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Proposal for a Regulation of the European Parliament and of the Council

establishing a framework on the market access to port services and the financial transparency of ports

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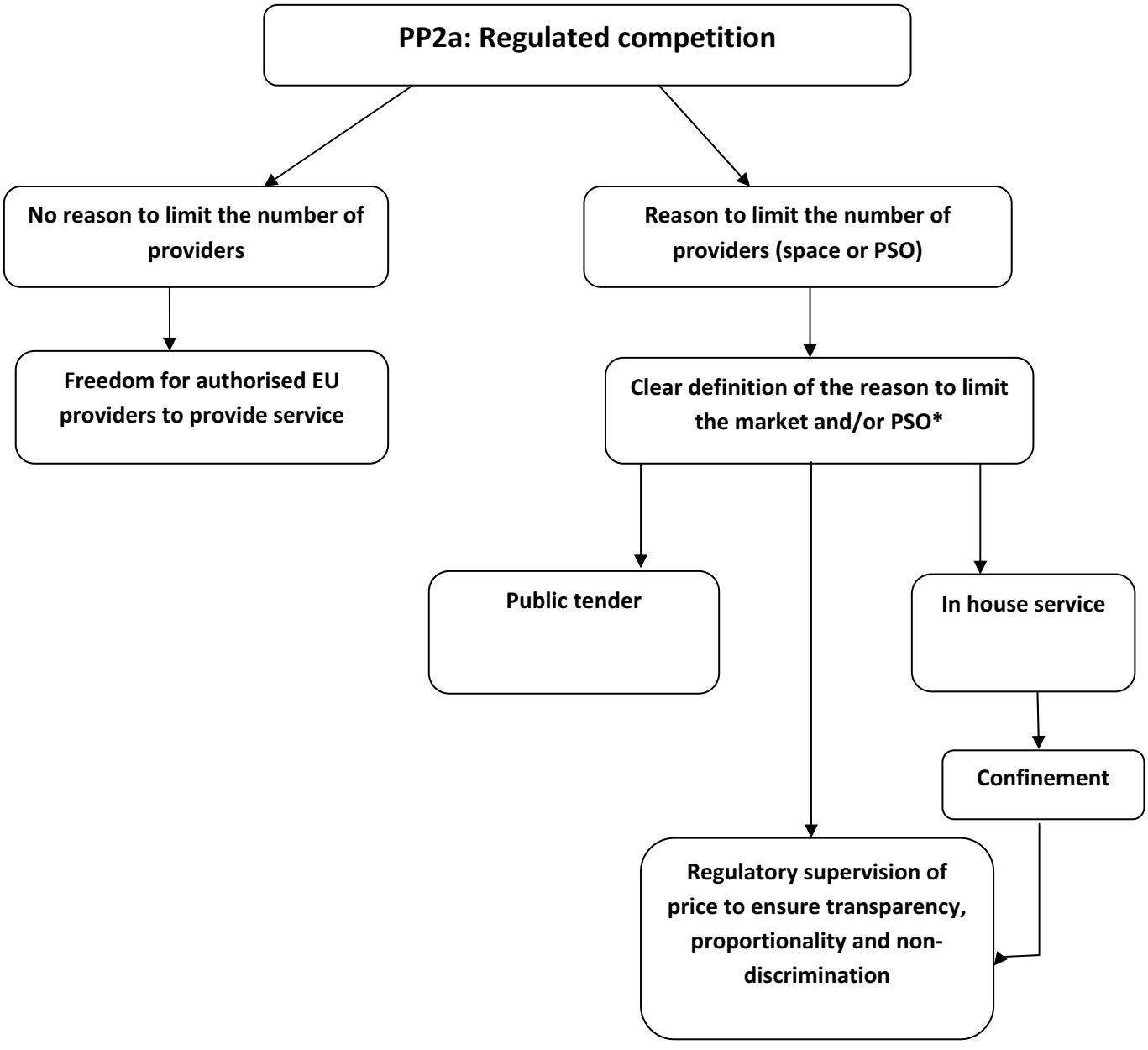


* Public Service Obligation

ANNEX II:

General context: Features of the EU Ports system

EU – Ports – ITMMA Antwerp University – the EU Port System

"*To accommodate maritime extra-EU and intra-EU trade flows, Europe is blessed with a long coastline reaching from the Baltic all the way to the Med and the Black Sea.*

The European port system cannot be considered as a homogenous set of ports. It features established large ports as well as a whole series of medium-sized to smaller ports each with specific characteristics in terms of hinterland markets served, commodities handled and location qualities.

This unique blend of different port types and sizes combined with a vast economic hinterland shapes port competition in the region".

1. Statistics

Eurostat produces extensive port statistics based on data collected within the framework of the EU maritime transport statistics Directive (Directive 2009/42/EC) on statistical returns in respect of carriage of goods and passengers by sea.

EU-27 aggregates refer to the total of 22 maritime Member States. The Czech Republic, Luxembourg, Hungary, Austria and Slovakia have no maritime ports. “Main ports” are ports handling more than 1 million tonnes of goods annually (however, data for some smaller ports may be included in the published results). Data are presented at level of “statistical ports”. A statistical port consists of one or more ports, normally controlled by a single port authority, able to record ship and cargo movements. The table below provides an overview of some main indicators (source: Eurostat):

Reporting country	2008 Q4	2009 Q4	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4			
	Gross weight of goods (in Mio tonnes)						Gross weight of goods (in Mio tonnes)	Growth rate on previous quarter	Growth rate on same quarter of previous year	Annual growth rate
Total	**911.2**	**844.8**	**901.7**	**879.2**	**915.5**	**904.7**	**893.8**	**-1.2%**	**-0.9%**	**+1.5%**
BELGIUM (BE)	57.4	52.4	58.5	59.4	59.8	56.7	**55.1**	**-2.8%**	**-5.8%**	**+2.0%**
BULGARIA (BG)	6.4	6.1	6.1	5.6	6.1	7.0	**6.6**	**-6.8%**	**+6.6%**	**+9.8%**
DENMARK (DK)	23.0	20.4	21.0	21.5	22.2	20.6	**19.5**	**-5.3%**	**-7.0%**	**+6.5%**
GERMANY (DE)	76.2	65.3	69.7	68.4	72.6	73.8	**73.9**	**+0.2%**	**+6.1%**	**+7.5%**
ESTONIA (EE)	8.1	9.1	11.4	11.3	12.7	10.6	**11.2**	**+6.0%**	**-1.6%**	**+4.7%**
IRELAND (IE)	11.6	10.9	11.4	11.1	11.1	10.5	**11.6**	**+10.5%**	**+1.2%**	**+0.6%**
GREECE (EL)	30.5	25.5	25.8	25.7	26.5	29.8	**28.2**	**-5.5%**	**+9.2%**	**+8.8%**
SPAIN (ES)	96.8	93.4	101.4	94.5	100.6	102.9	**105.8**	**+2.8%**	**+4.4%**	**+7.3%**
FRANCE (FR)	86.8	77.0	75.5	77.7	79.4	74.4	**77.8**	**+4.6%**	**+3.0%**	**+0.3%**
ITALY (IT)	114.0	104.5	109.5	124.4	128.5	122.4	**112.2**	**-8.4%**	**+2.5%**	**+1.1%**
CYPRUS (CY)	1.8	1.6	1.9	1.7	1.7	1.6	**1.6**	**-1.6%**	**-15.1%**	**-5.6%**
LATVIA (LV)	15.5	14.0	14.7	15.5	17.4	15.8	**16.9**	**+7.2%**	**+14.8%**	**+14.6%**
LITHUANIA (LT)	8.4	9.2	10.6	10.4	10.8	10.8	**10.7**	**-1.3%**	**+0.5%**	**+12.7%**
MALTA (MT)	0.8	0.8	0.9	0.8	0.8	0.9	**0.8**	**-15.9%**	**-11.9%**	**-12.5%**
NETHERLANDS (NL)	124.9	126.5	137.1	118.2	123.3	128.5	**120.8**	**-6.0%**	**-11.9%**	**-8.7%**
POLAND (PL)	11.1	12.3	15.4	15.0	14.3	13.2	**14.6**	**+10.7%**	**-4.7%**	**-3.3%**
PORTUGAL (PT)	14.8	15.2	16.2	15.3	16.5	17.4	**16.5**	**-5.3%**	**+1.4%**	**+2.7%**
ROMANIA (RO)	11.9	8.7	9.9	8.1	9.2	10.1	**10.1**	**-0.6%**	**+1.8%**	**+2.6%**
SLOVENIA (SI)	4.2	3.6	4.2	3.8	4.1	4.1	**4.2**	**+2.5%**	**+1.0%**	**+11.0%**
FINLAND (FI)	27.7	24.6	28.9	24.2	28.4	28.4	**28.3**	**-0.4%**	**-2.0%**	**+4.6%**
SWEDEN (SE)	42.6	39.6	42.9	41.2	41.6	38.0	**41.1**	**+8.1%**	**-4.2%**	**-2.0%**
UNITED KINGDOM (UK)	136.6	124.2	128.8	125.5	128.0	127.0	**126.5**	**-0.4%**	**-1.8%**	**+1.7%**
NORWAY (NO)	42.2	42.4	44.0	41.7	44.7	47.6	**46.1**	**-3.1%**	**+4.8%**	**+4.9%**
CROATIA (HR)	6.2	5.1	5.2	4.3	4.2	4.8	**3.8**	**-21.7%**	**-27.4%**	**-13.0%**
TURKEY (TR)	63.0	76.8	87.2	86.2	92.4	90.4	**90.0**	**-0.5%**	**+3.2%**	**+6.2%**

Seaports handle, in volume, 74% of the goods exported or imported to the EU and from the rest of the world. The table below gives an overview of the relative importance of seaports in comparison to the other transport modes in terms of external trade.

EU -27 External Trade by Mode of Transport 2010 – Weight (million tonnes) (source: Eurostat)

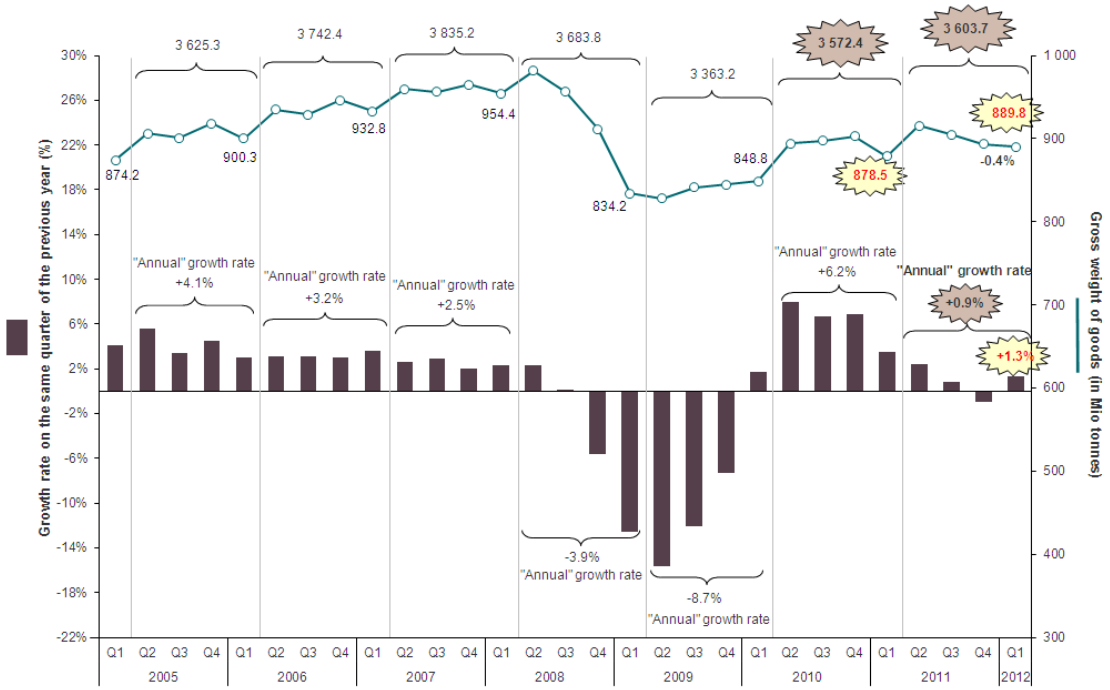
	Export		Import		Export + Import	
Sea	424.8	77.0%	1202.2	73.8%	**1627.0**	**74.6%**
Road	79.8	14.5%	58.0	3.6%	**137.7**	**6.3%**
Rail	19.8	3.6%	64.1	3.9%	**83.9**	**3.8%**
Inland Waterway	9.6	1.7%	12.1	0.7%	**21.7**	**1.0%**
Pipeline	3.7	0.7%	240.3	14.8%	**244.0**	**11.2%**
Air	10.2	1.9%	3.9	0.2%	**14.1**	**0.6%**
Self Propulsion	1.3	0.2%	1.5	0.1%	**2.8**	**0.1%**
Post	0.0	0.0%	0.0	0.0%	**0.0**	**0.0%**
Unknown	2.6	0.5%	46.2	2.8%	**48.7**	**2.2%**
TOTAL	**551.7**	**100.0%**	**1628.3**	**100.0%**	**2180.0**	**100.0%**

Sea-borne freight trade

In terms of cargo flows in the European seaport system, five main markets can be distinguished: the container market, the RoRo market, the market for conventional general cargo, the liquid bulk market and the dry bulk market. Each market has its own dynamics: the routing of different types of maritime freight through European ports to the hinterland is guided by complex interactions between a large set of factors and actors. However, there are two underlying common factors to all ports and types of trade that influence the routing to the hinterland: the connectivity of the port to the hinterland and the level of performance of the port itself.

The following graph[1] summarizes sea-borne trade trends in the EU since 2005:

[1] Source: Statistics Explained article "Maritime transport of goods - quarterly data" updated with figures for 2012 Q1:



The number of ports active in Ro-Ro, general cargo, liquid bulk and or dry bulk handling is in excess of 300. There are about 130 seaports handling containers of which around 40 accommodate intercontinental container services. The normalized HH-index for the European container port system is decreasing which means an increasing number of European ports are present on the competitive scene. While the European container port scene becoming more diverse in terms of number of ports involved, a lot of cargo is concentrated in a limited number of ports. Moreover, large differences in growth patterns can be observed among the multi-port gateways regions.

Distribution of cargo flows

For the purpose of examining sea-trade flows, the EU is often divided into 6 maritime regions (North West Continent region, Mediterranean Sea region, Baltic Sea region, UK & Ireland region, Atlantic Ocean region, Black Sea region).

The biggest share in total EU seaborne freight traffic is held by North West Continent region ports (31.7%). The "***Le Havre-Hamburg***" range remains volume-wise a strong port range in Europe. However, its market share in total European volumes differs depending on the market segment considered:

- 48.4% or 40.3 million TEU in the container business
- 26.8% or 269 million tons for dry bulk
- 24.6% or 391 million tons for liquid bulk
- 19.5% or 62 million tons for conventional general cargo
- 18.3% or 82 million tons for Ro-Ro

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http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Maritime_transport_of_goods_-_quarterly_data.

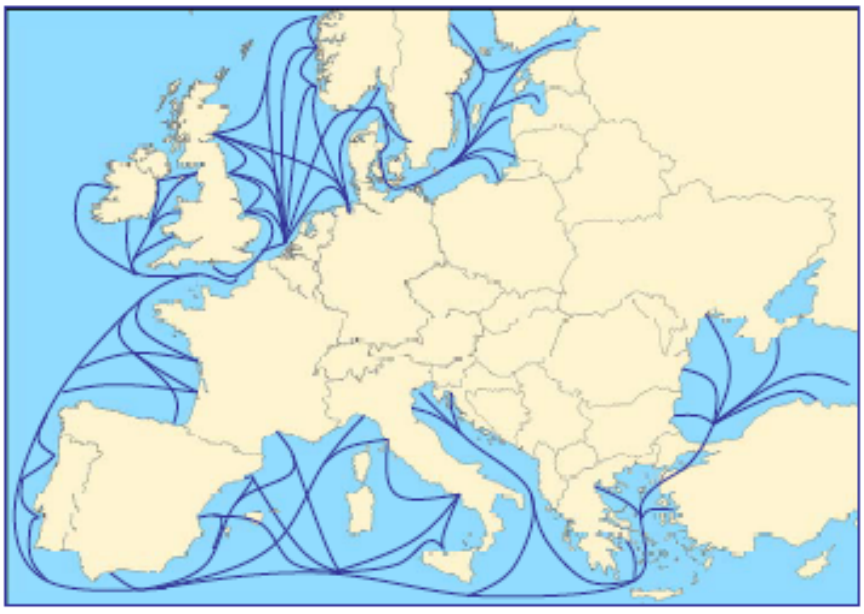
The second biggest region is the Mediterranean Sea region (only EU ports) with a share of 28.2%. Baltic Sea ports (excluding Russian ports) account for 17.3% of the total throughput in EU ports, followed by UK & Irish ports (15.3%). The smallest share is held by EU ports along the Atlantic Ocean coast (5.9%) and EU ports along the Black Sea coast (1.7%).

The group of seaports included into the TEN-T core network handle approximately 70% of the cargo passing through all EU seaports. The greatest number of core seaports (24) is concentrated within the Mediterranean Sea region. These seaports account for 58.4% of the throughput of all seaports within the EU Mediterranean Sea region.

Half of those ports are located along the coastline of Italy. This can be explained by taking into consideration the fact that Italian seaports handle the greatest volume of cargo within the Mediterranean Sea region (494.1 million tonnes) which accounts for about 48.3% of the total seaports' turnover in the region.

Additionally, Italy has the largest number of seaports that handle at least 1 million tonnes of cargo. Spain has also a large number of core seaports along its Mediterranean coast (7). The rest of the core seaports are located in Greece (4), France (1) and Slovenia (1). The figures below provide an overview of the main ports connections (the main intra-EU sea borne trade):

Ports connections - Main intra-EU sea-borne trade

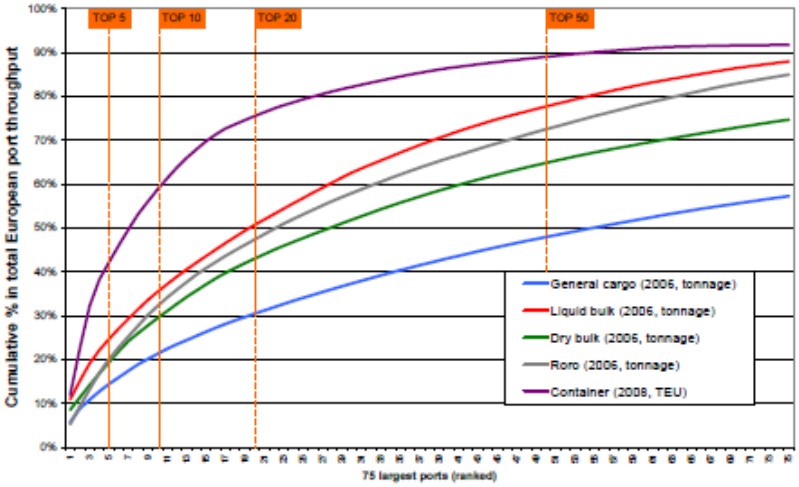


Source: Buck Consultants International

The following figure compares the five cargo handling segments on the basis of a cumulative market share curve for the 50 largest ports in each of the segments. It can be observed that the concentration is the lowest in the conventional general cargo segment and the highest in the container market.

Cumulative market share of the top 75 ports in each cargo segment

(Source: ITMMA Universiteit Antwerpen and ESPO (2009)



Passenger in EU ports

Eurostat statistics shows that ports in the EU-27 handled almost 400 million maritime passengers (ferry crossings and cruise-ships) in 2010; this marked the third successive annual decline in passenger numbers, decreased 2.0 % in comparison with 2009, after falls of 2.2 % in 2009 and 0.3 % in 2008.

Italian and Greek ports each handled more than twice as many passengers in 2010 than in any other Member State (accounting for 22.2 % and 21.2 % of the EU-27 total respectively). The next busiest ports in terms of passenger numbers were in Denmark (42 million passengers), followed by ports in Sweden, the United Kingdom, Germany and France which each handled between 27 million and 30 million passengers in 2010; ports in Croatia handled 25 million passengers.

Relative to national population, the importance of maritime passenger transport was particularly high in Malta (19.5 passengers per inhabitant), followed by Denmark (7.6), Greece (7.4) and Estonia (7.1); other than Finland, Sweden and Italy, the number of maritime passengers per inhabitant in 2010 averaged less than 1.0 in each of the remaining EU Member States. The table below provides an overview of the main passenger data (source: Eurostat):

	Air passengers, 2011 (2)		Maritime passengers, 2010 (3)	
	(1 000)	(passengers per inhabitant)	(1 000)	(passengers per inhabitant)
EU-27	776 852	1.6	395 595	0.8
Belgium	25 099	2.3	829	0.1
Bulgaria	6 652	0.9	1	0.0
Czech Republic	12 242	1.2	:	:
Denmark	25 805	4.6	41 993	7.6
Germany	175 316	2.1	28 780	0.4
Estonia	1 908	1.4	9 512	7.1
Ireland	22 886	5.1	3 089	0.7
Greece	32 132	2.8	83 993	7.4
Spain	165 153	3.6	21 215	0.5
France	122 887	1.9	27 218	0.4
Italy	116 315	1.9	87 658	1.5
Cyprus	7 237	8.6	107	0.1
Latvia	5 098	2.5	676	0.3
Lithuania	2 692	0.8	251	0.1
Luxembourg	1 837	3.6	:	:
Hungary	8 885	0.9	:	:
Malta	3 507	8.4	8 063	19.5
Netherlands	53 895	3.2	1 994	0.1
Austria	25 138	3.0	:	:
Poland	20 549	0.5	2 601	0.1
Portugal	27 578	2.6	701	0.1
Romania	9 687	0.5	0	0.0
Slovenia	1 359	0.7	39	0.0
Slovakia	1 808	0.3	:	:
Finland	16 374	3.0	17 867	3.3
Sweden	29 732	3.2	30 185	3.2
United Kingdom	201 535	3.2	28 824	0.5
Iceland	2 463	7.7	:	:
Norway	32 402	6.6	5 876	1.2
Switzerland	41 440	5.3	:	:
Croatia	4 989	1.1	25 124	5.7
Turkey	:	:	1 386	0.0

(1) For air: aggregates exclude the double-counting impact of passengers flying between countries belonging to the same aggregate; for maritime: figures refer to the number of passengers 'handled in ports' (the sum of passengers embarked and then disembarked in ports); if both the port of embarkation and disembarkation report data to Eurostat, then these passengers are counted twice.
(2) Total passengers carried (arrivals and departures for national and international);
EU-27, Czech Republic, Greece and France, 2010.
(3) Turkey, 2009.
Source: Eurostat (online data codes: ttr00012, tps00001 and mar_pa_aa)

2. Functioning of the port: a chain of services

A port is generally regarded as a gateway through which goods and passengers are transferred between ships and the shore[2]. Different activities take place in a port such as ship arrivals and mooring, (un)loading on docks and transit warehousing. While the port as a whole can be seen as a link in a global logistics chain, the port product is itself a chain of consecutive links[3]. According to a commonly accepted presentation[4], the functioning of a port requires the combination of a number of services organised as follows:

(a) ***Provision of general transport infrastructure*** whose planning, construction, maintenance, operation and funding are in most cases the responsibility of local, regional or national authorities. The only notable exception is the UK case where port general infrastructure investments are privately financed on a commercial basis. The general infrastructure includes:

- Maritime transport infrastructure, i.e., maritime access channels, lights, buoys and navigational aids, dikes and quays, etc.
- Ancillary infrastructure equipment, including, inter alia, equipment for ice-breaking, hydrological surveys, dredging and maintenance of the port and port approaches

2 Button, K. Transport Economics. Edward Elgar, Aldershot. (1993).

3 Goss, R. Economic Policies and Seaports: 1. The Economic Functions of Seaports. "Maritime Policy and Management" 17(3): pp.207-219. (1990).

4 See, e.g. International Handbook of Maritime Economics, Cullinane and others (2010)

- Land transport infrastructure, i.e. road, railways and/or waterways infrastructures ensuring the hinterland connection of the port.

(b) ***Provision of port "technical-nautical" services***, including pilotage, towage and mooring: pilotage is a compulsory service required under national and international regulations for ensuring maritime safety conditions. Usually, pilotage fees are fixed by the administration and/or by the corporative body of maritime pilots. Towage and mooring services are commercial services in many ports, i.e. with prices fixed under market conditions.

(c) ***Provision of operational infrastructure and equipment***, i.e. elements required for the operation of specific facilities, such as berths, cranes, generally linked to the provision of cargo handling and/or passenger services: these facilities and equipment are usually provided by terminal operators (see below). Their use is most of the time charged as a part of the service provided to customers (shipping companies, cargo owners, logistic operators).

(d) ***Provision of cargo handling and passenger handling services***: these services involve marshalling services (receipt, storage, assembly and sorting of cargo in preparation for delivery to a ship's berth) and stevedoring services (loading and unloading of cargo from ships). Each type of cargo requires specialised equipment and berthing facilities (passenger berths, oil, coal, ore, grain, timber, roll-on/roll-off, containers, chemical and gas, etc.). Cargo-handling services are mainly, but not exclusively, provided in Europe by privately owned terminal operators. For historical reasons, in many EU ports, there is at least one cargo-handling operator owned and/or managed by the national, regional or local authority. Where there is a degree of competitive pressure, prices and quality of cargo-handling services are establish by the market. The competitive pressure is especially present in container services; for other segments, like bulk, the cargo handling is often related to local demand, linked to localised production facilities (steel mills, chemical plants or electricity production).

(e) ***Ancillary (or general) services*** provided in many ports include bunkering, chandlering, ship repair, container maintenance, marine appraisals, insurance claims inspections, banking, etc.

(f) ***Waste reception facilities***: waste reception services are mandatory by virtue of international law and have to be provided under the conditions of Directive 2000/59/EC, which amongst other establish common rules on charging.

Below, a more detailed description is given for some core port services***:***

Cargo handling operations form the core of the raison d'être of ports. The efficiency and effectiveness with which loading and discharging activities take place in a port are important cornerstones for the port competitiveness and its ability to generate wider economic effects in terms of employment and value-added creation. In terms of services, cargo handling involves marshalling services (receipt, storage, assembly and sorting of cargo in preparation for delivery to a ship's berth) and stevedoring services (loading and unloading of cargo from ships).

Pilotage is a service provided by a pilot with local knowledge and skills which enable him to conduct the navigation and manoeuvring of the vessel in and approaching the harbour. Usually, pilotage services are provided by the State itself or by a corporation entrusted with exclusive rights for the provision of the service.

Towage is a service provided by tug boats which move larger ships that either should not or cannot power themselves. Usually, towage companies are private companies that operate in the port by means of an authorisation of the port authority. In some cases, towage operators are owned by the State.

Mooring is a service provided by specialised boatmen companies securing or confining a vessel in a particular station, as by cables and anchors or by a line or chain run to the wharf.

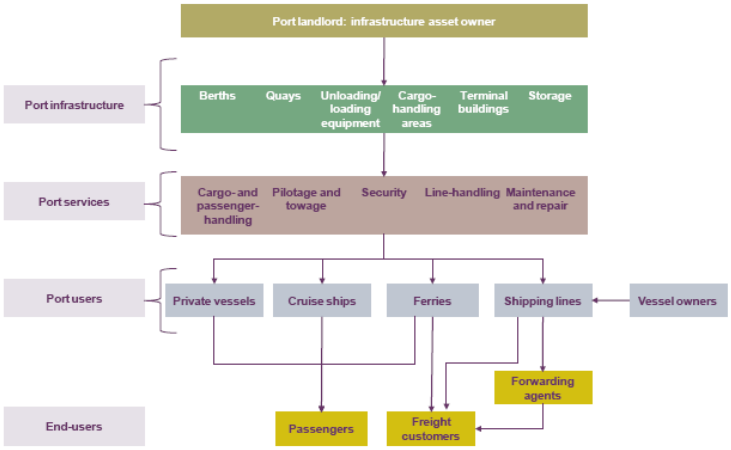
Dredging involves collecting and bringing up, fishing up or clearing away or out material and / or any object from the bed of a river, sea, etc.; transporting it to the relocation site and unloading the material or object. The purpose for dredging can be maintenance of the depth or the deepening of navigation accesses or channels; it can also be land reclamation, coastal protection, seabed stabilisation for the offshore energy installations or the removal of contaminated sediments

Waste reception services: in the EU, the provision of ship waste reception facilities in ports is an obligation stemming from Directive 2000/59/EC; waste reception facilities can be operated as a commercial service or as a public service provided by the port

Passenger services: services provided in passenger terminals in ports, of particular importance for ferry crossings (islands' traffic, Channel and straits crossings, North and Baltic Sea inter-city connections)

Other Ancillary (or general) services provided in many ports include bunkering, chandlering, ship repair, container maintenance, marine appraisals, insurance claims inspections, banking, etc.

