policy

- **Greece:** apart from the ports of Piraeus and Thessaloniki, in which the dockers are employees of the respective port authorities, they are either on open-ended contracts or employed as temporary workers; the former are hired in the number laid down for the port concerned, and the latter are taken on temporarily as the need arises. A committee answerable to the Ministry of Labour is responsible for regulating work within the port, defining the number of dockers for each port, keeping nominal rolls, providing subsidies for unemployment and determining the charges for handling services.

- **Spain:** the workers are employed by the private handling enterprises, and a company - in which the port authority generally owns a 51% holding while the handling enterprises own the remainder - administers a pool in each port which covers peak working periods; the pool workers are paid by the day.

- **France:** under the rules of the Navigation Code, dock workers are covered by a national collective agreement and, in some ports, local agreements. They can be hired by the month by the handling enterprises or as casual labour, the latter being chosen from among those who have registered at the local employment office or, in some ports, have been organized as a pool; casual workers benefit from a special scheme which covers them for a maximum of 150 days' unemployment.

- **Ireland:** the dockers are covered by a national collective agreement. Those in the port of Dublin are full-time employees of the handling enterprises, but in the other ports, except Limerick, they are hired on a casual basis, generally by the day.

- **Italy:** the dockers are covered by a national collective agreement and their duties are reserved to those registered with the dockers’ associations, and supervised by the port authority. The associations act as employers, providing the necessary labour to the handling enterprises; however, an exception applies to the employees of bodies and enterprises which operate within the port on the basis of an administrative licence.

- **Netherlands:** the dockers are covered by a national collective agreement and most of them are full-time employees of the handling enterprises. In the ports of Rotterdam and Amsterdam, however, a number of dockers are employed by a dock employment agency which allocates them by the day to the handling companies, on request, although their relationship with the agency is an open-ended one. It should be noted that workers who undertake the same tasks in terminals administered directly by an enterprise on its own account are covered by the collective agreement for the sector within which that enterprise operates.

- **Portugal:** the dockers are covered by a national collective agreement and are employed by the handling enterprises or by special enterprises which, on a competitive basis, supply labour to the handling enterprises. An appropriate national body oversees dock labour and, in particular, runs the lists from which workers can be hired and grants the licences to the agencies which supply the labour.

- **Finland:** dockers are employees of private companies and covered by the general system for employed workers.
- Sweden: dockers are covered by a national collective agreement.

• United Kingdom: since 1989, when the special system for dockers was abolished, they have been covered by the general employment legislation.

Within this general picture, three different types of scheme can be identified. The first is the general arrangement covering work in any sector of production (Finland, Sweden, the United Kingdom and, in essence, Ireland). The second combines the general scheme with dock pools, \( \text{in various ways so as to be able to meet peak labour demands and, to a more or less explicit degree, to compensate for unemployment in the sector (Germany, Spain, France, the Netherlands, Portugal and, with certain special features, Denmark).} \) The third type is characterized by variable degrees of regulatory intervention by government which regulates work (Greece), reserves it to particular associations (Italy) or encourages co-operation between the parties (Belgium).
CHAPTER THREE
LIBERALIZATION AND PRIVATIZATION

1. The liberalization of the ports: administration in particular

In many publications and debates, *liberalization* is viewed as being so closely linked to *privatization* that the two processes become confused. It should be emphasized that these processes relate not only to the States of the Community but to virtually the entire world. In this chapter we endeavour to preserve a clear distinction between them, in the awareness that they are two manifestations of a more general trend towards reduced public involvement, and that any process of privatization presupposes liberalization, by which is meant the process of *reducing intervention* (regulatory, planning or control) of the public authorities in an activity which is generally private. In the port sector, this process has also involved the administration of the infrastructure, and in the Mediterranean States the abandonment of the "comprehensive authority" model has been a preparatory step towards the liberalization of dock labour and port activities. These three areas of liberalization are here considered separately, but they are three indispensable elements of a common design of liberalization.

The description of the administrative running of the ports given in the previous chapter takes account of the reforms introduced during the 1990s. The most radical reforms have been centred on the Mediterranean States of the Community, and in particular those of the Iberian peninsula and Italy, since their initial situations were more heavily regulated and controlled by the state. The major concern in these countries was to close the gap in efficiency and productivity in the face of keen competition from the North Sea ports, which were objectively marginalizing the Mediterranean ports. The results have been favourable.

The tough competition provided by the North Sea ports, and in particular those of Belgium and the Netherlands, was the motive force behind the French reform, which not only liberalized port administration but also encouraged private investment and allowed parts of the dock area that were not strictly necessary to be solid off to private enterprise. The North Sea ports, too, although they enjoyed a more flexible form of administration, have introduced reforms designed to increase their independence: the authority of the port of Antwerp has been legally re-established as a company, and the port of Rotterdam is contemplating the same idea. In Ireland, although privatization has been ruled out, measures to reduce government controls are under consideration.

In the Baltic, the Finnish ports have always enjoyed a wide degree of autonomy, which is fact is that of the municipality to which they belong; municipal autonomy has been a substantial obstacle to privatization.

---

35 Despite its Atlantic location, Portugal had, before the reforms of recent years, a port system similar to that of the Mediterranean States.
2. The liberalization of the port activities

Public control over port activities has taken different forms and varied in intensity:

- **Direct administration**, associated primarily with the institutional form of the port;

- **Regulation and control of activities**, which pursues various ends, such as guaranteeing the quality of the services provided, restricting internal competition (not always an explicit aim), social protection for workers, environmental protection and safety; and

- **Tariff regulation**, which exercises a price-control function in the interests of the external competitiveness of the port and the restriction of internal competition.

The situation of the port activities, as set out in the previous chapter, shows how direct administration has been abandoned virtually everywhere, or is now in the process of being abandoned, while other forms of public control are gradually being reduced, with significant differences between the various categories of activity. Cargo activities can now be said to be liberalized virtually everywhere, while those relating to the ships themselves still exhibit some important examples of public control, especially as regards the handling of ships: pilotage, for example, is still largely within the public sector, being administered on a monopoly basis or otherwise subject to intensive public controls.

The greater liberalization of cargo-related activities is probably associated with the need to promote private investment in superstructures dedicated to cargo handling. These, as we have seen, are very expensive, particularly because of the increase in the sizes of ships and containers. On the other hand, the lesser degree of liberalization of activities connecting with ship handling is probably due to the connections between these activities and public shipping control functions, often entrusted to the same public bodies.

Greater liberalization of port activities, increasing internal competition, would be likely to have favourable repercussions on the external competitiveness of a port, but the most efficient port systems do not always exhibit greater liberalization of handling activities than other systems: in all probability, a high degree of professionalism and a sense of belonging to specialist associations may be efficiency factors which are just as valid as keen internal competition. This prompts careful consideration of the socio-environmental and local factors when deciding to make changes to satisfactory situations that have now become established.

On a more general level, the liberalization of port activities goes hand in hand with the liberalization of dock labour, in that the advantages which the former can bring depend on the flexibility of the latter.
3. The liberalization of dock labour

The liberalization of labour, the present situation of which was described in the previous chapter, which identified three types of system characterized by varying levels of public or corporate control, has to meet two different requirements which are difficult to reconcile: first, that of protecting a sector of the labour market which can be highly precarious, and secondly that of enabling technological progress to be applied to good effect.

The first requirement is the more traditional: a highly labour-intensive technology had been dealt with by a very high level of regulatory intervention in countries which had adopted a public administration model of the comprehensive authority type. This system featured a high level of protection, partly achieved through a monopoly of services which allowed stable employment and high wages. This was a particularly rigid form of dock labour organization, with high handling costs that have been held responsible for the decline in traffic passing through some ports.

