

EUROPEAN
PORTS
POLICY
REVIEW



UNLOCKING THE GROWTH POTENTIAL **BRUSSELS 25/26.09.2012**

EUROPEAN PORTS POLICY REVIEW

Ports: Engines for Growth and Employment

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Efficiency & Reliability

Efficiency



Reliability



Two words are recurring in this presentation:

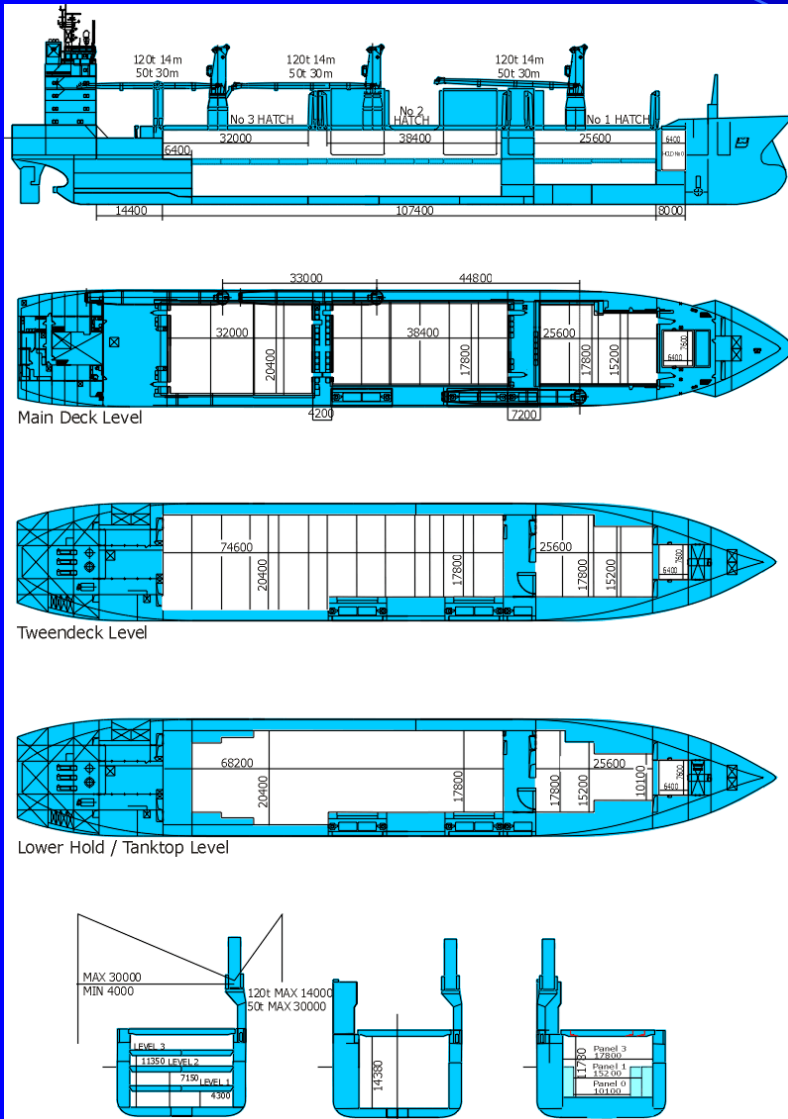
Efficiency: the crucial role of ports in global supply chains

Reliability: The existence (or not) of the supply chains themselves

Ports: the Early Days

Up to the beginning of the 1960s, general cargo was transported, in various forms of packaging (pallets, boxes, barrels, crates), by relatively small vessels, known as general cargo ships. These were twin-deckers and multi-deckers, i.e. ships with holds (cargo compartments) in a shelf-like arrangement where goods were stowed in small pre-packaged consignments (parcels) according to destination. That was a very **labour intensive** process and, often, ships were known to spend most of their productive time in port, waiting to load or discharge. And although seafaring was great fun in these days (!) **congestion** was a chronic problem in many ports, raising the cost of transport and hindering the development of trade. Equally importantly, such **delays in ports made trade movements erratic and unpredictable**, obliging manufacturers, wholesalers and retailers to **keep large stocks**. As a consequence, warehousing and **carrying costs** were adding up to the cost of transport, making final goods more expensive and, again, hindering the development of international trade.

Multi-purpose vessels



Multi-purpose vessels

Cargo handling in this way could take months and ships were known to spend most of their productive time in ports. The impact on the (un)reliability of the overall supply chain was thus significant.



