

Ports and Regional Development in Europe: a Historical Perspective¹

Professor H.E. Haralambides
Center for Maritime Economics and Logistics (MEL)
Erasmus University Rotterdam

After WW II, the importance of, and reliance on, oil led to the construction of huge tankers that minimised unit transport costs and allowed a shift of refining/petrochemical industry from the politically sensitive regions of exporting countries to Europe. Advances in shipbuilding technology have had a similar effect on the iron ore and steel industries, through the construction of large bulk carriers.

Heavy industry such as this attracted other heavy industry in port areas and the result has been high concentration of industrial activity and employment. This was facilitated by the growing economies of Europe of the pre-1970 recession that allowed production with considerable economies of scale. To a certain extent, concentration of industrial activity in the port vicinity was also necessitated by the lack of adequate inland infrastructure that was also being developed in parallel.

However, port development did not take place evenly across Europe: By 1965, the reconstruction of many coastal works in France, following the destruction during the war, had not been completed, whereas it was put right in Rotterdam by 1955. Antwerp had experienced little damage. In addition, western Europe's natural system of waterways and superior hinterland links also favoured Benelux ports. The lack of investment and modernisation in south European ports; trade liberalisation and the consolidation of North European ports' market position made things even more difficult for the South, necessitating government involvement for levelling the playing field. It was considered that the more powerful a foreign competitor becomes, the more able he is to invest and thus divert traffic away from national ports. It should also be remembered that the battle for containerised cargo in the 1960s was fought at the north-western ports for geographical reasons (north Atlantic) and also because these ports were already prepared, possessing a favourable inland transport network that gave them the possibility to further consolidate their market position.

During this period, general cargo traffic was less containerisable, regional port competition was less of an issue, and ports were comprising a lot of labour intensive activities, generating considerable value-added and a multitude of direct and indirect impacts on the national economy including, of course, the facilitation of international trade. They were thus seen by governments as growth-poles of regional and national development and, as a matter of fact, they were often used as instruments of regional planning. Many member States have done so by steering state investment, through regional policies, towards ports, in order to encourage national development. A

¹This paper was never meant to be made widely available. It rather consists of a 'collection of thoughts', some of them 'borrowed' from EC documents and other sources without proper referencing. It was prepared, at an early stage, as supportive documentation to the European Commission's *Green Paper on Ports and Maritime Infrastructure*. However, many of the ideas I have developed here have since become the mainstay of European Port Policy and have found their way in every subsequent Commission publication. I have thus decided to make the paper available, mainly for the benefit of my students.

classic example of such a policy was the Mezzogiorno in Italy, considered by many as a model of spatial reorganisation of economic development. In the United Kingdom, this task was the responsibility of the National Ports Council, established in 1964 and abolished in 1981. It is perhaps worth mentioning at this point that, for instance in Japan, apart from the direct financial returns of port operations, port development is appraised on the basis of its contribution to the social and economic development of the region and the nation. Port development plans are, thus, adjusted to and included in the country's regional development plans, while ports are managed and administered by public sector bodies.

Thus, in Europe and in many other parts in the world, ports have become -and still are- instruments of national development. In that role, they generate numerous benefits, for the country as a whole, that do not necessarily produce visible financial rewards for the ports concerned. However, as government policies usually go beyond considerations of short-term financial profitability and towards the maximisation of long-term *economic benefit* and general welfare, state intervention is often justified on the grounds of the “not solely commercial” objectives of ports.

To make the best use of ports in this role still remains the basis of a policy of regional development in many member States, particularly in southern Europe. Port capacity and its spatial characteristics are determined by national priorities aiming at the spatial reorganisation of the entire national economy. Investments in port infrastructure, such as new terminals, docks, deep-water quays, major locks, etc. is thus centrally funded, considered to be serving the collective benefit of the nation. It is clear that individual port administrations benefit from the growing traffic which results from regional policies and, in this respect, they have to take part in the establishment of major works. However, it is often thought that it is in the national interest to have State initiatives in decision-making, as the individual port authority cannot appreciate the full extent of regional impacts or the diversity of the interests involved.

Such public investment is not necessarily in conflict with the provisions of the Treaty: For example, Article 93 considers such intervention permissible when:

- it encourages the development of areas with a low standard of living and high unemployment;
- it facilitates recovery after periods of economic depression;
- it promotes the development of certain key economic activities.

The Impact of Technology: Containerisation

The advent of containerisation in the 1960s started to change the situation quite dramatically, especially in northern Europe. The capital-intensive nature of liner shipping and the need for maximum capacity utilisation in order to achieve adequate rates of return on investment, increased pressures on ports for further improvements in labour productivity and operational efficiency. In its efforts to adjust to the new demand requirements, the port industry itself became also a capital-intensive one, requiring massive investments in port infrastructure and sophisticated cargo handling equipment. In this way, containerisation and the induced cargo-handling techniques have had an

equally profound impact on port employment. As with all other capital-intensive innovations, containerisation substituted capital for labour and, thus, resulted in substantial reductions in port employment, simultaneously accompanied by enormous increases in labour productivity.

In addition, through the use of modern and expensive cargo-handling equipment, containers transit the port domain in a matter of hours while, at the same time, sophisticated and highly efficient transport networks, space limitations and sometimes labour rigidities, have taken a considerable part of what was previously considered as “port work” outside the port domain. This development has particularly to do with the staffing and stripping of containers that can now be performed at the consignor’s/consignee’s premises by own staff or at Inland Container Depots (ICDs) where ample and cheaper space if available, often conveniently located close to main road junctions.