In a landlord authority model, this kind of protection was impossible and a casual labour system had grown up, based on day labour in most cases, prompting intervention by the ILO, which has dedicated a convention and a recommendation to the problems of this sector. The purpose of these instruments was to provide dockers with stable and regular employment and the appropriate wage guarantees, while they also established the principle that dockers should be registered on special lists. The fact that the convention has been ratified only by a small number of states, excluding the most important maritime states, is probably significant of concern that such legislation could introduce a degree of rigidity at a time when great changes were taking place in this sector in countries where the market was not already protected.

Even during the 1970s, indeed, as the ILO Recommendation observes, devoting a complete chapter to the impact of new technologies, the dock workforce had proved - and would prove even more in subsequent years - to be oversized for the requirements of the new technologies. These required less labour for two separate reasons: the classical one of increased automation and greater capacity of more advanced equipment, and a reason more specifically attributable to intermodality, which has reduced the amount of storage undertaken at ports.

Where dock work was particularly rigid and protected, technological innovation had difficulty in becoming established or producing its full beneficial effects, while in other countries the opposite effect was felt - the need to accommodate the inevitable reduction in dock labour while avoiding any reduction in the flexibility of the market or any financially burdensome public intervention.

\[3\] The documents in question are the Dock Work Convention, No 137 of 1973, ratified by 22 states of which only seven were Community members (Spain, France, Italy, the Netherlands, Portugal, Finland and Sweden), and Recommendation No 145 of the same year. For the sake of completeness, it should be noted that, as far as dock work is concerned, the ILO sponsored or adopted in 1979 another Convention (152) and another Recommendation (160), both specifically concerned with safety and health.
Confronted with these problems, the States of Europe introduced liberalizing reforms, the outcome of which has been described in the previous chapter; every State has seen a massive reduction in the number of dockers. Since the 1979 reform, the United Kingdom has seen an 80% reduction in the number of dockers, while the workforce at the port of le Havre has been reduced by half and that in Genoa from 3,300 to 900, partially cushioned by the private sector.  

In many countries, the reduction in the size of the workforce has been accompanied by renegotiation of working conditions to bring them into line with the requirements of modern technology, with a greater emphasis on the acquisition of new professional qualifications and the introduction of more modern career and pay structures. Conversely, the amount of control exercised by the unions has been reduced: instead of being the organizers of labour (in some situations) they have been reduced to the normal role of representatives of the workforce. In conclusion, disregarding the reduction in the number of jobs which international competition would have brought about in any case, liberalization has resulted in the labour market's emergence from the special, protected but sometimes deprofessionalized system within which it had been confined and brought it into line with the general conditions of private employment in a modern industrial economy.

4. The privatization of the ports

As previously stated in the first paragraph of this chapter, privatization of the ports, where it has occurred at all, has occurred to differing degrees. The following breakdown demonstrates this:

- **Private administration of port activities** (Antwerp and Rotterdam): the owner of the port infrastructure (landlord authority) licenses or leases one or more of its elements to private enterprises which use it to provide services (the port operations) to users, or for their own transport activities, if the licensee or lessee company does not have port activities as its own company object but is a port user (shipper, freight forwarder or industrial undertaking). In this type of privatization, the private operator supplements private investment with his own capital in kind, used to develop the superstructure; the lease or licence is for a limited period and lays down the rent payable. Furthermore, in the case of private enterprises which supply services to users, this creates competition within the port among the various enterprises performing the same operations, but the associated costs become a factor in competition between ports as well, the authority having no control over this except where it has retained some powers in this respect in the licence or lease.

---

37 It should be stressed that in at least one State, Italy, resistance to liberalization in this sector was overcome only as a result of a judgment by the Court of Justice in 1991 which condemned the monopoly system practised in the port of Genoa. It is quite possible that this judgment smoothed the way for liberalization in other States where a similar situation existed.

**Private ownership**: transfer to the private sector comprises the ownership of an infrastructure facility and the associated superstructures; this transfer may also relate to the port as a whole, which will then be administered as a comprehensive authority. The transfer arrangements may take the form of a public auction, a dockers’ buy-out, or a licence to use an infrastructure built by private enterprise; as far as competition is concerned, this takes place exclusively between ports if the private ownership relates to the port as a whole, whereas if a single infrastructure facility is affected the situation is similar to that described in the previous paragraph, probably with less possibility of intervention by the landlord authority.

**Mixed management**: this is essentially one of the two preceding types in which the private body comprises a company with both public and private shareholders; in this connection the same considerations apply as were described for each of the previous cases, the public sector being more important in determining internal competition factors within the port.

No discussion of the privatization of the ports can exclude the case of the United Kingdom, which since the 1980s has conducted the most sweeping operation of this kind anywhere in the world, based on the philosophy of allowing free rein to market forces, removed from any government control or public subsidy. However, the most distinctive aspect of British privatization has been its global nature: not only the ports but even the supervision of the shipping movements that take place in them, and of the ships concerned, have been transferred to the private sector. The resulting organization, in the majority of ports, is a private landlord authority which has entrusted handling operations and the other port activities to private enterprises in mutual competition and, in some cases, in joint venture with the landlord.

A process of privatization of the ports, as of any other economic activity traditionally carried on by the public sector, is feasible only if preceded by the removal of any environmental obstacles which prevent the private sector operating in accordance with the methods specific to it.

In the port sector, this means, first and foremost, overcoming possible opposition from central government, the authority management and the unions. On a level more directly associated with port management, it is necessary to privatize labour relations in the port which, especially where the authority was a comprehensive one, were extremely rigid from the contractual standpoint or that of restrictive practices, to reorganize the accounts of those port bodies which were to be fully privatized and, in some cases, to intervene with a programme of extraordinary maintenance of the infrastructures to be privatized (though this may also be a condition imposed on the private sector in exchange for the licence).

Finally, in cases in which privatization applies to the building of infrastructures by the private sector, it is necessary to ensure access to credit for the substantial sums required. Although the

---

39 Known as British literature as a MEBO ("Management and Employee Buy-Out").

40 In this connection, British literature has built up a survey of various combinations between the activities and obligations of the private sector, identified by various abbreviations comprising: building (B in all cases), organization (O in all cases and often temporary), ownership (O in some cases) and transfer to the licensee body for organizational purposes (T, not always but in the majority of cases). For a more detailed description of the subject, cf. the final chapter of EP DG IV, "The financing of the trans-European transport networks", note 27.
current level of interest rates seems to be favourable, special instruments still appear necessary, providing credit, guarantees and joint funding by public structural funds and specialized banking and para-banking institutions.

5. Liberalization and competitiveness

For the port authority, liberalization essentially means eliminating public ties and controls, though in the continental administrative systems it is difficult for these to be removed entirely if not accompanied by privatization. Still on the subject of liberalization, the reforms introduced by the Member States in recent years have enabled many port authorities to adopt entrepreneurial strategies - in other words, to define independent business objectives and to administer their resources consistently with those objectives and with full autonomy. Where the port authority is not comprehensive, as occurs in the privately owned port of Felixstowe, liberalization would allow the terminal operators greater administrative flexibility and better adaptation of services to the needs of the port customers, who would benefit from this.

Liberalization should allow the port system to be more adaptable to changes in the transport sector, and not only in maritime transport but also in intermodal transport, to the advantage of the economy, and would have beneficial effects on government administration, relieved of the burden of the current controls.

6. The institutional aspects of privatization

Does the primarily public nature of European ports enable them to deal adequately with an increasingly competitive environment? The European Commission considers that the necessary changes can be effected by means of a "more co-ordinated approach to port development at Pan-European level aimed, inter alia, at ensuring that ports compete on sound commercial grounds...". This philosophy is substantially similar to the traditional approach of the Member States, but elevated to European level, failing to address the institutional aspect of the ports and the part this plays in their competitiveness.

A different approach is adopted by UNCTAD in a recent publication dealing with the question of privatization from the eminently practical standpoint of the arrangements and taking the option for granted. Nevertheless, it provides food for thought on the matter of the option as well, at a

---

41 On this topic, cf. ibidem.

42 Green Paper on seaports and maritime infrastructure, COM (97) 678, p. 10.

time in history when processes of liberalization and privatization are of some interest to every economic sector worldwide. The main advantage of privatization which is generally identified is that of removing any justification for the current tax systems which, by giving preferential treatment to publicly owned ports, distort competition between ports.