And there came containerisation...

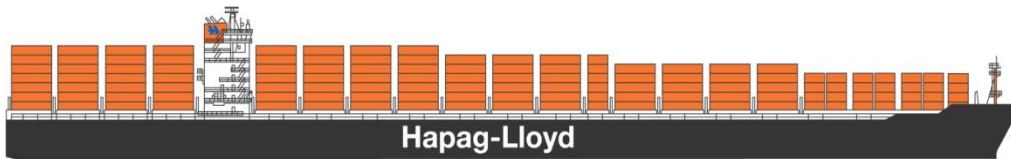
This situation started to change in the 1960s with the introduction of 'containerisation' in the trade between the United States and Europe, and subsequently in the rest of the world. Containerisation is often described as a **revolution in transport** in the sense that:

- a) It improved tremendously transport reliability (ship and cargo-handling operations were optimized and the 'challenge' passed on to ports that now had to timely clear huge surges of containers from their yards).
- b) Now, containers were packed (stuffed) and unpacked (stripped) away from the waterfront, either at the premises of the exporter (**consignor**) and/or the importer (**consignee**), or at Inland Container Depots (**ICD**), known also as 'dry-ports'.

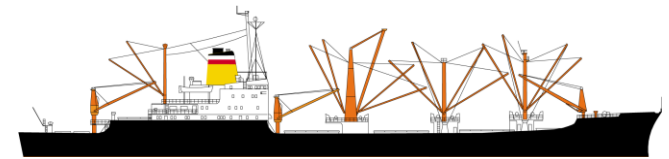
Containerisation, Just-in-Time and Make-to-Order Production

By-passing the waterfront in the stuffing and stripping of containers, and thus having them ready in port to be handled by automated equipment, increased immensely the **predictability** and **reliability** of cargo movements, enabling manufacturers and traders to **reduce high inventory costs** through the adoption of flexible **Just-in-Time** and **Make-to-Order** production technologies. *Inter alia*, such technologies have helped manufacturers to cope with the vagaries and unpredictability of the **business cycle** and plan business development in a more cost effective way.

Containerization: A remarkable leap in productivity



6 round voyages
Annually = approx. 800,000 t

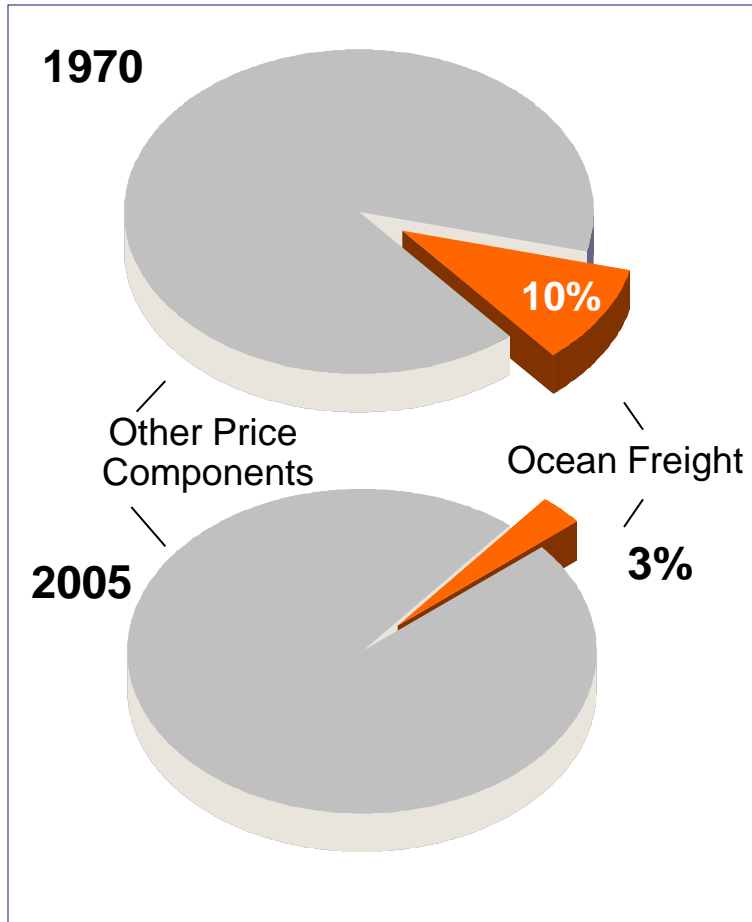


4 round voyages
Annually = approx. 80,000 t

Capacity Comparison Europe-Asia Trade

	Length	Breadth	Capacity (tdw)	Speed	Engine	Crew
Containership	320 m	43 m	100,000 t	25 kn	68,640 kw	22
Freighter	160 m	22 m	13,000 t	21 kn	18,400 kw	42