Even more importantly nowadays, globalisation and the international division of labour; environmental pressures and similar concerns, drive away heavy industry from European ports towards developing countries. Light industry is instead taking their place together with the new role of ports as transshipment points serving hinterlands that extend far beyond national boundaries. These activities and functions, however, are increasingly commercial in nature; they benefit an increasingly narrower group of port users, and thus they cannot easily justify central funding. Thus, many north-European ports have lost a considerable part of their role as “growth poles”, deserving regional development considerations, especially in regions (countries) that have reached an advanced stage of regional development, and are increasingly viewed as commercial entities that have to fund their investments and price their services accordingly. This is especially the view of the UK where, after their privatisation, ports are treated indiscriminately as any other business enterprise.

Reduced profits, as a result of intensified port competition, and labour-saving cargo-handling techniques have led to a considerable loss in direct value-added from port activities, mainly in northern Europe. This has intensified -sometimes rather unsuccessfully- those ports’ efforts to attract new value-added activities, such as assembling, labelling, etc., in the port domain. Often, these efforts carry strategic rather than tactical profitability considerations: In other words, profits from such value-added activities are not so important as the need to convince governments that ports still remain growth-poles and thus deserve a share of taxpayers money that, *inter alia*, would give them a comparative advantage over other regional ports who see themselves as commercially viable enterprises.

In the meantime, however, new logistical concepts have evolved as a result of globalisation of production and the demands this has posed for efficient transport systems. Globalisation and trade liberalisation, helped by the remarkable developments in transport, logistics and communication technologies, have drastically weakened the link between manufacturing and the location of factors of production and have stimulated a most noticeable shift in manufacturing activities towards countries with a comparative advantage.

Developments in international transport have been instrumental in shaping these processes. Containerisation and multimodal integrated transport have revolutionised trading arrangements of value-added goods and have given traders and global managers more control and choice over their "production-transport-distribution" chain. Furthermore, transport efficiency is necessitated by the very same nature of value-added goods whose increasing sophistication requires fast transit times from origin to destination in order to increase traders' turnover and minimise high inventory costs. Today, these costs are brought down significantly by the use of logistical concepts and methods and also by the increased reliability and accuracy of international transport that allow manufacturing industries to adopt flexible *Just-in-Time* and *Make-to-Order* production technologies. *Inter alia*, these technologies enable companies to cope with the vagaries and unpredictability of the seasonal, business and trade cycles and plan business development in a more cost effective way.

The North-South Traffic Imbalance Question

The high degree of efficiency and productivity of north-European ports, coupled with the existence of sophisticated inland transport networks, has allowed them to capture in full the benefits of the new logistical developments described above. Thus, approximately 50% of Europe's external trade (i.e. 1.2 billion tons) is channelled through what has come to be known as the Hamburg-Le Havre port range. To a considerable extent, Mediterranean ports are by-passed in the Europe-Far East trades, with goods destined for the South being transhipped in the North and then carried over land.

As a consequence, the heavy demand on road use, compounded by the under-priced, fixed-cost-based, supply of road infrastructure, and the increasing unwillingness of many governments to invest in new road capacity (0.8% of Community GDP in 1995, compared to 1.5% twenty years ago) create a number of significant problems, particularly with regard to congestion, safety and environment. Some often quoted illustrative figures could further highlight this point. Thus:

- The death toll in road transport amounts to 55,000 people per year (1.5 million injured);
- Every day, 4,000 km of Community motorway are totally congested;
- Yearly congestion costs amount to 120 billion ECU, or 2% of Community GDP;
- The external costs of accidents, air² and noise pollution have escalated to 130 billion ECU/year;
- In total, transport externalities represent roughly 4% of Community GDP.

Externalities such as these, however, are rarely internalised in the pricing of road infrastructure, the more so when the latter has lost most of its "public interest" character and is increasingly becoming a private consumption good. A different road pricing policy, as suggested in the Commission's Green Paper "*Towards a Fair and Efficient Pricing in Transport*" is expected to make competition among ports and transport systems fairer and more efficient, leading to a more balanced distribution of traffic across Europe. Correctly, however, the Green Paper takes a differentiated

²Excluding global warming.

approach to road-pricing with respect to peripheral regions, as road haulage there is the predominant mode of transport and pricing policies aimed at shifting cargo from roads may have adverse effects on development prospects.

Current trends may, however, change this picture in favour of smaller ships targeting more immediate hinterlands through an increased number of direct calls, particularly in the Baltic and Mediterranean regions. A number of market signals indicate to this direction, at least in the long-run:

1. Up to now, developments in ports (hub-and-spoke) have been dictated by developments in shipping rather than the other way around. Developments in liner shipping in particular have been necessitated by the drive to cut unit costs through increases in the size of ships. The capital-intensity of modern containerships, however, requires very fast turnaround times and thus appropriate investments in ports. At the same time, shippers require a certain frequency of service that befits their *just-in-time* and *flexible-production* technologies. The combination of “large ship size” and “adequate frequency of service” can easily lead to low load factors and under-utilisation of capacity, for operators intending to “go it alone” without a secure cargo basis. Under today’s circumstances, and with few notable exceptions (Evergreen), such an operation would be unprofitable, meaning that liner shipping starts to realise diseconomies of scale. Until recently, containership sizes were able to increase and operators able to go-it-alone due to the antitrust protection afforded to liner conferences. With the imminent demise of the latter, however, alternative solutions had to be found, mainly in the face of consortia, aimed at rationalisation of service by combining tonnage, routes and equipment. Of course, both conferences and consortia are, so far, exempted from competition law provisions albeit amidst heated debate and criticism. If liner shipping is thus liberalised further in the future, ship sizes are bound to decrease together with an increase in the number of ports of call. Low prices would then be achieved through higher competition rather than big ship sizes.