As against that, privatization may have the disadvantage of overshadowing the performance of those unpaid public functions which the port authorities undertake, and in particular those connected with safety and the environment, essential as they are. On the other hand, it would be necessary to prevent the replacement of a public monopoly with a private one, which suggests that preference should be given to a port model in which the administrator of the infrastructure (the port authority) is not involved in carrying out the port operations, or rather to separate administration of the infrastructures in general from the port operations and the administration of the infrastructures specifically dedicated to these, as indeed is already occurring in some ports.

7. Privatization and port development

The ideas developed in the previous paragraph are general in nature, but privatization of the European ports must be considered from the specific standpoint of their situation, characterized by an infrastructural overcapacity which is one of their most serious problems.

The ports of Europe, especially those on the North Sea, have adopted in recent years and will continue to do so for the next ten years, in accordance with the plans of the port authorities, a strategy of massive investment as regards the cargo handling superstructures, especially those for container handling, to bring the ports into line with the technological changes in maritime transport. This strategy, made necessary by the fact that the carriers now view the ports as integral parts of a combined transport system, is both a factor in and an effect of strong competition, although in many cases it cannot guarantee an increase in a port’s traffic but is confined to preventing its further decline.

A phenomenon which is additional to the ports’ investment strategies is the tendency among carriers to take on the direct management of port terminals: by doing so, they open up a new area of competition in customer service on the actual site of the port activities, and their strategies must inevitably be geared to developing the superstructures they administer, evaluating the costs and benefits of the associated investments with reference not to the port activities but to transport

---

44 Although liberalization and privatization are quite separate processes in terms of the direct result, they are linked in terms of their ultimate effects, in that some of the long-term effects of privatization are also long-term effects of liberalization. For the purposes of this working document, this means that it is possible to deal with them jointly, highlighting those effects which are specific to privatization.

45 One school of thought considers this strategy responsible for causing overcapacity in the ports, with adverse effects on competition and on the system in general. This view, well summarized by De Monie G., “Privatization of Ports Infrastructures”, in *Ports for Europe*, pp. 287-90, poses a fundamental problem of port policy - the specific problem of surplus capacity, which is the focus of the Commission’s Green Paper and will be dealt with fully in the next chapter.

46 Cf. next chapter.
European sea port policy

between ports as a whole. The effects of this strategy, which is directed not against other port operators but against other carriers, produce a cumulative effect together with the strategies of the authorities and port operators.

It should be emphasized that the direct organization by carriers of the port activities, and especially of the terminals, constitutes a form of vertical integration of the sector which shifts the terms of competition away from the intraport or interport level to competition between combined transport systems, which cannot take effect in the absence of the technology component, needed to make good any lagging behind by other transport modes which nevertheless participate in the system.

8. Towards a European port model?

In this chapter, an attempt has been made to summarize the various aspects of liberalization and privatization, showing their impact on the ports in terms of efficiency, but also showing how they are connected with the fundamental changes taking place in the transport system. The resulting picture is one of general liberalization of the port system throughout the Union, following a progression based on quite similar criteria in most of the Member States: greater autonomy of the port authorities, and a gradual reduction of public sector control of port working, with the significant exception of pilots.

The phenomenon of privatization, too, has followed similar criteria in most of the Member States: cargo handling activities are now administered almost everywhere by private companies, whose main activity this is in the majority of cases, while in others it is a subsidiary activity to the main one, which may be transport or an actual commercial or industrial production activity. The level of privatization of port activities relating to ships is lower, but still significant. The privatization of the superstructures and infrastructures has paralleled that of the port activities: in other words, where the physical components of the port have been privatized, this has generally followed the privatization of the activities for which those components exist.

Although it is premature to talk about the existence of a European port model - with the significant exception of the United Kingdom, which opted for complete privatization in 1989 - there are indications of an advanced level of harmonization of port systems in the various countries, based on a system of reducing public control to the minimum essential to safeguard those public interests that rule out an exclusively economic approach, such as safety and environmental protection. However, some "port professions" have succeeded in retaining forms of corporate protection.

In this "model", the port authority, which enjoys a large degree of autonomy, is responsible for managing the infrastructure and, though with sharp differences from country to country, for building it, and also for the development and promotion of the port, while private companies take over the port activities and the associated superstructures and infrastructure, the latter to a lesser degree. In other words, the port authority is involved in the port's external competition, while the private section is involved in internal competition, even though the two areas of competition are mutually interdependent since the authority's investment, charging and promotional strategies determine the factors that affect the other area of competition, and the level of charges imposed for the port activities have an effect on the success of the promotion of the port.
A special aspect of privatization, or rather of the involvement of private capital, concerns the port infrastructure. As far as the participation of private enterprise in this is concerned, the same general principles can be stated here as are set out in a previous working document, but in the port sector the involvement of private enterprise is viewed from the particular standpoint of overcapacity, which has been deplored in some circles and will be dealt with in the next chapter.

As a general rule, it can be assumed that private sector involvement in infrastructure, and superstructure, determines that the scale of investment will be proportionate to its profitability and thus imposes a brake on excess capacity, though this is not necessarily true if technological modernization - especially of superstructures - represents a factor in competition or even actual survival in the marketplace.

---

CHAPTER FOUR

OVERCAPACITY AND COMPETITION

1. Changing technology in maritime transport

Maritime transport has undergone a radical technological change in the last twenty years, which has profoundly altered the sector as a whole and has been a key to its development. This technological change has essentially been concerned with containers, innovation in this area having given rise to a whole series of innovations in shipping and, which is what concerns us here, the handling of containers in ports. The effect of this technological change, which has made a significant contribution to the development of maritime transport, has been to emphasize the importance of maritime transport in worldwide combined transport.

Within this framework of technological change, an important element has been the transition from ISO 1 to ISO 2 containers, and a steady increase in the tonnage of vessels, which is partly a result of it. As a general rule, the ships formerly in operation were designed for ISO 1 containers, and the transition to ISO 2 meant adapting the holds, while the deck is more easily adaptable, but in both cases a new handling system is needed and a loss of capacity results. A new generation of vessels has been designed to handle both standards, though this involves extremely accurate computerized cargo management.

Ship owners, apart from those in the United States and Canada, have generally been very cautious about the transition to ISO 2, fearing that, in the absence of an increase in the maximum authorized weight, the freight charges will be unchanged, thus reducing profit margins. It is foreseeable, therefore, that there will be a slow transition to the larger containers.

The increase in the tonnage of ships has gone hand in hand with container development, and has been partly determined by it: the need to reduce costs in a highly competitive market is the main reason, though another factor is that of bringing ships’ cargo capacities into line with the larger size of container. In November 1997, the world container ship fleet was as shown in Table 3, which shows that the average capacity of vessels on order was greater than that of those in operation, with the exception of the medium category between 2,000 and 2,999 TEU. This

---

46 This calls for a brief technical note on container classification, taken from EP DG IV, "Les systemes logistiques dans le transport combine [Logistical systems in combined transport]", Working Paper, Transport Series, TRAN 102 FR, 1998, pp. 57-60, to which reference is made for further details. First and foremost, a "container" is any special, reinforced case which is stackable horizontally and vertically and designed for the intermodal transportation of goods without part-loading. The first generation of containers were the ISO 1 version, which had two sizes (external dimensions) of 20 and 40 feet in length (6.058 and 12.192 metres, respectively), the length and height in both cases being 8 feet or 2.438 metres. The second-generation containers (ISO 2) are larger, the sizes being 24.5 feet and 49 feet (7.43 and 14.9 metres), with a width and height of 8.5 feet or 2.59 metres. There is also a "high cube" version which is the same length but another foot in height. In practice, use is also made of non-standardized containers (known as "super high cube") in sizes of 45, 48, and 53 feet (13.72, 14.64 and 16.10 metres). These are used primarily in North America.
situation confirms the trend apparent in previous years towards an increase in average capacity, as is apparent from the overall averages.