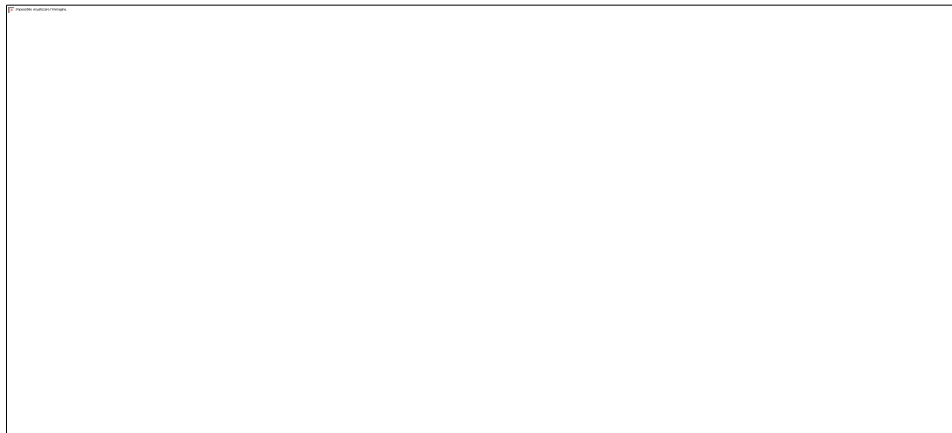
Economies of Scale, Competition and Rationalization in shipping have reduced transport costs substantially and have expanded trade