If deregulation and competition in liner shipping intensifies, shipping companies will be forced to provide the services their customers want, rather than the ones they find it convenient to offer. This argumentation is vindicated by the strategic importance that, for example, North Sea ports attribute to short-sea-shipping (i.e. main-porting/feeder), logistics/distribution and EDI. The importance now will be on *global logistics* instead.

Reduction in ship size and more direct calls could follow the example of the air-transport industry. The most common jet flying across the Atlantic is not the 420-seat 747 jumbo but the 200 plus-seat Boeing 767. Eight out of 10 transatlantic planes are twin-engined craft such as the 767, its bigger brother the 777, or the various airbuses. This taste for smaller international jets reflects the fact that travellers now like to shun big international hubs such as London and New York and fly directly to their destinations. This is changing the international market into a web of direct intercontinental flights rather than one big air-bridge between London and New York.

2. The present hub-and-spoke or mainporting system is likely to be under attack for an additional reason: all over the world, ports are being spectacularly developed in tandem with their countries' general economic growth, development and trade requirements. The Hirshman-Myrdall effect is little taken into account, as countries are not convinced that they should not develop their ports just because they can be equally well feedered by neighbouring hubs.

Given the existence of the significant economies of scale involved in port development, once the need for port development is realised it is usually also understood that the development of container-handling facilities in excess of national requirements might have the positive spin-off effects of an *unbalanced growth* approach to development. According to this, basic infrastructural facilities (such as ports) are built up far ahead of existing demand, on the part of the industry, agriculture and commerce, in the hope that the latter activities will expand by the wake of the former (a.o. see for example north American railways, particularly those of Canada). Thus, global port development along these lines, combined with further deregulation in liner shipping, is bound to make "diversion-smaller ships" a much more attractive alternative than "mainporting/feedering".

3. The trend towards smaller ships and direct calls/diversion will also be facilitated by the growth of intra-regional trade in Asia: It is estimated that by the year 2005, 50% of international trade will be taking place within Asia. The consequent development of Asian ports and fleets to serve this trade -with ships of smaller sizes obviously- and the increased profitability of these trades, will perhaps make it more economical for Asian operators to deploy an increasing number of this type of ships to Europe-Far East instead of building dedicated large containerships to serve Europe, as is currently the case under the hub-end-spoke system.
4. Another factor challenging the present mainporting system is a different future road pricing policy in Europe. A full cost recovery pricing policy (including the external costs of road transport³) based on variable costs (the user pays principle) is expected to make competition among ports and transport systems fairer and more efficient. It will also make long-haul road transport considerably more expensive thus boosting not only alternative modes (e.g. short-sea-shipping and IWT) but also southern European ports that could equally well target Asian cargoes destined for the hinterlands of France, southern Germany, Switzerland, Austria, the countries facing the Black Sea and a considerable part of Central and Eastern Europe. The competitive position of South-European ports and short-sea-shipping in this region can further improve along with progress in the integration of non-member Mediterranean countries and the eventual formation of a Customs Union and a Free Trade Area with them. However, the process of modernisation and management re-engineering of South-European ports will require substantial regional development funds.

The development of TENs coupled with a different road pricing policy will also have an effect on the *price equalisation* policies of most maritime conferences; policies that, however well justified under the present circumstances, affect both port competition and encourage long-haul road transport. Liner shipping

³already emphasised in the Commission's green paper "Towards a Fair and Efficient Pricing in Transport".

companies incur substantial fixed costs due to their need to provide regular and frequent services to their customers. As a result, they require increased port reliability and quick turnaround times, sometimes achieved through the use of their own dedicated terminals. Furthermore, the inherent overcapacity in liner shipping, again as a result of the need for regular and frequent services, oblige liner companies to try and extend their catchment areas far beyond the immediate hinterland of their port(s) of call. This need explains their price equalisation policy according to which short-haul cargoes cross-subsidise long-haul ones. Long-haul cargo may, thus, pay less than its full direct costs of transportation, the difference accounted for by either the relatively higher price of short distance haul, and/or lower sea-leg tariffs that, incidentally, are immune to antitrust legislation. Arrangements such as these encourage haulage over long distances and, from a Common Transport Policy (CTP) point of view, cannot be unquestionably acceptable, especially when shorter distances/other modes are available/under-utilised.

Having said that, however, this policy of liner shipping companies is not necessarily the result of the particular market structure of liner shipping. Even with higher competition prevailing, a liner company/conference would still have the incentive to cross-subsidise long-hauls as long as the marginal costs incurred are less than the costs of having to sail with less than optimal load factors. The latter costs have of course to do with the economies of scale of large vessels that are, however, only realised if high capacity utilisation is achieved.

Ports in Trans-European Transport Networks: the Crucial Link

The Treaty on the European Union requires the EU to promote the interconnection and interoperability of national networks and access to them, taking into account the need to link island, landlocked and peripheral regions of the Union with its more central areas. The aim is to enable citizens of the Union, economic operators and regional and local communities to derive full benefit from the internal market.

Article 130 in particular refers to the role of the networks in promoting harmonious development and in strengthening economic and social cohesion. For that purpose, it provides for the establishment of a Cohesion Fund to support projects in member States which qualify. The Treaty also permits cooperation with neighbouring countries in order to promote projects of mutual interest and to ensure the interoperability of networks at a pan-European level. One of the aims of this provision is the connection of TENs with networks outside the Union, in particular with Central and Eastern Europe and the Mediterranean area.

In this context, ports provide access to the land elements of the transport network from the rest of the world and services and facilities which enable maritime transport to connect different parts of the land networks, to join them to comparable networks in third countries and to reach islands and peripheral regions.