The figure[5] below provides an overview of the maritime value chain:



3. Competition issues in ports

The following forms of competitive pressures can be distinguished:

a) Inter-port competition: The degree of substitutability between ports, able to serve the same hinterland efficiently, determines the extent of competition between ports. Ports may also compete for transhipment traffic, whereby larger ocean-going vessels use a port hub to transfer cargo to smaller feeder vessels: in such a circumstance the relevant geographic market is likely to be wider than in the case where ports compete for hinterland traffic only. Rivalry between ports is influenced by the availability of public funds to offset losses,

[5] Source Oxera (taken from the ECD (2011) Report "Competition in Ports and Port Services"

blurring the role of commercial forces. The issue is of particular relevance for trades involving containers. The choice of a major container shipping company or of a major terminal operator for a particular port as its base for operation has huge economic implications for the port and the port region in question. In the EU, "fair competition" (or the lack of it) between ports serving the same hinterlands (North Sea range) and between ports with similar features to serve as "transhipment" points (Mediterranean Sea) has been an issue of debate for many years.

b) Intra-port competition: This concerns competition between operators established in the same port, or in close vicinity, offering the same service to the ports' customer. Often, it is up to the port authority to establish a level playing field for all competitors. In terms of economic importance, the issue of intra-port competition is particularly relevant for terminal operator companies providing cargo-handling and other cargo-related added value services. In the case of container terminals, many ports have more than one terminal operator, but even in those ports that do not, the terminal operators compete fiercely with rivals in neighbouring ports for the same hinterland. For cargo handling and terminal operators established in ports in the same maritime façade, there may be little difference between intra-port and inter-port competition insofar as they offer similar competing alternatives for worldwide logistic integrator and shipping lines – they battle for the same hinterland.

The table below gives an example of the number of operators in key major ports:

Number of service providers in major European ports[6]

Port	Pilotage	Towage	Mooring	Container	Dry bulk	Liquid bulk
Algeciras	1	1	1	3	2	2
Antwerp	1	1	1	3	11	11
Genoa	1	1	1	6	1	3
Goteborg	1	1	1	1	5	2
Hamburg	1	3	3	12	NA	NA
Le Havre	1	1	1	6	10	8
Rotterdam	1	9	1	35	15	NA
Tallinn	1	3	1/2[7]	2	10	8

c) Competition for entering into the market: Intra-port competition takes place only when there is more than one service provider in the port. Where there are reasons to restrict the number of operators, like the scarcity of land or public service considerations, the market access to the port can be granted by means of concessions, lease contracts, administrative authorisations, licenses and other instruments. The award of such contracts is (usually) a prerogative of port authority and the degree of competition to enter into the market depends on the extent to which the tender is open and transparent.

[6] Based on the market analysis of the sector (DG MOVE 2012).

[7] In the port of Tallinn one mooring service provider is present in one harbour while two others operators provide mooring services in another harbour.

4. Consolidation of the market for handling containers

In Europe, the top five leading operators (HPH, PSA, APM Terminals, Eurogate and DP World) handled an estimated 75% of the total European container throughput in 2008 compared to less than 50% in 1998, illustrating the mature and consolidated nature of this market. The consolidation trend in European container handling leads to some controversy: the industry structure has become sufficiently concentrated to raise a fundamental question about whether market forces are sufficient to prevent the abuse of market power[8].

Cargo-handling of containers: Global Operators – Deep Sea Trade

Since 2002, global container port throughput has more than doubled, whilst the share accounted for by Chinese ports has reached 30%. Almost one in three TEU handled worldwide is handled in a Chinese port today. Meanwhile, on a total TEU basis, global/international terminal operators now account for over 75% of world throughput compared with 58% in 2002. The largest container ship in service in 2002 was just 7,000 TEU whilst today it is in excess of 15,000 TEU with 18,000 TEU ships on the way.

In 2011 the big four global container operators collectively accounted for 26.5% of world container port throughput, slightly down compared to the previous year due to the emergence of other large players, both international and local.

Top 10 global/international terminal operators throughput, 2011

	Operator	Million TEU	% share of world throughput
1	PSA International	47.6	8.1%
2	Hutchison Port Holdings	43.4	7.4%
3	DP World	33.1	5.6%
4	APM Terminals	32.0	5.4%
5	COSCO Group	15.4	2.6%
6	Terminal Invest Limited (TIL)	12.1	2.1%
7	China Shipping Terminal	7.8	1.3%
8	Evergreen	6.9	1.2%
9	Eurogate	6.6	1.1%
10	HHLA	6.4	1.1%

Source: Drewry Maritime Research

Examples of terminal providers operating in core ports across the European Union[9]

Terminal operator	Core ports
HPH	Taranto, Gdynia, Barcelona, Stockholm, Amsterdam, Rotterdam, Felixstowe, London
APTM	Zeebrugge, Aarhus, Le Havre, Bremerhaven, Gioia Tauro, Algeciras, Rotterdam
PSA	Zeebrugge, Antwerp, Genoa, Venice, Sines, Rotterdam

[8] See NOTTEBOOM, T., 2002, Consolidation and contestability in the European container handling industry. Maritime Policy and Management, 29, 257-269

[9] Based on our analysis of terminal providers in core ports across the EU (DG MOVE (2012).

DP World	Antwerp, Le Havre, Constanta, Tarragona, Rotterdam, Southampton
Cosco Pacific	Antwerp, Hamburg, Bremerhaven, Piraeus, Genoa, Naples, Livorno, La Spezia, Ancona, Algeciras, Barcelona, Valencia, Tarragona, Rotterdam
MSC	Antwerp, Aarhus, Le Havre, Bremerhaven, Hamburg, all Italian ports, all Dutch ports
Eurogate	Bremerhaven, Wilhelmshaven, Gioia Tauro, La Spezia, Ravenna, Lisbon

Vertical Integration

Incumbent terminal operators are confronted more often with a strong competition coming from new entrants (railways companies, investment groups, etc.). In particular, container shipping lines have adopted vertical integration strategies in order to increase their terminal capacity in strategic ports. While pure terminal operators manage multi-user facilities, container shipping lines handle vessels in terms of berthing and crane density in view of an efficient synchronization of liner services (e.g. hub-feeder operations) and high schedule reliability. This phenomenon of vertical integration is highly experienced by EU ports as shown by the following examples[10]:

- MSC and CMA CGM, the world's second and third largest container shipping lines, are involved in 15 and 10 container terminals respectively within the EU.
- Maersk Line's parent company, AP Moller-Maersk, operates a large number of container terminals through its subsidiary APM Terminals: "although this Netherlands-headquartered company advertises itself as an independent company within the AP Moller-Maersk Group, with an independent board and operating common user terminals for all container ship lines in Europe, it currently still mainly handles traffic of sister company Maersk Line"[11].
- Other shipping lines with a strong presence in the terminal operator industry include Evergreen, Cosco (directly or via sister company Cosco Pacific), Hanjin, APL, NYK, K-Line, Yang Ming and Hyundai.

Terminal operators usually tend to expand their network of facilities across several TEN-T ports to maximise network's effects, optimise their hub-and-spoke operation and widen their customers' base.

5. Relative cost of port services in the logistic chain

Total port costs can account for a significant fraction of the total costs associated with the logistics chain. In traditional ports, handling general cargo, costs of ports and ports terminal operation may exceed 30% of the total door-to-door logistic costs. Typically, the situation concerns short sea shipping and intra-EU maritime trade exchanges in particular. In moderns' ports for deep-sea containers trades, using capital-intensive cargo-handling equipment and advanced IT systems, the equivalent cost can be reduced to less than 4-5% of the total logistic costs.

[10] See *Notteboom T., Rodrigue J., The Corporate Geography of Global Container Terminal Operators,* "Maritime Policy & Management: The flagship journal of international shipping and port research", v. 39, i. 3, 2012.
[11] Ibidem.

European labour costs typically represent between 40% and 75% of a general cargo terminal's operating costs and, even in the capital-intensive container handling industry, they can be as high as 50% of total operating costs[12].

In many EU ports, terminal operators rely heavily on the so-called "pools" of dock workers for loading/unloading ships and moving cargoes around the port. These pools have been put in place in order to cope with the irregularity of port traffic and the ensuing fluctuations in labour demand. Temporary labour is thus reserved for a steadily available complement ('pool') of registered workers who enjoy unemployment benefit or similar pay when there is no work available. Even if these arrangements take on very different shapes, today, in 16 out of 22 Member States, access to the port labour market is thus subject to sector-specific rules which depart from general labour law.

The total EU port cost to the shipping industry is estimated at around €11-17 billion in 2010 (PWC/NEA). An indicative repartition of the relative weight of the different costs items of the total cost port operation is presented in the following table:

Relative weight of port services costs[13]

	% of total costs, confidence interval	Charging criteria
Port dues (charges for using port general infrastructure)	5%-10%	Historic criteria, not necessarily linked to costs; rebates for attracting vessels in case of low activity are usual practice
Vessel technical services (pilotage, towage, mooring) Of which pilotage	10% - 15% 5% - 6%	Pilotage prices are unilaterally fixed, with supervision by an independent authority in some cases only. Towage and mooring services prices fixed in commercial terms in most cases
Charges for using operational infrastructure ("berthing costs")	5%-15%	Depending on type and size of vessels and nature and volume of cargo; unilateral rebates for attracting vessels and congestion charges in case of tight demand
Cargo handling prices	45%-60%*	Usually fixed under competitive market conditions; concerns of conflict of interests in cases where terminals are owned by major shipping lines
Prices for other port ancillary services	5%-10%	Usually fixed under market conditions
Waste reception fees	1%-5%-	Charges fixed by the Authority, in principle cost-oriented (see Directive)

The table is indicative only since the heterogeneity of ports and cargo-handling operations makes it extremely difficult to present values "valid for all". According to research, the cost of cargo-handling can represent between 70%-80% in some traditional, labour intensive ports.

[12] Source: 'Dock labour and port-related employment in the European seaport system', Prof Theo Notteboom, June 2011.

[13] Source: Haralambides H. (2012) "Ports: Engines of Growth and Employment". There are huge variations in the composition of costs from one port to another. For an academic review on port pricing issues see also Haralambides et al (2001), "Port Financing and Pricing in the EU: Theory, Politics and Reality"

6. Deep sea vs. Short sea shipping

Deep sea shipping refers to the maritime transport of goods on intercontinental routes, crossing oceans; as opposed to short sea shipping over relatively short distances, for instance within the EU.

In the EU, inter-continental sea trade of containers is concentrated in a relatively limited number of major ports, e.g. Rotterdam, Hamburg, Antwerp, Le Havre or Felixstowe. Those ports are equipped with advanced, capital intensive cargo-handling installations, able to serve very large container-ships. Large container ships and huge cargo-handling capacities in ports lead to economies of scale resulting in very low transportation costs per unit.

Short-sea-shipping includes traffic from "hub" ports and also freight exchanges between European maritime regions. For long intra-EU distances, e.g. Iberian Peninsula to the North Sea and Baltic regions, short sea is, in principle, an alternative to land transport solutions. Low cargo volumes, smaller ships and much more frequent port calls have a negative impact on the cost and competitiveness of short sea services.

7. Heterogeneity of ports in the EU

There are various ways of classifying European ports. On a geographical basis, the most common classification is based on the maritime coastlines of the continent (Baltic, North Sea, Atlantic, Mediterranean, and Black Sea) or ranges of neighbouring, competing ports (e.g. Hamburg-Le Havre range). A functional classification[14] distinguishes large gateway ports, hub ports as well as a whole series of medium-sized to smaller ports each with specific characteristics in terms of hinterland markets served, commodities handled and location qualities. In terms of ownership and operational structures, at the one end there is a significant number of ports where the local government both owns the land, the infrastructure and the equipment, and runs the entire operation of all the services provided in the port. At the other end of the spectrum there are a number of ports with a private landlord owner and a number of private interests that provide the services, some of them in competition with each other. The table below provides an overview of the ownership structure in the different regions.

This diversity in governance seems to have an impact on the financial autonomy of ports and their capacity to decide the investments and pricing policies according to their own commercial strategy. In contrast with the ports of the Hanse and Anglo-Saxon, the ports of the Latin and New Latin often have limited or no financial autonomy. They receive funds from the general State budget and the State regulates, sets port charges and/or collects other port revenues.

[14]See OECD (2011) Report "Competition in Ports and Port Services" http://www.oecd.org/regreform/liberalisationandcompetitioninterventioninregulatedsectors/48837794.pdf.

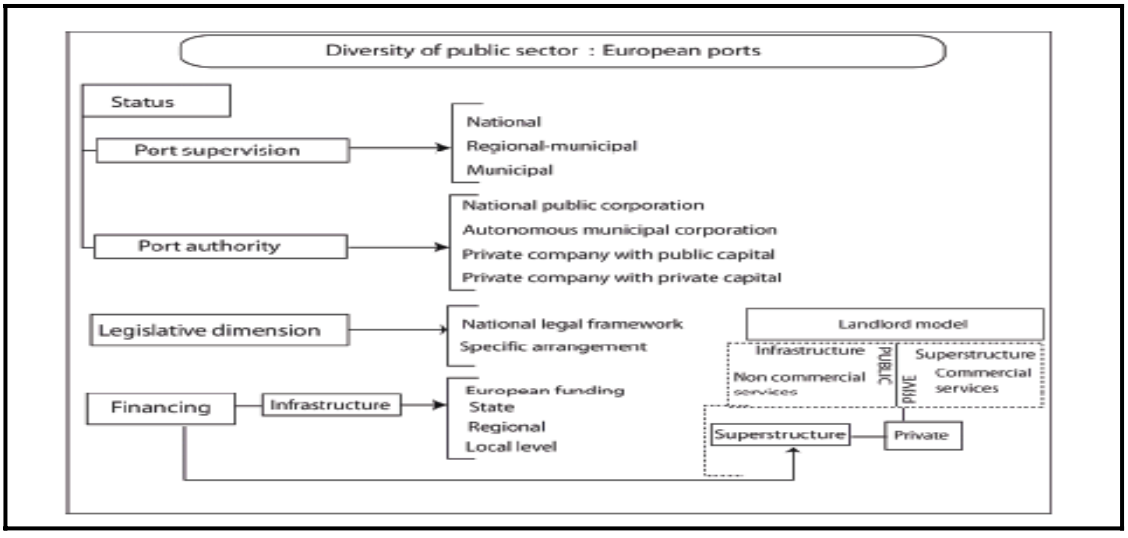
Ownership of port authorities (European Port Governance report 2010, ESPO[15])[16]

	Hanse	New Hanse	Anglo-Saxon	Latin	New Latin
Publicly owned ports	**96.0%**	**84.1%**	**47.1%**	**75.0%**	**90.6%**
National Authority	6.5%	71.3%	35.3%	64.4%	87.3%
Region	2.5%	0.0%	0.0%	7.9%	0.0%
Province	4.3%	0.0%	0.0%	2.7%	0.0%
Municipality	82.7%	12.8%	11.8%	0.0%	3.3%
Privately owned ports	**4.0%**	**0.0%**	**8.8%**	**0.7%**	**0.0%**
Other	**0.0%**	**15.9%**	**44.1%**	**24.3%**	**9.4%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Port authorities' dual nature of functions

The extent, scope and mandate of "port authorities" vary greatly from one Member State to another. The association of European Port Authorities Port Governance report (ESPO, 2010) concluded as follows: "*Most port authorities in the EU have formalised objectives, but these show a great diversity of economic and non-economic ones, which are often even mixed. The pure economic objectives are varied as well. Maximisation of handled tonnage, maximisation of added value and maximisation of the profit of the port authority stand out as the most important ones. The first is more common for port authorities from the New Hanse and New Latin regions, whereas added value occurs more often in the Hanse and Latin regions. Profit maximisation is more common for port authorities from the Anglo-Saxon region*".

The ESPO Fact Finding Report further examines the dual nature of nearly all port authorities in the EU, both as (a) regulatory bodies, administering the port and providing a level playing field for port operators established in the ports and (b) operators directly and indirectly involved in the provision of commercial services in the port, often competing with other operators.



[15] See ESPO (2010) Report "European Port Governance": http://www.espo.be/images/stories/Publications/studies_reports_surveys/espofactfindingreport2010.pdf#.

[16] The categorisation made by ESPO, the "typology of regions" includes the following Member States: 1) "Hanse Region":Belgium, Denmark, Finland, Germany, The Netherlands and Sweden, 2) "New Hanse": Estonia, Latvia, Lithuania and Poland, 3) "Anglo-Saxon":Ireland and UK, 4)"Latin":Cyprus, France, Greece, Italy, Malta, Portugal and Spain and 5) "New Latin":Bulgaria, Romania and Slovenia.

Port governance and funding

In terms of public *vs* private sector involvement, the structures for provision of port services in the EU underwent significant changes in recent years. Private operators took an extremely solid and strategic role for the development of ports. Some public authorities governing the port became more commercial oriented. Although port authorities run a rather restrictive information policy on the funding of port infrastructure[17],it can be said that ports substantially rely on public funding. Except in the case of UK, general port access infrastructures are always funded by public resources. Funding of commercial operational infrastructures (dedicated quays and berths, cargo-handling facilities, ancillary cargo services, etc.) is shared both by public authorities and private operators.

Port management models – Source, World Bank

Type	General port Infrastructure	Superstructure (infrastructure required for the provision of cargo-handling operations)	Cargo-handling Operations	Other functions
Publicly owned, managed and operated Port	Public	Public	Public	Mainly public
Public Owned Port open to private operators	Public	Public	Private	Mainly public
Public Owned Port with operations privately managed	Public	Private	Private	Mainly private
Privately owned and operated ports	Private	Private	Private	Mainly private

8. Impact of ports on local economies and jobs

The impact of seaport efficiency and productivity on economic growth and jobs is well documented in transport economics. Some studies suggest[18] that there are about 800,000 enterprises directly linked to ports' activities in the EU which generate, directly and indirectly, approximately 3 million jobs. Port throughput is positively correlated to employment in port regions. OECD studies[19] indicate that an increase of one million tonnes of port throughput is associated with an increase in employment in the port region of 0.03%. This means that in a region with one million employees, employment would increase by 300 units; in the long run this increase would be 7500 units.

[17] In 2012, the European Parliament has conducted a study on this issue, which includes a number of recommendations related to transparency and state aid rules in the port sector. The study is at : http://www.europarl.europa.eu/committees/en/tran/studiesdownload.html?languageDocument=EN&file=66171.

[18] ITMMA Report: Socio-Economic Impacts of EU Ports.

[19] Ferrari, C., Merk, O., Bottasso, A., Conti, M., Tei, A. (2012), "Ports and Regional Development: a European Perspective", OECD Regional Development Working Papers.

9. Port development stages[20]

	First generation	Second generation	Third generation	Fourth generation
	Before 1960	**1960s to 1980s**	**1980s to 1990s**	**As of 2000s**
The port development position and development strategy	Conservative junction point of the sea and inland transportation	Expansionism transportation and production centre	Industrial principle international trade base chain connecting transportation system	Nodal point / key gate of sustainable transport chains, combining ocean trades and intra-EU redistribution of cargoes
Activity scope	(1) Cargo handling, storage, navigation assistance-pier and	(1) + (2) Cargo type change: container handling and distribution, ship related industry - enlargement of port regions	(1)+ (2) + Cargo information, logistics integration, ferry, Ro-Ro, lo-lo deployment, Formation of the terminal and distribution centres	(1)+(2)+(3) High end activities in the port and adjacent region(s); attraction of industrial and commercial firms to the port
Structure formation and specifics	➢ Everybody acts individually in the port ➢ Port and its users maintain informal relations.	➢ Relations between port and its users become more close ➢ Emergence of the slight correlation among port activities ➢ Absent / negative cooperation relations between port authority and users community	➢ Formation of the port cooperation system ➢ Trade and transportation chain concentration in the port ➢ Relations between port and self-governing community become more closer ➢ Planning of the port adapted to business needs	➢ Develop the EU hinterland network in cooperation with other European sea and inland ports ➢ Optimization of internal port logistics ➢ Efficient coordination between shippers, terminals, service providers, harbourmasters and transport companies.
Character of the productivity	➢ Loading - Unloading ➢ Individual supply of the simple services ➢ Low value added	➢ Cargo distribution ➢ Cargo processing ➢ Increase of the value-added activities in the port	➢ Distribution of the cargo and information ➢ Combination of the diversified services and distribution ➢ Broad range of value added activities	➢ Integrated logistics ➢ Reducing ecological footprint of overall logistic chain ➢ Attraction of high end activities to the region.
Core factors	Labour/capital	Capital	Technology and know-how	ICTs and network integration

[20] Haralambides et al. (2003) Erasmus University Rotterdam.

10. Overview of recent and on-going port reforms and re-organisations in selected European countries[21]

Belgium (Flanders)

The legal form of port authorities is laid down in the 1999 'Havendecreet' (Ports Decree) of the Flemish government. A few years ago, government introduced the concept of 'Flanders Port Area' to stimulate more intensive co-operation between port authorities. Here, priority will be given to common initiatives with a clear value added, without questioning the decision-making of individual port authorities.

Activities with respect to (1) strengthening the social support for ports, (2) acknowledging the importance of ports in logistics networks and (3) greening of port activities will be emphasised. In order to ensure the realisation of three sea locks in three Flemish ports, the Flemish government created the 'NV Vlaamse Havens' (SA Flemish Ports). For each sea lock the 'NV Vlaamse Havens' will establish a subsidiary in which the NV and the involved port authority or a selected private partner will participate. Notwithstanding the stipulations of the Ports Decree, the Flemish government requests that port authorities concerned make a financial contribution for the construction of these sea locks.

Bulgaria

Since Bulgaria became an open market economy, a successive series of port reforms have occurred which basically intend to privatise operations in the country's two main ports, Bourgas and Varna. Port authority responsibilities are centralised at national level and have shifted back and forth between an 'executive agency' for maritime administration and an 'infrastructure company'. The latest change (2010) concentrates all port authority responsibilities, including nautical responsibility, with the Bulgarian Port Infrastructure Company.

Denmark

In 2010, Danish government started up discussion on reform of the country's ports which are mostly owned by municipalities but governed by a national Ports Act. A governmental commission is evaluating the current legislative framework from the perspective of efficiency and competitiveness, making recommendations to modify the Port Act where necessary. A particular question is whether certain ports need to have a 'national interest' status.

Finland

A 2007 decision of the European Commission regarding the existence of state aid in a Finnish so-called 'state enterprise' has led Finnish government to legislate that government-owned entities must be corporatized by the beginning of 2014. This also affects Finnish port authorities, which are mostly owned by municipalities. Furthermore, some Finnish ports are in the process of merging, the most concrete example being the Ports of Hamina and Kotka which merged into one limited company on 1 May 2011.

France

President Sarkozy initiated in 2008 a major reform of French ports of which the most visible part is the completion of the port labour reform, notably the privatisation of handling equipment and staff. The reform programme however also modified the governance of the major ports in France, the former 'ports autonomes' (autonomous ports) which have now

[21] Source: ESPO Fact Finding Report (2011)

become ‘Grands Ports Maritimes’. The reform will be effective before the end of June 2011. The reform of the major ports succeeds the reform of smaller national ports which has been launched in 2004 and has put those ports mainly under regional control.

Germany

In close co-operation with the ‘Bundesländer’ (Federal states), the German government published in 2009 a ‘Nationales Hafenkonzept’ which is currently in the process of implementation. This approach is innovative and significant, because it is the first time that the German government develops an elaborate view on ports policy, which addresses – inter alia – capacity development and aims to stimulate co-operation between ports. Governance of German seaports however remains within the competence of each ‘Bundesland’.

Various forms of co-operation exist between these states and the ports themselves. One example is the co-operation between the seaports of the Lower Elbe river (Hamburg, Brunsbüttel, Cuxhaven, Stade) agreed in 2009 which aims to attract business ventures, exchange know-how and develop joint marketing. The ‘Länder’ also want to establish joint PR activities under the common label ‘German Ports’. In addition, the regional governments of Hamburg and Bremen started in 2011 an investigation into a more profound co-operation between their port authorities. The results of this exercise have not yet been published.

Ireland

Irish government started in September 2010 a consultation on a reform of Irish ports. Most of the commercial ports are currently state-owned corporations. The consultation addresses four aspects: governance (including corporate governance but also ownership and the option of privatisation), capacity development, planning and funding, exploiting the use of short-sea shipping, benchmarking competitiveness and stimulating cooperation between ports.

Italy

The fundamentals of Italian port governance are laid down in a 1994 Law which established port authorities for the main Italian ports and liberalised cargo-handling services. In recent years several proposals to amend the Law have been discussed but without major changes so far. In September 2010 government proposed a bill which introduces a classification of ports, deals with competences of port authorities and harbour masters offices, faster approval procedures for port regulatory plans and a review of concession procedures. The main wish of the sector, i.e. to establish financial autonomy for port authorities, has however not been realised yet. In 2009 and 2010 neighbouring port authorities in several regions (North Adriatic, Liguria, Tuscany, Calabria) set up regional port associations to stimulate more intensive co-operation.

Malta

During the last 10 years the operation of the ports in Malta has undergone a whole reform process whereby all port services have passed from the port authority to the private industry either through concession contracts or service level agreements. All port related legislation was amended to reflect these changes and allow for more flexibility in responding to market needs and efficiency in port operations. Likewise, new legislation establishing the port authority was adopted in 2009 to clearly reflect the change whereby its functions have changed from being an operator of port facilities and a provider of port services to one where it has become the regulator of port services and the facilitator of port business.

Netherlands

Reforms of Dutch ports have taken place on individual basis. The most significant reform in the recent past was the corporatisation of the Port of Rotterdam in 2004, which was probably the most advanced corporatisation of any European, publicly-owned port authority. With the reform, the Dutch state became co-shareholder in the otherwise municipally-owned port authority. Zeeland Seaports, the port authority that manages the ports of Vlissingen and Terneuzen, was corporatized early 2011.

The main difference with Rotterdam is that the only shareholder here is the Joint Agreement Zeeland Seaports, in which the Province of Zeeland and the municipalities of Terneuzen, Vlissingen and Borsele participate. The Dutch state is no shareholder. The Port of Amsterdam and Groningen Seaports, the port authority that manages the ports of Delfzijl and Eemshaven, are both going through similar corporatisation process at the moment. On national level, government has de facto followed a 'mainport' approach to the advantage of Rotterdam. Recently, an advisory body to the government suggested to set up a port holding between Rotterdam and Amsterdam. This has thus far not led to any concrete initiative however.

Poland

The 1996 'Act on Seaports and Harbours' was the basis to create three port authorities in the ports of major importance for the national economy, i.e. the ports of Gdansk, Gdynia and Szczecin-Swinoujscie. Since then the Act has been a few times amended and an obligation to sell shares in port operation companies was imposed on port authorities. Currently, there is no legislative procedure active in this respect. The execution of certain stipulations of the Act is still in progress, such as privatisation of port authorities' daughter companies involved in stevedoring.

Romania

In July 2010 the government of Romania has reviewed the legal framework for the administration of Romanian ports and the use of public port infrastructure (review of the Governmental Ordinance 22/1999). This has concretely allowed the sub-concession of the port domain to interested private companies and operators.