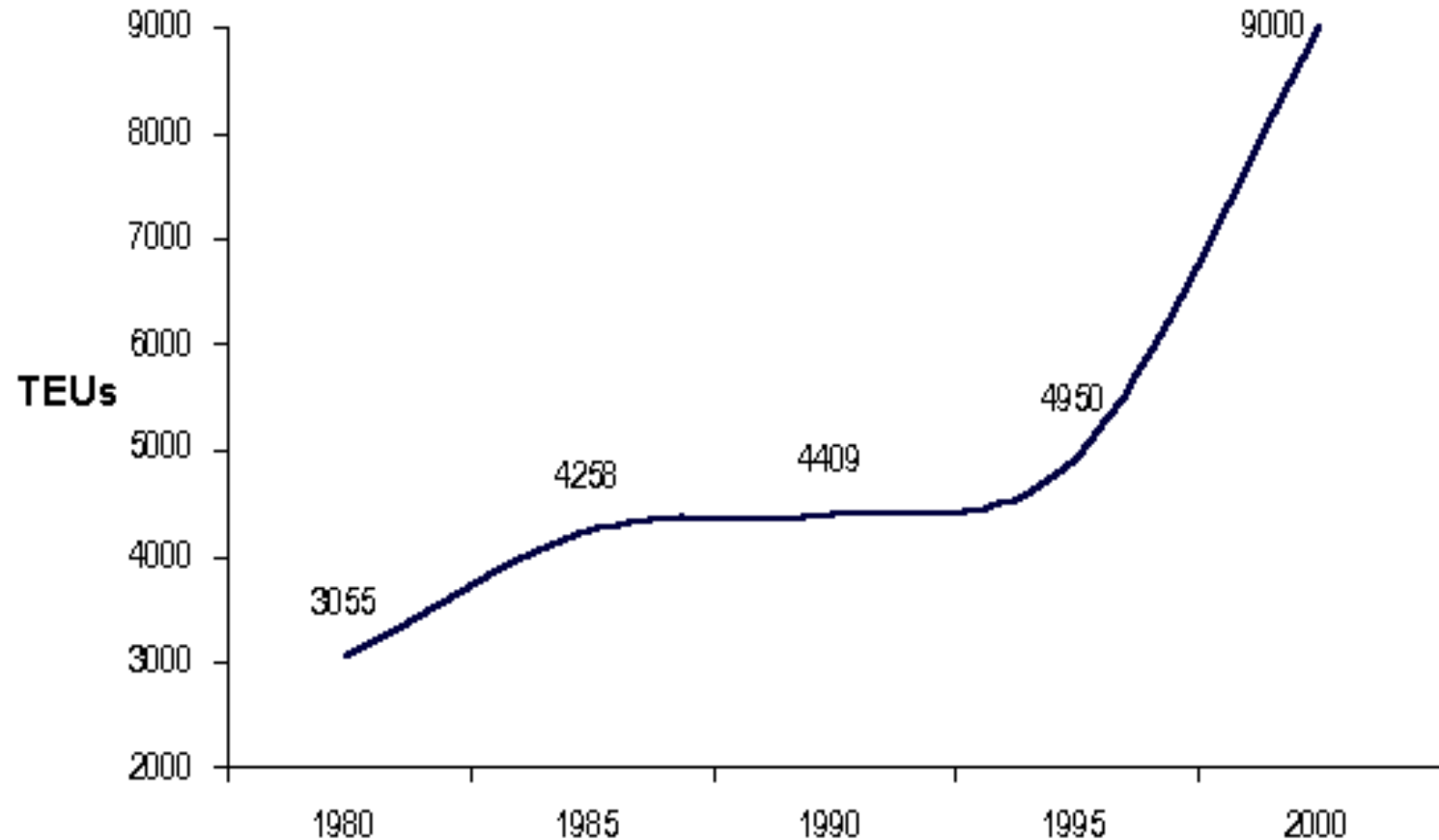
Price Components Motorcycle

	Retail Price	Ocean Freight	Share
1970	\$5,000	\$500	10%
2005	\$3,000	\$90	3%

Typical Ocean Freight Levels 2005

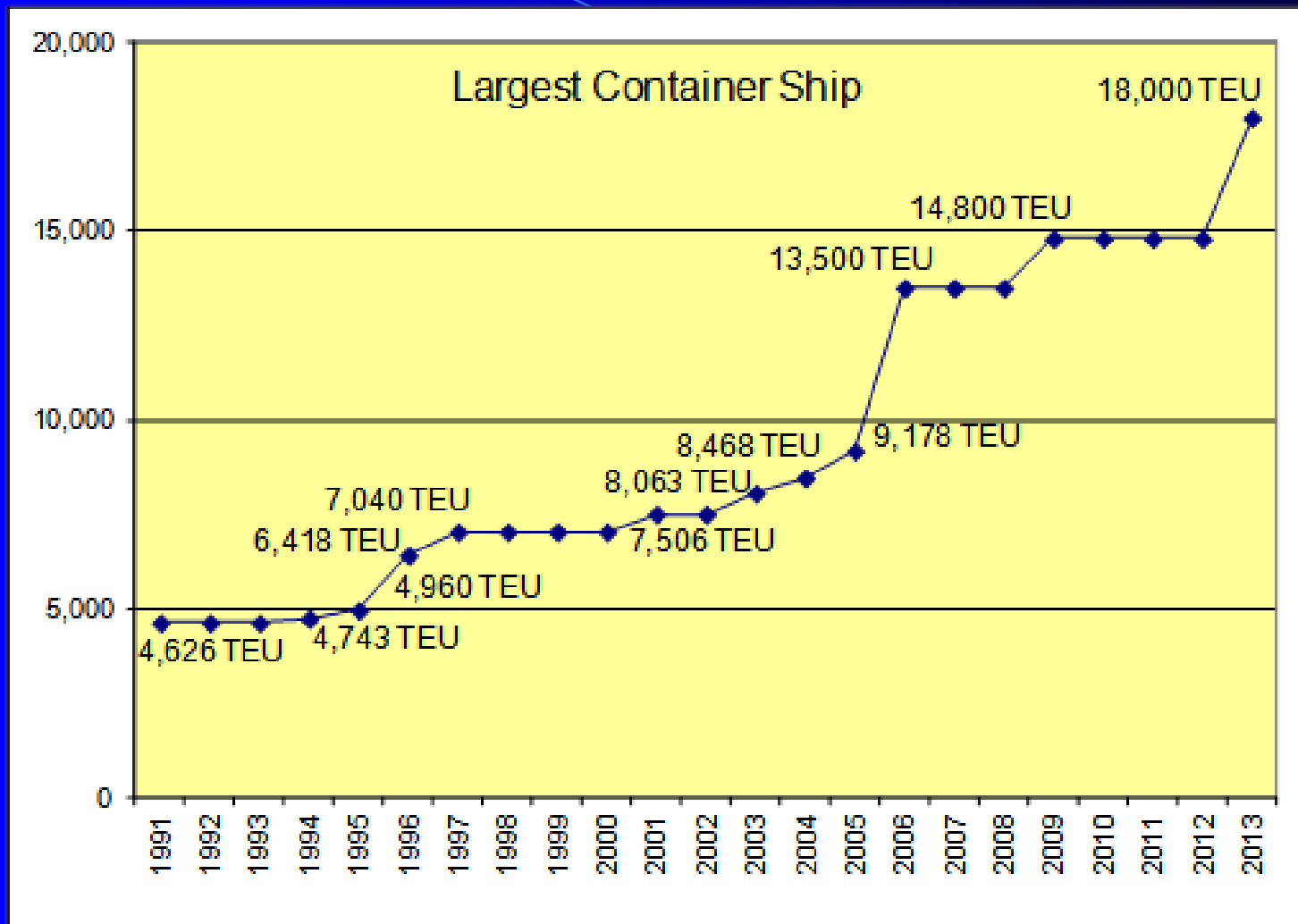


Developments in Maximum Size of Containerships



Source: Hoffmann

Developments in Maximum Size of Containerships



Source: Ocean Shipping Consultants; Drewry Shipping Consultants

Port Productivity