The substantial commitment, resources and emphasis the Union attributes to the development of trans-European transport networks, aiming at closer economic and

social integration, creation of employment, growth, and sustainable mobility, charges ports with a crucial role and responsibility. The development of the Union's multimodal network would be incomplete without including the interconnection points which connect the different transport modes and lines. This consideration comes to complement the fact that 90% of the Union's external trade is carried by sea. Thus, Europe's export competitiveness in a global economy increasingly depends on an efficient and cost effective port sector.

Optimisation of TENs is likely to reduce transport costs and the perception of "distance", at least in the long-run, and thus lead to important locational decisions causing production to relocate to peripheral regions. This is why "transport" plays such an important role in the Union's cohesion philosophy. Ports in these regions have to be adequately prepared to take on the challenge. Otherwise, the economic and social benefits of greater cohesion can be easily withered by peripheral ports that are generally characterised by lower levels of efficiency, mainly as a result of under-investment.

In the same way, if short sea shipping is going to offer an attractive alternative to shippers, and thus relieve Europe's congested motorways, it will also require efficient and cost effective ports optimally integrated in multimodal transport networks. The importance of short sea shipping and southern European ports is also attracting increasing attention in view of the rapid economic development of non-member Mediterranean countries, their increasing economic links with the Union and the eventual creation of a Mediterranean Free Trade Area.

The basic aim of integrating ports in TENs is to promote physical and management improvements so that transfers between maritime and land transport are seamless and efficient, and efficient intermodal transport chains are established which facilitate trade, promote short-sea-shipping and strengthen economic and social cohesion. In brief, the objectives of including ports in the TENs strategy can be summarised as:

- ◇ Encourage growth of inter/intra EU trade and more specifically trade with the Community's nearest neighbours (EFTA, Central and Eastern Europe, Mediterranean and North Africa);
- ◇ Overcome congestion of the main land-corridors and minimise the external costs of European transport by contributing to the development of combined transport;
- ◇ Improve the accessibility of peripheral regions and strengthen the economic and social cohesion within the Community by enhancing the Community's internal maritime links, paying particular attention to island and peripheral regions.

Among others, the Treaty requires the establishment of guidelines which cover objectives and broad lines of measures and which identify "projects of common interest". The EU may support such projects from the TEN budget line or from the Cohesion Fund. Support to port and related infrastructure projects aiming at diverting traffic from "road" to "sea", and thus reduce bottlenecks and missing links, can be considered as serving the "common (European) interest". In the same light, support to projects enhancing the "functionality" and optimisation of TENs can also be seen as such.

Since the TEN guidelines do not identify “ports of common interest”, port and port related projects of common interest can be located in any port of a member State, as long as the project meets the criteria set down in the Guidelines. However, as these criteria include the ‘facilitation of community trade’ and ‘short-sea-shipping’, care should be taken not to promote projects of a purely commercial nature that, although indeed may incrementally facilitate trade, their ‘societal’ gains are small, compared to the required funding, and, at any rate, much smaller than the societal *European* gains achieved by promoting projects that connect peripheral regions; achieve cohesion; and allow access to the internal market of regions that happen to be geographically and historically disadvantaged.

European ports should be considered as a “closed system” and as infrastructural and functional elements of a wider European logistical system. Considering European ports as a whole and as the international interface of the European logistical network is consistent with the approach taken by the Commission in its *white book* on the Future Development of the Common Transport Policy. In fact, while taking note of existing inefficiencies and discordances, the *white book* provides for a global approach to the problem. It aims at a more balanced modal development of transport, allowing users a greater freedom of choice; at a more balanced distribution among regions of benefits resulting from infrastructural development; at improving the efficiency of companies operating in this sector; at increased safety and attention to the problems of environmental protection. All this, while taking social problems related to the sector’s employment levels into account.

Port Competition, Funding of Infrastructure and the Pricing of Port Services

The administration and financing of ports in Europe -as of course in other parts of the world- principally falls under two philosophies: that which sees ports indiscriminately as business undertakings that ought to recover their costs from port users that benefit directly; and the philosophy that sees ports as trade facilitators and growth-poles to regional and national development; as integral parts in national industrial and regional planning; and thus as economic activities offering a “public good” that ought to be paid for by the general taxpayer. The arguments for and against each philosophy abound, often giving ground to heated debate if not friction, while the overall picture is far from being conclusive.

Notwithstanding this, however, the completion of the internal market and the existence and further development of superior inland transport networks across Europe intensifies competition among ports significantly, particularly competition aimed at attracting unitised transshipment cargo. Disappearing national hinterlands mean that the pricing, port development and financing decisions of a particular port may have marked effects on its neighbours, nationally or internationally. This raises the relevance and desirability of a more coordinated approach to port development at pan-European level aimed, among others, at highlighting the crucial role of ports in the optimisation of trans-European transport networks. Such an approach should take into account the significant role of ports as *nuclei* of regional development in the less developed regions of the Union; the strong commitment of the latter to greater economic and social cohesion; and the importance of adequate Public Service

Obligations (PSO) provisions. Indeed, PSOs are essential in order to help reconcile the highly desirable, but often long-term, effects of liberalisation and competition with the inevitably uncertain and, therefore, risky nature of investment in ports. Cohesion-oriented policies, which have a long-term time-horizon, require continuity and the supply of regular services over an extended period of time, something that cannot be always guaranteed in low volume and highly seasonal markets. Public provision in the poorer, less developed, regions can therefore help balance the desirable effects of liberalisation on efficiency with the need for adequate services to be provided to all areas at an affordable price.