Spain

In August 2010 Spanish government adopted a new Law which contains a major amendment to the 2003 'Law on the Economic Regime and the Provision of Services in Ports of General Interest'. The new Law seeks to enhance the efficiency and competitiveness of Spanish ports and specifically regulates the financial autonomy of ports and the provision of port services. To this end, it contains detailed provisions on various types of port dues and port services, on the delimitation of port areas and on port labour.

Sweden

In spring 2009, Gothenburg City Council decided to divide the Port of Gothenburg into a municipal company – Gothenburg Port Authority - and three terminal companies to be run by external operators. The Port of Gothenburg will still operate as an open, multi-user port and new shipping companies and cargo owners are welcome to establish their activities. These would be overseen by the port authority through concession agreements with new terminal operators.

In April 2011, the Swedish logistics company Logent took over operations at the car terminal. In October 2010, an agreement was reached with DFDS and C.Ports which will be the new,joint operator of the roro-terminal. The transfer is subject to approval by the Swedish Competition Authority, which is standard practice for major transfers. The process of

transferring the container terminal is underway. An agreement with a new operator is expected to be in place during autumn 2011. A similar process of privatisating cargo handling activities took place earlier in the Ports of Stockholm.

United Kingdom

A number of the largest ports in the UK were privatised in the late 1980s and early 1990s. Other ports remained in the hands of independent trusts or municipalities. The installation of a conservative / liberal democrat coalition government in 2010 has again sparked the debate about privatising the remaining major trust ports. This debate is highly controversial as the on-going privatisation of Dover, a process which was initiated before the government changeover, demonstrates

11. Sea port dues in EU ports (excerpt from infrastructure charging study, 2012[22])

Charges applied by maritime ports for ships are the fundamental way not only to obtain payment for services provided but also to internalise costs related to local externalities. Accordingly, all 29 ports considered in the study use port dues.

Gross tonnage is overwhelmingly common as basis for setting the charges. While some ports use volume as proxy for capacity, there are only two ports in the sample whose charges are not tonnage or volume based.

Environmental considerations are taken into account by 13 ports, which grant discounts based on participation in the Environmental Ship Index scheme[1] (7 ports in Belgium, France, Germany and the Netherlands), and/or based on the Green Award certificate[2] (5 ports in Latvia, Lithuania, the Netherlands and Portugal), or directly though rebates linked to NO_x/SO_x emissions (Port of Stockholm and Trelleborg in Sweden) or via levying a sulphur fee (Port of Gothenburg, Sweden)[3].

The resulting variation in port dues is shown on the following table for four types of vessel. The study found that sea port dues diverge the greatest for Roll-On-Roll-Off-Passenger (RoPax) vessels, because of the dissimilar charging for passengers and passenger cars across the ports.

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22 http://ec.europa.eu/transport/themes/sustainable/studies/doc/2012-11-inventory-measures-internalising-external-costs.pdf

[1] The Environmental Ship Index is based on ship emissions of local pollutants, such as NO_x, SO_x, particulate matter, and GHG. Source: http://www.wpci.nl/projects/environmental_ship_index.php.

[2] The Green Award certification scheme focuses on crew, operational, environmental and managerial elements. Source: http://www.greenaward.org/greenaward/.

[3] In addition, Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues, requires ports to provide waste reception facilities and vessels are, against a waste charge, obligated to make use of these facilities. The charges are always differentiated based on the certain characteristics of the ship, such as gross or net tonnage, engine power, or volume.

Table 5 Sea port dues (in €) calculated for exemplary vessels (2012)[23]

Port	Aframax liquid bulk carrier	Panamax bulk carrier	Handy container vessel	RoPax vessel
Port of Antwerp, Belgium	41,500	24,700	8,800	18,700
Port of Zeebrugge, Belgium	19,800	14,000	4,900	5,800
Port of Bourgas, Bulgaria	30,400	24,500	9,200	14,400
Port of Lemesos, Cyprus	43,500	17,100	9,200	16,300
Port of Copenhagen-Malmö, Denmark	68,100	25,200	9,700	19,400
Port of Tallinn, Estonia	99,000	32,000	11,900	11,000
Helsinki Port, Finland	37,800	23,000	6,000	9,800
Grand Port Le Havre, France	44,100	25,800	3,100	5,900
Grand Port Maritime de Marseille, France	35,300	28,500	3,400	9,500
Ports of Bremen/Bremerhaven, Germany	24,600	11,000	6,000	9,500
Port of Hamburg, Germany	24,200	16,600	3,200	2,300
Port of Riga, Latvia	54,200	35,800	7,000	8,800
Port of Klaipeda, Lithuania	31,900	23,500	8,700	24,400
Grand Harbour of Valletta, Malta	50,800	24,600	9,300	3,900
Port of Amsterdam, The Netherlands	29,500	17,500	3,600	16,300
Port of Rotterdam, The Netherlands	31,700	17,600	5,500	5,200
Port of Gdansk, Poland	30,300	22,300	4,100	4,800
Port of Sines, Portugal	17,000	11,300	2,700	8,100
Port of Constanza, Romania	17,000	7,700	3,800	8,100
Port of Koper, Slovenia	10,700	6,800	2,800	2,900
Port of Barcelona, Spain	21,000	21,400	6,500	18,200
Port of Valencia, Spain	21,500	21,800	6,300	18,400
Port of Gothenburg, Sweden	22,800	16,800	6,200	5,800
Port of Stockholm, Sweden	86,900	27,300	10,300	20,300
Port of Trelleborg, Sweden	36,500	12,700	5,700	3,100
Ports of Grimsby & Immingham, UK	237,600	140,000	14,300	159,300
Port of London, UK	33,000	21,900	7,700	15,200
Ports of Tees & Hartlepool, UK	92,200	67,900	25,100	67,000

[23] Source: DG MOVE Study (2012) "An inventory of measures for internalising external costs in transport", chapter 5 Maritime Shipping – see footnote 22

12. Findings of the European Court of Auditors on the use of Structural Funds for ports projects

The Court pointed out as a serious problem for the allocation of funding to ports the absence of long-term port development plans and the fact that, in the cases of ports projects audited, no needs assessment had been carried out.

Excerpts from the report of the European Court of Auditors on performance of sea-ports (2012)[24]

"Between 2000 and 2006, 2.8 billion euro from the Structural and Cohesion Funds was allocated to seaport infrastructures." "A lot of the investments made [N.B. supported by the EU Funds] suffer from either ineffective links to their hinterland ('Port 2000' in Le Havre) or missing links (Bari, Brindisi, Langosteira and Ferrol). Even though 'Port 2000', Bari and Ferrol were considered as being effective, these five projects, representing 47,7 % of the co-financed amounts audited, are likely to need significant further investments to become linked to their hinterlands and operate to their capacity."

"In **Italy**, there was neither a national nor a regional planning strategy for seaport investments at the beginning of the 2000-06 period. A general plan for transport and logistics was approved in December 2002 and this remains in place as no subsequent plan has been established. In 2003, a working group came together to synchronise investments at national and regional levels."

"In **France**, decisions on co-funding port infrastructures were embedded in a decision of the Transport Minister. In 2010, the Schéma National Infrastructures de Transport was proposed in order to develop alternatives to road transport, linking investments to their impact on global warming, but this proposal had not yet been adopted at the time of the audit. "

"This audit also showed that none of the regions visited had a long-term port development plan in place and needs assessments to support the selection of seaport infrastructure projects had not been carried out".

[24] http://eca.europa.eu/portal/pls/portal/docs/1/14050737.PDF

ANNEX III:

Maritime ports freight and passenger statistics

From EUROSTAT Statistics Explained

This annex reproduces the latest statistical data (20 March 2013) on freight handling and passenger traffic in ports in the European Union. For more detailed EUROSTAT information / updates see: **Statistics Explained article "Maritime transport of goods - quarterly data"**
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Maritime_transport_of_goods_-_quarterly_data

Maritime port activity in the EU27

After growing steadily between 2002 and 2007, the total weight of goods handled[1] in maritime ports in the **EU27** remained nearly stable at 3.9 billion tonnes in 2008. It then fell by 12% to 3.4 bn tonnes in 2009 as the result of the economic crisis. From 2010 the weight of goods handled increased again, to reach 3.7 bn tonnes in 2011, still below the level recorded in 2008. Compared with 2010, the weight of goods handled increased by 2% in 2011.

For sea transport of passengers, the number of passengers embarking or disembarking[1] in maritime ports in the **EU27** has fallen steadily from a peak of 414 million passengers in 2007, to reach 385 mn in 2011. Compared with 2010, the number of passengers decreased by 4% in 2011.

These figures are published in a report[2] from **Eurostat, the statistical office of the European Union**, on port activity for goods and passengers in the **EU**[3], as well as **Norway**, **Croatia** and **Turkey**.

The United Kingdom, Italy, the Netherlands, Spain, France and Germany represent just over two-thirds of the total weight of goods handled

The Member States with the largest total weight of goods handled in maritime ports in 2011 were the **United Kingdom** (520 mn tonnes, +2% compared with 2010), **Italy** (500 mn tonnes, +1%), the **Netherlands** (492 mn tonnes, -9%), **Spain** (398 mn tonnes, +6%), **France** (322 mn tonnes, +3%) and **Germany** (296 mn tonnes, +7%).

Italy, Greece, Denmark, Sweden and Germany account for just over two-thirds of the total number of passengers handled

In 2011, the highest numbers of passengers embarking or disembarking in maritime ports were recorded in **Italy** (82 mn passengers, -7% compared with 2010), **Greece** (79 mn, -8%), **Denmark** (42 mn, -1%), **Sweden** (30 mn, 0%), **Germany** (29 mn, +2%), the **United Kingdom** (28 mn, -3%), **France** (26 mn, -6%) and **Spain** (22 mn, +3%).

Rotterdam largest port for goods handling, Dover for passengers

Among the top ten cargo ports in terms of tonnes of goods handled, **Rotterdam** (370 mn tonnes weight of goods handled, -6% compared with 2010) was the largest port in 2011, followed by **Antwerp** (169 mn tonnes, +5%), **Hamburg** (114 mn tonnes, +9%), **Marseille** (85 mn tonnes, +3%) and **Algeciras** (69 mn tonnes, +17%).

Dover (13 mn passengers, -3% compared with 2010) was the busiest port in terms of the number of passengers disembarking or embarking in 2011, followed by **Paloukia Salaminas** and **Perama** (both 12 mn, -8%), **Helsinki** (10 mn, +5%) and **Calais** (10 mn, -2%).

	Weight of goods handled, in million tonnes			Number of passengers embarked or disembarked, in thousands		
	2010	2011	Growth rate 2011/2010, %	2010	2011	Growth rate 2011/2010, %
EU27[3]	**3 645.6**	**3 706.4**	**1.7**	**399 465**	**385 402**	**-3.5**
Belgium	228.2	**232.8**	**2.0**	829	**824**	**-0.6**
Bulgaria	22.9	**25.2**	**9.8**	-	-	-
Czech Republic	-	-	-	-	-	-
Denmark	87.1	**92.6**	**6.4**	41 993	**41 527**	**-1.1**
Germany	276.0	**296.0**	**7.3**	28 780	**29 233**	**1.6**
Estonia	46.0	**48.5**	**5.3**	11 186	**11 840**	**5.9**
Ireland	45.1	**45.1**	**0.0**	3 089	**2 906**	**-5.9**
Greece	129.1	**135.3**	**4.8**	86 189	**79 183**	**-8.1**
Spain*	376.4	**398.3**	**5.8**	21 215	**21 868**	**3.1**
France	313.6	**322.3**	**2.8**	27 218	**25 552**	**-6.1**
Italy	494.1	**499.9**	**1.2**	87 658	**81 895**	**-6.6**
Cyprus	7.0	**6.6**	**-5.6**	107	**92**	**-14.2**
Latvia	58.7	**67.0**	**14.2**	676	**786**	**16.4**
Lithuania	37.9	**42.7**	**12.7**	251	**281**	**12.1**
Luxembourg	-	-	-	-	-	-
Hungary	-	-	-	-	-	-
Malta	6.0	**5.6**	**-7.1**	8 063	**8 250**	**2.3**
Netherlands**	538.7	**491.7**	**-8.7**	1 994	**1 770**	**-11.2**
Austria	-	-	-	-	-	-
Poland	59.5	**57.7**	**-3.0**	2 601	**2 528**	**-2.8**
Portugal**	66.0	**67.5**	**2.3**	701	**659**	**-5.9**
Romania	38.1	**38.9**	**2.1**	-	-	-
Slovenia	14.6	**16.2**	**11.0**	39	**36**	**-8.9**
Slovakia	-	-	-	-	-	-
Finland	109.3	**115.5**	**5.6**	17 867	**18 074**	**1.2**
Sweden	179.6	**181.6**	**1.1**	30 185	**30 094**	**-0.3**
United Kingdom	511.9	**519.5**	**1.5**	28 824	**28 002**	**-2.9**
Norway***	195.1	**199.0**	**2.0**	5 876	**6 130**	**4.3**
Croatia	24.3	**21.9**	**-10.1**	25 124	**26 947**	**7.3**
Turkey	338.1	**359.1**	**6.2**	1 577	**1 842**	**16.8**

Top ten EU27 cargo ports and passenger ports, 2011

Rank	Cargo ports		Weight of goods handled		Passenger ports		Number of passengers embarked or disembarked	
			Millions of tonnes	Growth rate 2011/2010 (%)			Thousands	Growth rate 2011/2010 (%)
1	**NL**	Rotterdam	370.3	-6.4	**UK**	Dover	12 918	-3.3
2	**BE**	Antwerpen	168.5	5.3	**EL**	Paloukia Salaminas	11 662	-8.2
3	**DE**	Hamburg	114.4	9.4	**EL**	Perama	11 662	-8.2
4	**FR**	Marseille	84.5	2.5	**FI**	Helsinki	10 326	+4.8
5	**ES**	Algeciras	68.8	17.4	**FR**	Calais	10 063	-1.7
6	**FR**	Le Havre	63.4	-3.6	**SE**	Stockholm	9 184	+0.4
7	**NL**	Amsterdam	59.6	-18.1	**EL**	Piraeus	9 182	-16.1
8	**UK**	Immingham	57.2	5.9	**SE**	Helsingborg	8 339	-2.4
9	**DE**	Bremerhaven	55.9	21.6	**DK**	Helsingør (Elsinore)	8 324	-2.5
10	**ES**	Valencia	54.2	2.1	**IT**	Messina	8 060	-25.1

1. It should be noted that these statistics are primarily designed to measure port activity and not the sea transport of goods and passengers. Goods and passengers travelling within the EU are counted twice, once in the port of loading/embarkation and once in the port of unloading/disembarkation, whether these ports are in the same or in two different Member States.
2. **Eurostat**, Statistics in Focus 7/2013, "**Continued recovery in volume of goods handled in EU ports**". The publication is available free of charge in PDF format on the Eurostat website.
3. Excludes the Czech Republic, Luxembourg, Hungary, Austria and Slovakia which have no maritime ports.

Main statistical findings – March 2013

Continued recovery in volume of goods handled in EU ports

There were continued year-on-year increases in EU port activity in the first three quarters of 2011. However, this recovery came to an end in the fourth quarter of 2011, interrupting a pattern of growth which goes back to the first quarter of 2010 (Figure 1).

The growth in EU port activity in 2011 was mainly due to increased volumes in inward movement of goods. Despite the annual increases in the gross weight of goods handled in EU ports following the economic downturn, overall port activity in the EU was still lower in 2011 than the level recorded 6 years earlier, in 2005 (Table 1).

Rotterdam, Antwerpen and Hamburg maintained their positions as the three largest EU ports in 2011, both in terms of the gross weight of goods and the volume of containers handled in the ports. The 20 largest ports accounted for 37.0 % of the total tonnage of goods handled in the countries reporting data in 2011. Rotterdam on its own accounted for 8.6 % of the total tonnage (Table 3).

The number of passengers passing through EU ports is estimated at more than 385 million in 2011, a decrease of 3.5 % compared with 2010. The main reason for this fall is a reduction in the numbers of passengers embarking and disembarking in Italy and Greece, the EU's two leading countries for seaborne passenger transport (Table 6).

UK: largest maritime freight transport country in Europe

Port activity grew in most European countries in 2011. The largest increases were recorded in Latvia, Lithuania and Slovenia, all with rises of more than 10.0 % in the tonnage of goods handled in their ports compared with 2010 (from relatively low levels). In contrast, decreases

in port activity were recorded in the Netherlands (-8.7 %), Malta (-7.1 %), Cyprus (-5.6 %) and Poland (-3.0 %). Port activity in the acceding state of Croatia also decreased from 2010 to 2011 (-10.1 %).

At 519 million tonnes, the United Kingdom (UK) handled the largest volumes of seaborne goods in 2011, reclaiming its position as the largest maritime freight transport country in Europe. The volume of seaborne goods handled in UK ports in 2011 represented 14.0 % of the EU-27 total. The UK was followed by Italy and the Netherlands, with shares of 13.5 % and 13.3 %, respectively. Spain remained the fourth largest maritime freight transport country in the EU in 2011 and France the fifth largest. Ports in the candidate country Turkey handled 359 million tonnes of goods in 2011, placing it between France and Spain.

Inward movement of goods increased by 2.8 % in 2011 and accounted for over 62 % of the total tonnage of goods handled in EU-27 ports. Considerable inward volumes of liquid bulk goods, such as crude oil and oil products, account for much of this inward tonnage.

In general, more seaborne goods are unloaded than loaded in the majority of EU countries. Cyprus had the highest share of total tonnage unloaded in 2011, followed by the Netherlands and Malta. However, for Romania (agricultural products), the three Baltic countries (oil products) and the EEA country Norway (crude oil), outward movement of goods prevailed.

Liquid bulk accounted for 39 % of total tonnage

Liquid bulk goods accounted for 39.0 % of the total tonnage of cargo handled in the main EU-27 ports in 2011, followed by dry bulk goods, containerised goods and Ro-Ro mobile units (Table 2). The largest tonnage of liquid bulk goods was handled in UK ports (230 million tonnes), followed by the Netherlands (223 million tonnes) and Italy (210 million tonnes). Estonia recorded the highest share of liquid bulk goods as a percentage of the total tonnage of goods handled in the main ports (reflecting large volumes of outward movements of oil products from Russia). Dutch ports' handling of dry bulk goods was by far the largest in the EU in 2011 (140 million tonnes), but only a little higher than the candidate country Turkey (137 million tonnes).

Container transport was the dominant type of cargo in Germany (44.0 %) and Belgium (41.0 %), while the largest volumes of goods in containers were handled in Germany (126 million tonnes) and Spain (128 million tonnes). The share of Ro-Ro units in the total tonnage of goods was highest for Denmark, Ireland and Sweden (all 27.0 %). However, in tonnage terms, the United Kingdom (97 million tonnes) and Italy (93 million tonnes) had the largest quantities of goods transported on Ro-Ro mobile units in 2011.

Rotterdam, Antwerpen and Hamburg remain top ports

Rotterdam, Antwerpen and Hamburg, all located on the North Sea coast, consolidated their positions as Europe's top three ports in 2010, both for the gross weight of goods (Table 3) and the volume of containers handled (Table 4). Europe's largest port, Rotterdam, saw a fall of 6.4 % in the gross weight of goods handled from 2010 to 2011 (mainly due to reduced volumes of liquid bulk goods), while Antwerpen and Hamburg both reported increases in the total volume of goods handled in the same period. Most of the cargo handling in Rotterdam involves liquid and dry bulk goods such as oil, chemicals, coal and ores. However, Rotterdam is also Europe's largest container port, handling almost 15 million twenty-foot equivalent units (TEUs) in 2011, a substantial increase compared with 2010 (Table 4).

Container cargo accounted for more than half of the total tonnage of cargo handled in the more specialised ports of Antwerpen and Hamburg. The port of Hamburg handled a total of 9

million TEUs in 2011, overtaking Antwerpen as the second largest container port in Europe measured by the number of TEUs handled. After a gradual recovery in the last years, the port of Piraeus in Greece handled more TEUs in 2011 than before the economic downturn (Table 4).

Among the top 20 cargo ports, Bremerhaven in Germany reported the largest growth in gross weight of goods handled in 2011 (+21.6 %), followed by Taranto in Italy (+20.5 %) and Algeciras in Spain (+17.4 %). On the other hand, Amsterdam saw a substantial decrease in port activity in 2011 (-18.1 %), due to reduced tonnages of dry and liquid bulk goods (Table 3).

The most specialised among the top 20 cargo ports are Milford Haven in the UK, Bergen in Norway and Botas in Turkey (mostly liquid bulk goods), as well as Bremerhaven in Germany (mostly containers). While inward activity is prevalent in most of the top 20 ports, the ports of Bergen and Botas both handle substantial outward movements of crude oil. Bremerhaven also handles slightly more outwards movements of containerised goods than inwards movements.

The 20 largest ports accounted for 37.0 % of the total tonnage of goods handled in the countries reporting data in 2011 (EU-27, Croatia, Norway and Turkey), about the same as in 2010. Rotterdam alone accounted for 8.6 % of the total port activity in the reporting countries in 2011. Nine of the 20 top ports in 2011 are located on the North Sea coast, while eight are Mediterranean ports (Map 1). The remaining three are located on the Atlantic coast (two of which are on the Channel).

The composition of the port infrastructure will sometimes determine if a country is represented on the top 20 list of cargo ports or not. Denmark and Greece, for instance, are two countries with a high number of medium size ports (handling between 1 and 25 million tonnes of goods per year). However, there are no ports in these two countries above a 25 million tonnes threshold.

Increase in seaborne transport with extra-EU partners

Unlike statistics presented earlier in this article, the figures in Table 5 do not present the total handling of goods in ports (inwards movements plus outwards movements), but estimate the seaborne transport of goods between main ports and their partner ports (see data sources and availability). In 2011, 64.0 % of the EU-27 seaborne goods were transported to or from ports outside the EU, making maritime transport by far the most important mode for long distance transport of goods for the EU, in tonnage terms.

Map 2 illustrates the eight largest maritime transport flows to or from the EU. As shown in the map, all of the top eight transport flows were inward flows of goods, from the Baltic Sea region of Russia, Brazil, Norway, the East Coast of the United States of America (USA), Egypt, the Black Sea region of Russia, China and Turkey, respectively. In comparison, the ninth largest seaborne transport flow in 2011 was the outwards flow of goods from the EU to the East Coast of the USA.

In total, EU seaborne transport grew by 1.7 % from 2010 to 2011. International extra-EU transport grew by 3.5 % in the same period, while international intra-EU transport decreased by 3.3 %, reversing some of the growth in intra-EU transport seen between 2009 and 2010. National seaborne transport grew by 4.1 %.

In countries with a geography characterised by well-populated islands or long shorelines, like Greece, Italy, Denmark and Norway, the share of national seaborne transport is naturally high (20-30.0 %). Countries, like Ireland, Latvia, Malta, Poland, Finland and Sweden, on the other

hand, have the highest shares of international intra-EU transport (more than 60.0 %), because their main transport partners are found within the EU. Other countries, like Bulgaria, Romania, Slovenia, Spain and the Netherlands, have high shares of extra-EU transport (above 70.0 %), based either on their geographical position or the "deep sea" nature of the transport activities prevailing in their main ports.

Continued decrease in maritime passenger transport

In contrast to the recent developments in maritime transport of goods, seaborne transport of passengers continued to decline in 2011 (Table 6). The total number of passengers passing through EU-27 ports is estimated at 385 million in 2011 (inwards movements plus outwards movements), a drop of 3.5 % compared to the previous year.

Unlike goods movements (where broadly 2/3 of goods are unloaded and 1/3 loaded), the difference between the numbers of passengers embarking ("outwards") and disembarking ("inwards") in European ports is small. This reflects the fact that seaborne passenger transport in Europe is mainly done by national or intra-EU ferry connections, causing the same passengers to be counted twice in the statistics (when they embark and when they disembark).

Close to 82 million passengers were embarked and disembarked in Italian ports in 2011, confirming Italy as the leading seaborne passenger transport country in Europe. Italy was followed by Greece, with 79 million passengers. However, both the main maritime passenger countries recorded quite considerable decreases in the number of passengers passing through their ports in 2011.

While cruise passengers represented 3.0 % of the total number of passengers in EU-27 ports, they are important to the ports they visit. Three countries, Italy, Spain and the UK, accounted for over 70.0 % of the total cruise passengers reported by countries.

The top 20 passenger ports accounted for 38.0 % of the total number of passengers embarking and disembarking in the countries reporting data in 2011 (Table 7). Dover in the UK, situated on the Channel, remained the largest passenger port in Europe, with close to 13 million seaborne passengers passing through the port facilities in 2011. The Italian ports of Reggio Di Calabria and Messina and the Greek port of Piraeus recorded the largest decreases in number of passengers in 2011, while the Spanish port of Santa Cruz de Tenerife recorded the largest increase.

The figures in Table 7 show that some ports have experienced quite substantial decreases in the number of seaborne passengers over time. These changes are typically caused by openings of new bridge connections and subsequent closure of ferry links. Increased use of the Channel tunnel and rapid growth in low cost flights are other factors having effects on the number of seaborne passengers.

Most passengers are ferried in Italy and Greece

Table 8 shows the breakdown of seaborne passenger transport (excluding cruise passengers) between national, international intra-EU and international extra-EU transport for each reporting country. As in Table 5, these figures are calculated on the basis of the statistics declared by main ports vis-à-vis their partner ports. Unlike the statistics shown in tables 6 and 7, however, these figures do not reflect the total embarkation and disembarkation of passengers in ports, but estimate the transport of passengers between ports (see also data sources and availability).

The volume of seaborne passenger transport in main EU-27 ports decreased by 4.7 % from 2010 to 2011, which was about the same as between 2009 and 2010. The sustained fall in European maritime transport of passengers in recent years has mainly been caused by decreased transport to or from ports in a number of the largest maritime transport countries, such as Italy, Greece, the UK and France.

The number of seaborne passengers transported to or from the main ports of Italy fell by 8.0 % to 41 million passengers in 2011, while the volume of seaborne passenger transport with Greek ports fell by 7.1 % to 39 million passengers. The corresponding decreases were -5.9 % in France (to about 23 million passengers) and -3.2 % in the United Kingdom (to about 24 million passengers). In contrast, the volume of seaborne passengers recorded in the main ports of several other of the large maritime passenger countries increased or was relatively stable in 2011.

More than half of the seaborne passenger transport in the EU countries is carried out between national ports. In general, countries with busy ferry connections and well-populated islands tend to have both a large volume of maritime passenger transport and a high share of national passenger transport by sea.

This applies to the two leading maritime passenger transport countries, Italy and Greece, as well as countries like Malta and Portugal. On the other hand, countries with major regular ferry connections to other EU countries, like Ireland, the Netherlands, Poland, Sweden, Finland and the UK, naturally have high shares of international intra-EU transport.

As in previous years, Spain and Denmark recorded the highest shares of extra-EU passenger transport in 2011. This is mainly due to the geographical position of the countries, with Spain having links with Morocco and Denmark with Norway.