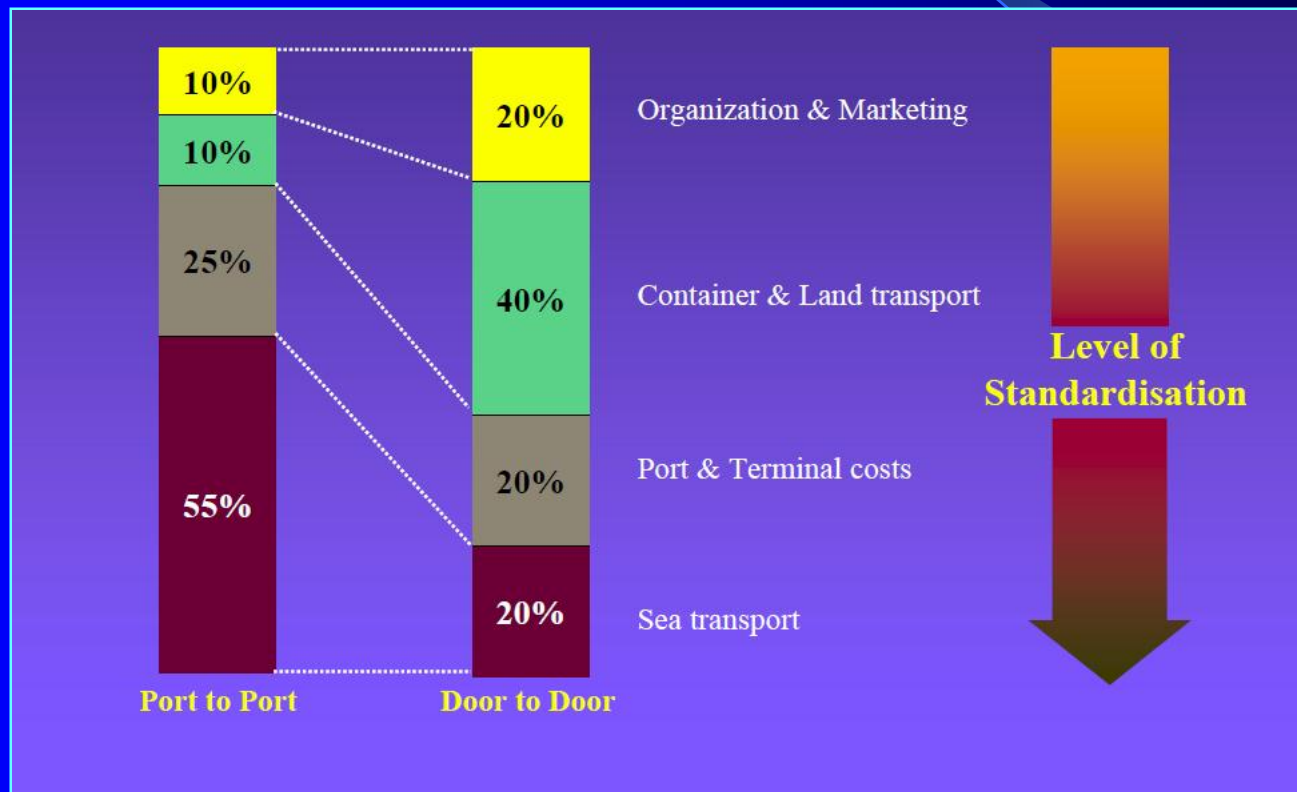
However, the single most important factor that led to the development of the mammoth ships we see in our ports today has been not technology nor economies of scale but **port productivity**. Ships make money at sea and not in port while waiting to be handled. The minimization of port time –and thus terminal costs- has allowed ships to enjoy economies of scale and grow in size.