In addition, and especially in the case of the containerised transshipment traffic of northern Europe, intensified inter-port competition, combined with automated labour-saving cargo handling systems, reduces the value-added of port activities, while the whatever benefits of port investments and their impacts can be easily dissipated from the country in question to the final consignor/consignee. This issue causes considerable concern to governments contemplating the continuation of public funding of port projects, as it deprives them of the basic *rationale* of doing so, namely, that the port provides a public service to the benefit of the whole nation. From a European port policy perspective, the uncontrolled (public) funding of port investment projects, for the often overestimated regional development or economic impact effects, can create excess capacity whose substantial sunk costs may encourage the proliferation of over-investment, hindering the development plans of other ports where regional development considerations may be of real significance.

Among the many functions of a port, is indeed the provision and maintenance of the port's basic infrastructure, such as breakwaters, approach channels, turning basins, rail/road facilities within the port, navigational aids, towage and pilotage. Apart from the general public's interest in the safety of ports, many of the port services can clearly be considered as falling within the domain of "public goods" in the sense that no particular user can be excluded from their use if he/she is not agreeable to share in the cost of their production; a situation often referred to as *the free rider problem*. Furthermore, services such as those provided by, say, breakwaters and navigational aids can be considered as *collective consumption goods* in which case, and up to a point, the total cost of production does not vary in relation to the number of users. Finally, a number of port services can be considered as *non-rival in consumption*, given that user A's demand does not reduce (compete) that of user B. It is thus argued that those port services that qualify as "public goods" ought to be provided by some public authority, although *provision* should not be confused with *production*; the latter could be entrusted either to the public or private sector depending on considerations of economic efficiency.

However, ports, being used mostly for commercial ends, are entirely different in nature from the other public goods to which they have been likened. They are characterised by such peculiarities as the scant diversification of users they serve; the typically private organisational modes they adopt; and objectives greatly differing from the general ends pursued by the so-called pure public goods such as defence; education; justice; environmental protection, etc. For example, port users can be excluded from the use of the port if they do not agree to pay for the services of, say, lighthouses; the cost of dredging varies in relation to the number and size of ships; and the "non-rivalry in consumption" argument cannot stand true in congested ports.

Furthermore, the notion that the port is a public asset which should be used in the national interest has no useful meaning in practice without a criterion for determining how and when that interest is being served. Especially in today's economically integrated Europe, this "public interest" has to be redefined and measured. To take an extreme example for the sake of argument, if port X, situated in a densely populated and highly developed area, were to be scrapped and the port area redeveloped to its alternative uses, while the whole traffic were to be served by other European ports Y and Z, this might indeed lead to an increase in overall economic welfare in the country of port X. Or, to put it differently, with the availability of inland transport infrastructure in western Europe, if a certain country is prepared to use taxpayer money to subsidise its ports, why shouldn't a neighbouring country take advantage of this instead of subsidising its own ports to the benefit of others? Wouldn't it be better to spend the money instead on efficient inland transport systems which, on the other hand, could well be considered as public goods?

An additional important trend nowadays has to do with the fact that the port industry has moved from one in which predominantly public capital was used to provide common user facilities, to one in which capital is being used to provide terminals which are designed to serve the logistics requirements of more narrowly defined groups of users. Indeed, they may be designed to serve the needs of a few firms or even one firm. In such a way, the "common interest" argument loses weight, leading to a more commercial attitude towards pricing and infrastructure funding.

Many times, public works in the port industry are classed as "public" only because they are in practice publicly financed. The management of infrastructure -which is a component of a "public good" as defined by welfare economics- is consequently one of the activities carried out by public agencies called upon to warrant indiscriminate supply on the market, check monopolistic behaviour within ports and provide adequate allocation of funds to schemes aiming at improving and modernising the existing infrastructure network. Often, however, strong arguments are voiced regarding conspicuous public resources allocated to support "trade", while the ensuing benefits accrue predominantly to narrow groups of transport operators, occasionally to the manufacturers of the traded commodities, and to the public agencies engaged in the management of port operations. Furthermore, "benefits" often accrue to operators in countries other than the nation in which the relevant port is located and this often results in a substantial decrease in resources available to the various domestic communities involved. Thus, the alleged "social" and "employment" issues often put forward to justify public intervention in ports are being increasingly questioned.

Port Subsidies and Infrastructure Pricing

It is often argued that the EU funding of port projects distorts competition. In principle, however, EU funds should be aimed at correcting existing distortions to competition. For example, a Member State opposes any industrial policy approach which would allocate roles to specific ports in the EU. This is indeed right. However, the EU has to see to it so that port development and traffic are more equitably

balanced, reflecting the increasing traffic and general economic development of European regions, and that the present “main-porting” situation (largely created through public investment) does not continue to proliferate road congestion. The Same member State also maintains that public investment in “general infrastructure”, i.e. dredging, breakwaters, VTS, road/rail/canal connections, should reflect commercial decisions and there should be no place for “central planning” of any type. However, this proposition is contradictory by nature: if public investment should reflect commercial decisions, why does it have to be public in the first place? And if it does, why couldn't investment costs be recovered, also under commercial terms, from direct users? Furthermore, how can port investment reflect only commercial decisions when the rest of the transport infrastructure in which ports belong is publicly funded and/or subsidised, giving the ports in question a definitive comparative advantage *vis a vis* their foreign competitors?

Assistance to ports cannot be ascertained if generalised transport infrastructure costs and related pricing are not taken into account. For example, the fixed-cost pricing of a country's road usage; the subsidisation of its railways, shuttle services or maritime access can easily favour national ports in their efforts to attract foreign transshipment traffic. Thus, although ports, from their own narrow commercial perspective, may claim that they operate under competitive conditions -and even demand that others do so too- and no need for a policy at any level is necessary, from a pan-European perspective the picture can be quite different. Indeed, even if port operations are conducted under purely commercial terms, the provision of subsidised inputs necessary to the production of the port service (such as road and rail capacity and maritime access) does not have any different overall effect from that of a direct operational subsidy.