The increase in tonnage is contributing to the growth of short maritime transport and, in particular, transhipment. The reason is that large vessels have higher running costs, which make it advisable to reduce the number of ports of call. Hence the economic necessity to concentrate the unloading of a large container ship in a single port, from which the containers are then moved on to other sea ports or, by river, to inland destinations. This approach means that transhipment also has intermodal potential.

2. Adapting the ports to the technological change in maritime transport.

From this standpoint, the ports act as hinges between the various modes of transport and can attract maritime traffic by offering appropriate intermodal structures, especially if, by virtue of their geographical position and access to navigable inland waterways, they establish a connection point between high seas traffic and short sea and river transport.

The gradual spread of the large containers, 45 and 49 feet in length, a trend from which European ports are virtually excluded, is creating objective problems with the global competitiveness of the entire European transport system. Even if a port makes the necessary financial effort to update its infrastructures and superstructures, it cannot solve these problems unless consistent decisions have previously made in transport policy and the other transport infrastructures have been suitably updated.

As regards the container sizes that can be handled by the European transport system, most of the European ports have terminals which can also handle those outside the ISO standards, but there is little equipment capable of dealing with the 49 foot containers - and, to the best of the present author's knowledge, only the port of Rotterdam has such equipment.

Bringing the existing equipment, and especially the cranes, into line with the ISO standards, for example by means of telescopic wideners, costs an average of 20% of the initial investment cost, whereas the cost of a new crane is around three million euros. However, adaptation does not only run into difficulties because of the high costs; it is also slowed down by the precautions taken by the ship owners, as described in the previous paragraph, and may depend not only on the technical characteristics of the port superstructures, which have often previously been adapted

49 Virtually none of the European ports has the necessary equipment to handle the 45 foot containers, while the 49 foot versions are also ruled out by road traffic regulations. EP DG IV, "Les systemes logistiques dans le transport combiné", Working Paper, Transport Series, TRAN 102 FR, 1998, p.101.

50 The cranes discussed here are the "gantry cranes", mounted on tyred wheels and capable of moving under their own power at a speed of 24 kph. The width of the gantries depends on that of the ships, which in turn are identified as panamax, post-panamax and super-post-panamax, depending on their ability to pass through the Panama Canal: panamax vessels have the maximum width capable of making the passage, while the others are larger. The gantries have a load capacity of 40 tonnes and are capable of moving the 49 foot ISO 2 containers from the third generation onwards (post-panamax), thanks to a 32 metre jib which enables them to operate on a vessel carrying 12 containers side by side widthways. The fourth generation gantries (super-post-panamax) have a 50 metre jib and can operate on vessels with 19 containers placed side by side widthways.
to those of the infrastructures, but also by the organization of the terminals. Finally, not only the superstructure is involved in the transition to ISO 2: account also has to be taken, as with the ships, of the need to use more sophisticated computer systems to handle storage, together with the likely necessity of physical reconstruction of warehouses and storage areas.

The increasing tonnage of shipping is causing particular problems for ports in river estuaries, which have to increase the depth of the access channels (estuary or canals) to at least 13 metres. Among such ports, Rotterdam can offer a depth of 15 metres, whereas the ports of Antwerp and Hamburg have been forced to undertake excavation and maintenance work on the beds of the Scheldt and the Elbe. An alternative solution is to create a satellite port on the coast, as Rotterdam did in the case of Maasvlakte. The problems discussed here have also been mentioned by the Commission exclusively in connection with the North Sea region, where the estuarine ports are concentrated.

3. The development of the infrastructure as a competitive factor

In the previous chapter, it was noted that the European ports had adopted a policy of massive infrastructure and superstructure investment with a view to bringing them into line with technological changes and increasing the competitiveness of the port, or maintaining that competitiveness in the face of identical strategies pursued by other ports.

In actual fact, a quantitative overall assessment of infrastructural investments by ports cannot draw upon any trustworthy data because of the varied classification of the investments, due partly to the institutional reforms in the sector, which has split the source of public investment and increased the private contribution.

With that proviso, it can be said that during the 1990s investments in port infrastructure by the Member States accounted for a consistent proportion of overall investment in transport infrastructure, though this was going through a period of decline within a framework of general restrictions on public spending caused by the policy of financial austerity imposed by the implementation of monetary union. These investments, both public and private, did not however include the superstructure investments, the technological modernization effort and capacity increase having concentrated on the infrastructure, which also enjoys greater support from private capital.

The reduction in overall infrastructural investment in the 1990s followed a period of expansion during the previous 10 years, during which major port works were carried out in the run-up to the institutional reforms, and appears to be picking up again in the final years of the century on the basis of multi-annual programmes mainly directed at the North Sea and Mediterranean ports.

---

51 Baird A., op. cit., note 21, p. 150.
52 Green Paper on sea ports and maritime transport, Annex I.
the latter being determined to make up lost ground, both by comparison with the former and by comparison with the requirements of their respective national economies.

Despite the criticisms levelled at this strategy from some quarters, the development of the infrastructure and superstructures has become a basis competitive factor, since it enables the port to accept vessels which would otherwise look elsewhere, for both technical reasons (the physical possibility of mooring at suitably large wharves equipped with the superstructures to allow the handling of the containers they carry) and economic reasons, specifically the reduction in costs obtained by taking full advantage of the technological capabilities of the ships.

4. **The question of overcapacity**: the oversizing of the infrastructure

The publication of the Green Paper on sea ports, which added the problem of fair competition to that of overcapacity, triggered off a debate on the subject, to the effect that some ports, committed to a strategy of making up their shortfall in infrastructure by comparison with others, fear the additional effect of competition policy over and above the limitation of investment which would obstruct their strategy. The key to the debate is the identification of the cause of the overcapacity as being oversizing of the infrastructure or less than optimum use of the port capacity.

Before explaining the positions adopted by these two schools of thought, we should first note that, for the two most dynamic port regions in the Union, the overcapacity in the container sector can be estimated at 35% for the Mediterranean ports and 52% for those on the North Sea. These data refer to 1997; the 1992 figures were 42% and 46% respectively.

According to those who regard the oversizing of the infrastructure as the cause of the overcapacity, the competitive role of investment triggered a spiral of investment decisions which, some say, is the cause of excess port capacity. An example quoted is the series of massive investment decisions which involved the North Sea ports:

- the decision of the port of Antwerp to construct the first container terminal in 1986 persuaded the ports of le Havre, Zeebrugge and Rotterdam to follow suit;
- the decision by Rotterdam to respond to Antwerp's initiative with an improved technology prompted Antwerp to open a second container terminal and triggered further programmes by the other North Sea ports;

---

55 By "port capacity" is meant the maximum volume of traffic which a port can handle with given infrastructure and plant, irrespective of the actual volume of existing traffic. Overcapacity, then, is the positive difference between the capacity of the port and the existing traffic. The definition of port capacity is taken from MARCONSULT, *Il Libro Verde sui porti e le infrastrutture marittime - osservazioni critiche [The Green Paper on sea ports and maritime infrastructure - critical observations]*, unpublished document, Genoa, 1998, p. 28. This document was commissioned by ASSOPORTI, the Italian ports association.

56 These data are taken from the document quoted in the previous note which, applying the criteria illustrated in the next paragraph, considered, on the basis of the *International Containerization Yearbook (1993-8)*, the Mediterranean ports of Genoa, Gioia Tauro, La Spezia, Livorno, Trieste, Ravenna, Venice, Marseilles, Algeciras, Barcelona, Valencia and Malta, and the North Sea ports of le Havre, Zeebrugge, Antwerp, Rotterdam, Bremen and Hamburg.
the second Antwerp terminal compelled Rotterdam to launch Project 2000-8, comprising eight new terminals, resulting in further development programmes at Antwerp and the other North Sea ports\textsuperscript{57}.