$$\bar{Q} = \frac{dr(z + w + pv)}{2s(z + w)} = \frac{dr}{2s} \left(1 + \frac{pv}{z + w}\right)$$

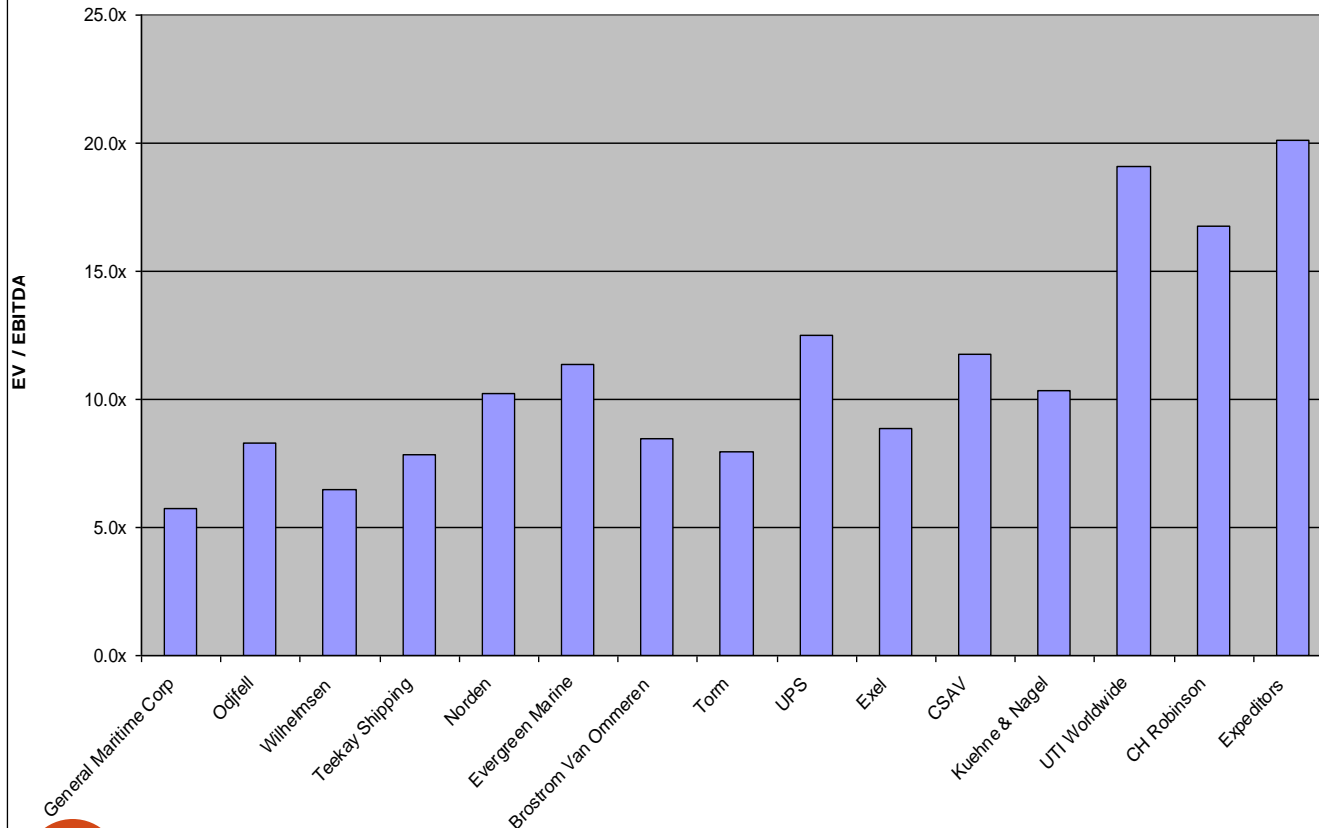
And then there came 'logistics'

- And then came logistics; the word of the day, and a word that didn't even exist 20 years ago. In one word, logistics is nothing more than the decision of manufacturers and traders to minimize inventory costs, i.e. holding- and warehousing costs, and opt for Just-in-Time and Make-to-Order technologies. These, among others, allowed manufacturers to “ride the business cycle” and thus protect themselves against its vagaries.
- JIT systems, however, needed to rely on highly reliable transport (and port) systems. Researchers have calculated a strong relationship between reliability (measured by deviations from ETA) and inventory levels.