Increased average size of vessels calling in main EU ports

The number of vessel calls in the main EU-27 ports (excluding French ports) was just above 2 million in 2011, about the same as in 2010 (Table 9). The corresponding gross vessel tonnage (GT) increased by 3.0 %, however, confirming the trend towards larger average size of vessels making port calls in recent years. The average size of vessels calling in EU ports in 2011 was just above 7 300 GT

Top 20 cargo ports in 2010 - on the basis of gross weight of goods handled (in million tonnes)

Rank 2010	Port	*	1997	2007	2009	2010									Growth rate 2009-2010 (%)	Average annual growth rate 1997-2010 (%)
						By direction			By type of cargo handled (%)							
			Total	Total	Total	Inwards	Outwards	Total	Liquid bulk goods	Dry bulk goods	Large con-tainers	Ro-Ro Mobile units	Other cargo, nes			
1	Rotterdam (NL)	=	303.4	374.2	353.9	287.9	107.9	**395.8**	53%	21%	22%	2%	3%		**+11.8%**	+2.1%
2	Antwerpen (BE)	=	104.6	165.5	142.1	83.9	76.2	**160.0**	25%	12%	52%	3%	7%		**+12.6%**	+3.3%
3	Hamburg (DE)	=	69.6	118.2	94.8	61.9	42.6	**104.5**	14%	25%	59%	0%	3%		**+10.3%**	+3.2%
4	Marseille (FR)	=	92.9	92.6	79.8	64.4	18.0	**82.4**	71%	14%	9%	3%	3%		**+3.2%**	-0.9%
5	Amsterdam (NL)	=	36.9	62.5	72.7	48.8	23.9	**72.7**	51%	43%	1%	0%	4%		**-0.1%**	+5.3%
6	Le Havre (FR)	=	58.2	73.9	69.2	49.8	15.9	**65.8**	64%	5%	29%	1%	0%		**-5.0%**	+0.9%
7	Algeciras (ES)	+1	34.2	62.1	55.8	33.8	24.8	**58.6**	43%	3%	50%	1%	3%		**+4.9%**	+4.2%
8	Immingham (UK)	+1	48.0	66.3	54.7	40.5	13.6	**54.0**	41%	31%	1%	25%	2%		**-1.2%**	+0.9%
9	Valencia (ES)	+1	16.3	45.9	48.3	28.1	25.0	**53.1**	10%	5%	76%	0%	9%		**+9.8%**	+9.5%
10	Bergen (NO)	-3	:	61.2	56.0	9.6	40.1	**49.8**	90%	5%	0%	0%	4%		**-11.1%**	:
11	London (UK)	=	55.7	52.7	45.4	39.8	8.3	**48.1**	41%	23%	13%	19%	5%		**+5.8%**	-1.1%
12	Bremerhaven (DE)	+1	16.6	43.6	42.7	20.8	25.1	**45.9**	0%	0%	92%	0%	7%		**+7.6%**	+8.1%
13	Göteborg (SE)	+4	31.3	40.4	38.9	22.4	20.5	**42.9**	53%	0%	20%	27%	0%		**+10.3%**	+2.5%
14	Milford Haven (UK)	+1	34.5	35.5	39.3	27.9	14.8	**42.8**	97%	0%	0%	2%	0%		**+8.9%**	+1.7%
15	Genova (IT)	-3	42.2	48.4	42.7	30.1	11.3	**41.4**	49%	7%	26%	17%	1%		**-3.0%**	-0.1%
16	Trieste (IT)	-2	42.1	39.8	41.0	33.3	7.2	**40.6**	69%	2%	6%	18%	5%		**-1.0%**	-0.3%
17	Southampton (UK)	+3	33.1	43.8	37.2	24.1	15.2	**39.4**	70%	6%	21%	3%	0%		**+5.7%**	+1.4%
18	Dunkerque (FR)	+9	36.4	50.2	37.9	25.7	10.6	**36.3**	15%	63%	5%	0%	18%		**-4.3%**	-0.0%
19	Tallinn (EE)	-3	:	35.9	31.4	8.7	27.5	**36.3**	70%	15%	4%	10%	1%		**+15.5%**	:
20	Tees & Hartlepool (UK)	+3	51.2	49.8	39.2	12.3	23.4	**35.7**	69%	17%	5%	6%	2%		**-8.9%**	-2.7%
Total top 20 ports [1]		-	:	**1 588.8**	**1 429.9**	**954.0**	**552.0**	**1 506.0**	**48%**	**16%**	**27%**	**5%**	**4%**		**+5.3%**	:
EEA-IS+HR (all ports)		-	:	**4 166.1**	**3 651.5**	**2 321.8**	**1 535.8**	**3 857.7**							**+5.6%**	:

** This column indicates the number of positions lost or gained compared to 2009.*

(1) Information about the ports being part of the top 20 ports during the reference year concerned. The composition of the top 20 changes over time.

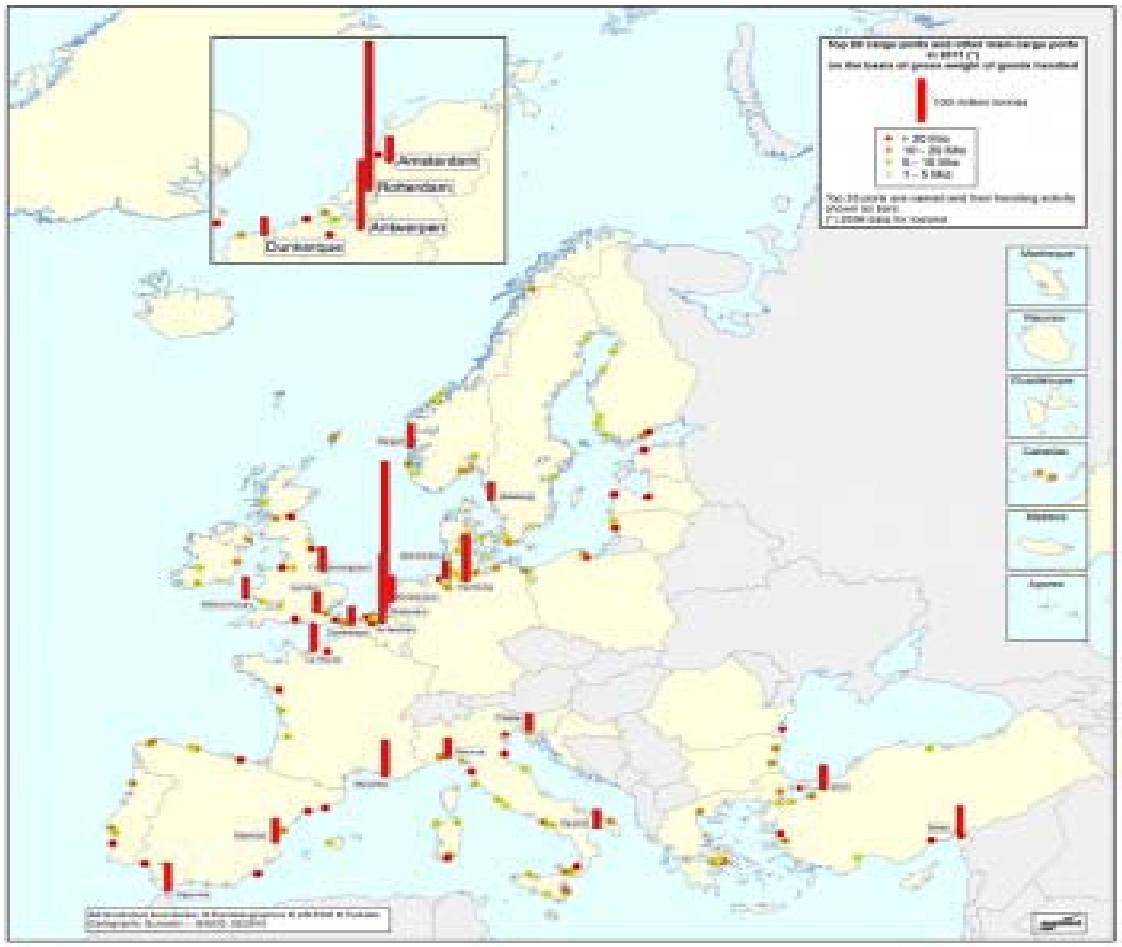
Source: Eurostat

Gross weight of seaborne goods handled in all ports (in million tonnes) 1997-2011

	1997	2004	2005	2006	2007	2008	2009	2010	2011			Growth rate 2010-2011 (%)
	Total	Total	Total	Total	Total	Total	Total	Total	Inwards	Outwards	Total	
EU-27	:	3 570.2	3 718.7	3 836.0	3 937.5	3 918.7	3 445.5	3 645.6	2 315.9	1 390.6	3 706.4	+1.7%
EEA-IS+HR+TR	:	:	:	:	:	4 446.5	3 945.4	4 203.1	2 587.2	1 699.1	4 286.3	+2.0%
BE	161.6	187.9	206.5	218.9	236.3	243.8	203.4	228.2	129.7	103.1	232.8	+2.0%
BG	:	23.1	24.8	27.5	24.9	26.6	21.9	22.9	13.0	12.1	25.2	+9.8%
DK	124.0	100.4	99.7	107.7	109.7	106.1	90.6	87.1	52.6	40.0	92.6	+6.4%
DE	213.3	271.9	284.9	302.8	315.1	320.6	262.9	276.0	180.3	115.8	296.0	+7.3%
EE	:	44.8	46.5	50.0	45.0	36.2	38.5	46.0	13.2	35.3	48.5	+5.3%
IE	36.3	47.7	52.1	53.3	54.1	51.1	41.8	45.1	29.8	15.2	45.1	+0.0%
EL	101.3	157.9	151.3	159.4	164.3	152.5	135.4	129.1	78.3	57.0	135.3	+4.8%
ES	270.6	373.1	400.0	414.4	426.6	416.2	363.5	376.4	257.4	140.9	398.3	+5.8%
FR	305.1	334.0	341.5	350.3	346.8	352.0	315.5	313.6	222.2	100.0	322.3	+2.8%
IT	434.3	485.0	508.9	520.2	537.3	526.2	469.9	494.1	327.3	172.6	499.9	+1.2%
CY	:	6.8	7.3	7.7	7.5	8.0	6.8	7.0	5.5	1.1	6.6	-5.6%
LV	:	54.8	59.7	56.9	61.1	61.4	60.1	58.7	7.4	59.6	67.0	+14.2%
LT	:	25.8	26.1	27.2	29.3	36.4	34.3	37.9	16.0	26.6	42.7	+12.7%
MT	:	5.3	5.3	5.5	5.3	5.5	5.5	6.0	4.2	1.3	5.6	-7.1%
NL	402.2	440.7	460.9	477.2	507.5	530.4	483.1	538.7	386.2	105.5	491.7	-8.7%
PL	:	52.3	54.8	53.1	52.4	48.8	45.1	59.5	33.6	24.2	57.7	-3.0%
PT	54.7	59.1	65.3	66.9	68.2	65.3	61.7	66.0	43.0	24.5	67.5	+2.3%
RO	:	40.6	47.7	46.7	48.9	50.5	36.1	38.1	18.2	20.7	38.9	+2.1%
SI	:	12.1	12.6	15.5	15.9	16.6	13.4	14.6	11.6	4.6	16.2	+11.0%
FI	75.3	106.5	99.6	110.5	114.8	114.7	93.2	109.3	62.7	52.8	115.5	+5.6%
SE	149.9	167.4	178.1	180.5	185.1	187.8	161.8	179.6	95.9	85.8	181.6	+1.1%
UK	558.5	573.1	584.9	583.7	581.5	562.2	500.9	511.9	327.6	191.9	519.5	+1.5%
IS	:	5.3	5.7	5.9	:	:	:	:	:	:		:
NO	:	198.2	201.7	196.8	198.5	193.4	182.6	195.1	60.3	138.7	199.0	+2.0%
HR	:	25.2	26.2	26.3	30.1	29.2	23.4	24.3	13.3	8.6	21.9	-10.1%
TR	:	:	:	:	:	305.3	293.9	338.1	197.7	161.3	359.1	+6.2%

Source: Eurostat

Main European cargo ports in 2011 by gross weight of goods handled



Source: Eurostat

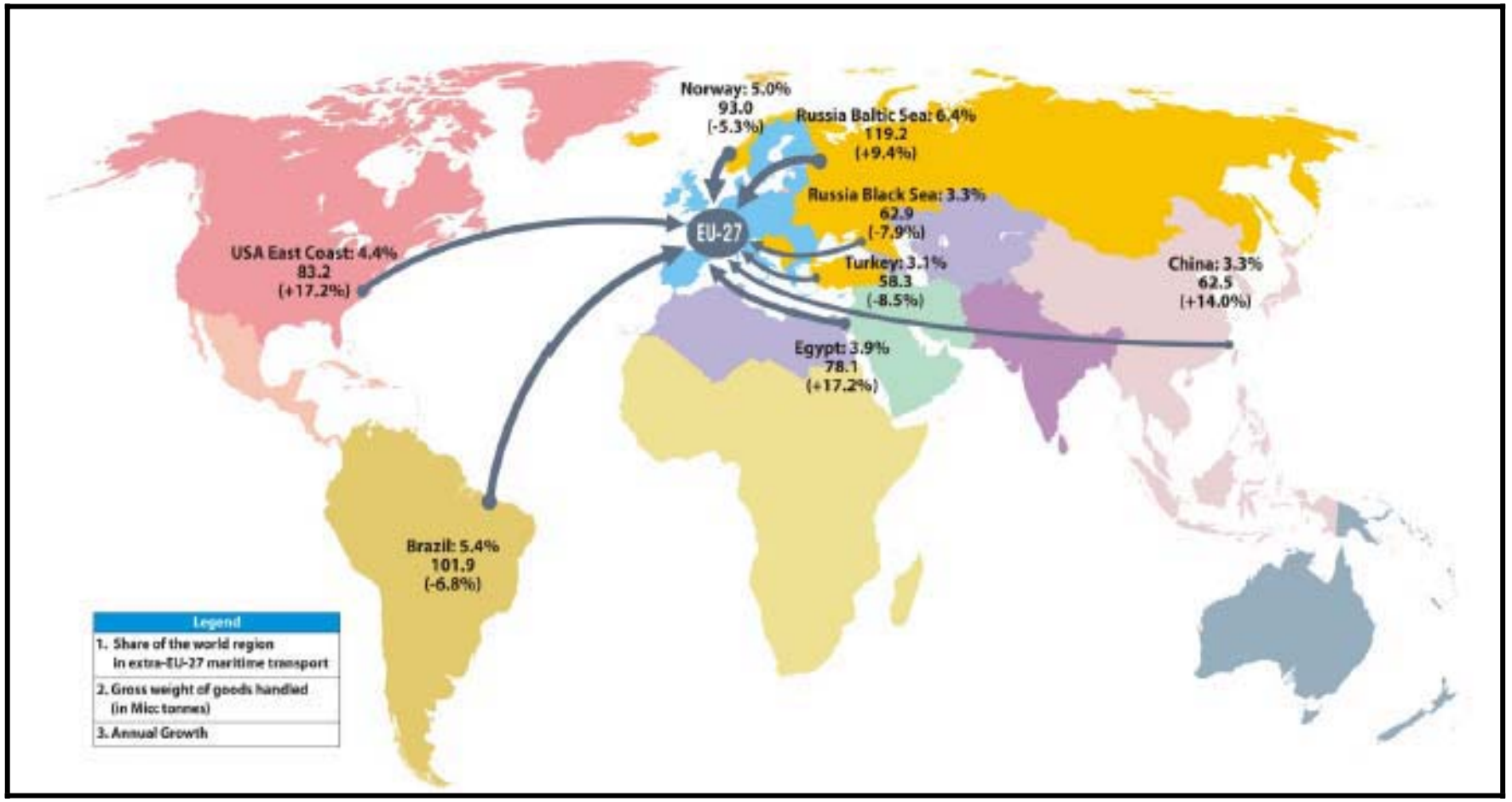
Top-20 container ports in 2010 - on the basis of volume of containers handled in (1 000 TEUs)

Rank 2011	Port	*	2004	2005	2006	2007	2008	2009	2010		2011		Growth rate 2010-2011 (%)	
			Total	Total	Total	Total	Total	Total	Total	of which empty	Total	of which empty	Total	of which empty
1	Rotterdam (NL)	=	8 242	9 195	9 575	10 773	10 631	9 579	11 017	984	14 730	1 129	+33.7%	+14.7%
2	Hamburg (DE)	+1	7 004	8 084	8 878	9 914	9 767	7 031	7 906	1 234	9 035	1 386	+14.3%	+12.3%
3	Antwerpen (BE) (2)	-1	5 055	6 221	6 718	7 879	8 379	7 014	8 144	1 120	8 317	1 031	+2.1%	-7.9%
4	Bremerhaven (DE)	=	3 501	3 696	4 479	4 884	5 451	4 552	4 858	501	5 911	754	+21.7%	+50.4%
5	Valencia (ES) (3)	=	2 156	2 415	2 615	3 049	3 606	3 654	4 211	945	4 338	952	+3.0%	+0.7%
6	Algeciras (ES) (3)	+2	970	3 184	3 262	3 420	3 298	2 953	2 777	472	3 584	769	+29.1%	+62.9%
7	Gioia Tauro (IT)	-1	3 170	3 123	2 835	3 464	3 165	2 725	3 897	465	3 307	367	-15.1%	-21.1%
8	Felixstowe (UK)	-1	2 717	2 760	3 030	3 342	3 131	3 021	3 415	915	3 249	829	-4.9%	-9.4%
9	Le Havre (FR)	=	2 158	2 144	2 119	2 685	2 512	2 257	2 369	377	2 222	353	-6.2%	-6.4%
10	Barcelona (ES) (3)	=	2 084	2 071	2 315	2 606	2 565	1 846	1 928	453	2 006	517	+4.0%	+14.2%
11	Piraeus (EL)	+7	1 551	1 401	1 413	1 384	437	667	850	195	1 681	290	+97.7%	+48.2%
12	Southampton (UK)	-1	1 435	1 384	1 502	1 905	1 617	1 385	1 567	447	1 591	472	+1.5%	+5.6%
13	Las Palmas (ES) (3)	+1	1 111	1 222	1 303	1 319	1 312	1 006	1 118	273	1 284	352	+14.9%	+29.0%
14	La Spezia (IT)	-1	879	916	1 086	1 130	1 186	840	1 181	170	1 205	203	+2.1%	+19.3%
15	Zeebrugge (BE)	-3	458	682	895	1 191	1 401	1 467	1 437	264	1 157	236	-19.4%	-10.5%
16	Marseille (FR)	-1	920	911	950	1 058	901	943	1 031	149	1 095	143	+6.2%	-3.8%
17	Göteborg (SE)	=	722	772	812	841	864	824	891	189	914	189	+2.5%	-0.3%
18	Genova (IT)	-2	1 437	1 038	1 146	1 230	1 462	1 311	1 020	14	910	0	-10.8%	-99.0%
19	London (GB)	=	966	765	743	858	983	646	733	219	737	249	+0.6%	+13.6%
20	Gdansk (PL)	+5	18	63	76	95	183	233	510	87	685	183	+34.3%	+110.2%
Total top 20 ports (4)		-	47 352	53 032	57 003	64 491	64 495	54 312	61 012	9 523	67 957	10 405	+11.4%	+9.3%
EEA-IS+HR (main ports)		-	61 616	69 463	74 400	83 858	82 922	70 408	78 333	13 737	87 286	14 948	+11.4%	+8.8%

* This column indicates the number of positions lost or gained compared to 2009
(1) TEU = Twenty-foot Equivalent Unit (unit of volume equivalent to a 20 foot ISO container).
(2) Partial data up to 2nd quarter 2004.
(3) Data for 2004 are underestimated
(4) Total figure for the ports being part of the top 20 ports during the reference year concerned

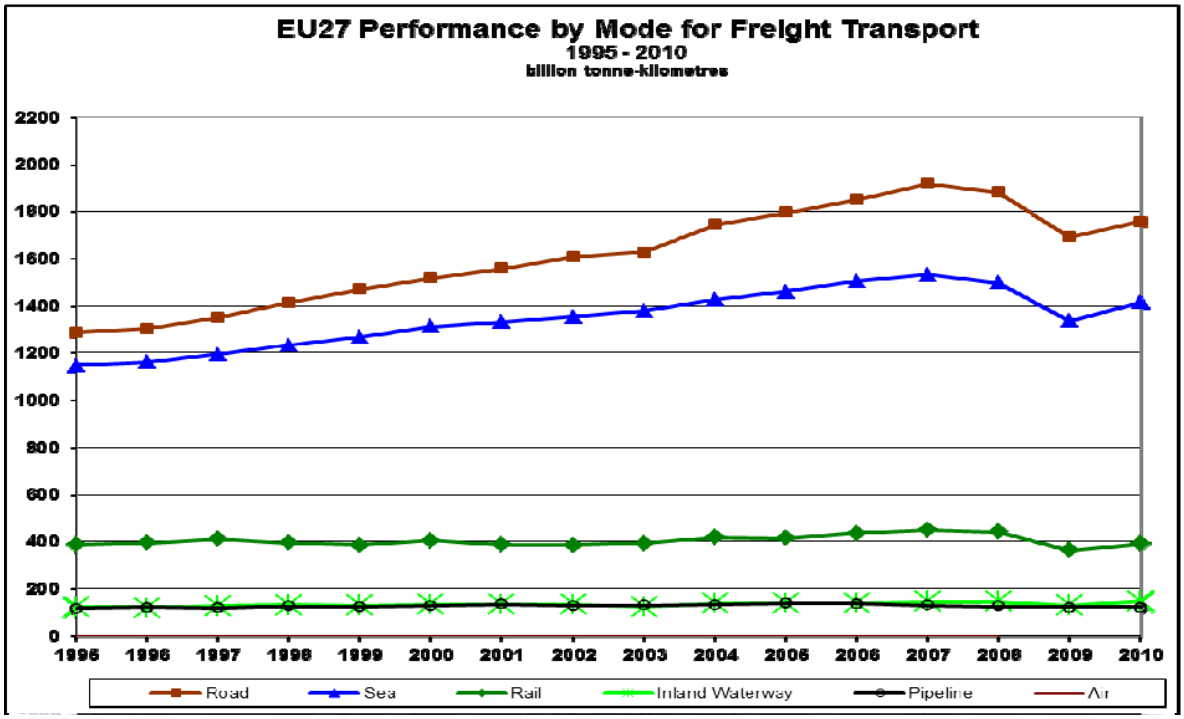
Source: Eurostat

Main Extra-EU 27 partner regions in 2011 by gross weight of goods handled



EU-27 Performance by mode for freight transport: 1995-2010

(source: European Commission, EU transport in figures, statistical pocketbook 2012)



Modal split (%): 1995-2010

(source: European Commission, EU transport in figures, statistical pocketbook 2012)[25]

	Road	Rail	Inland Water-ways	Pipe-lines	Sea	Air
1995	42.1	12.6	4.0	3.8	37.5	0.1
1996	42.1	12.7	3.9	3.9	37.5	0.1
1997	42.2	12.8	4.0	3.7	37.3	0.1
1998	42.9	11.9	4.0	3.8	37.4	0.1
1999	43.5	11.4	3.8	3.7	37.6	0.1
2000	43.4	11.5	3.8	3.6	37.5	0.1
2001	43.9	10.9	3.7	3.8	37.6	0.1
2002	44.5	10.6	3.7	3.6	37.6	0.1
2003	44.5	10.7	3.4	3.6	37.7	0.1
2004	45.2	10.8	3.5	3.4	37.0	0.1
2005	45.5	10.5	3.5	3.5	37.0	0.1
2006	45.5	10.7	3.4	3.3	37.0	0.1
2007	45.9	10.7	3.5	3.1	36.7	0.1
2008	46.0	10.7	3.6	3.1	36.6	0.1
2009	46.5	9.9	3.6	3.3	36.7	0.1
2010	45.8	10.2	3.8	3.1	36.9	0.1

[25] **Air** and **Sea:** only domestic and intra-EU-27 transport; provisional estimates;
Road: national and international haulage by vehicles registered in the EU-27

Relevance of intra-EU transport in total maritime transport by EU country[26] - 2010
(source: European Commission, EU transport in figures, statistical pocketbook 2012)

	INWARDS			OUTWARDS			TOTAL			
	Total inwards	of which: from EU	Share of EU in total	Total outwards	of which: to EU	Share of EU in total	TOTAL goods transported*	of which: to/from EU	Share of EU in total	
	million tonnes		(%)	million tonnes		(%)	million tonnes		(%)	
BE	125.561	43.266	34.5%	100.798	33.454	33.2%	226.333	76.695	33.9%	**BE**
BG	11.847	0.832	7.0%	11.099	3.610	32.5%	22.946	4.442	19.4%	**BG**
DK	42.919	30.707	71.5%	35.772	30.711	85.9%	73.648	56.375	76.5%	**DK**
DE	165.630	67.392	40.7%	102.985	43.640	42.4%	267.223	109.639	41.0%	**DE**
EE	10.364	6.956	67.1%	33.257	18.044	54.3%	43.599	24.979	57.3%	**EE**
IE	29.756	21.178	71.2%	14.186	12.572	88.6%	43.154	32.962	76.4%	**IE**
EL	59.741	26.588	44.5%	41.556	28.267	68.0%	88.284	41.842	47.4%	**EL**
ES	252.498	78.339	31.0%	123.893	59.067	47.7%	352.230	113.245	32.2%	**ES**
FR	211.197	63.407	30.0%	97.042	54.028	55.7%	301.175	110.372	36.6%	**FR**
IT	316.683	110.122	34.8%	165.559	109.812	66.3%	403.995	141.686	35.1%	**IT**
CY**	6.048	1.017	16.8%	0.906	0.284	31.3%	6.954	1.301	18.7%	**CY**
LV	5.060	3.690	72.9%	52.166	38.899	74.6%	57.060	42.423	74.3%	**LV**
LT	15.447	4.663	30.2%	22.422	13.718	61.2%	37.869	18.382	48.5%	**LT**
MT	3.601	2.588	71.9%	0.193	0.100	51.9%	3.795	2.689	70.9%	**MT**
NL	385.684	101.191	26.2%	152.031	74.173	48.8%	537.715	175.364	32.6%	**NL**
PL	28.459	15.689	55.1%	30.789	24.890	80.8%	58.881	40.212	68.3%	**PL**
PT	41.367	17.288	41.8%	22.603	13.865	61.3%	58.197	25.381	43.6%	**PT**
RO**	16.191	1.392	8.6%	20.337	6.447	31.7%	36.528	7.840	21.5%	**RO**
SI	10.341	2.835	27.4%	4.250	1.325	31.2%	14.591	4.160	28.5%	**SI**
FI	56.056	36.571	65.2%	48.465	42.226	87.1%	98.579	72.854	73.9%	**FI**
SE	87.679	62.508	71.3%	77.510	65.972	85.1%	161.007	124.297	77.2%	**SE**
UK	304.418	166.532	54.7%	194.070	149.069	76.8%	454.743	271.855	59.8%	**UK**

*: The total goods transported data may be less than the sum of inward and outward traffic due to the double counting of tonnes moved within the same country.

**: The share of intra-EU in total maritime transport may be underestimated in this table for CY and RO because a significant share of partner ports are "unknown" and hence cannot be attributed to any geographical area.

[26] Data from main ports only (ports handling more than 1 million tonnes per year).

Main Routes in Intra-EU Maritime Transport[27] - 2010
(source: European Commission, EU transport in figures, statistical pocketbook 2012)

	Country of loading port	Country of unloading port	million tonnes transported
1	ITALY	ITALY	87.227
2	UNITED KINGDOM	UNITED KINGDOM	71.324
3	UNITED KINGDOM	NETHERLANDS	46.347
4	SPAIN	SPAIN	40.862
5	NETHERLANDS	UNITED KINGDOM	30.983
6	FRANCE	UNITED KINGDOM	25.700
7	UNITED KINGDOM	FRANCE	25.697
8	SWEDEN	GERMANY	22.318
9	GREECE	GREECE	22.243
10	GERMANY	SWEDEN	20.021
11	SWEDEN	SWEDEN	18.336
12	FRANCE	FRANCE	18.071
13	DENMARK	DENMARK	14.831
14	BELGIUM	UNITED KINGDOM	14.654
15	DENMARK	SWEDEN	13.292
16	UNITED KINGDOM	BELGIUM	12.968
17	UNITED KINGDOM	GERMANY	12.698
18	SWEDEN	UNITED KINGDOM	12.287
19	ITALY	SPAIN	12.210
20	UNITED KINGDOM	IRELAND	11.560
21	LATVIA	NETHERLANDS	11.224
22	SWEDEN	FINLAND	10.847
23	NORWAY	UNITED KINGDOM	10.720
24	FINLAND	GERMANY	9.395
25	SPAIN	ITALY	8.180
26	FINLAND	FINLAND	8.005
27	NETHERLANDS	GERMANY	7.779
28	SWEDEN	DENMARK	7.768
29	FRANCE	SPAIN	7.218
30	FINLAND	SWEDEN	7.091

[27] Data from main ports only (ports handling more than 1 million tonnes per year); the tonnes have been calculated by taking the declarations of the unloading ports (inward declarations) and adding those outward declarations of partner ports for which the inward declarations were missing.