A negative effect of these heavy investments is an overcapacity situation whose critics\textsuperscript{58} deplore the consumption of national resources by the ports to the detriment of other modes of transport; they cite the example of the investment plans of the North Sea ports, which will increase their container handling capacity by 50\% by the year 2000, although only 67\% of their present capacity is being used\textsuperscript{59}.

Already, the effect of the overcapacity is the collapse of port dues, which is making it more difficult and slower to recover the investment and repay the loans taken out; furthermore, since the overcapacity is particularly heavy in the container sector, it is the bulk cargo sector that will eventually have to bear a major share of the investment cost. The effects on prices of container handling operations, which may be insufficient to cover the long-term financial costs, have been similar; while price wars are taking place between the major terminals of the British ports\textsuperscript{60} and between the North Sea ports.

Other effects are having an impact on employment at the ports, which is tending to fall, as we have seen, and on industrial relations which are tending to deteriorate as a consequence, although this deterioration - in the view of the author - may be regarded as a transitory effect caused by the readjustment of the employment market towards less protected forms.

A particular impact, although its likely future is not sufficiently clear, could be felt by the secondary ports which do not adopt the same strategies of investment and technological adjustment as the major ports: they are still dedicated to the traffic in bulk cargo and the provision of services to their own hinterland, but it is reasonable to assume that, precisely because they do not have to bear massive financial burdens, they may be able to provide better investment opportunities for private capital.

From this analysis we can derive a strategy for the elimination of competitive distortions centred on reducing excess capacities by limiting new investment and controlling the full passing-on of infrastructural costs through port dues and tariffs, so as to avoid dumping phenomena designed to reduce excess capacity.

\textsuperscript{57} De Monie G., "Privatization of port infrastructures", in \textit{forts for Europe}, p. 293.

\textsuperscript{58} Ibidem, pp. 287-90.

\textsuperscript{59} Ibidem, p. 289.

\textsuperscript{60} "Felixstowe bids to stay in the lead", in \textit{Lloyds List}, 29 May 1995, quoted in De Monie G., \textit{Privatization...}, p. 289.
5. The question of overcapacity: the role of bottlenecks

Another school of thought holds that the issue of overcapacity may be exaggerated, since the criteria for evaluating it are different and in some cases subjective, and because it is not entirely attributable to the infrastructure. Specifically, some regard a port's capacity as being that of its terminals, which is not dependent exclusively on the infrastructure but also on other factors such as superstructures, mechanical equipment and "the operational efficiency achieved and the criteria for handling containers in relation to their destinations"\(^{61}\), which may reduce the capacity of the terminal, although estimates do not attribute the reduced capacity to these factors.

To eliminate these distortions and estimates, it is proposed that account should be taken of the productive value, calculated by a method which provides for standardization of the effects of the principal factors. With a specific view to an overall evaluation of the North Sea ports, one study proposes a simplified method for this purpose:

...in this case (the evaluation of capacity in terms of a port region) various factors may be overlooked, since they are moderately capable of being set off against one another, given the differences existing between the individual terminals. Furthermore, those factors which limit production capacity can be ...eliminated where overcoming them does not involve any particular difficulties or high investment costs.

Moving on, then, to the subsequent elimination of the possible bottlenecks, it is possible to eliminate the effects of the major infrastructures: wharves and storage yards. At the container terminals, the wharves today are usually not a factor which limits production, given the high productivity of the wharf cranes and the resulting very short periods for which ships remain at moorings. Conversely, the storage yards may be a factor that imposes serious limits on production: it is not a matter of chance that the availability of space on land is the bottleneck against which the terminals are really fighting as they develop their traffic.

It is possible then (at least in principle) to associate the potential of a system of port terminals with one or more basic features (such as the availability of land areas) and hence to calculate the relationship between the production capacities and these basic factors\(^{62}\).

It must be emphasized, however, that this position takes a different standpoint: that of the role of surplus capacity in competition between groups of ports, in other words between port regions, which is however the sensitive point of Community competition policy\(^{63}\) in the sector. Nevertheless, this shows that the non-utilization of some of the capacity may be attributable to its less than optimum use, rather than to oversizing of the infrastructure, and that therefore an improvement of the port management system might increase the utilization rate. In this respect,

---

\(^{61}\) MARCONSULT, op. cif., p. 28.

\(^{62}\) ibidem, p. 29.

\(^{63}\) The MARCONSULT document cited here was in fact commissioned by ASSOPORTI, the association of Italian ports, with a view to supporting the action taken by its members towards the policies recommended by the European Commission in the Green Paper.
it should be remembered that a port, even after liberalization, enjoys a monopolistic power which, as often happens, can result in inefficient performance\(^4\).

Obviously, this is not to say that the negative effects studied in the previous paragraph do not exist, merely that it may be possible to avoid or reduce them by better management without any interference with investment.

6. Infrastructure, competition and state aid: general aspects

The infrastructure may determine the excess capacity which results in dumping or be financed by state aid which is not included in the calculation of port dues and tariffs for port activities and so distort the competition between different ports\(^5\). The remedies here are transparency in the setting of dues and tariffs, the Community's control over state aid, and the resizing of the infrastructure to bring it into line with actual demand, meaning the elimination of excess capacity.

The latter, on the other hand, may be a short- or medium-term effect brought about by a strategy for acquiring a greater market share in the long term, taking account of the fact that, from an industrial standpoint, a port is a highly capital-intensive business, whose equipment, apart from the need to adapt to changing technology, has a long service life and therefore a low annual rate of depreciation: in other words, the port authority can accept a negative economic result (due to suboptimum use of capacity) in the short term in order to acquire a larger market share in the long. This hypothesis is confirmed by the fact that phenomena of surplus capacity exist even in privately run ports. The objective of a demand-driven infrastructure must, then, be defined as a function of the timeframe of demand, which has to serve as a reference for investment policies.

Economic research in the sector confirms, indirectly, the assumption of a long-term competition policy, noting that the costs relating to the infrastructure have such a slight direct impact on the costs of renting that infrastructure that they produce no distorting effects on the final tariff of the activity that makes use of it\(^6\). Therefore, it would not appear that any dumping phenomena can be realistically attributed to the oversizing of the infrastructure, but rather to a deliberate policy on the part of the port undertakings.

When we come to consider state aid, the classification of the infrastructure facilities becomes important. The most common, adopting a criterion which could be defined as "territorial" in that it is based on the infrastructure's belonging to the port area, distinguishes between maritime access and defence infrastructure, port infrastructure in the strict sense and superstructures. A second criterion, adopting a "functional" criterion, distinguishes between the sea defences, for example canals, lighthouses and outer harbour walls.

---


\(^5\) In theory, distortions could also exist between the various operators within one port, but it is taken for granted that the conditions of infrastructure use are equal for all operators.

\(^6\) Suikens F., "Ports should be efficient, even when this means that some of them are subsidized", in *Maritime Policy and Management*, 1986, 13, pp. 105-26.
special infrastructures and superstructures. A third criterion is that adopted by the Commission and is based on accessibility to the user, distinguishing between works which are:

- accessible to all users on a non-discriminatory basis;
- accessible to all or some users on a discriminatory basis, this group including those for the exclusive use of one user, including the superstructures.

The accessibility criterion may be the best suited for examining the impact of public financing on competition, and these two types can easily be extended to include the others, or most of the others: sea access works and defence works clearly form part of the first category, while the superstructure, the specialized infrastructure according to the functional criterion and most of the port infrastructure fall within the second.

Given its non-discriminatory use, the problem of public financing does not arise for infrastructure of the first type, though it does for the second. In order to avoid distortions, the use of infrastructure of this type must be paid for, and paid for according to a tariff which correctly charges on to the user the costs of the infrastructure in question, on the basis of the user-pays principle.