Logistics transformed not only ports but carrier companies too. From a standardized commodity (port-to-port) shipping became a tailor-made service (door-to-door). Carriers invest in port terminals, warehousing and land transport, rather than in ships which they can easily charter from German private investors



Logistics companies tend to be higher valued than pure transportation companies



Companies towards the right of the chart (i.e., “asset light” companies) typically have :

- lower asset bases
- high levels of asset utilisation
- and, therefore, a higher return on equity, which, together with higher observed growth rates, boosts their market valuations

Ports in the past (1)

Ports in the past (and I am afraid in many instances even today) were mere *interface points* between sea and land. They were administered as public entities, with non-market criteria, and their sole function was to transfer cargo from sea to shore as safely as possible. Their infrastructure was financed publicly and, given the captive nature of their demand, port infrastructure development was a straightforward exercise: the demand for port services was almost *deterministic*, depending on population size; national income; and volume of trade.

Ports in the past (2)

Bureaucracy and inefficiency of port operations were notorious. The captive nature of the demand for port services made ports public monopolies. Port labour was also a public monopoly, and technical/nautical services were restrictive, on arguments such as 'market size' and 'Public Service Obligations'. There is evidence that such monopoly situations were even encouraged, as they offered local stakeholder (often governing bodies of port authorities) effective protection from outside competition.

Ports in the past (3)

Words such as 'efficiency'; 'innovation'; and 'market orientation' were thus unknown, and ports were effective barriers to trade rather than engines of growth. And to clarify one point which is often raised as opposition to the above: The detrimental effect on trade of such ports was not the result of high port dues –often described as only a small part of overall supply chain costs- but rather the result of inefficiency, unreliability and loss of time.

Port Operating Structures

	Port Authority Owns Infrastructure	Port Authority Owns Superstructure	Port Authority Provides Services
Service Port	Yes	Yes	Yes
Tool Port	Yes	Yes	No
Landlord Port	Yes	No	No

Infrastructure development in Europe and Global Supply Chain Management (1)

It only takes a cursory look at the map of Europe to realize that our road; rail; and inland waterways infrastructure looks not much different than a nice dish of Italian spaghetti! This impressive development of infrastructure (especially that of north-south), coupled with the free movement of goods and the abolition of border controls, have expanded port catchment areas and have virtually made “the whole of Europe” the hinterland of each port. *Ad passim*, this development has been facilitated by transport pricing policies that have failed to internalize transport externalities.

Infrastructure development in Europe and Global Supply Chain Management (2)

Our extensive infrastructure has given shippers, carriers, and supply chain managers ample choice in the selection of their routings. The selection of the port itself plays a lesser role today, *vis à vis* the selection of the optimum supply chain. I have found out that there are 37 different ways to bring a bicycle, made in Wuhan, China, to Paris, and it makes little difference if it passes through Antwerp, Rotterdam or Hamburg. Now it is supply chains that compete and not just ports. The demand for port services has thus become *dynamic* and extremely difficult to forecast in depth of time.

Port restructuring and reform (1)

The situation described above has led to intensified competition among ports. At first sight this can only be good, given the ensuing port efficiency. Indeed, free trade, globalization and export-led growth strategies of nations are requiring the highest efficiency from every single link and node of the supply chain.

Port restructuring and reform (2)

Thus, around the world, the port industry has invested significantly in order to cope with the new technological and organizational requirements. Modern terminals –and suitable cargo-handling equipment- have been built and new, more efficient, organisational forms (including privatisation) have been adopted in an effort to speed up port operations. Operational practices have been streamlined; the element of uncertainty in cargo flows largely removed; forward planning has been implemented; port labour regularized; and customs procedures simplified.

Port restructuring and reform (3)

These developments took place under the firm understanding of governments and local authorities that ports, now, constitute the most important node in the overall door-to-door transport chain and thus inefficiencies (bottlenecks) in the port sector can easily whither all benefits derived from efficient supply chain management.