The Maritime Statistics Directive is a piece of European Union legislation passed in December 1995 Council Directive 96/64/EC which requires Member States to supply to the Statistical Office of the European Communities (Eurostat) information relating to freight traffic, vessels and passenger traffic through ports throughout the European Union. The data collected under the directive are used by the European Commission to assist in policy development at a European level and to monitor the impact of European policy measures. The Annexes to this Directive specify the data to be gathered with regard to goods, passengers, vessels and ports. The Directive also provides the cargo classification (see below), the statistical transport nomenclature and the geo-nomenclature to be used to identify the maritime coastal areas and the nationality, type and size of vessels. The data collected allows Eurostat to examine periodically the latest trends in freight and passenger transport in European Union (EU) ports. The work is closely related to the monitoring the EU external trade of goods, intra-EU freight exchanges and transport services for sea passengers.

Classification of port freight traffic for the EC Directive on statistical returns in respect of the carriage of goods and passengers by sea (2009/42/EC)

▼M3

ANNEX II

Type of cargo classification

Category (1)	Code 1 digit	Code 2 digits	Description	Tonnage	Number of units
Liquid bulk	1	1X	Liquid bulk goods (no cargo unit)	X	
		11	Liquefied gas	X	
		12	Crude oil	X	
		13	Oil products	X	
		19	Other liquid bulk goods	X	
Dry bulk	2	2X	Dry bulk goods (no cargo unit)	X	
		21	Ores	X	
		22	Coal	X	
		23	Agricultural products (e.g. grain, soya, tapioca)	X	
		29	Other dry bulk goods	X	
Containers	3	3X	Large containers	X (2)	X
		31	20 ft freight units	X (2)	X
		32	40 ft freight units	X (2)	X
		33	Freight units > 20 ft and < 40 ft	X (2)	X
		34	Freight units > 40 ft	X (2)	X
Roll on roll off (self-propelled)	5	5X	Mobile self-propelled units	X	X
		51	Road goods vehicles and accompanying trailers	X (2)	X
		52	Passenger cars, motorcycles and accompanying trailers/caravans		X (2)
		53	Passenger buses		X (2)
		54	Trade vehicles (including import/export motor vehicles)	X	X (2)
		56	Live animals on the hoof	X	X (2)
		59	Other mobile self-propelled units	X	X
Roll on roll off (non-self-propelled)	6	6X	Mobile non-self-propelled units	X	X
		61	Unaccompanied road goods trailers and semi-trailers	X (2)	X
		62	Unaccompanied caravans and other road, agricultural and industrial vehicles	X	X (2)
		64	Rail wagons engaged in goods transport	X (2)	X
		65	Shipborne port-to-port trailers engaged in goods transport	X (2)	X
		66	Shipborne barges engaged in goods transport	X (2)	X
		69	Other mobile non-self-propelled units	X	X
Other general cargo (including small containers)	9	9X	Other cargo, not elsewhere specified	X	
		91	Forestry products	X	
		92	Iron and steel products	X	
		99	Other general cargo	X	

▼M3

Supplement to the type of cargo classification for ro-ro containers

Category (1)	Code 1 digit	Code 2 digits	Description	Tonnage	Number of units
Large Ro-Ro Containers	R	RX	Large Ro-Ro containers		X
		R1	20 ft freight units		X
		R2	40 ft freight units		X
		R3	Freight units > 20 ft and < 40 ft		X
		R4	Freight units > 40 ft		X

(1) These categories are consistent with United Nations ECE Recommendation No 21.
(2) The quantity recorded is the gross weight of the goods including packaging but excluding the tare weight of containers and Ro-Ro units.
(3) Only total number of units.

ANNEX IV:

The EU Ports Policy: an ex-post evaluation

Communication on a European Ports Policy, COM/2007/0616 final of 18 October

1. Declared objectives and progress achieved

In 2007, after extensive consultation with stakeholders, the Commission adopted a Communication defining its ports policy[28]. The problems identified by the Commission at the time related to

a) threats on port performance and hinterland connections,

b) expanding capacity while respecting the environment,

c) modernisation of ports,

d) absence of clarity for investors, operators and users and

e) port labour issues.

One of the main objectives of the Communication was to announce that the obstacles to the modernisation of ports to improve their performance would be addressed by means of "soft" measures, namely guidelines, and close cooperation and dialogue with stakeholders. The Communication presented the action plan for the Commission in that regard.

In summary, the evaluation of the Commission on the progress achieved in the last six years (2007-2013) can be summarised as follows:

The problems last identified in 2007[29] remain largely unsolved. Very few of the envisaged measures were adopted. The main development has been the adoption of the proposal for the new TEN-T Guidelines and Connecting Europe Facility, both of which foresee substantial funding support for ports.

The Commission has not delivered two key announced measures: State Aid Guidelines for ports (see point 3 below) and application of the Public Funding Financial Transparency Directive to ports.

The Commission has adopted a draft Directive on Concessions, which would apply to different economic sectors, including ports. In the particular case of ports, the draft directive deviates from the line announced in the 2007 Communication (see point 2 below).

The European Court of Auditors (2012) has revealed systemic problems regarding strategic planning and allocation of public resources for ports infrastructural projects.

Substantial reforms in the port sector have required in Member States under the Conditional Assistance Programmes (Greece, Portugal and Ireland)[30].

[28] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0616:EN:HTML:NOT

[29] Cf. last revision of the EU Ports Policy, COM(2007)

[30] See DG ECFIN web-site and IMF reports on the Conditional Assistance Programmes

At the same time, reduction of budgetary deficits, austerity measures and consequential constraints in public funding possibilities have reduced significantly resources for maintaining, operating an/or expanding port facilities in many Member States. Attracting private investment to sustain the operational capacity of the European port system is already a crucial necessity.

Contrary to expectations, the development of intra-EU maritime transport connections supporting internal market exchanges has stagnated. Inter-modality objectives have been largely missed. This mainly due to a lack of efficiency, high costs and excess of bureaucracy in too many EU ports.

2. The issue of concession rules in the European port sector

The relevant case-law of the Court of Justice ("Telaustria", *Case C-324/98)* has pointed out that, when Member States grant service concessions, public authorities are bound by an obligation of transparency implying that their initiative is adequately advertised, that the procedure is fair and non-discriminatory and that it can be reviewed.

Such obligation of transparency consists in ensuring, for the benefit of any potential tenderer, a degree of advertising sufficient to enable the concession to be opened up to competition and the impartiality of the selection procedure to be reviewed .

The obligation fully applies to the port sector. However, as in many other sectors, concession award regimes in the EU Port Sector are often unclear or – in case of services concession - non-existent.

In 2012, the Commission proposed a draft directive on concessions covering all sectors, including the port sector. The draft Directive will impose the recourse to public tendering procedure to select companies operating work or service concessions.

The draft is still being examined in the normal legislative procedure by the European Parliament and Council. According to the assessment made by the Commission when preparing the proposal[31], the absence of clear rules at EU level and in many cases at national level governing the award of concession contracts gives rise to obstacles to the free provision of services and causes distortions in the functioning of the Internal Market.

As a result, EU citizens do not benefit from quality services at best prices, economic operators (in particular SMEs) are being deprived of their rights within the Internal Market and miss out on important business opportunities, and contracting authorities and entities may fail to manage public resources on a sound financial basis.

In the 2007 Ports Policy Communication, the Commission considered that the obligation of transparency applies when Member States' authorities decide to entrust a third party with a portion of port land for the provision of cargo-handling services, i.e. public authorities should respect it when granting lease-land contracts to commercial operators.

However, the draft Directive on concessions would exclude lease-land contracts from its scope, creating a de-facto legal vacuum for this type of arrangements in European ports: public lease-

[31] See http://ec.europa.eu/internal_market/publicprocurement/docs/concessions/SEC2011_1588_en.pdf

land contracts in favour of particular operators in some ports will not be affected the obligation of transparency.

In fact, the draft Directive on concessions would apply only to concessions whereby the substantial operating risk is transferred to the concessionaire. It covers just one particular type of concession used in European Ports. Other types of acts, such as authorisations, licences or lease agreements of port land and installations often practised in ports will fall outside the scope of the Directive[32] (see recital 6 of the draft proposal). This situation threatens to create a double standard for European ports: certain Ports will have to use a public tendering procedure to select port service operators while others will not and will stay free to foreclose the market.

Stakeholders expressed criticisms against the proposal arguing that it would aggravate legal uncertainty instead of solving it. It should be noted that similar criticisms were expressed in 2001 and 2004 at the occasion of the "port packages" I and II which included provisions requiring public authorities to follow a public tendering procedure when granting authorisations, by means of concessions or any other type of contracts" to port operators. Another criticism is that following a tendering procedure when granting a contract to an operator leads to increased bureaucracy.

3. The issue of State Aid rules in the port sector

The first complaints about unfair competition between European ports because of State funding appeared[33] in the late 1970s. Since then, the request for clarification on how the Commission applies the State Aid rules to the public funding of port infrastructures (request for publishing State Aid Guidelines) has been a constant request of the sector.

The problem of distortion of competition because of State Aid has been largely recognised by the Commission, in 1997 (Green Paper on seaports and maritime infrastructure), in 2001 and 2005 (proposals for a Directive on market access to port services) and 2007 (latest Communication on Ports Policy). In all those occasions, the Commission declared its intention to adopt State Aid Guidelines. To date, this commitment has not been fulfilled.

For many years, the Commission position was that public funding of general transport infrastructures did not involve State Aid. In fact, significant funding support to the developments of ports has been provided by the Commission itself by means of the Structural and Cohesion Funds and by the TEN-T funds. The Connecting Europe Facility foresees further substantial support to ports and port connections in Europe.

In 2007, the Commission stated that "*Although it cannot be said that there is competition between all ports in all cases, competition between some of them, and competition inside ports can be significant and calls for a level-playing field. In this respect, one of the issues to be addressed is public financing to ports. The Commission will establish a general legal framework as port stakeholders are requesting. Clarity in financing will also be an incentive for port investment*"[34]

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[32] A "whereas" in the draft Directive clarifies this point

[33] An illustrative example appears in the written question nr 1075/79 by Mr Gendebien to the Commission: coordination of the development of North Sea Ports, *OJ C 105, 28.4.1980, p. 11*

[34] COM(2007)616 Communication on a European Ports Policy

Since then, the Commission's position has evolved and, confirmed by the Court of Justice, it is now of the view that State aid distorting or threatening to distort competition in the internal market, is involved in the public funding of general transport infrastructures, including airports and seaports.

For the time being, the Commission does not intend to adopt particular guidelines for State Aid to ports. The case law from the Court of Justice on state aid to infrastructure has recently clarified certain issues (the case T-443/08 "Leipzig-Halle"), in particular that public financing of the construction of (airport) infrastructure constitutes State aid. The only exception concerns certain activities that are part of the exercise of public powers (security, police, etc). This judgement requires careful reflections for all sectors with heavy infrastructures like transport and which go beyond ports.

The Commission is now working on the modernisation of State Aid rules for all economic sectors. It will streamline procedures and better explain rules and concepts, including a clarification of the notion of state aid for infrastructures, later on in 2013.

The 2012 public consultation has confirmed that the current state of play is unsatisfactory for the Member States Transport administrations, port authorities and other stakeholders. All of them require to the Commission to provide legal certainty and a playing level field ensuring fair competition for ports in Europe.

4. Historical evolution of the EU ports' policy: from 1997 Green Paper to 2012 Single Market Act II Priority

The first attempt by the Commission to move towards a coherent policy on ports and maritime infrastructures was made in 1997, with the publication of a Green paper on that subject.

In 2001, following the Green Paper consultation the Commission issued a Communication on reinforcing quality service in sea-ports and proposed a Directive on market access to port services (port package I). The Commission proposal was rejected by the European Parliament in 2003.

In 2004, the Commission adopted a second proposal for a directive on market access to port services (port package II). The proposal was withdrawn by the Commission in 2006.

In 2007, after two years of consultation with stakeholders, the Commission adopted a Communication on ports policy, announcing a number of "soft" measures in the form of guidelines (state aids, environment), best practices (benchmarking, indicators) and close cooperation and dialogue with stakeholders.

Between 2001 and 2008, the situation of port labour in the EU Member States changed substantially: Some Member States like Germany, Finland, France or Spain have undertaken reforms of their respective port labour sectors (of different degree and scope though).

In 2011, in the context of the structural adjustments required by the Conditional Assistance Programme to Member States in financial difficulties, a radical reform of the ports regulatory regimes, inter alia of the port labour regimes, has been implemented in Greece and Portugal.

In 2012, in the context of the measures proposed in the Single Market Act II, the Commission identified the need to act in ports as follows:

"The Commission therefore also works on enhancing the efficiency and overall quality of port services, addressing questions of the obligations of Member States regarding the sound planning of ports and hinterland connections, transparency of public funding and port charges, and administrative simplification efforts in ports, and reviewing restrictions on the provision of services at ports"

ANNEX V:

Public Consultation - Summary of stakeholders' positions

This annex explains the public consultation procedure and summarises the results of the 1st and 2nd phase of the targeted stakeholder surveys together with the input received during bilateral meetings DG MOVE has had with the individual stakeholders.

Due to the technical nature of the file (inter alia, issues related to performance of ports, port technical services, hinterland connectivity, governance structures, port infrastructure charges, funding of port investments or public service obligations in ports), DG MOVE decided to carry out an intensive targeted sectoral public consultation, and not a full public consultation open to the wider public. Indeed, in first instance only workers and businesses active in the port sector would be affected by this initiative, and the broader public would only be indirectly affected, as port economics are of a derived nature. By performing an intensive targeted consultation, the policy discussion could be more technical in nature, and has nevertheless in no way excluded or prevented any party concerned from participating.

A. Public consultation procedure

The milestones of the public consultation procedure were:

3rd quarter 2011	Informal meeting of DG MOVE with the authorities in charge of ports policy in the 22 maritime Member States: discussion of the Transport White Paper measures and possible follow-up in the port sector CommissionVice-president Siim Kallas public announcement of the COM intention to review the EU Ports Policy in 2013.
4th quarter 2011	First round of bilateral contacts with main EU associations in the port sector
1st quarter 2012	Launching of the procedure for the establishment of the European social dialogue committee in the port sector (ESPO, ETF Dockers, FEPORT and IDC) Launching of the Study on EU Port Labour Regimes (Porf Van Hoydoonk, University of Ghent, College of Europe) – Start of the survey addressed to the 22 EU Member States, labour unions and industry associations regarding port labour, health and safety and training and qualifications of dockers in the EU. Launching of the study supporting the impact assessment on "measures to enhance the efficiency and quality of port services in the EU (PricewaterhouseCoopers in partnership with Panteia). Start of the first public on-line survey.
2nd quarter 2012	Data collection for the port labour study and conduct of the on-line survey on the efficiency and quality of TEN-T port services. Preparation of the conference on the future of the EU Ports Policy. Round of visits to major EU Ports and discussions with port authorities
3rd quarter 2012	EU conference on the future of the EU Ports Policy. Presentation of results of the first survey on quality and efficiency of EU ports and of the preliminary conclusions of the Port Labour Study See: http://www.portsconference2012.eu/home.html

4rd quarter 2012	Reception and review of comments and position papers from stakeholders Second round of bilateral contacts with EU associations in the port sector Follow up of the procedure for the establishment of the social dialogue committee Launching of the second public on-line survey for evaluation of possible policy measures and likely impacts of those measures
1st quarter 2013	Public hearing in Brussels, with all interested parties, presenting the results of the on-line surveys and of DG MOVE preliminary views on possible policy measures. Informal contacts with social partners, industry, Member States administrations and port authorities. Finalisation of the study on port labour
Pending	Presentation and discussion of the study on port labour with social partners Publication of impact assessment study

Criticisms on the on-line survey and position papers by the trade unions

The preparation of the on-line survey has involved contacts with stakeholders, including the representatives of the trade unions. They have expressed criticism about the questions - drafted by PwC / Panteia in collaboration with the Commission services - regarding aspects of quality and efficiency of ports connected (directly or indirectly) with port work issues.

The participation of national trade unions in the two on-line surveys has been low (the trade unions rejected the approach chosen by the consultants and the Commission). Instead of answering the questions in the survey, the trade unions at European level (IDC and ETF dockers) have expressed their views in position papers and manifests adopted in different ports. Both IDC and ETF participated actively in the Ports Conference (Sept 2012) and in the Public Hearing (January 2013). The joint press release of IDC and ETF in the consultation process can be retrieved at: http://www.itfglobal.org/etf/etf-press-area.cfm/pressdetail/8457

B. Summary of stakeholders' positions

The following presentation follows the order of the issues proposed for discussion at the Public Hearing (January 2013) that closed the public consultation exercise.

1. Challenges

The Commission concludes the following for what concerns the challenges to be tackled:

1. All stakeholders stressed the **need for a stable and fair level playing field both for inter-ports** (competition between ports) **and intra-port** (competition between providers of a same port service within a port) **competition in the EU**. The need for legal certainty and a business friendly environment with as less administrative burden as possible is a priority for all stakeholders, such as Member States, port authorities, terminal operators or the shipping sector, logistic operators and cargo interests.
2. There is **a major concern about unfair competition between ports linked to public funding practices of port infrastructures**. Member States and port authorities request a tight control of state aid through the adoption of state aid guidelines for the port sector and highlight that the public funding transparency requirements of the existing

Commission Directive 2006/111/EC is not sufficient as it does not apply necessarily in the sector.

3. The European Court of Auditors has revealed in 2012 **serious problems in the use and effectiveness of EU Regional funds for funding port infrastructures**. The root causes are systemic: lack of strategic planning and of economic rationality criteria in the allocation of resources.

4. **A majority of the users of port services**, shipping companies and export-import industries**, consider that port services in many EU ports are not satisfactory in terms of price, quality and administrative burden**. In the ports of the core TEN-T network, around half of the users surveyed (shipping lines) consider that there are specific challenges in terms of price or quality with cargo handling (48% complain), pilotage (54% complain) and towage (49% complain). A smaller percentage ranging from 17% to 25% sees similar problems for other services such as mooring, bunkering, dredging, passenger services or waste management.

5. **30% of European port authorities do not consider that the current situation is satisfactory.** However, the majority of them oppose the introduction of EU procedures limiting the capacities of public authorities for granting contracts and permissions through direct award to operators of port services. Applying detailed concession rules to certain contracts granted by public authorities in ports is highly controversial in certain Member States.

6. **Port workers trade unions extremely oppose any EU provision touching on the existing port labour regimes** in certain Member States, in particular in Mediterranean Member States.

7. Representatives of pilotage services argue that **pilotage, although provided against remuneration, is not an economic service** and should be excluded from competitive pressure.

8. **All stakeholders agree that the EU port system has to evolve and adapt to significant challenges in terms of scarce funding resources, competitiveness in respect of ports in neighbouring third countries and other world regions, creation of added value and jobs and environmental impacts.**

9. All stakeholders agree on the importance to secure and, if possible, increase, EU **funding** expenditure for supporting ports and maritime transport.

2. Results per service (quantitative results of the questionnaire)

10. The survey shows that a large proportion of the users of port services (shipping companies, terminal operators and port authorities) consider that port services in many EU ports are not satisfactory in terms of price, quality and administrative burden. In the ports of the core TEN-T network, around half of the users surveyed (shipping lines) consider that there are specific challenges (especially in terms of price) with cargo handling (48% complain), pilotage (54% complain) and towage (49% complain). A smaller percentage ranging from 17% to 25% sees similar problems for other services such as mooring, bunkering, dredging, passenger services or waste management.

Overview of respondents (USERS) that indicate there is a problem with a given service:

CORE	Port Auth.	Terminals	Shipping L.	**COMPREH**	Port Auth.	Terminals	Shipping L.
Pilotage	45%	48%	54%	Pilotage	21%	17%	25%
Towage	35%	43%	49%	Towage	31%	67%	0%
Mooring	19%	23%	27%	Mooring	21%	17%	0%
Dredging	29%	29%	24%	Dredging	33%	33%	0%
Bunkering	14%	17%	28%	Bunkering	25%	17%	25%
Cargo	20%	N/A	48%	Cargo	46%	N/A	33%
Passengers	16%	N/A	38%	Passengers	17%	N/A	67%
Waste rec.	18%	18%	15%	Waste rec.	9%	17%	25%

	Pilotage	Towage	Mooring	Dredging	Bunkering	Cargo	Passengers	Waste reception
Core	50%	44%	24%	27%	22%	30%	23%	17%
Comprehensive	21%	35%	17%	27%	23%	42%	30%	14%
Total	45%	42%	22%	29%	22%	29%	25%	17%

3. Objectives

On the basis of the 2nd phase of the targeted stakeholder consultation and the public hearing, the Commission concludes that a majority of stakeholders did not question the Commission's analysis of the challenges that EU ports have to face with related to the objectives of the port initiative. These objectives have been identified as the following:

Scenario 2020-2030

11. Maritime trade and port activities are likely to remain weak in the medium term (2014-2018), with a possible overcapacity on certain segments. Forecasts predict return to steady port traffic growth towards 2020, but with changes in volumes and types of cargoes, size, design and propulsion systems of ships, cargo-handling and logistic technologies and ICT developments having huge impact on ports. Ports failing to modernise could be left behind.
12. Sea-trade growth is a necessity for Europe’s economic recovery and the development of short-sea-shipping is needed as part of intermodal transport solutions offering alternatives to road transport and contributing to sustainable transport. However, ports risk not fully

playing their role in the supply chain because of poor network integration, problems of congestion and decline of short sea shipping in face of strong competition from road transport (leading to congestion and saturated intra-EU land corridors).

13. Further developing the efficiency of the gateway function of ports will require: (a) better connections with the hinterland; (b) improvement of the use of existing capacities by increasing port performance and (c) provision of new port infrastructure.

14. In respect to (a), the new EU guidelines for developing the TEN-T and the Connecting Europe Facility will help Member States to improve the connections with the hinterland. Addressing the two other challenges (b) and (c) would require a framework that encourages the modernisation of ports procedures and services and can better attract capital investments and human resources to ports.

European dimension

15. Those challenges are a matter of concern for national regional and local authorities. But they are also transnational by nature when it comes down to TEN-T ports, both the core network ports and the comprehensive ports, as part of an efficient hub-and-spoke system. Unfair practices in a port may harm neighbouring competing ports and/or the business opportunities of port service operators of other Member States. Better port performance in other Member States can further facilitate intra-EU trade with them and reduce the negative externalities on its own network (e.g. congestion).

Modernisation of ports, attracting investments

16. By optimising business processes and simplifying administrative procedures, TEN-T ports could handle more ships, cargo and/or passengers with the same infrastructure. By further improving the reliability, flexibility and efficiency of port services, they could also accommodate more short-sea shipping traffic. The completion of the Single Market for ports will provide a fair level playing field thus unleashing port modernisation dynamics.

17. This however cannot happen with unjustified market entry barriers, unnecessary administrative burden and unclear rules governing the provision of services, in particular those provided under exclusive or special rights granted to particular operators. Legal uncertainties are a source of discomfort both for incumbent operators and for new operators willing to enter their markets. Modernisation of ports, investment flows and creation of new businesses and employment are therefore handicapped.

18. Investments in port infrastructure, terminal operations and connectivity of ports are of crucial importance to maintain EU port performance levels. Overall funding needs for ports (infrastructures, equipment and connections) could easily exceed € 100 billion in the next 20 years. Meanwhile, public funding is drying up. Inevitably public investments will have to be better optimised (see the report of the European Court of Auditors 2012[35]) and private investments encouraged (ports are part of a long-term growth sector).

19. Transparency in the use of public funds and the need for a level playing field for inter-port competition is a repeated concern for all stakeholders. They seem to see transparency

[35]See http://eca.europa.eu/portal/pls/portal/docs/1/14050737.PDF

as a way to ensure the correct allocation of public resources and reduce the risk of State aid incompatible with the internal market. This is not surprising since some 30-40% of the ports of the core network do not fall in the scope of Directive 2006/111 on the transparency of the financial relations between public authorities and public undertakings. Moreover, without separation of accounts (statutory vs. commercial activities) port authorities operating specific port services can cross-subsidise the activities related to port services in a non-transparent way and thus disrupt the level playing field.

20. Furthermore, ports are not always allowed to define their own infrastructure charging policy. Charges for the use of infrastructure are not always linked to real costs and may not contribute to an efficient allocation of resources to finance the maintenance and/or construction of infrastructure. Lack of transparency in the setting of charges may lead to unjustified discrimination. Price signals rarely incentivise users to take into account their external costs (e.g. environmental costs). Moreover, in a period of faltering economy and overcapacity in certain market segments, there is an increased risk of unfair inter-port and intra-port competition.

21. In addition, lack of coordination of public investments in port capacities, even within the same Member State, may lead to duplication of facilities, waste of funding resources or higher uncertainties related to the social and economic returns of investments. Such situation is also detrimental for encouraging Public-Private Partnerships agreements.

Creating new jobs

22. Finally, port growth, investments and jobs come together. European ports represent an opportunity to generate employment and create new, quality jobs, both inside and outside the port, ranging from vehicle drivers and crane operators to ICT specialists and commercial executives. Successful ports attract industrial and commercial firms; marine services generate high-end employment. The quality of the social relationships, of the working environment and of the human resources policies are key factors for the development of TEN-T ports.

4. Measures

On the basis of the 2nd phase of the targeted stakeholder consultation and the public hearing, the Commission draws the following conclusions related to possible interventions:

Fair market access

23. Apart from the net position of port service providers, which is strongly adverse, stakeholders' responses denote a **shared approval towards the possibility to opening the market up for greater competition**. At least 80% of port users seem very keen to support this measure. 40% of MSs and port authorities understand the need for assuring that their operations are transparent and in line with the need for port services to be provided efficiently and effectively, but are less interested in further regulation going beyond transparency.

Avoid abuses arising from exclusive /special rights

24. Wide **consensus is found with regard to the need for port authorities to set transparent, non-discriminatory and proportionate charges for the provided services, when acting as service providers**.

25. **Stakeholders express concerns when port services are provided in a monopolistic regime** (direct award or in-house operation). The need to set charges following non-discrimination, proportionality and transparency principles was recognised by all stakeholder groups as a core element for the port service market to be enhanced. A soft approach is much preferred, as it is considered essential to adapt the measure to local specificities and contexts.

Administrative simplification and intra-port coordination

26. An administrative simplification action plan would comprise the centralisation of coordination activities by port managing bodies. Port authorities/port managers (77%) support this measure much more than port service providers (23%), who would like to be more involved in port coordination activities; 91% of port users also find this a good idea.

27. Coordination mechanisms could be regarded as a weakness across EU ports. **Respondents showed strong interest in having such mechanisms improved.** In particular, port users and port service providers claim it is a core element that needs to be regulated. Synthetically, having **an entity coordinating various service providers is required by most respondent**s, with the exception of terminal operators (only 36%), who show little interest.

28. When considering the possibility to introduce a port users' committee, port service providers (95%) and port users (88%) are very supportive, while MSs and ports are less supportive (23%). It seems that port service providers would like to have a role in coordinating activities – together with authorities, while others (mainly port authorities and port managers) are less keen to see coordination activities delegated, as they see these activities as being their responsibility.

Financial Transparency of public funding

29. **Port users are almost unanimous in supporting whatever measure increases financial transparency**. On the contrary, the other stakeholders are much more sensitive and express their distinct support or concern depending on the way transparency is to be achieved.

30. When considering the unbundling of the port authority dimensions – managing body and service provider – port service providers (89%), terminal operators (71%) and port users (94%) are very supportive. In line with expectations, only 34% of MSs and port authorities are much less supportive, since port authorities/port managers would be forced to limit their presence in the market, even in natural monopolistic situations, where competition would be inefficient or cannot be guaranteed.

Port Infrastructure Charging

31. While stakeholders where not explicitly asked about this, this is part of the **Commission's horizontal strategy on infrastructure charging, adopted since 2008**. The strategy is designed in order to have fair intermodal competition and to ensure that

all infrastructure users are paying the correct price (at least the marginal cost – with a possibility to also contribute to the total investment costs). This strategy also foresees in the advice to differentiate the charge according to environmental performance of the vehicle/vessel in line with the polluter pays strategy.