As regards the charging-on of public finance in the charges and dues for the use of an infrastructure, there are those who maintain that it is necessary to distinguish between public finance for infrastructures which increase the port capacity and for those which modify or replace existing infrastructures as a consequence of technological changes in maritime transport or for environmental or safety purposes. In the latter case, the beneficiary of the finance would be not the user but the public as a whole, and the public financing should therefore not be taken into account when calculating the tariff.\textsuperscript{68}

The present author admits to some doubts as to how this attitude can be reconciled with the lines followed by the theory of sustainable development with regard to the charging-on of external costs, which have been largely accepted by the Community; these doubts relate, in particular, to public financing intended for purposes of environmental protection, which, on the basis of the polluter-pays principle, should be internalized in the costs borne by the user/polluter. A similar criticism could be advanced in those other cases in which public finance has at any rate contributed, if not to an increase in capacity, then to technical upgrades which have made it possible for the financed infrastructure to be used more efficiently or safely.

\textsuperscript{68} \textit{MARCONSULT, op. cit., note 20, p. 6. The document quoted does not pursue this argument to the point of explicitly excluding from the calculation any public finance which does not result in capacity increases, confining itself to emphasizing the requirement that the criteria relating to investment (for all types of infrastructure) should be taken into account along with other considerations. "In particular, it seems necessary not to omit an evaluation of the objective towards which the investment is directed and the identification of the actual beneficiary."}
7. The internalization of the port infrastructure costs

The elimination of distortions of competition in the tariffs for using the infrastructures can be achieved if those tariffs are made transparent by laying down uniform calculation criteria; of the various criteria that might be selected, there are three which have been mentioned in the discussion of this subject, each of which favours or penalizes specific ports:

- the **operating cost**, by means of which the tariff is required to cover only the costs of administering the infrastructure;
- the **average cost**, by which the tariff has to cover all the infrastructure costs, in other words administrative and external costs and the costs of construction and the extraordinary maintenance of infrastructure at its historical value;
- the **marginal cost**, similar to the above but without having to take account of past investment\(^69\).

The first of these results in the most moderate tariffs but does not allow internalization of the infrastructure costs and is not a disincentive to new investment and hence to the increase in the capacity of the ports; on the other hand, this criterion favours those ports of greater internal efficiency, reducing their surplus capacity.

The second alternative results in the highest tariffs and totally internalizes the infrastructure costs; this version favours those ports that have invested less in recent years, in that the historical cost of their infrastructure is lower, and is intended to reduce the impact over time.

The third variation results in tariffs between those of the two previous criteria, and probably closer to the lower level; it discourages new investment, the cost of which is the only type of cost to be internalized; in other words, this is the instrument of choice for gearing investment to demand and containing surplus capacity. It would favour those ports which have made the greatest investment efforts in recent years, penalizing those which made a later start on their modernization and expansion. This criterion may result in the technological obsolescence of the port system in the medium and long term.

\(^{69}\) European Commission, *Green Paper on seaports and maritime infrastructure*, note 3, Annex III.
CHAPTER FIVE
THE COMMUNITY’S PORT POLICY

1. The ports in Community policies

Despite the importance of the ports to the transport and regional economies, they have not hitherto been "at the centre of the development of the common transport policy". In fact, the Commission had already provided an initial approach to a European ports policy in its communication The development of short sea shipping, which the European Parliament had criticized as being inappropriate since the policy on ports is a general one which goes beyond the limits of the segment considered in the communication.

The general objectives stated by the Commission were to make the ports efficient, orienting them toward interoperability, with a regulatory framework of labour relations which would optimize the use of the infrastructure and the establishment of competition between operators. With a view to achieving these objectives, reference was made to technological development in the sector of port activities, the adaptation of the rules of competition to the requirements of ports, with particular reference to state aid, and a structural policy within the framework the trans-European networks.

A point of considerable importance regarding the rules of competition between the ports is transparency of the port tariffs, which have a direct influence on the industrial costs of maritime transport: the Commission recommended that the tariffs should be commensurate with the services actually rendered and should be applied with a clear indication of those services and the sums concerned. In consideration of the specific object of the document, particular attention was paid to short-distance transport, on which the tariffs in question have a major impact. Associated with transparency of tariffs is transparency of state aid, which must not enable a port to undercut the charges of its competitors, while, within a port, competition between the various operators must be guaranteed, overcoming the legal monopolies which, incidentally, the Court of Justice has found to be incompatible with Articles 90 and 86 of the Treaty. These ideas were confirmed in the following year by another Commission document.

70 European Commission, Green Paper on seaports and maritime infrastructure, point 15, p. 8.
71 Com (95) 3 17.
72 Resolution of 18 June 1996 on the communication from the Commission on the development of short sea shipping.... (A4-167/96).
74 European Commission, Shaping Europe’s maritime future – a contribution to the competitiveness of maritime industries, COM(96)84.
2. The Green Paper on ports: the use of the infrastructures

At the end of 1997 the Commission presented a Green Paper on the subject, restating the approaches adopted by the previous documents and updating and emphasizing certain objectives: the integration of the ports into the Trans-European Transport Network, incorporating it as effectively as possible into the transport chain, and bringing about optimum competitive conditions and the containment of overcapacity.

Regarding the use of infrastructures, the Green Paper refers explicitly to the "user-pays" principle with a view to preventing the practice adopted by some ports of covering some or all of the costs of their infrastructural investments with port dues. The basic reason for the emphasis on the internalization of the infrastructure costs is the need to avoid works being carried out with public financing, distorting competition and discouraging private participation in infrastructure investment in ports other than those which enjoy non-internalized public financing.

The application of the "polluter pays" principle is diversified in accordance with the type of infrastructure, and for this purpose the criterion of accessibility is adopted, so that the port defence works are excluded from the internalization of costs. With regard to the other works located outside the port area, a distinction is made between sea access works and navigational aids. As regards the first, which include the dredging of the estuaries, having asserted that there is no reason for them to be excluded from internalization, the Green Paper observes that "the unqualified and abrupt application of the user-pays principle in this case would gravely disadvantage a number of ports, some of which are important gateways to European trade, and could have a negative impact on the inland waterway traffic." As regards the second, the internalization of their costs is generally supported, but as far as those intended for access purposes are concerned, it is suggested that they should be treated in the same way as in the case of roads.

As the criterion for internalization, the Green Paper opts for the marginal costs to be applied gradually, with partial exemptions in Objective 1 regions and cohesion regions. On the basis of these principles, the Commission intends to promote a Community framework on port

---

76 European Commission, Green Paper on seaports and maritime infrastructure, COM(97)678, which offers a suitable starting point for a debate on sea ports.
77 This subject will be dealt with in paragraph 4 below, in connection with the associated project to amend the Community guidelines for the development of the trans-European transport network.
78 The objectives set out by the Green Paper largely coincide with those proposed in the previously cited EP working document European sea port policy of 1993; the most important distinction is the emphasis placed on the internalization of the infrastructure costs.
79 Not only buoys and lighthouses but also radio navigation systems and the physical infrastructures necessary to accommodate the maritime traffic systems equipment and its administration.
80 European Commission, Green Paper on sea ports and maritime infrastructure, point 72.
81 Ibidem, point 14.
82 Chapter IV, paragraph 7.
financing and charging. Point 58 of the Green Paper clarifies what is meant by a Community framework on port charges: "... charges [should] be linked with costs and contain guidelines on the extent to which port charges should reflect the cost of infrastructure investments. It would form the subject matter of a Council directive", which could adopt one of the following calculation mechanisms:

- a calculation based on an assessment "of the costs per unit of transport of the expected increase of volumes handled in a port by a certain percentage (possibly to be varied depending on the type of port)", which still poses the problem of defining the criteria for charging on the fixed costs to the users;

- a calculation substantially identical to that indicated in the previous paragraph, but carrying out the assessment over a period of several years;

- a calculation comprising the operating costs and those relating to investment undertaken after a specified date. It is appropriate to emphasize that the subsequent White Paper on infrastructure costs, dealing specifically with the ports, regards the marginal criterion as a minimum parameter which is insufficient to transfer the full cost to users, and "higher charges should, therefore, be allowed, provided they are non-distortive", which appears to be an indirect reference to the average cost criterion.