Port competition and transshipment (1)

On the other hand, port competition has not been void of problems. I have shown in some of my earlier works that port competition goes hand-in-glove with excess port capacity. Actually, I have shown that once a 70% capacity utilization has been reached, congestion starts to set in. And, today, congestion is not an option in any port, given the footloose nature of the ship and of the container. Excess capacity, however, is difficult to 'sell' to the taxpayer when he himself has to foot the bill, particularly for the development of container terminals which, due to their automation, generate comparatively lesser value-added for those who have financed them.

Port competition and transshipment (2)

In addition, port competition, naturally, has developed mostly for transshipment cargo which is highly volatile and whose local impacts are lesser still. It has therefore been argued, in my view correctly, by a number of quarters, including voices within the European Commission, that it is no longer acceptable to expend public resources on the development of, principally private, infrastructure intended to 'steal' cargo from each other, among members of a Union. Such voices are particularly relevant today, when our new primary objective is for greater fiscal harmonization and control across the Union. The recent inclusion of ports in Trans-European Transport Networks (TEN-T) was in this sense a most opportune and timely development. Port infrastructure in Europe, at least major works of predominantly commercial use, needs to be better planned and appropriately financed.

Port pricing and finance

In the past 20 years I have participated in four large studies of the EC on port charging, financing and pricing, starting with the seminal work of the Commission entitled *Green Paper for Ports and Maritime Infrastructure*. Twenty years later, I can still recall the words of Neil Kinnock telling me that “if you decided to get down to the issue of port pricing I can promise you one thing: you will retire with the same subject”. My main concerns were exemplified in my paper “Competition, Excess Capacity and the Pricing of Port Infrastructure” published 10 years ago in *Maritime Economics and Logistics* (2002) 4, 323-347. [doi:10.1057/palgrave.ijme.9100053](https://doi.org/10.1057/palgrave.ijme.9100053).

Competition, Excess Capacity and the Pricing of Port Infrastructure

...The pricing strategy of a port is dependent on the way the port is financed and, ultimately, on the ownership status of the port: should, thus, a publicly owned and financed port be allowed to compete on price, for the same custom, with a privately owned port that has to charge higher prices in an effort to recover its investments? What if these ports are in the same, economically interdependent, geographic area (e.g. the European Union)? What if the effects of strategic pricing of different ports are, at the end of the day, felt by the same consumers or taxpayers? Should ports primarily engaged in commercial operations, such as container terminals, be publicly financed or should the port user pay in full for the port services he buys? Do ports need to recover infrastructure costs through pricing? And what happens if some do and others don't while all have to compete for the same hinterland? Is there such a thing as 'efficient port pricing' and is there scope for policy intervention to ensure a level playing field?

Competition, Excess Capacity and the Pricing of Port Infrastructure

The paper shows how *Long-run Marginal Cost Pricing* of port infrastructure can be a powerful 'pricing discipline' towards achieving cost recovery and fair competition among ports. To succeed in this, the paper advocates for stronger policy intervention in order to ensure greater transparency of port accounting systems, better and more harmonised port statistics, a meaningful set of state aid guidelines, and stricter application of Competition Law in port infrastructure investments.

The “Efficiency-Growth Circle”

Most certainly, in conclusion, ports are definitely engines of growth. This, not just because of their well-advertised clustering effects, such as the Maritime Industrial Development Areas (MIDA) of the 70s and 80s, but because ports are the engines of global supply chains and if the engines stops, the car stops as well.

To ensure such a role, port administrations need to depart from their often “civil servant” mentality and adopt a client-oriented, entrepreneurial approach with “efficiency” placed center stage in their operations. The “Efficiency-Growth Circle” of ports, as I have hopefully demonstrated above, can be summarized as follows:

- Port efficiency leads to larger ships
- Larger ships lead to economies of scale and low transport costs
- Low transport costs lead to more trade and growth
- More trade and growth lead to larger ships
- Larger ships lead to higher port efficiency

Conclusions: Port “maintenance”

To ensure a well running engine however, the following ‘maintenance’ is required:

- Port administrations need to assume a highly entrepreneurial and market-oriented approach
- Ports need to move towards a ‘real’ landlord models, with more autonomy in their financing; pricing; real estate management; and labour operations
- Emphasis on “green efficiency”
- Port labour: Advanced training of young professionals, according to ILO standards, employed in an open port labour market
- State aid guidelines and clear definition of “public vs. private investment” in the port sector
- Free –albeit well regulated- access to provide services need to be ensured

Thank you for your attention