32. Respondents have expressed wide support for the freedom to set the price of these charges and the need to make sure that these charges can take into account local circumstances and considerations.

33. Respondents have expressed their concerns about the rise of administrative costs related to the setting up of new and more complex procedures for the calculation of charges in line with transparency, proportionality, etc. principles. Moreover the publication of prices and calculation methods for port access infrastructure charges needs a certain amount of work to be done by administrative personnel, contributing to increased administrative costs.

ANNEX VI:

Relative performance of TEN-T Core: efficiency vs. competitive pressure

(a proxy model by PWC/NEA, 2013)

There are no universally accepted benchmarks or formulae to define port or port system performance or its attractiveness to users. Nevertheless performance gaps are perceived by users, so this section sets out some empirical findings. In certain contexts, performance tends to be equated with throughput or turnover, in other cases with operational efficiency, but in a policy context it is more appropriate to consider the relationships between investment, management, market forces and institutional factors, analysing the extent to which any given port is achieving its full potential.

1. WEF Global Competitiveness Survey

One indication is given by the World Economic Forum Global Competitiveness Report 2012-2013 which surveys executive opinions on a range of economic development topics including infrastructure.

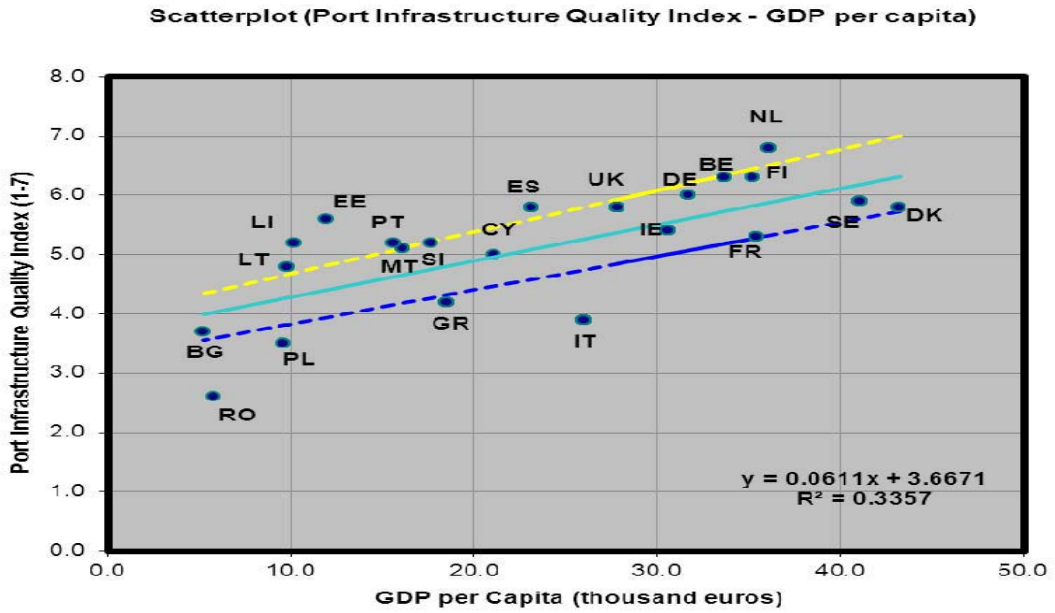
Survey respondents were asked to assess port facilities in their country according to a 1-7 scale, where 1 is extremely underdeveloped and 7 is well developed and efficient by international standards. The global mean score is 4.3, which coincides with the scores achieved by Greece and Turkey in 2012.

At the top of the list, scoring 6.8 are the Netherlands and Singapore. Other high scoring countries are Hong Kong, Panama and the United Arab Emirates. There are clear similarities between the countries in this leading cluster, in relation to their abundance of port infrastructure and international maritime connections relative to their own size.

Looking at high scoring countries in Europe, Belgium and Finland score 6.3, followed closely by Germany, Sweden, UK, Denmark, Spain, Malta and Estonia. The latter all score higher than 5.5.

The lowest scoring countries, excluding the landlocked countries who were asked to rate accessibility rather than quality, were Bosnia and Haiti with 1.7 and 1.9 respectively. In the EU, the lowest scorers were Romania with 2.6, Poland with 3.5 and Bulgaria with 3.7, similar to countries such as Nigeria, Indonesia and Argentina. The majority of EU countries however score more than the global average.

Overall there is a positive relationship between GDP and infrastructure. The following graph shows the results of a regression analysis relating the WEF score to GDP per capita, in order to show the extent of port performance gaps that cannot be explained by income gaps.



Source: World Economic Forum, Global Competitiveness Report 2012-2013.

The solid blue trend line indicates the score that would be expected per country based on GDP per capita alone. The dotted lines indicate a 10% margin. Many countries are clustered along these 10% boundaries.

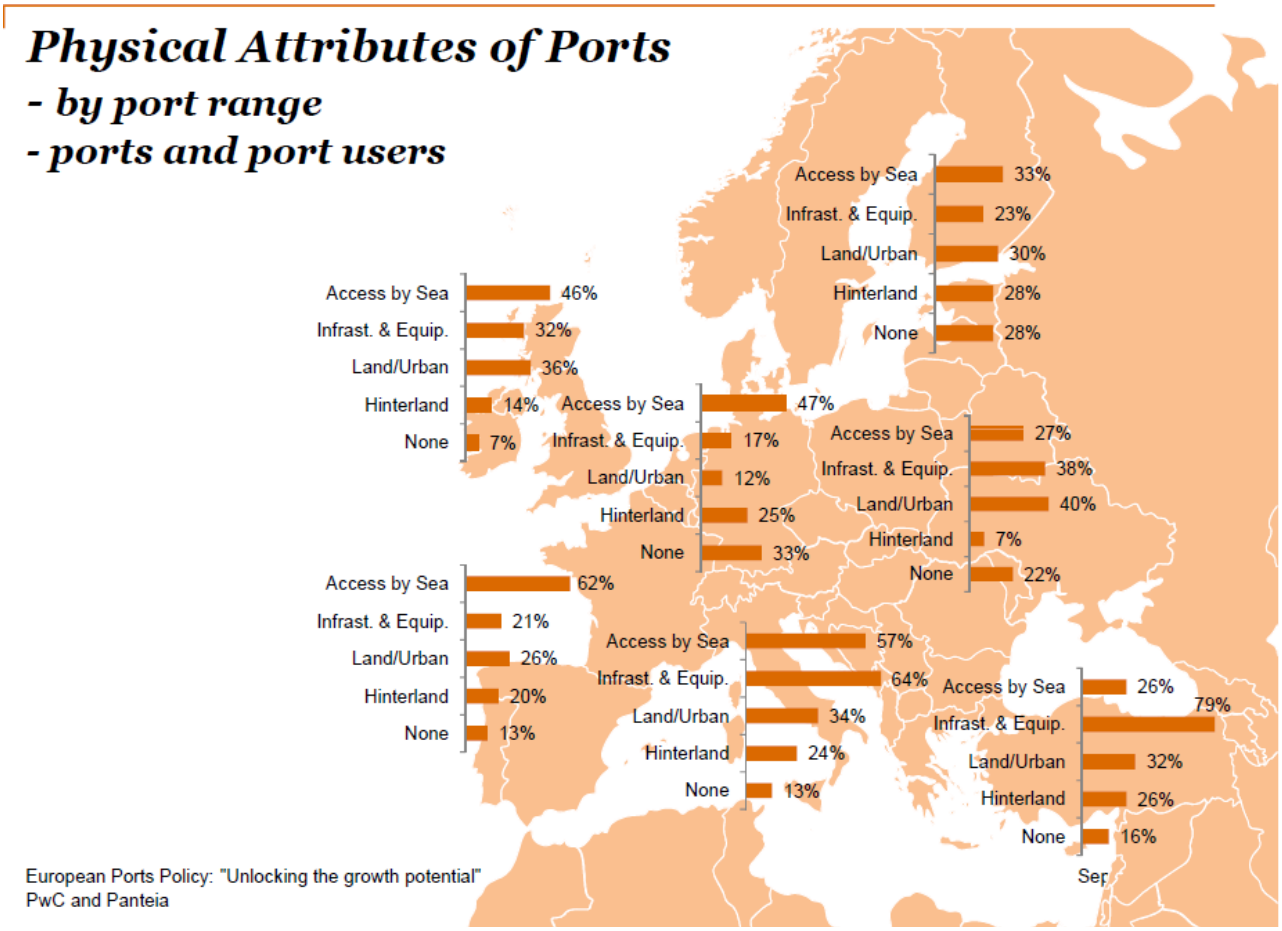
Countries above the higher dotted line perform relatively well compared to their GDP/capita and countries below the line relatively badly. The three Baltic States of Latvia (LT), Lithuania (LI) and Estonia (EE) receive relatively high ratings, together with Spain (ES) and the Netherlands (NL). Romania (RO), Poland (PL) and Italy (IT) receive relatively low ratings, with Bulgaria (BG), Greece (GR), France (FR) and Denmark (DK) all borderline.

2. PwC/Panteia Survey 2012

During the stakeholder consultation taking place during the summer of 2012, port stakeholders were asked to identify problems in relation to the performance of European ports. Port users were asked to rate the ports they use. Ports and port operators were asked to identify challenges they face in their own businesses. This contrasts with the WEF analysis in which opinions were stated by businesses from all sectors in the respective countries, and not necessarily by direct users.

Quality service levels: physical attributes of ports

The responses on issues concerning infrastructure and equipment are broadly comparable with the WEF results. There is a high instance of port infrastructure related problems in the Black Sea (79% of respondents find problems) and in the Central Mediterranean (64%). Spain, France, Belgium, Netherlands and Germany have low problem counts (around 20%). The UK and the Nordic area are slightly higher.

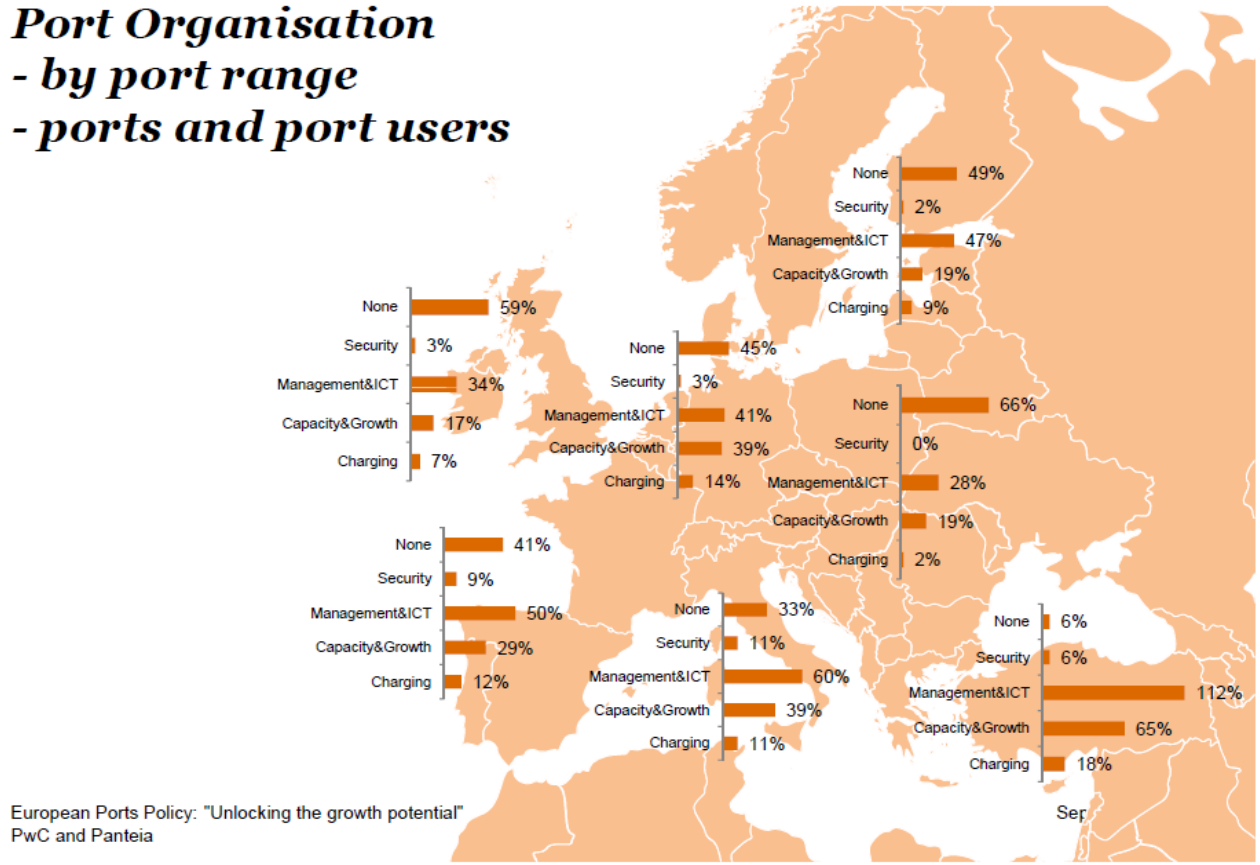


Quality service levels: matters related to organisation

The PwC/Panteia 2012 survey also considered organisational factors. There is some degree of correlation between the likelihood of infrastructure issues and the likelihood of management and IT related issues. The highest problem count for management and ICT is in the Black Sea (112%[36]), again followed by the Central Mediterranean area (60%). However, in case, most regions have scores higher than 40%, so the gap is not as evident.

[36] The count can be greater than 100% because more than one problem can be identified per port. The heading "Management and ICT" covers a range of questions, including management autonomy, coordination of services, control and monitoring, etc.

Port Organisation
- by port range
- ports and port users



European Ports Policy: "Unlocking the growth potential"
PwC and Panteia

3. Relative Performance (RPI)

The object has been to use available data to make a performance ranking of the major European ports. The calculation has been done for a sample of 115 ports TEN-T ports. The term "port performance" has no universally accepted meaning – in some contexts it means operational efficiency, in others a user rating, in others market share or competitiveness, and in others it means growth.

Definitions

The ranking applied here is based on a national user rating, combined with indicators on competitiveness and market share. Thus a "well-performing" port under these definitions is one that is located in a country where there is high infrastructure rating, and which achieves a high market share in circumstances where there is a high degree of inter-port rivalry.

The ranking is based upon three main criteria:

- The WEF (World Economic Forum) Global Competitiveness Report[37], 2012-2013, which provides a rating of port infrastructure in a given country by businesses in the same country. Each country is allocated one score.
- A proximity measure, showing per port, the presence or absence of close competitors. This is calculated with a gravity model, weighting port throughput and distance. Thus if a port has nearby rivals carrying significant throughput volumes, the proximity index is high. It will be low if there are fewer or smaller nearby competitors.
- A market share index per traffic mode of appearance, showing the performance of each port relative to the total market in a specific coastal range. Coastal ranges are listed below (Table 1). Modes of appearance are container, ro-ro, dry bulk, and liquid bulk. A share is also calculated for total tonnes.

Table 1: Set of Coastal Ranges

1	IRELAND
2	CYPRUS
3	MALTA
4	UNITED KINGDOM
5	SPAIN, SW FRANCE, PORTUGAL
6	DENMARK, NORWAY, SWEDEN
7	ESTONIA, FINLAND, LITHUANIA, LATVIA, BALTIC RUSSIA
8	BALTIC GERMANY, POLAND
9	HAMBURG-LE HAVRE RANGE
10	CENTRAL AND SOUTHERN ITALY
11	ADRIATIC INCL NE ITALY
12	GREECE, BULGARIA, ROMANIA
13	NW ITALY

[37] http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf

Island nations are separated from the continental area, since there is a specific context, in terms of which ports can be used to serve the hinterland. Cyprus and Malta have one main port each for example. Island regions (of larger countries) such as Mallorca or Corsica are not included in the analysis, as neither the national WEF, nor the market share aspects are relevant.

Scoring

Scores are calculated according to the following variables:

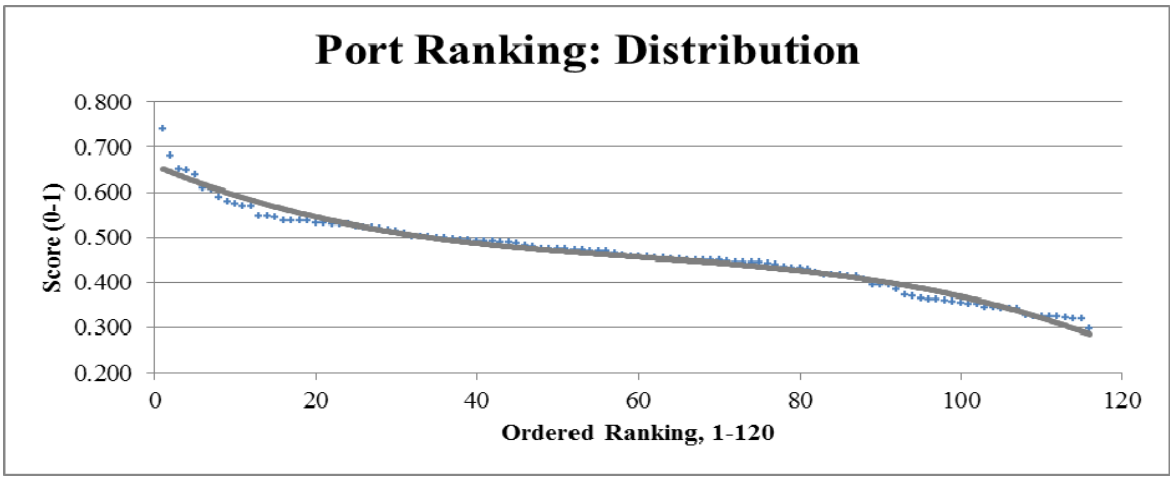
VAR	Description	Weight
A	WEF Rating. Converted from a 0-7 scale to a 0-1 scale.	10
B	Rivalry: $R_p = \sum_{q \neq p} \frac{T_q}{d_{p \to q}^2}$ Where: R_p = Rivalry Score for Port p. T_q = Throughput of Port q. d = Distance between port p and port q. These scores are converted into a ranking, and then into a 0-1 scale.	1
C_1	Market share of Port P in Coastline Range, Dry Bulk Tonnes (0-1 scale)	1
C_2	Market share of Port P in Coastline Range, Liquid Bulk Tonnes (0-1 scale)	1
C_3	Market share of Port P in Coastline Range, Container Tonnes (0-1 scale)	5
C_4	Market share of Port P in Coastline Range, RORO Tonnes (0-1 scale)	3
C_5	Market share of Port P in Coastline Range, Total Tonnes (0-1 scale)	5

The score is a weighted average, using the weights calculated above.

Island ports in Cyprus, Malta and Ireland are calculated without such a strong weighting for market share. Essentially, these ports are not directly comparable with the others as far as market share performance is concerned. However they each receive WEF scores greater than 5 out of 7, indicating a high degree of satisfaction from local businesses.

The resulting distribution is as follows:

Figure 1: Port Ranking- Distribution



The distribution fits an order 3 polynomial function, superimposed on the scores in Figure 1. We can discern that most ports are clustered between 0.4 and 0.5, with sets of well-performing and less-well performing at either end of the distribution.

The Commission decided not to disclose the final calculations for the list of individual ports but only the list of ports considered in the calculations. This is done because the calculation is done to show the existing performance gaps between European ports without wishing to shame or blame individual ports. The Commission is also aware that this could have potential commercial impacts on the mentioned ports.

Table 2: List of ports

ALGECIRAS	DUBLIN	KAVALA	NAPLES	SOUTHAMPTON
AARHUS	DUNKIRK	KLAIPEDA	NARVIK	SPLIT
AGIOI THEORDORO	ELEUSIS	KOPER	OLBIA	STOCKHOLM
AMSTERDAM	FELIXSTOWE	KOTKA	OPORTO - LEIXOE	SZCZECIN
ANTWERP	FORTH	LA CORUNA	OSLO	TALLINN
AUGUSTA	FREDERICIA	LA ROCHELLE-PAL	OSTEND	TARANTO
BARCELONA	FREDERIKSHAVN	LA SPEZIA	PATRAS	TARRAGONA
BELFAST	GDANSK	LARNACA	PIOMBINO	TEESPORT
BERGEN	GDYNIA	LE HAVRE	PIRAEUS	THESSALONIKI
BILBAO	GENOA	LIMASSOL	PLOCE	TRELLEBORG
BORDEAUX	GHENT	LISBON	PORTSMOUTH	TRIESTE
BOURGAS	GIJON	LIVERPOOL	RAAHE	TURKU
BREMERHAVEN	GIOIA TAURO	LIVORNO	RAFINA	VALENCIA
BRINDISI	GLASGOW	LONDON	RAUMA	VARNA
BRISTOL	GOTHENBURG	LUBECK	RAVENNA	VENICE
CAGLIARI	HAMBURG	MALMO	RIGA	VENTSPILS
CALAIS	HELSINGBORG	MARIEHAMN	RIJEKA	VLISSINGEN
CARTAGENA	HELSINGOR	MARSAXLOKK	ROSTOCK	WILHELMSHAVEN
CASTELLON	HELSINKI	MARSEILLES	ROTTERDAM	ZEEBRUGE
CIVITAVECCHIA	HOLYHEAD	MESSINA	ROUEN	
CONSTANTZA	HUELVA	MILAZZO	SAVONA-VADO	
CORK	HULL	MILFORD HAVEN	SHEERNESS	
DELFZIJL	IGOUMENITSA	NAANTALI	SINES	
DOVER	IMMINGHAM	NANTES-ST-NAZAI	SORRENTO	

ANNEX VII:

Modelling of impacts

main assumptions[38]

Quantification of Impacts

This note sets out the methods used to estimate certain quantified impacts associated with the proposed policy packages.

Five policy packages have been considered; PP1, PP2, PP2a, PP3, and PP2a-variant.

Three main areas have been considered:

- The relationship between the policy packages and user costs (freight).
- The impact of alternative user costs on freight traffic, including modal shift.
- The impact of alternative freight traffic patterns on externalities of transport.

Step 1:

The first step is to relate the individual policy measures contained in a policy package to specific port services. Different measures tend to target specific elements of the value chain e.g. infrastructure provision, technical nautical services, etc.

All the measures were enumerated and allocated to policy packages. Each of the main port services has been considered in turn, and a linkage has been derived between the measure and the service. Thus, for example a measure aimed at port infrastructure is not deemed to have an impact on a technical nautical service.

Where linkages are deemed to exist, it is necessary then to assess what kind of impact is likely to be negative, positive or neutral on efficiency. It is not known which ports have the potential to improve their performance in a specific area, nor the level of improvement: in general, each impact is only assumed to have a modest effect e.g. a single percentage point per measure. The main objective is therefore to identify which particular services might react to which measures, and to ensure that combined measures are working in a cohesive way.

Port User Costs: assumptions

[38] For a detailed presentation, see the final report of the PwC/Panteia 2013 "Study aimed at supporting an impact assessment to enhance the efficiency and quality of port services in the EU"

One of objectives for improving the efficiency of port services is to remove bottlenecks and ultimately to save cost. For the impact assessment it has been necessary to consider how the policy packages might contribute on transport costs.

During the conduct of the study, stakeholder discussions have tended to present a view of port operations in which a range of separate services, with varying levels of co-ordination and efficiency, also varying by port, are consumed by users. In many cases, users pay separate fees according to different tariffs to the port service providers, and not an "all-in" price. For cargo ships, the largest items will be port dues, cargo handling, pilotage, towage and mooring. Part of the cargo handling fee paid to terminal operators also covers land rents which will be paid by terminal operators to port authorities.

Although it is very difficult to generalise about port costs and tariff structures, it is possible using published tariffs, port accounts and stakeholder responses to make an approximate subdivision of user costs amongst the different services. When this cost information is combined with a set of maritime flows, it is possible to make an estimate of total turnover in the port sector. By segmenting the analysis into cargo types (e.g. container, ro-ro, bulk) and by geographical areas (short sea, near sea, deep sea) it is possible to refine this estimation somewhat.

User costs, expressed in Euros per tonne, have been applied to the maritime traffic matrices. Port costs have been estimated using existing Port of Rotterdam tariffs.

Table Error! No text of specified style in document.**-2: Assumed Port Costs, 2012**

Port Costs *Euros per tonne*	Port Dues	Handling	Pilotage	Towage	Mooring	Others	Total
Containers	0.70	7.00	0.30	0.30	0.10	0.05	8.45
Dry Bulk	0.60	2.00	0.25	0.25	0.10	0.05	3.25
Liquid Bulk	0.75	2.00	0.30	0.25	0.10	0.05	3.45
RORO	0.85	0.50	0.00	0.00	0.00	0.05	1.40
Other	0.60	5.00	0.50	0.30	0.10	0.05	6.55

Using the traffic forecast, PwC / Panteia has therefore estimated that aggregate port costs at today's prices, but with future volumes, for EU ports would be €15,837 million in 2030. This forecast takes into consideration differential growth by traffic type and by O/D. Table one provides forecasts of throughput and revenue for the forecast year 2030. Note that in this table, tonnage is the volume of maritime traffic moved. Most European maritime traffic calls at more than one European port, and sea-to sea transshipment involves double handling, counted as two separate cargo movements, so these forecasts translate into port throughputs of 5.8 billion tonnes, compared to around 4 billion tonnes today.

Table Error! No text of specified style in document.**-3: Estimated Aggregate Port Costs, 2030**

2030	Tonnage (million)	Port Revenue (€ million)
Containers	606.00	5,437.49
Dry Bulk	844.27	4,151.46
Liquid Bulk	749.78	4,060.60
RORO	218.26	461.73
Other	183.27	1,725.95
TOTAL	2,601.57	15,837.23

Policy Packages

During consultation, stakeholders have indicated that problems of both quality and price can be found in European seaports – there is not a uniform level of performance. Both physical (access and infrastructure) and organisational factors are considered to play a part, and one of the important root causes identified are instances of weak competition. Essentially the port packages aim to address infrastructure requirements though measures to attract private investment, as well as structural requirements by creating the right conditions for enhancing competition, and creating a more business-friendly environment.

For the impact assessment it is necessary to consider how the different policy packages contribute. A priori, it is not possible to know in detail which ports and which services will be affected, and the margin for improvement that can be realised. However, the packages are structured so that it is possible to infer the relative strength of the measures contained, and to allow some indication of which services might respond to a greater or lesser extent. For example, because of inter-port competition, cargo handling costs are less likely to respond to measures that open up market access. Technical nautical services on the other hand are less exposed to inter-port competition, and in many cases there is only limited intra-port competition for these.

The approach has therefore been to apply conservative estimates of cost changes, differentiated per package and per service in order to permit comparison. These are assumptions made by relating policy package descriptions to changes in user cost. By scaling the costs up to the level of the industry it is possible to indicate the importance of port services at the European scale for consumers and businesses. Based on the above assumptions, the information obtained from the user surveys has been analysed in order to derive the following parameters for estimating the scope for cost decreases.

	Port Dues	**Handling**	**Pilotage**	**Towage**	**Mooring**	**Others**
PP1	1.00	0.98	0.97	0.95	0.95	0.95
PP2	1.10	0.95	0.95	0.90	0.90	0.90
PP2a	0.95	0.94	0.92	0.85	0.85	0.85
PP3	0.96	0.93	0.90	0.80	0.80	0.80
PP2a VARIANT	0.95	0.98	0.92	0.85	0.85	0.85

Step 2:

In the second step, the cost variations have been applied in a model of European maritime traffic. Maritime flows have been analysed as O/D traffic between coastline areas e.g. Britain to the Iberian Peninsula. Seventeen coastline areas have been used, of which thirteen are in the EU, and four outside. Traffics are broken down into five categories, including container, dry bulk, liquid bulk, roll-on roll-off and other general cargo. They are forecast using the TRANSTOOLS trade model (v2.6) to 2030.