3. The Green Paper on sea ports: the port services

The Green Paper includes the port services within the maritime transport system to whose proper functioning they are essential, and observes that certain practices currently followed in some ports have given rise to complaints by users of breach of the Community rules, especially on competition.

At present, the Commission considers complaints one by one on the basis of the applicable regulations. The Green Paper recommends a Community framework of systematic liberalization of the port services confined to the main ports, handling international traffic, which brings about optimum conditions for competition between ports and within ports and adequate safety standards. This framework should adopt the following principles:

- **free access** to the port services market by way of transparent and non-discriminatory concession or licensing procedures; particularly in the case of authorizations to carry out

---

83 European Commission, *Green Paper on seaports and maritime infrastructure*, Annex III; the italics in the first paragraph are a verbatim quotation from that annex.


85 Ibidem, point 32.

86 Chapter IV, paragraph 7.
activities on a monopoly basis, this would have to be subject to a time limit, though a limit sufficient to enable the investments to be recovered;

- **public service obligations**, where necessary, applied fairly among the various operators or properly compensated;

- **harmonization of professional requirements** at European level in order to encourage the movement of workers and free access to the market;

- **harmonization of the tariff systems** in order to ensure that the final prices charged for services internalize the costs of the plant and of the services provided.87

The Community framework illustrated here is integrated with the Commission’s proposal that provision should be made, by any enterprise operating partly in reserved sectors88 and partly in competition, for separate accounting for the various activities.89

4. **The ports and the trans-European networks**

Although since 1995 the Commission has been recommending a port infrastructure policy within the framework of the trans-European networks, none of the 14 priority projects concerned with the trans-European transport network and already approved by the end of 1994 relates to the ports, and only the Community guidelines on the development of that network recognize it as an element of the network and lay down the criteria which should be observed by common interest projects relating to it.90

Together with the Green Paper, which addresses the problem of the financing of the port works within the scope of the trans-European transport network, the Commission has presented a proposal to amend the Guidelines92 which incorporates as a whole the sea ports, the internal shipping ports and the intermodal terminals. With this amendment, the general scheme of the Guidelines, organized with reference to the modal connections, is extended to include the points

---

87 European Commission, Green Paper on ports and maritime infrastructure, points 98-103.

88 By "reserved sectors" is meant economic activities carried out on the basis of an administrative authorization and for which compensation is granted in the form of exclusive rights and compensatory payments.

89 European Commission, Green Paper on ports and maritime infrastructure, point 45.


91 In addition, of course, to the other requirements generally existing for all common interest projects. A fuller account of the Guidelines will be found in EP (DG IV), "The financing of the trans-European networks", Working Document, Transport Series, E1, 1997.

92 Proposal for a European Parliament and Council decision amending Decision No 1692/96/EC as regards seaports, inlandports and intermodal terminals as well as project No 8 in Annex 3, Com (97) 681.

- 58 -
of interconnection between the various modes, of which the ports are probably the most important type in terms of volume of traffic and impact on the local area.

The sea ports of the trans-European network must be open to all commercial operators and handle a minimum volume of traffic of at least one million tonnes of cargo or at least 200,000 passengers on international routes, an exception being made for the ports of the Greek islands, for which passengers on national routes are also taken into account providing that the distances between stops are at least 5 km. About 300 ports meet these criteria.

With regard to the specifics of port projects of common interest, the emphasis is placed on those which help to divert traffic from road transport to maritime transport, encouraging short-distance and sea/river shipping, those which strengthen socio-economic cohesion by encouraging links with the more remote areas, those relating to links between the ports and their hinterland, and computerized administration systems.

5. The position of the European Parliament

The European Parliament regards the Green Paper as a valuable basis for a Community-wide debate on competition in ports, but differs from the Commission in its assessment of the principle of subsidiarity in connection with sea ports "because of the major differences in their geographical and topographical situation, ownership structure, institutional and organizational structure, method of operation and importance to the Community and the Member States". Consequently, "the European Community should gradually develop and implement no more than an objectively limited, but effective, European sea port policy, designed in particular to ensure fair competition and strengthen Europe's international position".

Consequently, the European Parliament places the emphasis on the transparency of the conditions under which competition takes place between and within the ports, calling upon the Commission both to undertake a specific study and to propose a directive on separation of accounts, on the same model as Directive 91/440/EC for the rail sector. Regarding the control of state aid to the port infrastructures, which is a major cause of distortion, the European Parliament recommends the Commission to undertake an assessment of public financing of port and maritime transport infrastructure, subdividing it into public port infrastructure measures (infrastructure accessible to all users), port infrastructure measures for undertakings and port superstructures related to undertakings, and applying the following criteria to each of these categories:

a) public port infrastructure measures do not constitute state aid within the meaning of Article 92 of the EC Treaty,

b) port infrastructure measures for undertakings do not constitute state aid if financed at cost level; otherwise, they are subject to the provisions of aid legislation that concern notification, monitoring and prohibition,

---

93 Resolution of 13 January 1999 on the Green Paper on ports and maritime infrastructure, minutes unpublished at the date on which the present note was written.

94 Recital D of the resolution of 13 January 1999.

95 Recital E of the resolution of 13 January 1999.
c) Port superstructure measures for undertakings are always subject to the provisions of aid legislation that concern notification, monitoring and prohibition; public financing is always ruled out unless publicly managed ports or port operations accord with the market participant principle and unless the exceptional circumstances defined in Article 92 (2) and (3) of the EC Treaty obtain, provided that fair competition among and within the Community’s seaports is not adversely affected.

However, the European Parliament rejects the idea of a Community framework concerning charges for port infrastructure, port fees or terminal fees.

With regard to port services, the European Parliament does not even regard Community legislation on access to their market as necessary, considering that the present powers of the Commission are sufficient to ensure, with the necessary transparency, the public service obligations and high safety standards.

With regard to the proposal to amend the Guidelines, the European Parliament reached a decision at first reading, increasing the volume of traffic necessary for the integration of a port into the trans-European networks to 1.5 million tonnes and expressly excluding the superstructures from Community aid other than, by way of exception, interventions by the Cohesion Fund and the Structural Funds in the regions covered by these.

\[96\] Point 4 of the resolution of 13 January 1999.

\[97\] 10 March 1999 (provisional edition of minutes).
CONCLUSIONS

1. General overview of the basic problems

In recent decades the European port system has undergone substantial modernization at institutional level (especially in the 1990s) of the infrastructures and superstructures, and of the rules which regulate its activities. This modernization has been in response to far-reaching changes in maritime transport technologies and traffic, and in the transport system more generally.

What has been summarized above is the global phenomenon as it affects the system, but this is in fact the result of national and regional policies and of the policies of individual ports in keen competition among themselves to attract new traffic flows. This situation has resulted in excess port capacity, which may be regarded as short-term, in other words destined to be re-absorbed in the medium and long term, though as it stands at present it exerts the classical distorting effects on competition.

The removal of these effects, by way of the internalization of the infrastructure costs, poses, depending on the criterion selected, problems of excessive increases in the final cost or problems of balance between those ports which have already completed modernization and those which have yet to do so, and this problem of balance between ports is reflected in the problem of balance between regions, since the extent of modernization differs greatly between the North Sea ports and those of the Mediterranean.

A collateral effect of this process of modernization is the concept of the port as an intermodal platform which integrates it into the overall transport system. This concept, now finalized in the case of container traffic, has resulted in the loss of the role of the port as a factor in the development of its immediate hinterland, and in particular of the port cities, since cargoes are now much less likely to be processed on the coast to be shipped on by road to the wider interior of the country (or of the whole Union or a large proportion of it in some cases), so that the port is becoming a nexus in the transport system but heavily dependent on the economic progress of vast regions. Competition between the ports, and the resulting pressure to achieve greater intermodal integration, have accentuated this phenomenon, and although the concept of the port as a regional development factor still survives in some States, their connection with the immediate hinterland is declining sharply.