Port capacity could indeed be determined on the basis of commercial criteria, but then transparency in port accounts should prevail; the financial flows between the port and the government should be clear; and the costs of general infrastructure investments be reflected in port tariffs, regardless who is funding these investments. To take a simple but also crucial example, presently port competition is distorted as a result of inappropriate road transport pricing policies favouring long-hauls and not internalising the external (social) costs of transport. A different pricing policy for road transport, as suggested by the Commission in its Green Paper on road pricing, could improve the alleged north-south imbalance and give a substantial stimulus to southern European ports that could also serve the central European hinterland.

Many would argue that, presently, subsidies are given to many European ports not because they are considered necessary or because of “public good” arguments, but because other neighbouring countries do so (under different circumstances, ports should normally detest government subsidies as these are concurrent with government interference to port decisions that is not always welcomed). Common European guidelines on subsidies would thus make a lot of sense, if not absolutely necessary.

Port subsidies can be indirect and thus not easily detectable. In its effort to attract industrial activity to the port or to increase the competitive position of the port with regard to its various port charges, the port administration can afford land to companies, operators, stevedores, etc. at very concessionary terms not reflecting the

opportunity cost of land, particularly in densely populated areas. Existing government land thus priced loses its second-best alternative use and rent, whereas reclaimed new land often provided through taxpayers' money cross-subsidises many times foreign beneficiaries (e.g. refineries, car manufacturers, etc.) who leave comparatively limited value-added to the regional/national economy.

Furthermore, although in many ports it is claimed that operations such as cargo-handling, stevedoring, warehousing, etc. are in the hands of the private sector and thus adequate competition exists, licensing policies and the allocation of land (and its pricing) remains grossly in the power of the port administration which often cares less about intra-port competition and more about the creation of an appropriate mix of companies in the port domain. In short, port land is rarely liable to the forces of demand and supply and thus its pricing is often far from representing opportunity costs.

Thus, in a number of cases, port charges do not reflect the opportunity cost of land used to provide the port service. In densely populated areas this cost is substantially high (e.g. demand for office/residential space or recreation) and ports have been known to relocate just for that reason.

From the national economy's point of view, not accounting for the opportunity cost of land in port operations leads to inefficient resource allocation, at least in economies that proclaim adherence to market principles. Furthermore, such a situation can be considered as a hidden subsidy to ports *vis a vis* different policies in competing ports where land is privately owned by port operators.

A number of studies have shown that port dues constitute a rather insignificant percentage of overall transport costs and thus they have little impact on port competition. Much higher are the cargo-handling costs, charged for the services of private stevedoring companies. Thus, instead of reducing public support to ports, it could make more sense to increase competition in cargo-handling operations. This can be done by licensing more stevedores; make the acquisition of land a matter of market forces; etc. Still, however, the mere fact that port charges are in general only a small percentage of the final price of goods is not a valid argument for neglecting their impact on competition; however small, public funds allow the port to continue operating and it is this operation that may distort competition in a multitude of ways; not the subsidy itself.

It is quite legitimate for any government to see ports as growth-poles serving the national interest -to the extent that they do-, and thus subsidise them from national or, provided they qualify, European (e.g. structural) funds. Particularly as the latter funds aim to even out regional disparities and, in the case of Cohesion Funds, achieve greater cohesion through transport. However, in a number of cases, the provision of structural funds has to be looked at and evaluated very carefully in view of the need to integrate ports in efficient and seamless transport networks, eventually extended beyond the confines of the Union.

It has often been argued that if the legal, logistical and organisational systems of a port are globally more effective than those of another, this should not be a reason to

justify aid measures in favour of the second port. However, although this argument is in principle true, it should also be kept in mind that the above systems may have been purposely developed (often also with public money) in order to consolidate market power and/or increase/maintain market share.

It is likely that state aid to ports for reasons of regional/national development may cause traffic shifts unfavourable to neighbouring ports. In principle this is not acceptable unless the investment (and the subsequent shift) leads to network optimisation; relieves congestion; and accrues benefits to the final consumer through lower prices. From an EU point of view, especially when the affected port(s) does not apply full cost pricing of its services (i.e. infrastructure costs and transport externalities are not included in port charges), the new investment could well be seen as intervention aimed at correcting market failure.

State aid is given to ports mainly on grounds of regional development and is thus allowed by the Treaty through Articles 92-94. From the viewpoint of European port policy, state aid should be examined only as far as it contributes to distortions of competition *vis a vis* ports in other, neighbouring, member States. A good case in point regards the provision of state aid that lowers port operating costs, for example by not attributing opportunity costs to the value of land. Thus, the port can lease land to port operators/stevedores at prices below the economic value of land. Such an arrangement offers private stevedores, etc., a comparative advantage over their foreign competitors, which makes this type of (hidden) state aid incompatible with the Treaty.

In general, public investment has a “crowding-out” effect on private investment, particularly if funded through borrowing, and as such it may lead to non-optimal allocation of resources in the economy. It can be justified in the case of the production of public goods -although increasingly port services are not seen as such- and also whenever it carries regional development and similar considerations (Article 92 of the Treaty). Even in this case, however, the benefits to society from public intervention should be compared not only to the costs involved in the production of the public good in question but also with the foregone benefits in other sectors of the economy where the committed public money could alternatively have been invested.