Maritime costs, including port costs, have been estimated for this traffic set. Within the port cost estimate, separate amounts have been estimated for the main port services, including infrastructure, cargo handling, technical nautical services (analysed separately) and other services. Inputs for port costs are primarily based on 2011 Port of Rotterdam port tariffs. Port of Rotterdam figures have been used partly because they cover almost 10% of European traffic, implying that they have influence on competing ports, but also because tariffs for all services are published.

By combining forecast traffic flows with estimated charges, it is possible to arrive at an estimate of aggregate port costs in the EU. These can be expressed in percentage terms or absolute changes. For example, in PP1, where it is assumed that savings ranging from zero up to 5%, the net cost saving is estimated at 2.0%.

(2030)	Change (%) in Total Port Related Costs	Annual Savings (€ million)
PP1	-2.0%	-318.15
PP2	-3.0%	-481.47
PP2a	-6.8%	-1,071.37
PP3	-7.9%	-1,245.21
PP2a VARIANT	-4.0%	-635.55

Step 3:

Lower user costs act as an incentive to use maritime options in cases where sea is in competition with land transport. For the majority of traffic flows this is not the case; either the flows are captive for land transport or for sea, so the relative traffic shifts are expected to be small. Nevertheless, they can be estimated using a multimodal model. In the third step, therefore we have used the WORLDNET (FP6) approach to estimate multimodal route, following the methodology used in the study "Ports and their connections within the TEN-T", (DG-MOVE, 2010). This model assigns flows to multi-modal mode chains, thus estimating port choice, and the sensitivity between land and sea options. The calculation is made using 2010 network and flow data obtained from the ETISplus (FP7) transport information system.

The only variable used in this modelling step is port cost, with the inputs coming from the outcome of Step 2. Only EU ports are affected.

	Inland Tonne-Kms(m)	Maritime Tonne-Kms(m)	Maritime Tonnes	Change in Short Sea Shipping (%)	Change in Road transport over 300Km
PP1	-1,929	3,603	4,951,830	0.49%	-833
PP2	-2,894	5,404	7,427,745	0.73%	-1,249
PP2a	-5,996	13,311	16,550,502	1.63%	-2,634
PP3	-6,713	15,942	19,099,402	1.88%	-2,972
PP2a variant	-3,858	7,205	9,903,660	0.97%	-1,666

Model results show that inland traffic volumes fall by between 1.9 to 6.7 billion tonne kilometres, with a corresponding shift of between 3.6 billion and 15.9 billion tonne kilometres towards maritime transport. These figures imply an increase in maritime tonnes of between 4.9 million and 19.1 million. Since the shifted flows are between European ports, the increase in European seaport traffic will be double, i.e. up to almost 40 million tonnes under PP3 assumptions.

The impact on short sea shipping volumes ranges from a 0.49% increase in PP1 to a 1.88% increase in PP3.

For inland transport, the shift causes a decrease in road and rail modes. There is a modest increase in inland waterway traffic because this mode is frequently used in combination with maritime traffic. For road transport, the decrease is mainly found in longer distance bands. For example, PP2a reduces total inland transport by 5,996 million tonne kilometres, of which 2,634 million are shifted from road haulage trips over 300km long.

Step 4:

As explained earlier, lower user' costs act as an incentive to use maritime options in cases where sea is in competition with land transport. The maritime traffic increase is expected to result in new job creation.

According to our analysis every additional million tonnes (adjusted) of throughput creates roughly 90 new cargo handling jobs. Cargo handling jobs are approximately 10% of total direct employment including non-maritime employment, and 20% of direct maritime employment.

Therefore, taking into consideration only the direct employment categories, we obtain the following estimation for the baseline scenario:

Table 4: Estimated Employment Impacts, 2010 to 2030, Reference Scenario

Throughput	*2010*	*2030*	*Growth 30/10*	*Gr% YoY*
EU Port Throughput (T. mln)	3,622.43	5,204.44	44%	1.8%
Adjusted Throughput (T.mln)	1,107.94	1,801.43	63%	2.5%
Employment				
Port Workers (000s)	111.18	163.57	47%	1.9%
Other Maritime Port FTE (000s)	101.19	117.27	16%	0.7%
Non Maritime Direct FTE (000s)	256.45	256.45	0%	0.0%
Total Direct Employment (000s)	468.83	537.29	15%	0.7%

It is assumed that through a combination of public and private sector actions, including the EC measures to enhance port capacity, that volume will increase of 44% in EU ports by 2030. As a consequence, we estimate that the number of port workers will increase from the present day figure of around 110,000 to around 163,000 by 2030.

The ratio of other maritime port FTEs to port workers is based on the Flemish ports ratios. Over time it is expected that the ratio falls in line with increasing productivity rates. Non-maritime direct employment in ports is not expected to react to traffic volume.

Total direct employment is therefore estimated to grow by 15%, or approximately 70,000.

In the policy scenario (high case PP3), additional port volume would help to generate around 2,500 additional jobs. See below.

Table 5: Estimated Employment Impacts, 2010 to 2030, Policy Scenario

Throughput	*2010*	*2030*	*Growth 30/10*	*Gr% YoY*
EU Port Throughput (T. mln)	3,622.43	5,251.46	45%	1.9%
Adjusted Throughput (T.mln)	1,107.94	1,817.71	64%	2.5%
Employment				
Port Workers (000s)	111.18	165.05	48%	2.0%
Other Maritime Port FTE (000s)	101.19	118.33	17%	0.8%
Non Maritime Direct FTE (000s)	256.45	256.45	0%	0.0%
Total Direct Employment (000s)	468.83	539.83	15%	0.7%
Difference, Policy-Reference		+2.54		

The major employment impact comes from the exogenous effect of traffic growth. As shown in table 1 total direct employment in the baseline is estimated to grow by 15%, or approximately 70,000 from 2010 to 2030.

Policy measures contribute to this impact by setting out a more favourable structural framework for attracting investment. In addition they directly contribute to maritime and port employment through modal shift.

Table below summarises the number (unit) of additional jobs against the reference scenario expected in 2030 under different PPs.

2030	EU Port Throughput (Ton million)	Adjusted Throughput (Ton million)	New jobs
PP1	5,216.63	1,805.65	658
PP2	5,222.73	1,807.76	987
PP2a	5,245.19	1,815.54	2,199
PP3	5,251.46	1,817.71	2,537
PP2a VARIANT	5,228.82	1,809.87	1,316

Step 5:

In the final step, the inland traffic reductions and the maritime traffic gains are evaluated in terms of their externalities. The following average rates are used per unit (a 12m lorry or a forty foot container load), covering noise, accidents and emissions.

	RAIL	ROAD	WWAY	SEA
Externalities € per Unit/Km	0.161	0.3893	0.1984	0.0311

Valuations are based on a number of studies including:

1. IMPACT, Handbook on estimation of external costs in the transport sector. Produced within the study "Internalisation Measures and Policies for All external Cost of Transport", IMPACT, 2008, Maibach et al. (INFRAS, CE-Delft).

2. Vergelijkingskader Modaliteiten 1.4b, NEA in association with STERC, TransCare, 2001 to 2004. A study for the Ministerie van Verkeer en Waterstaat (DGG/AVV).

3. ASSET, Assessing Sensitiveness to Transport, Alpine Crossing, ECOPLAN, 2009. This study, in turn, uses inputs from ECOPLAN and INFRAS (2208), Externe Kosten des Verkehrs in der Schweiz. On behalf of Swiss Federal Office for Spatial Development and Federal Office of the Environment, Bern.

By applying these rates to the net shifts per mode, we obtain the following estimates:

	External Costs (€m/pa)
PP1	-23
PP2	-34
PP2a	-69
PP3	-76
PP2a VARIANT	-46

Policy Package 1

		Reference 2030	PP1
2030	Tonnes (million)	Port Revenue (€ million)	Port Revenue (€ million)
Containers		5,437.49	5,327.13
Dry Bulk		4,151.46	4,065.23
Liquid Bulk		4,060.60	3,979.39
RORO		461.73	457.61
Other		1,725.95	1,689.72
TOTAL	0.00	15,837.23	15,519.08
			-2.0%
			-318.15

Policy Package 2

		Reference 2030	PP1
2030	Tonnes (million)	Port Revenue (€ million)	Port Revenue (€ million)
Containers		5,437.49	5,218.70
Dry Bulk		4,151.46	4,033.30
Liquid Bulk		4,060.60	3,966.44
RORO		461.73	479.87
Other		1,725.95	1,657.44
TOTAL	0.00	15,837.23	15,355.75
			-3.0%
			-481.47

Policy Package 2a

		Reference 2030	PP1
2030	Tonnes (million)	Port Revenue (€ million)	Port Revenue (€ million)
Containers		5,437.49	5,085.82
Dry Bulk		4,151.46	3,857.66
Liquid Bulk		4,060.60	3,776.36
RORO		461.73	435.35
Other		1,725.95	1,610.67
TOTAL	0.00	15,837.23	14,765.85
			-6.8%
			-1,071.37

Policy Package 3

		Reference 2030	PP1
2030	Tonnes (million)	Port Revenue (€ million)	Port Revenue (€ million)
Containers		5,437.49	5,026.94
Dry Bulk		4,151.46	3,807.84
Liquid Bulk		4,060.60	3,731.04
RORO		461.73	435.68
Other		1,725.95	1,590.51
TOTAL	0.00	15,837.23	14,592.02
			-7.9%
			-1,245.21

Policy Package 2aVAR

		Reference 2030	PP1
2030	Tonnes (million)	Port Revenue (€ million)	Port Revenue (€ million)
Containers		5,437.49	5,266.00
Dry Bulk		4,151.46	3,959.85
Liquid Bulk		4,060.60	3,870.52
RORO		461.73	441.95
Other		1,725.95	1,663.37
TOTAL	0.00	15,837.23	15,201.68
			-4.0%
			-635.55

Port Employment

European port employment data is described by the recent study by Dr Eric Van Hooydonk, "Port Labour in the EU"[39] as "scattered, indeed hardly comparable", and of "uneven quality and reliability". It is therefore difficult to present an accurate overview of port employment at a European level. The Van Hooydonk study concentrates on the number of port workers or dockers engaged in cargo handling, as well as a few related activities including warehousing. According to this definition, the study estimates that there are around 110,000 port workers in the EU.

At national level or port level it is possible to extend these definitions. In the study by ITMMA "Dock labour and port related employment[40]" certain national case studies are presented. In the Flemish ports of Antwerp, Zeebrugge, Ghent and Oostende, total direct port employment was recorded as 108,818 full time equivalents (FTE). However, only approximately between one third and one half of these direct employees work in the 'maritime cluster'. The rest work mainly in industry located at the port complexes. In Antwerp for example, there were 60,509 direct FTE employees in 2010[41], of which 27,410 were employed in the maritime cluster. Of those, 14,350 were working in cargo handling activities in 2010. By comparison, the Van Hooydonk study shows that the number of dockers in Belgium as a whole was only 10,300, so the categorisation offered by official statistics could be difficult to interpret.

Table 6: Employment at the port of Antwerp (number of FTEs)

	2005	2008	2009	2010
Cargo Handling	14,079	15,249	14,858	14,350
Shipping agents and forwarders	6,457	6,940	6,805	6,808
Port Authority	1,646	1,631	1,659	1,680
Other	4,091	4,678	4,884	4,572
Total Maritime Cluster	**26,273**	**28,498**	**28,206**	**27,410**
Total Non-Maritime Cluster	**35,443**	**35,256**	**34,376**	**33,099**
Total Direct FTE	**61,716**	**63,754**	**62,582**	**60,509**
Antwerp throughput (mln. Tonnes)	160,1	189,4	157,8	178,2

Source: National Bank of Belgium, 2012

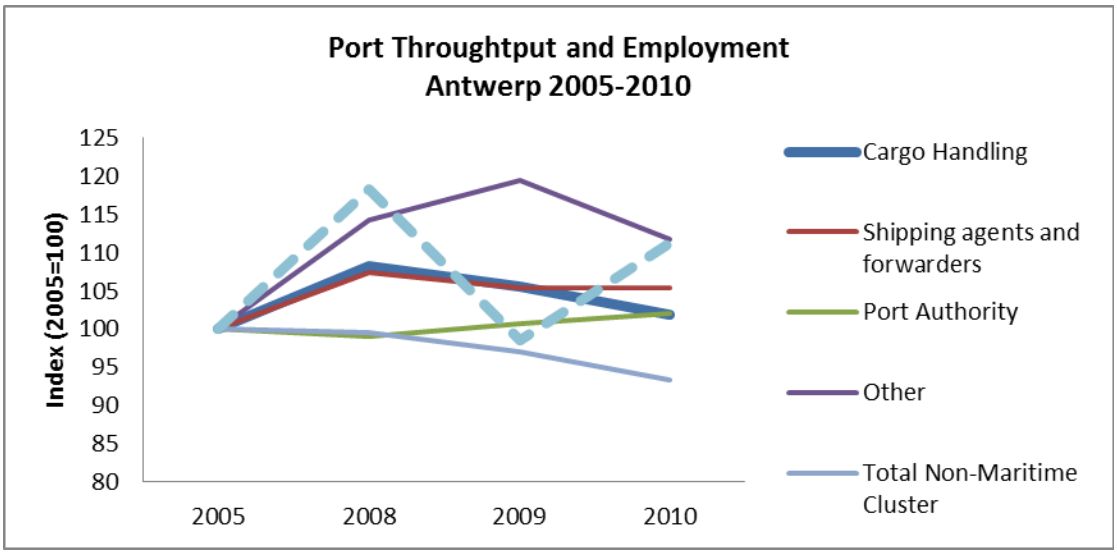
Comparing employment trends and throughput trends over this period (2005-2010), it can be seen that throughput grows faster than employment. From 2005 to 2010, throughput increased by 11%. Non-maritime employment fell, whereas the main maritime categories increased between 2% and 5%. ITMMA 2010 considers a longer time period between 2002 and 2007, and shows that while cargo in Flemish ports increased by 32%, employment in the maritime cluster increased by 18%.

[39] Dr Eric Van Hooydonk, 2013, "Port Labour in the EU", a study commissioned by the European Commission.
[40] T. Notteboom, ITMMA, 2010, "Dock labour and port related employment".
[41] Claude Mathys, National Bank of Belgium, 2012, "Economic Importance of the Belgian Ports".

During the growth period 2002-2007, ITMMA shows that non-maritime employment fell by 1%. They argue that this is related to a process of "de-maritimisation", implying that there is a shift in non-cargo handling activity from port complexes towards the hinterland. Growth in throughput, without an equivalent expansion of port land, implies that a higher proportion of activity within the port will become directly related to the movement (rather than the processing) of goods. Thus, direct port related employment may be substituted by indirect employment in the hinterland.

Over the period 2005 to 2010, the trends in throughput and maritime employment, including cargo handling are somewhat erratic. Non-maritime direct employment continues to fall.

Figure 2- Port Throughput and Employment in Antwerp



Source: NBB, 2012

In Rotterdam, traffic grew by 16% in total tonnage between 2005 and 2010. Over the same period total direct employment[42] grew from 85,844 to 87,111 (+1.5%). Industrial employment which accounts for around 20,000 of these employees, fell during this period but that was compensated in other areas such as road haulage, which grew from 21,930 to 25,357, and logistics services, which grew from 10,598 to 11,449. Employment in the activities most closely associated with cargo movement, described as 'transhipment and warehousing' rose from 9,021 in 2005 to a peak of 9,605 in 2008 and then fell steadily to 8,898 in 2010. It is difficult to directly compare Rotterdam and Antwerp statistics, but the general picture of moderate growth and static employment seems consistent.

Higher employment levels in Antwerp relative to cargo throughput (14,350 cargo handling employees for 178 million tonnes) compared to Rotterdam (8,898 transhipment and warehousing employees for 430 million tonnes) can be partially explained by the relative importance of more capital intensive sectors in Rotterdam, especially liquid bulk.

[42] Port of Rotterdam Statistics. Source: Erasmus University, Rotterdam.

Employment impacts of traffic growth in ports, Hamburg-Le Havre Range

Both Notteboom and Van Hooydonk emphasise caution in the comparison and use of port employment statistics. However, we can derive a few tentative conclusions from those studies.

- Port workers, or dockers, as defined by Van Hooydonk may represent some 10% of total direct employment in ports.
- Employment in cargo handling and warehousing tends to follow the economic cycle, but does not grow in direct proportion to throughput.
- Throughput has been growing faster than employment in the reviewed cases.
- Employment in non-maritime activities in ports does not correlate well with throughput and a long term decline seems to occur in this category.

Using the Van Hooydonk employment data, it is possible to make a scatter plot relating port employment per country to throughput. We have applied the 'Antwerp rule' as a way of normalising the mix of traffic, given that certain traffic types e.g. break bulk, are more labour intensive per tonne than others such as crude petroleum. Following the review of value added methods in ITMMA (2010), we apply the rule that 1 tonne of conventional cargo = 1 tonne of roll on roll off = 18 tonnes of crude oil = 2 tonnes of liquid bulk (except crude oil) = 3 tonnes of containers = 5 tonnes of dry bulk.

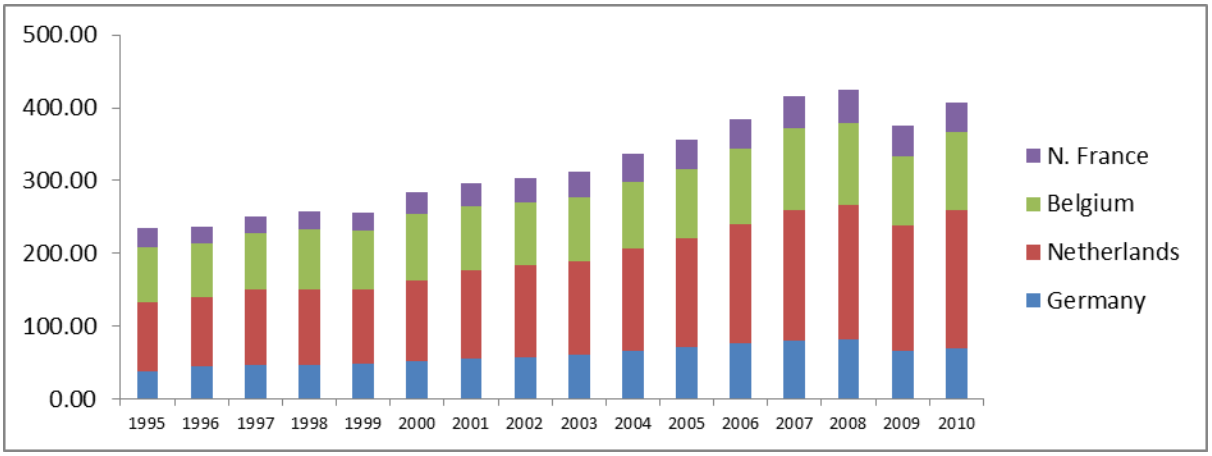
Table 7: Assumptions for Port Traffic Value Added, the 'Antwerp Rule'

	Conventional Cargo	RoRo	Crude petroleum	Other Liquid Bulk	Containers	Dry Bulk
Antwerp Rule	1	1	18	2	3	5

Source: ITMMA 2010.

However, if we convert all the traffic in the Hamburg-Le Havre range according to these factors into "conventional cargo equivalent" tonnes, the trend is broadly similar to the overall trend in tonnes.

Figure 3: Growth in "Conventional Cargo Equivalent" Tonnes according to the Antwerp Rule



Over the fifteen year term, throughput (expressed with these adjustments) has risen by 73%. During the period 2002 to 2007, it grew by 37%. Comparing this growth phase with the employment statistics, relating to maritime clusters, in the ITMMA (2010) study, it appears that there is approximately a 2:1 ratio between adjusted traffic growth and employment growth.

Employment Impacts, Italy

Data produced by Assoporti in 2008[43] shows that Italian ports accounted for 56,682 jobs in 2007, of which 27,899 were categorised as direct FTE. This compares with the employment figures quoted by Van Hooydonk, showing that there were up to 18,000 dockers employed in Italy.

Table 8: Traffic and Employment in Italian Ports

	2004	2007	Growth 2007/2004
Employment (nr jobs)	27,500	27,899	+1.4%
Annual Traffic (tonnes)	484,877	537,300	+10.8%

The figures suggest that direct employment rates per tonne of cargo moved are generally lower than in the North European examples. Given that Italian ports collectively handle approximately double the volume carried via Flemish ports, direct employment levels are close to the quoted Flemish figures for the maritime cluster, at around 30,000 FTE. This suggests that a higher proportion of Italian direct employees are indeed dockers. The ratio of traffic growth and employment growth is also higher, at around 8:1.

In Genoa, which carries around 50 million tonnes per annum, or around 10% of the Italian market, the port authority shows employment levels at 37,073. However, only 4,274 are classified as working in the commercial port, with a further 6,500 in ship-building and ship-repair, and 26,299 in port logistics and auxiliary services.

Table 9: Traffic and Employment in Italian Ports

	2004	2010
Employment (nr jobs)		**37,073**
- Commercial Port		4,274
- Shipyard		6,500
- Port Logistics and Auxiliary		26,299
Annual Traffic (tonnes)	**57,033**	**51,952**

Source: Genoa Port Authority

[43] Assoporti, 2008, "La Portualità come Fattore di Sviluppo e Modernizzazione." Fondazione Censis.

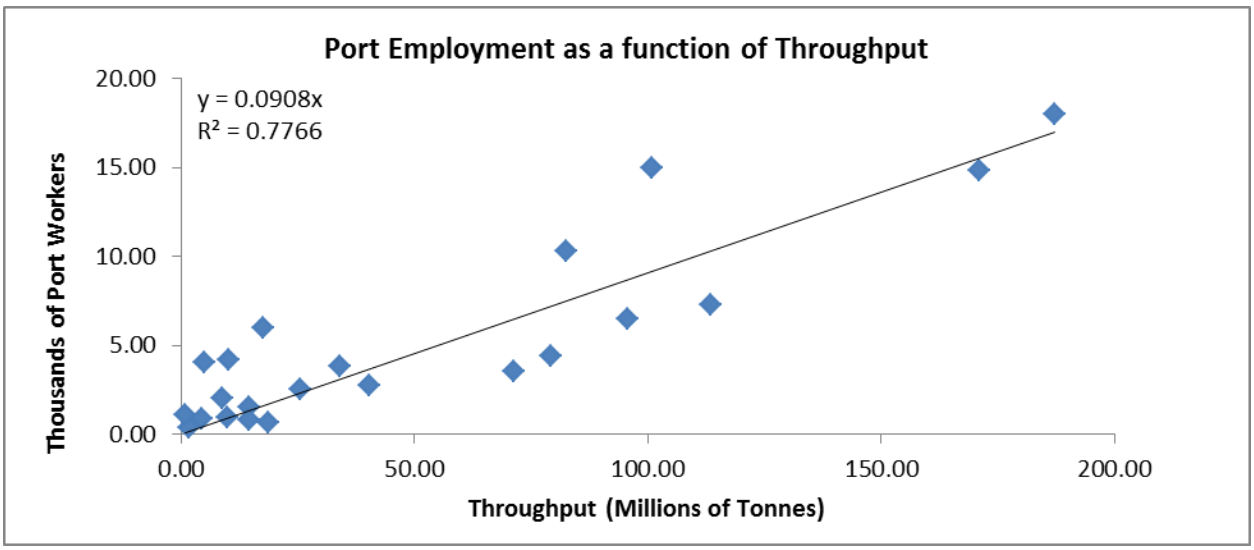
This suggests, as in the cases of Antwerp and Rotterdam that employees fitting the narrower definitions of port workers, i.e. those engaged in the operation of a port, are in the minority, and around 10% of total port employment in these examples.

Employment Impacts, EU27

For the wider European picture, we rely upon the surveys conducted by Van Hooydonk (2013), covering a narrower definition of port labour.

Here we have made a scatter plot relating converted throughput[44] (in millions) against the number of port workers (in thousands).

Figure 4: EU Port Employment as a function of throughput



The slope of the function implies that every additional million tonnes (adjusted) of throughput creates roughly 90 new cargo handling jobs.

Given the previous analysis showing that cargo handling jobs are approximately 10% of total direct employment including non-maritime employment, and 20% of direct maritime employment.

Estimate of Employment Impacts

Therefore, taking into consideration only the direct employment categories, we obtain the following estimation:

[44] According to Antwerp Rule as before.

Table 10: Estimated Employment Impacts, 2010 to 2030, Reference Scenario

Throughput	***2010***	***2030***	***Growth 30/10***	***Gr% YoY***
EU Port Throughput (T. mln)	3,622.43	5,204.44	44%	1.8%
Adjusted Throughput (T.mln)	1,107.94	1,801.43	63%	2.5%
Employment				
Port Workers (000s)	111.18	163.57	47%	1.9%
Other Maritime Port FTE (000s)	101.19	117.27	16%	0.7%
Non Maritime Direct FTE (000s)	256.45	256.45	0%	0.0%
Total Direct Employment (000s)	468.83	537.29	15%	0.7%

It is assumed that through a combination of public and private sector actions, including the EC measures to enhance port capacity, that there is a volume increase of 44% in EU ports by 2030. As a consequence we estimate that the number of port workers will increase from the present day figure of around 110,000 to around 163,000 by 2030.

The ratio of other maritime port FTEs to port workers is based on the Flemish ports ratios. Over time it is expected that the ratio falls in line with increasing productivity rates. Non maritime direct employment in ports is not expected to react to traffic volume.

Total direct employment is therefore estimated to grow by 15%, or approximately 70,000.

In the policy scenario (high case PP3), additional port volume would help to generate around 2,500 additional jobs. See below.

Table 11: Estimated Employment Impacts, 2010 to 2030, Policy Scenario

Throughput	***2010***	***2030***	***Growth 30/10***	***Gr% YoY***
EU Port Throughput (T. mln)	3,622.43	5,251.46	45%	1.9%
Adjusted Throughput (T.mln)	1,107.94	1,817.71	64%	2.5%
Employment				
Port Workers (000s)	111.18	165.05	48%	2.0%
Other Maritime Port FTE (000s)	101.19	118.33	17%	0.8%
Non Maritime Direct FTE (000s)	256.45	256.45	0%	0.0%
Total Direct Employment (000s)	468.83	539.83	15%	0.7%
Difference, Policy-Reference		+2.54		

Summary outcome

The major employment impact comes from the exogenous effect of traffic growth. As shown in table 5 total direct employment in the baseline is estimated to grow by 15%, or approximately 70,000 from 2010 to 2030.

Policy measures contribute to this impact by setting out a more favourable structural framework for attracting investment. In addition they directly contribute to maritime and port employment through modal shift.

Table below summarises the number (unit) of additional jobs against the reference scenario expected in 2030 under different PPs.

2030	EU Port Throughput (T. mln)	Adjusted Throughput (T.mln)	New jobs
PP1	5.216,63	1.805,65	658
PP2	5.222,73	1.807,76	987
PP2a	5.245,19	1.815,54	2,199
PP3	5.251,46	1.817,71	2,537
PP2a VARIANT	5.228,82	1.809,87	1,316

Reference Forecast – Overview of Methodology and Assumptions

The forecast is based upon applying a trade growth model to a disaggregated set of traffic flows, in which long distance trade flows are related to port traffic. This approach uses the NEAC[45] trade model methodology applied to a WORLDNET[46] freight-chain matrix derived from ETISplus[47] freight statistics. It has been updated during 2012 as a task of the Trans-Scenario[48] project, to integrate the methodology into the newest (v2.6) TRANS-TOOLS[49] model.

[45] See for example: NEA, 1999, Final Report, European Transport Forecast 2020, Freight Transport.

[46] WORLDNET Project, 2009, DG-MOVE, FP6, NEA, KIT, MKmetric, OSC, DEMIS, TINA.

[47] ETISplus project, 2012, DG-MOVE, Panteia/NEA(NL) et al.

[48] TransScenario, 2012, DG-MOVE, Tetraplan(DK) et al.

[49] TRANS-TOOLS, DG-MOVE reference transport model, JRC-IPTS, Spain.