2. The port as an enterprise

The keen competition between ports has triggered a process of liberalization which has made them more independent of the state and has reduced the statutory and corporate regulation of port activities, but concepts and styles of management still remain anchored to a public rather than commercial concept of the port: completing the process of liberalization of port activities is

98 Cf. Chapter IV.
probably a first and essential step\textsuperscript{99} in order to take full advantage of the competitive potential of a port.

The privatization of the port authorities may contribute to a market-oriented administration of the port authority and infrastructure, but the problem remains of whether it is preferable for the infrastructure to be in private ownership or whether its operation should be licensed for a particular period. The choice would have to take account of the market situation, so as to prevent a situation where the port enjoys a monopoly position relative to its catchment area and the administrator establishes his position on a permanent basis, and of any administrative functions that may have been delegated to the administrator.

Liberalization and privatization are a response to the market at the level of the individual port, a region or a state, but the international character of competition requires that the rules on this, and especially the removal of distortions, particularly those caused by public financing, should be adopted at a supranational level, which in the case of the Union means the Community. Hence the need for a European port policy, which is in any case also necessary from the standpoint of integrating the ports into the transport system.

On the other hand, the highly competitive environment within which the ports operate demands that the port undertakings and port authorities take full responsibility in decisions relating to the supply of services to port users, decisions which must be flexible and geared to the specific requirements of the traffic entering a particular port. The model of relations between Community, Member States and ports should therefore be the model established in any section of production between the first two actors and the enterprises. The latter are responsible for their economic and financial success in their market operations; the States, within the framework of their respective industrial and development policies, and possibly making use of Community funds, intervene with financial aid and services; the Community monitors compliance with the rules on competition, with particular regard to state aid.

In this way, it would be possible to overcome the conflicts of interest between the ports in the various regions regarding the criteria of internalization of the infrastructure costs, while private administration of the ports would ensure coverage of the infrastructure costs within the timeframe serving as a basis for a business strategy which must provide an adequate return on invested capital.

\textsuperscript{99} In the preceding chapters we have seen that only port activities relating to the handling of cargo can be said to be completely liberalized in most States of the Union, whereas those relating to shipping, and especially the handling of ships, are still governed by a mixed public and corporate system.
1. **Community sources**

The documents produced by the various Community institutions are normally available in all the languages of the Community. First, *The Treaty on European Union*, of which various editions exist: the one used for this working document was that published by EUROP\(^\text{100}\), *European Union*, compiled from Treaties, Volume 1, Luxembourg, 1993.

The Official Journals of the European Community report regulations, proposals for regulations and the resolutions of the European Parliament. The footnotes indicate the references for each document cited.

Of major interest is the European Commission's **Green Paper on sea ports and maritime infrastructure** (Com\((97)\)678 Final, whose point of view represents the most recent and complete account at the time the present document went to press.

The European Parliament's Directorate-General for Research has in recent years published a number of working documents on maritime transport and the ports, or other documents related to the subject dealt with here. All these documents are available in French and English, and in the other languages indicated in the note, and supply assessments of the subject matter dealt with:

- **The common maritime policy**\(^\text{101}\), Working Paper, "Transport Series" W 14, 1996, which examines the situation of maritime transport from the standpoints of economics, law, international relations, safety and the environment, with particular reference to the general lines of common policy in this sector;

- **European seaport policy**, Working Paper, "Transport Series" E1, 1993, which represents a detailed analysis of the European ports from the point of view of their organization, competition and future prospects;

- **Logistical systems in combined transport**, Working Paper, "Transport Series" TRAN 102, 1998, which constitutes an exhaustive review of the technologies referred to in its title, their future prospects and the problems of integration: particularly important in this context, as far as the ports are concerned, is the account of container and container handling technologies;

---

\(^{100}\) EUROP means, here and elsewhere, the European Community Official Publications Office.

\(^{101}\) Also available in Italian and German.
The financing of the trans-European transport networks, Working Paper, "Transport Series" E4, 1997, which, within a broader framework of examining the events that have resulted in the definition of European policy on the trans-European transport networks and the features of the various priority projects, studies those aspects connected with private sector participation in the construction and administration of the infrastructures, and from this standpoint is also important for the purposes of the present document.

2. Other documentary sources

Various publications which provide basic data were consulted for this document:

- OECD, Maritime transport 1995, Paris, 1997: published annually, and examines the situation of this mode of transport with reference to the last year but one; the analysis refers to the general course of events and to events in each area of the world, with reference to economic results, broken down by geographical area and market sector, shipbuilding, armament and disarmament, and the maritime policies of the various countries and international organizations in the sector;

- Containerisation International Yearbook 1998, London (EMAP), 1998: this again is an annual publication; it contains detailed world level statistics, analyses of progress in the container sector and, its purpose being more commercial than documentary, advertisements by the port undertakings, which provide useful information on the activities at each port;

- ESPO, Report of an inquiry into the current situation in the major Community sea ports, Brussels, 1996: this loose-leaf publication gives a detailed account of port organization not only in the maritime states of the Community but also in those of the European Economic Area (Norway and Iceland), and in Malta and Cyprus; port organization is described with reference to the institutional and financial aspects and to port activities and dock working: a revision of this work is in progress.

3. Literature

For literature, please see the footnotes in the text.

---

102 Also available in Italian and German.
103 Latest available. The English version Maritime Transport 1995 also exists.
104 European Sea ports Organisation, based in Brussels.
The following titles have been published in the transport series

W1 - The Community's external relations in the field of transport (January 1992 - EN/FR/DE)


W3 - Transport * Setting up an Infrastructure Fund * new financial perspective in the wake of Maastricht proposal for a CO2/Energy Tax (September 1992 - EN/FR)


W5 - The future of inland waterways transport in Europe (December 1993 - EN/FR/DE/ES/NL)

W6 - The international dimension of the Common Transport Policy of the European Union (March 1994 - EN/FR/ES)

W7 - The financing of Trans-European transport networks (October 1994 - EN/FR/DE/IT)

W8 - The Internal Market and the Common Transport Policy (December 1994 - EN/FR/DE/IT)

W9 - A European policy for land and air transport of dangerous goods (February 1995 - EN)

W10 - Economic and technical aspects of high-speed rail transport (September 1995 - EN/FR/IT)

W11 - The transport of live animals (July 1995 - EN/FR/DE/IT/NL, Summary - all Community languages)

W12 - The protection of tourists (November 1995 - EN/FR/IT/ES)

W13 - Public service transport obligations (April 1996 - EN/FR/ES)

W14 - The Common Maritime Policy (September 1996 - EN/FR/DE/IT)

W15 - National aid in the transport sector (October 1996 - EN/FR/DE, Summary - all Community languages)
E 1  •  European sea port policy  
(July 1993 • EN/FR, Summary • all Community languages)

E 2  •  Social aspects of transport policy  
(September 1994 • EN/FR/DE)

E 3  •  Carriage of dangerous goods and pollutants by sea • The safety aspects  
(September 1994 • EN/FR/DE/IT)

E 4  •  The financing of Trans-European transport networks  
(January 1997 • EN/FR/ES/IT)

TRAN 103  Fiscal measures in the transport sector  
(January 1998 • DE/EN/FR/IT, Summary • all Community languages)

TRAN 104  Social consequences of deregulation and liberalisation in the transport sector of the EU  
(January 1998 • DE/EN/FR, Summary • all Community languages)

TRAN 105  Logistics systems in combined transport  
(January 1998 • EN/FR, Summary - all Community languages)

TRAN 106  The European Community and road safety  
(May 1998 • DE/EN/FI/IT, Summary - all Community languages)

TRAN 107  Transport in the arctic region  
(April 1998 • DE/EN/FI/SV, Summary - all Community languages)

TRAN 108  The rights of airline passengers  
(November 1998 • DE/EN/FI/IT, Summary - all Community languages)