Cost Recovery in Ports

The lumpy nature of many port capital investments, such as breakwaters and major infrastructure, and the long period required until fully utilised, i.e. until the planned number of berths etc. is in place, is often used as an argument for central funding. Otherwise, it is argued, the commercial pricing of initial infrastructure would be unfeasible, harshly penalising particularly smaller ports (until sufficient traffic is built up). The argument is in principle false: these investments can be funded by long-term redemption bonds, or central government loans of very long maturity, with significant grace periods, but afforded at more or less commercial terms. In the USA, low interest rate tax free bonds could indeed be considered as a subsidy to ports: the return on capital required by the port is below its opportunity cost. However, as these bonds are usually attractive to high income classes, ports are subsidised not by the average

taxpayer -in higher need of “social infrastructure” like hospitals and welfare- but by the top echelons of income classes; some would consider this acceptable.

Apart from cases where regional development considerations are prevalent, the public funding of ports can create overcapacity which is unacceptable in an era of squeezed budgets and Maastricht convergence criteria. It is indeed increasingly difficult to justify policies subsidising principally commercial port activities when, at the same time, welfare systems and general government budgets are under scrutiny. In a sense, a port located in a relatively underdeveloped region can indeed contribute to trade and prosperity and thus be subsidised. But the same is not always true for commercial ports that mainly offer transshipment services to neighbouring countries. The elimination of subsidies in predominantly commercial port activities would lead to a market approach to port investment, necessitating adequate rates of return on capital: something that would lead to investment justified by the existence of adequate traffic volumes that would be redirected anyway as a result of different pricing and competition, but also as a result of progress towards optimisation of TENs, Central and Eastern Europe integration, etc.

There is thus a need for a harmonised approach to port development based on the financial viability of ports. This would largely remove the current difficulty of ports being the victims of other ports’ uneconomic investment practices. A more competitive environment is also consistent with more local decisions and a greater role for private enterprise. The evolution of more competitive conditions among ports has increased the relevance of public port policy in the allocation of traffic among ports. The potential effects of public subsidies on the routing of traffic are greater now that traffic is more able to move through alternate gateways. Also, the distorting effects of differential subsidies are much more likely to extend across national boundaries as the size of hinterlands is increased.

Whenever commercial criteria for infrastructure investment are deemed appropriate, the probability of excessive social investment in port capacity will be less than before. Under such a regime, ports are masters of their own destiny and they are not at the mercy of shipping lines that have the ability to move, because the lines would only find it attractive to move if another port could offer lower costs. If it can do so, and it is not subsidised, the move is desirable and it should take place. If it takes place because an alternative port is subsidised, the incumbent port is not at the mercy of the shipping line as much as the victim of the other port’s policy. Ports and terminals have thus more to fear in port policy than they have in the strategy of shipping lines.

It has often been argued that the costs of providing a permanent structure (breakwater, approach channel) do not have to be recovered, as there is no depreciation (deterioration) of the asset, which is owned by the State. That was the argument used for forgiving the 50-year loan by the U.S. government for dredging the U.S. part of the St. Lawrence Seaway System.

However, the public funding of port infrastructure and the cost recovery of port services are two different things. Infrastructure can and perhaps should be funded by public money due to a variety of legal, economic and administrative reasons. This does not mean, however, that this investment should be forgiven and not attempted to

be at least partially recovered from users who directly benefit, regardless of how the investment is funded. In this respect, reference can be made to the EC's position according to which ... *as a general rule, all transport users pay the full cost, internal and external, of the transport services they consume, even if these costs are in some cases paid by society to assist those in need...*

In this particular case, the problem could be solved if, for example, depreciation of port infrastructure was included as a cost in the port's pricing system. Something like this would undoubtedly raise the level of port prices, but even this should not be a problem if this policy were to be applied across the board to all competing regional ports. The overall result on society could then be ascertained by comparing the loss in consumer surplus, as a result of higher port prices, to the welfare gains had the public funds in question been invested in other sectors of the economy or led to lower taxes in general. The effect and importance of higher port prices to the consumer have also to be established statistically; i.e., export and import price elasticities in European regions have to be estimated, as well as the percentage of port costs in the final price of goods. It could well be argued that higher port prices are not necessarily passed on to consumers but are instead absorbed in lower profits for transport operators.

Such cost recovery would probably require the corporatization of ports and the funding of port infrastructure through the issuance of the appropriate instruments of senior debt. This approach could also go a long way towards eliminating overcapacity, as investments now would be made under commercial market criteria. The problem of distortions to competition would also be simultaneously reduced.

Investment Appraisal Considerations in Ports

It has often been argued that port development projects should comply with the criterion of a positive internal rate of return.⁴ The usefulness of this criterion, however, cannot be accepted indisputably. First, the returns of any port investment have to be seen in the context of the network in which the port belongs (roads and highways, railways, IWT, distribution centres, ICDs, etc.). The productivity of any part of the network (and thus this of the port) depends on the extent and configuration of the entire network and the returns to the port will be greater or lesser as other links are added (e.g. shuttle services). The empirical studies linking infrastructure investment and economic performance fail to capture the complexity of this relationship which is that "the economic impact of additional investment depends on the size and configuration of the existing network and on the degree of congestion at each point in the network⁵". These factors may imply that two equal amounts of investment expenditure on ports can yield different amounts of port services or, alternatively, the same port services may be generated by different amounts of port investment. The productive value of a given increment to port capacity depends critically on the efficiency with which the overall facility or network is operated and the patterns of demand by all users.

⁴ See also European Parliament (1993) "*European sea port policy*".

⁵ See: C.H. Hulten and R.M. Schwab (1991) "Is there too little public capital?".