Structure of NEAC Trade Model (Source: Panteia/NEA)

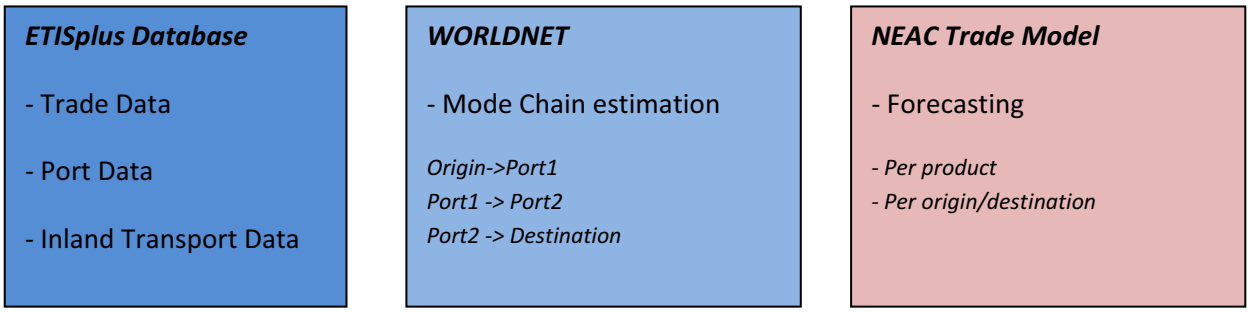
$$T_{ijg} = \alpha 1 * P_{ig}^{\alpha 2} * A_{jg}^{\alpha 3} * D_{ij}^{\alpha 4} * e^{\alpha 5 * DUMMY}$$

Where,

T_{ijg}	trade of commodity group g between country/region i and j in tonnes;
P_{ig}	added value of the sector that supplies commodity g in country/region i;
A_{jg}	added value of the sector that consumes commodity g in country /region j;
D_{ij}	the deterrence variable representing generalized costs between capital cities of country/region i and j as a proxy for the resistance on the trade;
DUMMY	a dummy variable that captures economic co-operation between countries/regions or a specific

In order to estimate port traffic, assumptions of economic growth up to 2030 and 2050 have been applied to a base year traffic matrix, containing maritime flows. ***Assumptions of economic growth use current (2012) estimates from PRIMES[50]/TREMOVE***[51].

Model structure:



The results of the model, namely the matrixes of port to port flows of maritime traffic (estimations 2005-2030) are given in Annex VIII.

Key points:

- The model builds up a picture of port-related traffic using trade data and port throughput data.
- The only assumptions entered into the forecasting model are economic growth rates, based on current expectations (Trans-Scenario, 2012);
- The model does not shift traffic between ports – it is competition neutral;

[50] PRIMES model, NTUA, Greece.

[51] TREMOVE model, TM-Leuven, Belgium.

- Differential growth rates according to coastline areas arise only from variations in regional economic growth and the mix of commodities; and
- The model calculates unconstrained demand – without capacity ceilings for transport infrastructure.

Balance of Demand and Supply in European Ports, up to 2030

4.1 Demand

The following forecasts are calculated using the TRANSTOOLS v2.6[52] model, based on economic assumptions (GDP and GVA) obtained from the PRIMES[53] model. Average growth in GDP for the EU27 as a whole is expected to be 1.4% per annum up to 2030. Different growth rates are assumed for each EU member State and for each trading partner.

It implies that growth will be close to 50% by 2030, with an average annual growth rate of 1.9% per annum.

Table 12 - 2010 port traffic by region of loading/unloading

Region	Container	Dry Bulk	Liquid Bulk	RoRo	Other Cargo	Total
UK/Ireland	65.46	137.58	265.57	123.12	18.70	616.60
Nordic	32.71	134.00	204.03	89.08	46.57	517.08
South Baltic	14.61	68.86	83.81	13.74	13.86	194.90
Hamburg-France	323.35	329.79	529.26	92.36	80.63	1,357.59
Iberia	124.48	90.50	175.37	15.45	25.32	431.12
Italy/Malta	83.22	67.76	207.01	85.72	33.45	482.92
Balkan/Aegean	54.48	74.47	80.81	24.69	56.12	313.36
Black Sea	6.26	27.42	20.03	0.30	6.18	60.19
Total	704.56	930.40	1,565.88	444.46	280.83	3,973.76

Source: Eurostat/ETISplus.

Table 13 - 2030 port traffic by region of loading/unloading

Region	Container	Dry Bulk	Liquid Bulk	RoRo	Other Cargo	Total
UK/Ireland	125.74	155.43	297.49	137.46	35.26	751.39
Nordic	50.53	187.66	240.30	122.01	81.87	682.37
South Baltic	19.91	158.09	88.92	17.68	39.39	323.98
Hamburg-France	595.58	434.53	571.20	186.83	138.26	1,926.40
Iberia	217.28	176.38	213.45	38.34	50.98	696.44
Italy/Malta	179.00	112.67	261.87	80.05	64.24	697.83
Balkan/Aegean	120.80	156.28	122.21	50.50	128.72	578.51
Black Sea	8.22	69.73	28.90	1.53	37.81	146.19
Total	1,317.06	1,450.77	1,824.34	634.40	576.53	5,803.11

[52] DG-MOVE reference transport model.
[53] NTUA, Athens. Reference model for EC forecasting.

Port Traffic in the container sector will be higher than in the bulk sectors. By 2030, container traffic growth will exceed 85% i.e. 3.2% year on year growth.

These results can be compared with other market research studies:

ISL Port Traffic Forecasts up to 2025

In the 2010 study by ISL, "Prognose des Umschlagpotenzials des Hamburger Hafens fur die Jahre 2015, 2020 und 2025", they show in the neutral economic forecast that container traffic in the Hamburg-Le Havre range might increase from 39.2 million TEU in 2008 to 70.9 million by 2025 (basis-scenario, p92). That suggests an annual rate of growth of 4.8% per annum for container traffic. For bulk cargo they indicate a rather static picture, with volumes remaining close to current levels.

Port of Rotterdam, Port Vision 2030

Port of Rotterdam's Port Vision 2030 sets out a long term strategy in which they cite factors such as global shifts and changes in the patterns of energy demand and supply as the driving forces for continued port traffic growth, particularly in the inter-continental trades. When this is combined with expected changes in the organisation of these traffic flows, and with cost and fuel savings offered by scale economies the port expects that there will be greater specialisation and clustering.

They apply four scenarios:

- Low Growth: with low economic growth and moderate environmental policy;
- European Trend: based on current trends and policy measures;
- Global Economy: with high economic growth, low fuel prices, and a low degree of environmental policy; and
- High Oil Price: with moderate economic growth, high oil prices, and a higher degree of environmental policy.

From a 2010 volume of 430 million tonnes, Rotterdam forecasts increases in volume up to 750 million tonnes in 2030.

Table 14 - Port of Rotterdam, Port Vision 2030

1. Scenario	2. 2030 prediction (tonnes)	3. Annual growth rate 2010-2030
4. Low Growth	5. 475 million	6. 0.5% per annum
7. High Oil Price	8. 575 million	9. 1.5% per annum
10. European Trend	11. 650 million	12. 2.1% per annum
13. Global Economy	14. 750 million	15. 2.8% per annum

In the European port forecast estimated by PwC/Panteia in this document, annual average growth rates up to 2030 are 1.9%. This lies in between the range of the two central Rotterdam scenarios (High Oil Price and European Trend).

OPTIMAR, IHS-Fairplay, Benchmarking Strategic Options for European Shipping and for the European Maritime Transport System in the Horizon 2008-2018, 2010 Update

OPTIMAR makes medium term forecasts for the European shipping sector. A post-crisis revision was published in 2010. It explains the expansion in the capacity of the world shipping fleet, and how this continued to grow throughout the period following the first economic crisis in 2008. Port volumes are shown to have fallen in many European coastal regions after 2008, but the report concludes that its strategic outlook or "signals of future change" were unchanged. The study had demonstrated that shipping-line capacity was capable of accommodating growth, but that in some port sectors, notably containers, there would be space constraints. One important driver in this market would be the growth of Russian containerized volumes, and the opportunity this creates for transshipment at EU hub ports.

In the OPTIMAR SWOT analysis of the European port system (see Annex), weaknesses are cited in relation to capacity shortages e.g. in East Baltic dry cargo sector, and in the container sector for most regions. Efficiency and unstable labour relations are also highlighted.

Opportunities include the development of Motorways of the Sea, new container feedering patterns, and the growth of Russian markets. The authors foresee a situation where excess capacity in the shipping fleet will drive the sector forward to seek new opportunities, especially in emerging markets.

4.2 Demand/Supply Balance

Because of the relatively high growth in the container sector, and the heavy investment required to build modern container terminals capable of handling the largest container vessels, the question of port capacity and imbalances between demand and supply is particularly important for European container flows.

OECD, Strategic Transport Infrastructure Needs to 2030

In 2011, the OECD study "Strategic Transport Infrastructure Needs to 2030" pointed towards "modest but sustained" growth in developed countries and "significantly higher growth" in developing countries. Worldwide the study expected that the volume of container transport would quadruple by 2030.

Much of that growth will be stimulated by economic and logistical changes taking place outside Europe, but it can still be expected that the volumes in major inter-continental gateways will increase.

In the same study, the OECD indicated that *infrastructure capacity is not able to handle even a 50%* increase in demand, and therefore that the supply side will become congested.

CLECAT (International Transport Forum, 2007)

CLECAT (European Association for Forwarding, Logistics and Customs Services) provided examples of port congestion in Europe in 2004. These occurred during a period of rapid growth, and they show that periods of unexpected growth can create short to medium term capacity shortages, resulting in additional cost and delay for shippers. It is estimated that when the supply demand ratio reaches 80%, the user will experience congestion because there will be very limited scope to handle peaks in demand.

Port	Capacity Utilisation
Le Havre	89.6%
Antwerp	92.9%
Rotterdam	92.5%
Bremerhaven	95.5%
Hamburg	93.2%
Southampton	99.3%
Felixstowe	77.1%
Others	41.9%
Total average	86.6%

Ocean Shipping Consultants, (2006) Forecast Container Handling Supply/demand Balance up to 2015

OSC's 2006 publication showed that by 2015, even with large increases in capacity in many regions, utilisation rates would reach in excess of 80%, the point at which congestion would start to be felt by users.

Supply/Demand balance by Coastal Region

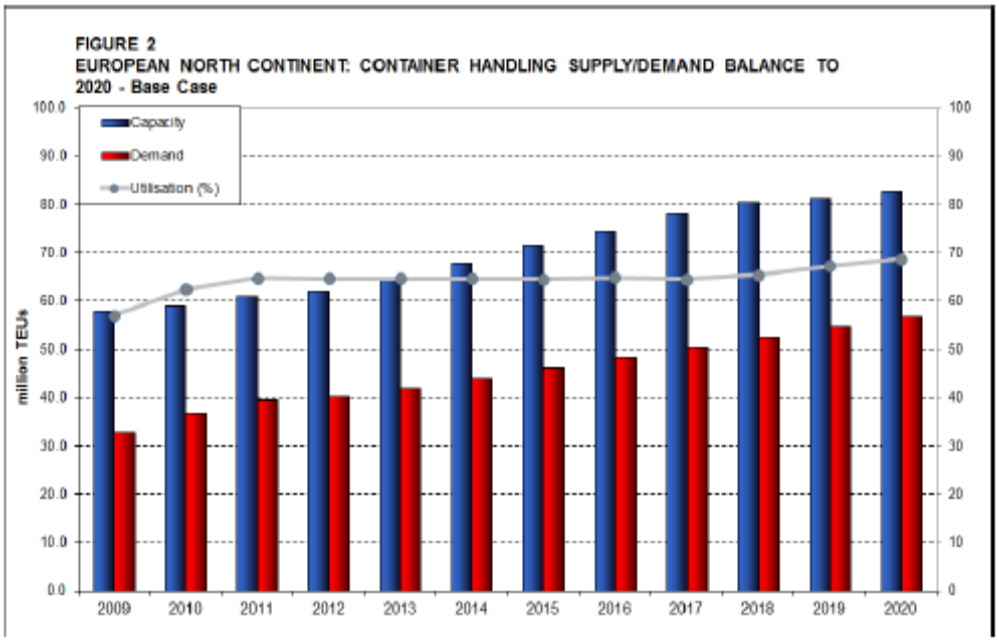
mTEUS/year		2005	2010	2015
North Continent East	Capacity	12.95	21.70	23.80
	Demand	11.42	17.06	23.63
	Utilisation	*88.2 %*	*78.6 %*	*99.3 %*
North Continent West	Capacity	24.18	45.64	51.14
	Demand	18.52	25.41	32.89
	Utilisation	*76.6 %*	*74.5 %*	*64.3 %*
British Isles	Capacity	11.54	16.79	19.43
	Demand	8.98	12.08	15.91
	Utilisation	*77.8 %*	*72.0 %*	*81.9 %*
Scandinavia	Capacity	5.13	6.56	6.51
	Demand	3.63	4.35	5.05
	Utilisation	*70.7 %*	*66.3 %*	*77.5 %*
East Baltic	Capacity	3.13	6.51	8.89
	Demand	2.17	4.59	7.18
	Utilisation	*69.2 %*	*70.5 %*	*80.8 %*

mTEUS/year		2005	2010	2015
West Mediterranean	Capacity	12.67	23.74	30.78
	Demand	10.51	16.81	24.03
	Utilisation	*82.9 %*	*70.8 %*	*78.1 %*
Central Mediterranean	Capacity	15.53	24.42	29.37
	Demand	12.06	18.18	26.32
	Utilisation	*77.7 %*	*74.5 %*	*89.6 %*
East Mediterranean and Black Sea	Capacity	13.37	25.50	29.21
	Demand	12.30	21.22	32.83
	Utilisation	*92.0 %*	*83.2 %*	*112.4 %*

Source: Ocean Shipping Consultants, 2006

Ocean Shipping Consultants (2012), North European Container Ports Market

In the update study in 2012 (post crisis) OSC show that capacity utilisation in the European North Continent , despite lower demand between 2010 and 2015, is still likely to reach 70% by 2020 in their base case forecast.



Source: North European Container Ports Market, Ocean Shipping Consultants, 2012

The time-series shows how the capacity utilisation has stabilised at around 65% in 2012-2013, which coincides with the impression derived from the impact assessment consultation that European ports have sufficient maritime capacity today. However, the outlook shows that after a period of rapid capacity expansion lasting until around 2018, utilisation rates will start to reach 70% again by 2020.

4.3 Demand/Supply Balance – Conclusions

Market research studies (as shown above) indicate that the supply/demand balance for container transport in Europe has shifted from the range 70-90% in 2005, to around 60-70% in 2010, since growth has slowed sharply between 2008 and 2010. On the supply side, many major container investments such as the Maasvlakte II terminal in Rotterdam and the Jade-Weser terminal in Northern Germany are starting to become operational. While this alleviates capacity shortages today, the planning horizon needs to be longer.

Demand levels can be restored steadily, and shipping capacity can be added at short notice, but adding port capacity is more difficult. A.A. Pallis[54] demonstrated that port developments in Europe have faced lengthy delays, both in the initial planning and in the implementation. Several approved plans have never been realised, and many others have failed to win approval. Maasvlakte II has taken over twenty years from initial plans to realisation.

Existing port terminals may also face setbacks. In Hamburg, for example, capacity development has been hindered by disagreements over plans to dredge the River Elbe for the first time since 1999[55].

[54] Pallis, A.A., (2009). "Port developments in Europe: Trends and policies". ODU Maritime Institute Speaker Series at the Nauticus National Maritime Center, Norfolk Virginia, USA, March 2009

[55] De Spiegel, December 2012

Without dredging, the port would become less attractive for some carriers particularly on Far East routes, potentially reducing choice and creating bottlenecks elsewhere.

On balance, however, the OSC (2012) study shows that these North European developments will stabilise between 2015 and 2020, leaving utilisation rates at around 70%. By 2020 the market is predicted to be experiencing growth in demand, but the foreseeable investment projects will have been realised.

In 2010 European container port throughput is at a level of 81m TEU (Source ESPO). With 85% growth as predicted for 2030, container throughput demand will increase to 149m TEU in Europe. Current utilisation rates imply that total capacity today is around 115m TEU.

Including the Maasvlakte II, development in Rotterdam, OSC predict that North European supply will increase by around 20m TEU. A further 10m TEU increase in other regions is likely, but not at the same scale. For example, more typically, Barcelona is adding 2.65m TEU at the BEST terminal.

On this basis it is plausible that capacity in EU container terminals will reach 145-155 million TEU based on existing planned developments. The changing requirements of shipping companies will also dictate that some existing capacity becomes obsolete.

With demand at 149m TEU in 2030 and capacity also reaching 145-155m TEU, it can be demonstrated that the supply/demand utilisation rate will reach the congestion threshold of 80% before 2030, and by 2030 the utilisation rate will exceed 95% in some regions.

ANNEX: OPTIMAR (2010) SWOT ANALYSIS OF THE EU PORT SYTEM

See: http://ec.europa.eu/transport/modes/maritime/studies/maritime_en.htm

Port, logistic systems ie the EU industry and society

Segment	Strengths	Weaknesses	Opportunities	Threats
Liquid Cargo	There is a good balance between port facilities and demand outlook, but for LNG. Ship capacity will be plenty.	Too few regasification facilities in certain areas (eg UK, Italy and Spain), compared to expected supply of LNG.	Potential volumes of renewable liquid fuels and/or volumes from deep sea offshore fields.	Too high dependence of deliveries of liquids from Russia. Particularly shipment in ice conditions is pressured by lack of skilled seamen.
Comments 2010	The severe winter 2009/10 revealed the lack of both skilled seafarers and ice classed tonnage for transports in the Baltic Sea, despite the negative impact of the recession.			
Dry Cargo	There is a good balance between port facilities and demand outlook. Ship capacity will be plenty.	There could be regional capacity shortages in export facilities in the Eastern Baltic.	There exists many opportunities if more dry bulk will be delivered from Russia. Ukraine and Black Sea countries to export more grain. Demand for raw materials to use as bio-fuels increases the shipping traffic.	Russia wants to use solely their own ports for bulk handling – thus taking away business from the ports in Eastern EU.
Comments 2010	The recession pushed the volume development forward.			
Container; all regions	There will be enough ship capacity and networks will continue to develop favourably	Space demanding	New systems of feedering from the large mega carriers	Some ports may be discarded by the global operators
Comments 2010	During the recession, several infrastructure development projects were postponed or put on hold, while a few were continued. Many liner routes were changed and/or rescheduled.			
Container; East Mediterranean region	Spacious port areas in several ports.	Investment needs to increase capacity and efficiency. Different institutional set-ups in eastern ports.	Transhipment of Russian cargo. Increased traffic with Turkey and Black Sea countries. Increased traffic with North African Coast. Developments of the Balkan countries. Mid Europe supply through Adriatic ports instead of traditional North European ports.	Increased protectionism from Russia and thus a wish to use own ports even more. Limited capacity of the Bosphorus strait. Unrest and instability of Levant countries like Israel and Lebanon.
Comments 2010	Much of the above is still valid.			
Container; West Mediterranean region & Atlantic arc	Several ports highly efficient. Ample transhipment capacity.	Unstable labour relations in ports. Italian port capacity constraints.	Increased intra-European traffic through motorways of the sea. New port capacity in north African countries (ie. Tangier), provides more capacity for shippers. Opportunity for involved port operators. New traffic trades with North Africa Coast.	New port capacity in north African countries (ie. Tangier), threat to some port operators. Direct calls to north African countries will reduce today's transhipment in European ports.
Comments 2010	Tangier transhipment is now established to some extent.			
Container; North Sea region	Several ports highly efficient.	Capacity shortages in ports mounting despite investments. Unstable labour relations in ports. Hinterland connections under stress due to growing seaports.	Increased transhipment of Russian cargo.	Investments facing environmental challenges. Russian cargo transhipped in the Mediterranean or in the Baltic sea in the future
Comments 2010	As in many placed and also as mentioned above several infrastructure development projects were postponed or put on hold, while a few were continued. Capacity shortages in terminals and hinterland still an issue in some key ports.			
Container; Baltic Sea region	Ample transhipment capacity.	Unstable labour relations in ports.	Transhipment of Russian cargo.	Capacity shortages in German ports. Areas are to small and new investments faces large
Comments 2010	Labour relations have stabilised during the recession.			

ANNEX VIII:

Reference forecast – NEAC Trade Model

(see also Annex VII, Section III)

Port to port flows of maritime traffic (estimations 2005-2030)

Table -15: Maritime O/D, 2005, Millions of Tonnes per annum

2005 Tonnages; Coastline to Coastline flows																		
TOTAL	BALKANS	BLACK SEA	BRITAIN	CYPRUS	FRANCE ATL	FRANCE MED	HMB-LEHAV	IBERIA	ICELAND	IRELAND	ITALY	MALTA	NON EUR MED	NORDIC	REST OF WORLD	S BALTIC	TURKEY MED	TOTAL
BALKANS	10.065	4.168	0.649	1.387	0.013	0.271	1.199	0.940	0.000	0.024	7.807	0.259	2.401	0.183	11.943	0.069	2.725	44.102
BLACK SEA	12.499	20.964	1.101	1.153	0.840	2.637	2.463	2.787	0.000	0.019	8.144	0.596	9.377	0.433	28.894	1.593	14.149	107.652
BRITAIN	0.545	1.233	39.800	0.234	0.785	0.139	19.488	6.701	0.171	11.390	0.177	0.623	0.184	7.689	42.087	2.119	0.723	134.087
CYPRUS	1.302	0.021	0.080	0.000	0.001	0.006	0.180	0.116	0.000	0.003	0.101	0.000	0.053	0.016	0.000	0.000	0.102	1.982
FRANCE ATL	0.089	0.056	1.127	0.002	2.742	0.256	7.227	2.122	0.001	0.198	0.288	0.010	0.038	0.799	6.815	0.108	0.027	21.903
FRANCE MED	0.256	0.505	0.111	0.063	0.287	1.084	1.291	2.170	0.000	0.028	1.162	0.314	0.032	0.204	11.685	0.015	1.116	20.323
HMB-LEHAV	1.676	6.670	33.347	0.604	8.015	1.843	67.068	15.259	1.539	3.403	2.458	0.151	1.420	23.055	146.283	9.789	1.734	324.312
IBERIA	0.681	0.146	2.811	0.132	0.825	1.229	7.974	20.093	0.035	0.248	2.091	0.196	0.188	2.183	26.887	0.246	1.037	67.003
ICELAND	0.002	0.000	0.111	0.000	0.001	0.000	0.960	0.095	0.000	0.027	0.000	0.000	0.000	0.286	0.000	0.008	0.000	1.490
IRELAND	0.008	0.011	10.677	0.027	0.176	0.015	1.798	1.382	0.035	0.340	0.026	0.022	0.001	1.295	2.551	0.095	0.000	18.462
ITALY	5.829	2.450	0.283	1.822	0.677	2.324	1.154	5.703	0.000	0.009	22.241	1.742	0.396	0.111	51.719	0.034	4.445	100.940
MALTA	0.003	0.008	0.003	0.000	0.000	1.450	0.000	0.068	0.000	0.000	0.341	0.000	0.035	0.000	0.000	0.000	0.253	2.162
NON EUR MED	1.906	11.065	0.042	0.334	0.005	0.018	0.229	0.505	0.000	0.005	0.355	0.003	1.044	0.217	14.603	0.006	3.107	33.443
NORDIC	0.235	2.399	41.937	0.018	1.082	0.188	62.675	4.721	1.321	2.178	0.429	0.016	1.116	47.702	37.290	19.337	0.397	223.041
REST OF WORLD	16.261	33.269	78.959	0.003	8.232	22.454	273.030	113.877	0.000	15.994	91.709	0.000	10.882	25.651	11.483	5.198	14.244	721.247
S BALTIC	0.126	2.386	18.390	0.057	1.434	0.080	39.078	5.956	0.053	1.170	0.257	0.002	0.133	35.903	13.445	21.644	0.060	140.173
TURKEY MED	2.206	7.184	0.842	1.419	0.008	0.054	0.874	0.988	0.000	0.002	3.514	0.097	5.681	0.216	11.738	0.010	8.146	42.978
TOTAL	53.693	92.533	230.270	7.254	25.124	34.048	486.687	183.482	3.157	35.039	141.099	4.031	32.981	145.943	417.423	60.270	52.266	2,005.299

Table -16: maritime O/D, 2030, Millions of Tonnes per annum

2030 Tonnages; Coastline to Coastline flows

TOTAL	BALKANS	BLACK SEA	BRITAIN	CYPRUS	FRANCE ATL	FRANCE MED	HMB-LEHAV	IBERIA	ICELAND	IRELAND	ITALY	MALTA	NON EUR MED	NORDIC	REST OF WORLD	S BALTIC	TURKEY MED	TOTAL
BALKANS	12.268	7.173	0.863	1.629	0.015	0.312	1.387	1.112	0.000	0.026	9.383	0.271	3.631	0.233	17.660	0.115	6.612	62.690
BLACK SEA	18.224	47.347	1.509	1.706	0.900	3.140	3.078	3.386	0.000	0.030	11.850	0.656	21.994	0.756	73.054	3.754	34.660	226.044
BRITAIN	0.725	2.026	45.077	0.263	0.866	0.160	21.790	7.392	0.186	12.951	0.199	0.647	0.241	8.454	47.522	2.862	1.311	152.671
CYPRUS	1.515	0.029	0.088	0.000	0.001	0.007	0.220	0.128	0.000	0.004	0.119	0.000	0.085	0.019	0.000	0.000	0.180	2.395
FRANCE ATL	0.101	0.080	1.267	0.003	3.380	0.311	8.633	2.533	0.001	0.270	0.333	0.012	0.054	0.943	7.780	0.171	0.046	25.919
FRANCE MED	0.288	0.873	0.124	0.071	0.348	1.301	1.513	2.528	0.000	0.035	1.327	0.316	0.048	0.245	13.077	0.023	1.810	23.929
HMB-LEHAV	1.991	12.315	40.435	0.794	9.584	2.135	74.340	18.191	2.163	4.640	2.763	0.165	2.147	28.405	199.243	10.822	3.210	413.344
IBERIA	0.907	0.226	3.194	0.166	0.968	1.448	9.335	22.441	0.047	0.301	2.612	0.215	0.270	2.598	34.992	0.384	2.162	82.267
ICELAND	0.005	0.000	0.169	0.000	0.001	0.000	1.341	0.123	0.000	0.041	0.000	0.000	0.000	0.500	0.000	0.016	0.001	2.196
IRELAND	0.010	0.014	11.824	0.032	0.196	0.016	2.306	1.486	0.062	0.402	0.029	0.023	0.002	1.688	3.330	0.152	0.000	21.574
ITALY	7.777	3.209	0.315	2.044	0.763	2.582	1.290	6.393	0.000	0.013	25.385	1.866	0.513	0.135	62.879	0.042	8.169	123.376
MALTA	0.005	0.009	0.004	0.000	0.000	1.450	0.000	0.068	0.000	0.000	0.363	0.000	0.044	0.000	0.000	0.000	0.328	2.271
NON EUR MED	2.547	19.987	0.054	0.682	0.007	0.025	0.290	0.639	0.000	0.007	0.441	0.006	1.806	0.319	27.019	0.006	5.419	59.256
NORDIC	0.301	4.206	44.656	0.025	1.196	0.231	70.549	5.918	1.699	2.331	0.466	0.018	1.495	57.976	46.835	25.696	0.700	264.300
REST OF WORLD	24.523	47.066	98.866	0.005	9.887	24.593	358.648	138.493	0.000	24.266	118.146	0.000	17.044	35.238	17.913	8.580	31.947	955.213
S BALTIC	0.167	3.279	22.397	0.080	1.639	0.111	44.788	8.762	0.087	1.548	0.321	0.003	0.227	46.623	24.138	30.348	0.091	184.608
TURKEY MED	3.606	14.369	1.550	1.778	0.012	0.063	1.653	1.713	0.000	0.004	6.299	0.130	11.012	0.397	23.812	0.015	14.283	80.695
TOTAL	74.959	162.208	272.391	9.278	29.763	37.886	601.162	221.309	4.246	46.870	180.036	4.330	60.613	184.528	599.255	82.985	110.931	2,682.749