Secondly, the expression “*a positive internal rate of return*” is basically inconclusive: the rate of return has to be higher than the investor’s cost of capital, however the latter is defined. In public investment, this is usually the *social opportunity cost of capital* which tends to be significantly lower than the commercial (market) discount rates. This is so given that public investment intends to capture also other benefits to society (e.g. generation of employment, income distribution, etc.) that are irrelevant to the private investor. Thus, the lower the discount rate used (i.e. the greater the importance that society attributes to the specific project) the higher the likelihood that the project in question will be accepted.

In addition, the economic return on a project, such as that of developing a port which is meant to run for decades, depends critically on the forecast of future operating costs and revenues. Two important questions can be raised here with regard to port competition and the attractiveness of the internal rate of return as a project selection criterion: 1) is maintenance dredging intended to be included as an operating cost? 2) do forecasts of future revenue (i.e. traffic) assume that the port will be able to attract traffic from competing ports? The answer to both questions is far from obvious, particularly that to the second one. It could perhaps suffice to say that *social cost-benefit analysis*, however useful, cannot be the only criterion for comparing similar projects in different countries, as it entails factors such as employment, income distribution, environment, regional development, etc., to which different governments attribute varying degrees of importance, even within the European Union.

Port Profitability and Transparency of Port Accounts

Many times, the cost structure of a port is not completely under its control: A number of mandatory costs can be imposed on it, constituting in essence negative subsidies, such as the requirement to maintain an excessive and permanent labour force; wages; fringe benefits; allowances, etc., that do not generally prevail in other sectors of the economy. For example in France, the port of Marseilles has to finance all the costs of fire prevention in town and Le Havre must manage a costly airport. In certain countries, ports have to provide free housing for the customs and police officers. This unfavourable cost structure, compared to the relatively fixed by international competition port dues, reduces the profitability of the port. Operational deficits may thus result from such impositions of restrictive conditions on port operations, based on macroeconomic considerations. Meeting such deficits may be acceptable as long as the port is seen by the government as a growth-pole befitting the country’s regional/national development plans.

If financial management and full cost recovery are to become the responsibility of the port, it would be only reasonable to argue that the latter should be also given more autonomy with regard to labour costs and other impositions that affect its cost structure. Transferring power to the local level (e.g. port authority) is an expression of regional development in the sense that local authorities are nearer to reality and in a better position to gauge public reaction.

In addition, as mentioned above, if port capacity is to be determined on the basis of commercial criteria, transparency in port accounts and the financial flows between the

port and the government should be clear. In the present administrative system of many ports, any attempt at verifying the economic/financial situation of a port proves to be a complex undertaking, since only a few ports have specific balance sheets and accounts. As to the rest, the only thing one can do is to peruse the overall financial statements of the ministry or local government responsible for the administration of the sector.

Imposed Services

A service can be considered as imposed whenever: a) the user could carry out the operations on his own but he is not allowed to; b) the user deems that the service is not required and/or desirable.

Such cases may concern pilotage, towage and mooring. A typical example, taking place until some time ago in Italy, concerned the provision (imposition) of cargo-lashing services by “Compagnie Portuali” irrespective of the crews’ availability and ability to carry it out autonomously. In Italy, shipowners sometimes challenge the real necessity of such services or at least they deny the need to use them to the extent provided by local regulations (e.g. need to use a certain number of tug-boats).

An extreme case can be whenever the service is not used but paid for nevertheless. Until recently, such cases were common in Italy (ships discharged by means of mechanical equipment only but which had to call a whole gang of dockworkers; luggage-carrying service that was charged per person to travellers (ferry-boat) irrespective of the fact that the service was never rendered. At present, this is the situation with pilotage in France where the shipowner can refuse the service under certain circumstances, but has always to pay a fee to the organisation (this fee is justified as a contribution to a service of general interest).

However, cases like these do not signify the existence of monopoly abuse but just the necessity to comply with existing law. Particularly in cases of comprehensive state-owned/controlled port administrations, the port can counter-argue that the services in question are just part and parcel of a comprehensive service -called port service- that includes pilotage, towage, etc., and they cannot be separately priced any more than a consumer can refuse to pay for the central-locking of a car that comes as standard equipment. As a matter of fact, the port administration does not even have to describe, list or price the service (e.g. pilotage) individually; it can simply include its costs in an overall port charge that it can levy to ships on the basis of their tonnage. If the port administration feels that the port should provide a comprehensive, all-encompassing service, cross-subsidisation of different activities can also be allowed through the design of an appropriate tariff structure. This would allow the continuance of the provision of certain otherwise unprofitable activities which, however, are deemed important and thus necessary for, say, the safe operation of the port.

Price Discrimination

The importance of first defining what is a port, and thus port subsidy, can be exemplified by the fact that a port which specialises in bulk trades (i.e. a port enjoying a natural monopoly in this respect) is able to cross-subsidise its general cargo traffic to the detriment of neighbouring general cargo ports. Sometimes, the existence of a large inland waterway; an oil or gas pipeline; can attract very profitable bulk traffic and thus enables the port to cross-subsidise other traffic. In other ports, valuable container transshipment traffic can be lost to foreign competitors as a result of high prices meant to cross-subsidise port charges applicable to local coastal shipping monopolies.

Sometimes, ports are in a position to discriminate among cargoes and customers. If a port wants to attract competitive transshipment traffic, it would be reasonable to charge a lower price for it and at the same time charge a higher tariff to captive cargo or customers, e.g. coastal shipping. This will always be the case given that, despite the sometimes intense regional competition, a port will always have *some* monopoly power, either in the case of certain local cargo or due to other physical/geographical reasons. From the port's point of view, price discrimination is the rational decision as it maximises profits (assuming some monopoly power). Thus, price discrimination cannot be condemned *ipso facto*; it only shows that the port is in possession of some monopoly power and this is the level at which the problem should be addressed by competition authorities.